Appendix A

Notice of Preparation Comments

NATIVE AMERICAN HERITAGE COMMISSION

RECEIVED

JUN 14 2022

City of Morro Bay
Community Development Dept.

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

June 8, 2022

Cindy Jacinth
City of Morro Bay
955 Shasta Avenue
Morro Bay, CA 93442

Re: 2022060083, 600-MW Morro Bay Battery Energy Storage System Project, San Luis Obispo County

Dear Ms. Jacinth:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    - **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    - **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    - **a.** If part or all of the APE has been previously surveyed for cultural resources.
    - **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
    - **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
    - **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    - **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    - **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

P: (626) 381-9248
F: (626) 389-5414
E: info@mitchtsailaw.com

Mitchell M. Tsai
Attorney At Law

139 South Hudson Avenue
Suite 200
Pasadena, California 91101

VIA E-MAIL

June 20, 2022

Cindy Jacinth, Senior Planner
City of Morro Bay
955 Shasta Avenue
Morro Bay, CA 93442
Em: cjacinth@morrobayca.gov

RE: City of Morro Bay's 600-MW Morro Bay Battery Energy Storage System Project.

Dear Cindy Jacinth,

On behalf of the Southwest Regional Council of Carpenters ("**Southwest Carpenter**" or "**SWRCC**"), my Office is submitting these comments for the City of Morro Bay's ("**City**") June 21, 2022, Scoping Meeting for the Morro Bay Battery Energy Storage System ("**Project**").

The Southwest Carpenters is a labor union representing 50,000 union carpenters in six states, including California, and has a strong interest in well ordered land use planning and addressing the environmental impacts of development projects.

Individual members of the Southwest Carpenters live, work and recreate in the City and surrounding communities and would be directly affected by the Project's environmental impacts.

SWRCC expressly reserves the right to supplement these comments at or prior to hearings on the Project, and at any later hearings and proceedings related to this Project. Cal. Gov. Code § 65009(b); Cal. Pub. Res. Code § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal. App. 4th 1109, 1121.

SWRCC incorporates by reference all comments raising issues regarding the EIR submitted prior to certification of the EIR for the Project. *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal. App. 4th 173, 191 (finding that any party who has objected to the Project's environmental documentation may assert any issue timely raised by other parties).

Moreover, SWRCC requests that the City provide notice for any and all notices referring or related to the Project issued under the California Environmental Quality Act ("**CEQA**"), Cal Public Resources Code ("**PRC**") § 21000 *et seq*, and the California Planning and Zoning Law ("**Planning and Zoning Law**"), Cal. Gov't Code §§ 65000–65010. California Public Resources Code Sections 21092.2, and 21167(f) and Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

The City should require the use of a local skilled and trained workforce to benefit the community's economic development and environment. The City should require the use of workers who have graduated from a Joint Labor Management apprenticeship training program approved by the State of California, or have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state approved apprenticeship training program or who are registered apprentices in an apprenticeship training program approved by the State of California.

Community benefits such as local hire and skilled and trained workforce requirements can also be helpful to reduce environmental impacts and improve the positive economic impact of the Project. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips, reduce greenhouse gas emissions and providing localized economic benefits. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of the Project Site can reduce the length of vendor trips, reduce greenhouse gas emissions and providing localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

> [A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling.

Skilled and trained workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the UC Berkeley Center for Labor Research and Education concluded:

> . . . labor should be considered an investment rather than a cost – and investments in growing, diversifying, and upskilling California's workforce can positively affect returns on climate mitigation efforts. In other words, well trained workers are key to delivering emissions reductions and moving California closer to its climate targets.[1]

Local skilled and trained workforce requirements and policies have significant environmental benefits since they improve an area's jobs-housing balance, decreasing the amount of and length of job commutes and their associated greenhouse gas emissions. Recently, on May 7, 2021, the South Coast Air Quality Management District found that that the "[u]se of a local state-certified apprenticeship program or a skilled and trained workforce with a local hire component" can result in air pollutant reductions.[2]

Cities are increasingly adopting local skilled and trained workforce policies and requirements into general plans and municipal codes. For example, the City of Hayward 2040 General Plan requires the City to "promote local hiring . . . to help achieve a more positive jobs-housing balance, and reduce regional commuting, gas consumption, and greenhouse gas emissions."[3]

In fact, the City of Hayward has gone as far as to adopt a Skilled Labor Force policy into its Downtown Specific Plan and municipal code, requiring developments in its Downtown area to requiring that the City "c]ontribute to the stabilization of regional construction markets by spurring applicants of

---

[1] California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, *available at* https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf.

[2] South Coast Air Quality Management District (May 7, 2021) Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve Supporting Budget Actions, *available at* http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10

[3] City of Hayward (2014) Hayward 2040 General Plan Policy Document at p. 3-99, *available at* https://www.hayward-ca.gov/sites/default/files/documents/General_Plan_FINAL.pdf.

housing and nonresidential developments to require contractors to utilize apprentices from state-approved, joint labor-management training programs, . . ."[4] In addition, the City of Hayward requires all projects 30,000 square feet or larger to "utilize apprentices from state-approved, joint labor-management training programs."[5]

Locating jobs closer to residential areas can have significant environmental benefits. . As the California Planning Roundtable noted in 2008:

> People who live and work in the same jurisdiction would be more likely to take transit, walk, or bicycle to work than residents of less balanced communities and their vehicle trips would be shorter. Benefits would include potential reductions in both vehicle miles traveled and vehicle hours traveled.[6]

In addition, local hire mandates as well as skill training are critical facets of a strategy to reduce vehicle miles traveled. As planning experts Robert Cervero and Michael Duncan noted, simply placing jobs near housing stock is insufficient to achieve VMT reductions since the skill requirements of available local jobs must be matched to those held by local residents.[7] Some municipalities have tied local hire and skilled and trained workforce policies to local development permits to address transportation issues. As Cervero and Duncan note:

> In nearly built-out Berkeley, CA, the approach to balancing jobs and housing is to create local jobs rather than to develop new housing." The city's First Source program encourages businesses to hire local residents, especially for entry- and intermediate-level jobs, and sponsors vocational training to ensure residents are employment-ready. While the program is voluntary, some 300 businesses have used it to date, placing more than

[4] City of Hayward (2019) Hayward Downtown Specific Plan at p. 5-24, *available at* https://www.hayward-ca.gov/sites/default/files/Hayward%20Downtown%20Specific%20Plan.pdf.

[5] City of Hayward Municipal Code, Chapter 10, § 28.5.3.020(C).

[6] California Planning Roundtable (2008) Deconstructing Jobs-Housing Balance at p. 6, *available at* https://cproundtable.org/static/media/uploads/publications/cpr-jobs-housing.pdf

[7] Cervero, Robert and Duncan, Michael (2006) Which Reduces Vehicle Travel More: Jobs-Housing Balance or Retail-Housing Mixing? Journal of the American Planning Association 72 (4), 475-490, 482, *available at* http://reconnectingamerica.org/assets/Uploads/UTCT-825.pdf.

> 3,000 city residents in local jobs since it was launched in 1986. When needed, these carrots are matched by sticks, since the city is not shy about negotiating corporate participation in First Source as a condition of approval for development permits.

The City should consider utilizing skilled and trained workforce policies and requirements to benefit the local area economically and mitigate greenhouse gas, air quality and transportation impacts.

Sincerely,

Mitchell M. Tsai
Attorneys for Southwest Regional
Council of Carpenters

Attached:

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling (Exhibit A);

Air Quality and GHG Expert Paul Rosenfeld CV (Exhibit B); and

Air Quality and GHG Expert Matt Hagemann CV (Exhibit C).

EXHIBIT A

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

Paul E. Rosenfeld, PhD
(310) 795-2335
prosenfeld@swape.com

March 8, 2021

Mitchell M. Tsai
155 South El Molino, Suite 104
Pasadena, CA 91101

Subject: Local Hire Requirements and Considerations for Greenhouse Gas Modeling

Dear Mr. Tsai,

Soil Water Air Protection Enterprise ("SWAPE") is pleased to provide the following draft technical report explaining the significance of worker trips required for construction of land use development projects with respect to the estimation of greenhouse gas ("GHG") emissions. The report will also discuss the potential for local hire requirements to reduce the length of worker trips, and consequently, reduced or mitigate the potential GHG impacts.

Worker Trips and Greenhouse Gas Calculations

The California Emissions Estimator Model ("CalEEMod") is a "statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects."[1] CalEEMod quantifies construction-related emissions associated with land use projects resulting from off-road construction equipment; on-road mobile equipment associated with workers, vendors, and hauling; fugitive dust associated with grading, demolition, truck loading, and on-road vehicles traveling along paved and unpaved roads; and architectural coating activities; and paving.[2]

The number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[3]

[1] "California Emissions Estimator Model." CAPCOA, 2017, *available at:* http://www.aqmd.gov/caleemod/home.
[2] "California Emissions Estimator Model." CAPCOA, 2017, *available at:* http://www.aqmd.gov/caleemod/home.
[3] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.

Specifically, the number and length of vehicle trips is utilized to estimate the vehicle miles travelled ("VMT") associated with construction. Then, utilizing vehicle-class specific EMFAC 2014 emission factors, CalEEMod calculates the vehicle exhaust, evaporative, and dust emissions resulting from construction-related VMT, including personal vehicles for worker commuting.[4]

Specifically, in order to calculate VMT, CalEEMod multiplies the average daily trip rate by the average overall trip length (see excerpt below):

"$VMT_d = \Sigma(\text{Average Daily Trip Rate}_i * \text{Average Overall Trip Length}_i)_n$

Where:

n = Number of land uses being modeled."[5]

Furthermore, to calculate the on-road emissions associated with worker trips, CalEEMod utilizes the following equation (see excerpt below):

"$\text{Emissions}_{\text{pollutant}} = VMT * EF_{\text{running,pollutant}}$

Where:

$\text{Emissions}_{\text{pollutant}}$ = emissions from vehicle running for each pollutant

VMT = vehicle miles traveled

$EF_{\text{running,pollutant}}$ = emission factor for running emissions."[6]

Thus, there is a direct relationship between trip length and VMT, as well as a direct relationship between VMT and vehicle running emissions. In other words, when the trip length is increased, the VMT and vehicle running emissions increase as a result. Thus, vehicle running emissions can be reduced by decreasing the average overall trip length, by way of a local hire requirement or otherwise.

Default Worker Trip Parameters and Potential Local Hire Requirements

As previously discussed, the number, length, and vehicle class of worker trips are utilized by CalEEMod to calculate emissions associated with the on-road vehicle trips required to transport workers to and from the Project site during construction.[7] In order to understand how local hire requirements and associated worker trip length reductions impact GHG emissions calculations, it is important to consider the CalEEMod default worker trip parameters. CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence.[8] The default number of construction-related worker trips is calculated by multiplying the

[4] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14-15.
[5] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 23.
[6] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.
[7] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.
[8] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 1, 9.

number of pieces of equipment for all phases by 1.25, with the exception of worker trips required for the building construction and architectural coating phases.[9] Furthermore, the worker trip vehicle class is a 50/25/25 percent mix of light duty autos, light duty truck class 1 and light duty truck class 2, respectively."[10] Finally, the default worker trip length is consistent with the length of the operational home-to-work vehicle trips.[11] The operational home-to-work vehicle trip lengths are:

> "[B]ased on the *location* and *urbanization* selected on the project characteristic screen. These values were *supplied by the air districts or use a default average for the state*. Each district (or county) also assigns trip lengths for urban and rural settings" (emphasis added). [12]

Thus, the default worker trip length is based on the location and urbanization level selected by the User when modeling emissions. The below table shows the CalEEMod default rural and urban worker trip lengths by air basin (see excerpt below and Attachment A).[13]

Worker Trip Length by Air Basin		
Air Basin	**Rural (miles)**	**Urban (miles)**
Great Basin Valleys	16.8	10.8
Lake County	16.8	10.8
Lake Tahoe	16.8	10.8
Mojave Desert	16.8	10.8
Mountain Counties	16.8	10.8
North Central Coast	17.1	12.3
North Coast	16.8	10.8
Northeast Plateau	16.8	10.8
Sacramento Valley	16.8	10.8
Salton Sea	14.6	11
San Diego	16.8	10.8
San Francisco Bay Area	10.8	10.8
San Joaquin Valley	16.8	10.8
South Central Coast	16.8	10.8
South Coast	19.8	14.7
Average	**16.47**	**11.17**
Minimum	**10.80**	**10.80**
Maximum	**19.80**	**14.70**
Range	**9.00**	**3.90**

[9] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 34.
[10] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 15.
[11] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 14.
[12] "Appendix A Calculation Details for CalEEMod." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 21.
[13] "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-84 – D-86.

As demonstrated above, default rural worker trip lengths for air basins in California vary from 10.8- to 19.8-miles, with an average of 16.47 miles. Furthermore, default urban worker trip lengths vary from 10.8- to 14.7-miles, with an average of 11.17 miles. Thus, while default worker trip lengths vary by location, default urban worker trip lengths tend to be shorter in length. Based on these trends evident in the CalEEMod default worker trip lengths, we can reasonably assume that the efficacy of a local hire requirement is especially dependent upon the urbanization of the project site, as well as the project location.

Practical Application of a Local Hire Requirement and Associated Impact

To provide an example of the potential impact of a local hire provision on construction-related GHG emissions, we estimated the significance of a local hire provision for the Village South Specific Plan ("Project") located in the City of Claremont ("City"). The Project proposed to construct 1,000 residential units, 100,000-SF of retail space, 45,000-SF of office space, as well as a 50-room hotel, on the 24-acre site. The Project location is classified as Urban and lies within the Los Angeles-South Coast County. As a result, the Project has a default worker trip length of 14.7 miles.[14] In an effort to evaluate the potential for a local hire provision to reduce the Project's construction-related GHG emissions, we prepared an updated model, reducing all worker trip lengths to 10 miles (see Attachment B). Our analysis estimates that if a local hire provision with a 10-mile radius were to be implemented, the GHG emissions associated with Project construction would decrease by approximately 17% (see table below and Attachment C).

Local Hire Provision Net Change	
Without Local Hire Provision	
Total Construction GHG Emissions (MT CO_2e)	3,623
Amortized Construction GHG Emissions (MT CO_2e/year)	120.77
With Local Hire Provision	
Total Construction GHG Emissions (MT CO2e)	3,024
Amortized Construction GHG Emissions (MT CO_2e/year)	100.80
% Decrease in Construction-related GHG Emissions	***17%***

As demonstrated above, by implementing a local hire provision requiring 10 mile worker trip lengths, the Project could reduce potential GHG emissions associated with construction worker trips. More broadly, any local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

This serves as an example of the potential impacts of local hire requirements on estimated project-level GHG emissions, though it does not indicate that local hire requirements would result in reduced construction-related GHG emission for all projects. As previously described, the significance of a local hire requirement depends on the worker trip length enforced and the default worker trip length for the project's urbanization level and location.

[14] "Appendix D Default Data Tables." CAPCOA, October 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/05_appendix-d2016-3-2.pdf?sfvrsn=4, p. D-85.

Disclaimer

SWAPE has received limited discovery. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

M Hagemann

Matt Hagemann, P.G., C.Hg.

Paul Rosenfeld

Paul E. Rosenfeld, Ph.D.

Attachment A

Location Type	Location Name	Rural H-W (miles)	Urban H-W (miles)
Air Basin	Great Basin	16.8	10.8
Air Basin	Lake County	16.8	10.8
Air Basin	Lake Tahoe	16.8	10.8
Air Basin	Mojave Desert	16.8	10.8
Air Basin	Mountain	16.8	10.8
Air Basin	North Central	17.1	12.3
Air Basin	North Coast	16.8	10.8
Air Basin	Northeast	16.8	10.8
Air Basin	Sacramento	16.8	10.8
Air Basin	Salton Sea	14.6	11
Air Basin	San Diego	16.8	10.8
Air Basin	San Francisco	10.8	10.8
Air Basin	San Joaquin	16.8	10.8
Air Basin	South Central	16.8	10.8
Air Basin	South Coast	19.8	14.7
Air District	Amador County	16.8	10.8
Air District	Antelope Valley	16.8	10.8
Air District	Bay Area AQMD	10.8	10.8
Air District	Butte County	12.54	12.54
Air District	Calaveras	16.8	10.8
Air District	Colusa County	16.8	10.8
Air District	El Dorado	16.8	10.8
Air District	Feather River	16.8	10.8
Air District	Glenn County	16.8	10.8
Air District	Great Basin	16.8	10.8
Air District	Imperial County	10.2	7.3
Air District	Kern County	16.8	10.8
Air District	Lake County	16.8	10.8
Air District	Lassen County	16.8	10.8
Air District	Mariposa	16.8	10.8
Air District	Mendocino	16.8	10.8
Air District	Modoc County	16.8	10.8
Air District	Mojave Desert	16.8	10.8
Air District	Monterey Bay	16.8	10.8
Air District	North Coast	16.8	10.8
Air District	Northern Sierra	16.8	10.8
Air District	Northern	16.8	10.8
Air District	Placer County	16.8	10.8
Air District	Sacramento	15	10

Air District	San Diego	16.8	10.8
Air District	San Joaquin	16.8	10.8
Air District	San Luis Obispo	13	13
Air District	Santa Barbara	8.3	8.3
Air District	Shasta County	16.8	10.8
Air District	Siskiyou County	16.8	10.8
Air District	South Coast	19.8	14.7
Air District	Tehama County	16.8	10.8
Air District	Tuolumne	16.8	10.8
Air District	Ventura County	16.8	10.8
Air District	Yolo/Solano	15	10
County	Alameda	10.8	10.8
County	Alpine	16.8	10.8
County	Amador	16.8	10.8
County	Butte	12.54	12.54
County	Calaveras	16.8	10.8
County	Colusa	16.8	10.8
County	Contra Costa	10.8	10.8
County	Del Norte	16.8	10.8
County	El Dorado-Lake	16.8	10.8
County	El Dorado-	16.8	10.8
County	Fresno	16.8	10.8
County	Glenn	16.8	10.8
County	Humboldt	16.8	10.8
County	Imperial	10.2	7.3
County	Inyo	16.8	10.8
County	Kern-Mojave	16.8	10.8
County	Kern-San	16.8	10.8
County	Kings	16.8	10.8
County	Lake	16.8	10.8
County	Lassen	16.8	10.8
County	Los Angeles-	16.8	10.8
County	Los Angeles-	19.8	14.7
County	Madera	16.8	10.8
County	Marin	10.8	10.8
County	Mariposa	16.8	10.8
County	Mendocino-	16.8	10.8
County	Mendocino-	16.8	10.8
County	Mendocino-	16.8	10.8
County	Mendocino-	16.8	10.8
County	Merced	16.8	10.8
County	Modoc	16.8	10.8
County	Mono	16.8	10.8
County	Monterey	16.8	10.8
County	Napa	10.8	10.8

County	Nevada	16.8	10.8
County	Orange	19.8	14.7
County	Placer-Lake	16.8	10.8
County	Placer-Mountain	16.8	10.8
County	Placer-	16.8	10.8
County	Plumas	16.8	10.8
County	Riverside-	16.8	10.8
County	Riverside-	19.8	14.7
County	Riverside-Salton	14.6	11
County	Riverside-South	19.8	14.7
County	Sacramento	15	10
County	San Benito	16.8	10.8
County	San Bernardino-	16.8	10.8
County	San Bernardino-	19.8	14.7
County	San Diego	16.8	10.8
County	San Francisco	10.8	10.8
County	San Joaquin	16.8	10.8
County	San Luis Obispo	13	13
County	San Mateo	10.8	10.8
County	Santa Barbara-	8.3	8.3
County	Santa Barbara-	8.3	8.3
County	Santa Clara	10.8	10.8
County	Santa Cruz	16.8	10.8
County	Shasta	16.8	10.8
County	Sierra	16.8	10.8
County	Siskiyou	16.8	10.8
County	Solano-	15	10
County	Solano-San	16.8	10.8
County	Sonoma-North	16.8	10.8
County	Sonoma-San	10.8	10.8
County	Stanislaus	16.8	10.8
County	Sutter	16.8	10.8
County	Tehama	16.8	10.8
County	Trinity	16.8	10.8
County	Tulare	16.8	10.8
County	Tuolumne	16.8	10.8
County	Ventura	16.8	10.8
County	Yolo	15	10
County	Yuba	16.8	10.8
Statewide	Statewide	16.8	10.8

Worker Trip Length by Air Basin		
Air Basin	**Rural (miles)**	**Urban (miles)**
Great Basin Valleys	16.8	10.8
Lake County	16.8	10.8
Lake Tahoe	16.8	10.8
Mojave Desert	16.8	10.8
Mountain Counties	16.8	10.8
North Central Coast	17.1	12.3
North Coast	16.8	10.8
Northeast Plateau	16.8	10.8
Sacramento Valley	16.8	10.8
Salton Sea	14.6	11
San Diego	16.8	10.8
San Francisco Bay Area	10.8	10.8
San Joaquin Valley	16.8	10.8
South Central Coast	16.8	10.8
South Coast	19.8	14.7
Average	**16.47**	**11.17**
Mininum	**10.80**	**10.80**
Maximum	**19.80**	**14.70**
Range	**9.00**	**3.90**

Village South Specific Plan (Proposed)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	45.00	1000sqft	1.03	45,000.00	0
High Turnover (Sit Down Restaurant)	36.00	1000sqft	0.83	36,000.00	0
Hotel	50.00	Room	1.67	72,600.00	0
Quality Restaurant	8.00	1000sqft	0.18	8,000.00	0
Apartments Low Rise	25.00	Dwelling Unit	1.56	25,000.00	72
Apartments Mid Rise	975.00	Dwelling Unit	25.66	975,000.00	2789
Regional Shopping Center	56.00	1000sqft	1.29	56,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 33

Climate Zone 9 **Operational Year** 2028

Utility Company Southern California Edison

CO2 Intensity (lb/MWhr) 702.44 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	1.25	0.00
tblFireplaces	NumberWood	48.75	0.00
tblVehicleTrips	ST_TR	7.16	6.17
tblVehicleTrips	ST_TR	6.39	3.87
tblVehicleTrips	ST_TR	2.46	1.39
tblVehicleTrips	ST_TR	158.37	79.82
tblVehicleTrips	ST_TR	8.19	3.75
tblVehicleTrips	ST_TR	94.36	63.99
tblVehicleTrips	ST_TR	49.97	10.74
tblVehicleTrips	SU_TR	6.07	6.16
tblVehicleTrips	SU_TR	5.86	4.18
tblVehicleTrips	SU_TR	1.05	0.69
tblVehicleTrips	SU_TR	131.84	78.27

tblVehicleTrips	SU_TR	5.95	3.20
tblVehicleTrips	SU_TR	72.16	57.65
tblVehicleTrips	SU_TR	25.24	6.39
tblVehicleTrips	WD_TR	6.59	5.83
tblVehicleTrips	WD_TR	6.65	4.13
tblVehicleTrips	WD_TR	11.03	6.41
tblVehicleTrips	WD_TR	127.15	65.80
tblVehicleTrips	WD_TR	8.17	3.84
tblVehicleTrips	WD_TR	89.95	62.64
tblVehicleTrips	WD_TR	42.70	9.43
tblWoodstoves	NumberCatalytic	1.25	0.00
tblWoodstoves	NumberCatalytic	48.75	0.00
tblWoodstoves	NumberNoncatalytic	1.25	0.00
tblWoodstoves	NumberNoncatalytic	48.75	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1713	1.8242	1.1662	2.4000e-003	0.4169	0.0817	0.4986	0.1795	0.0754	0.2549	0.0000	213.1969	213.1969	0.0601	0.0000	214.6993
2022	0.6904	4.1142	6.1625	0.0189	1.3058	0.1201	1.4259	0.3460	0.1128	0.4588	0.0000	1,721.6826	1,721.6826	0.1294	0.0000	1,724.9187
2023	0.6148	3.3649	5.6747	0.0178	1.1963	0.0996	1.2959	0.3203	0.0935	0.4138	0.0000	1,627.5295	1,627.5295	0.1185	0.0000	1,630.4925
2024	4.1619	0.1335	0.2810	5.9000e-004	0.0325	6.4700e-003	0.0390	8.6300e-003	6.0400e-003	0.0147	0.0000	52.9078	52.9078	8.0200e-003	0.0000	53.1082
Maximum	**4.1619**	**4.1142**	**6.1625**	**0.0189**	**1.3058**	**0.1201**	**1.4259**	**0.3460**	**0.1128**	**0.4588**	**0.0000**	**1,721.6826**	**1,721.6826**	**0.1294**	**0.0000**	**1,724.9187**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1713	1.8242	1.1662	2.4000e-003	0.4169	0.0817	0.4986	0.1795	0.0754	0.2549	0.0000	213.1967	213.1967	0.0601	0.0000	214.6991
2022	0.6904	4.1142	6.1625	0.0189	1.3058	0.1201	1.4259	0.3460	0.1128	0.4588	0.0000	1,721.6823	1,721.6823	0.1294	0.0000	1,724.9183
2023	0.6148	3.3648	5.6747	0.0178	1.1963	0.0996	1.2959	0.3203	0.0935	0.4138	0.0000	1,627.5291	1,627.5291	0.1185	0.0000	1,630.4921
2024	4.1619	0.1335	0.2810	5.9000e-004	0.0325	6.4700e-003	0.0390	8.6300e-003	6.0400e-003	0.0147	0.0000	52.9077	52.9077	8.0200e-003	0.0000	53.1082
Maximum	**4.1619**	**4.1142**	**6.1625**	**0.0189**	**1.3058**	**0.1201**	**1.4259**	**0.3460**	**0.1128**	**0.4588**	**0.0000**	**1,721.6823**	**1,721.6823**	**0.1294**	**0.0000**	**1,724.9183**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2021**	**11-30-2021**	1.4103	1.4103
2	**12-1-2021**	**2-28-2022**	1.3613	1.3613
3	**3-1-2022**	**5-31-2022**	1.1985	1.1985
4	**6-1-2022**	**8-31-2022**	1.1921	1.1921
5	**9-1-2022**	**11-30-2022**	1.1918	1.1918
6	**12-1-2022**	**2-28-2023**	1.0774	1.0774
7	**3-1-2023**	**5-31-2023**	1.0320	1.0320
8	**6-1-2023**	**8-31-2023**	1.0260	1.0260

9	**9-1-2023**	**11-30-2023**	1.0265	1.0265
10	**12-1-2023**	**2-29-2024**	2.8857	2.8857
11	**3-1-2024**	**5-31-2024**	1.6207	1.6207
		Highest	2.8857	2.8857

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835
Energy	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	3,896.0732	3,896.0732	0.1303	0.0468	3,913.2833
Mobile	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162
Waste						0.0000	0.0000		0.0000	0.0000	207.8079	0.0000	207.8079	12.2811	0.0000	514.8354
Water						0.0000	0.0000		0.0000	0.0000	29.1632	556.6420	585.8052	3.0183	0.0755	683.7567
Total	**6.8692**	**9.5223**	**30.3407**	**0.0914**	**7.7979**	**0.2260**	**8.0240**	**2.0895**	**0.2219**	**2.3114**	**236.9712**	**12,294.1807**	**12,531.1519**	**15.7904**	**0.1260**	**12,963.4751**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835
Energy	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	3,896.0732	3,896.0732	0.1303	0.0468	3,913.2833
Mobile	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162
Waste						0.0000	0.0000		0.0000	0.0000	207.8079	0.0000	207.8079	12.2811	0.0000	514.8354
Water						0.0000	0.0000		0.0000	0.0000	29.1632	556.6420	585.8052	3.0183	0.0755	683.7567
Total	**6.8692**	**9.5223**	**30.3407**	**0.0914**	**7.7979**	**0.2260**	**8.0240**	**2.0895**	**0.2219**	**2.3114**	**236.9712**	**12,294.1807**	**12,531.1519**	**15.7904**	**0.1260**	**12,963.4751**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Site Preparation	Site Preparation	10/13/2021	11/9/2021	5	20	
3	Grading	Grading	11/10/2021	1/11/2022	5	45	
4	Building Construction	Building Construction	1/12/2022	12/12/2023	5	500	
5	Paving	Paving	12/13/2023	1/30/2024	5	35	
6	Architectural Coating	Architectural Coating	1/31/2024	3/19/2024	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	458.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	801.00	143.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	160.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0496	0.0000	0.0496	7.5100e-003	0.0000	7.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0475	0.4716	0.3235	5.8000e-004		0.0233	0.0233		0.0216	0.0216	0.0000	51.0012	51.0012	0.0144	0.0000	51.3601
Total	**0.0475**	**0.4716**	**0.3235**	**5.8000e-004**	**0.0496**	**0.0233**	**0.0729**	**7.5100e-003**	**0.0216**	**0.0291**	**0.0000**	**51.0012**	**51.0012**	**0.0144**	**0.0000**	**51.3601**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9300e-003	0.0634	0.0148	1.8000e-004	3.9400e-003	1.9000e-004	4.1300e-003	1.0800e-003	1.8000e-004	1.2600e-003	0.0000	17.4566	17.4566	1.2100e-003	0.0000	17.4869
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.7000e-004	7.5000e-004	8.5100e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2251	2.2251	7.0000e-005	0.0000	2.2267
Total	**2.9000e-003**	**0.0641**	**0.0233**	**2.0000e-004**	**6.4100e-003**	**2.1000e-004**	**6.6200e-003**	**1.7300e-003**	**2.0000e-004**	**1.9300e-003**	**0.0000**	**19.6816**	**19.6816**	**1.2800e-003**	**0.0000**	**19.7136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0496	0.0000	0.0496	7.5100e-003	0.0000	7.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0475	0.4716	0.3235	5.8000e-004		0.0233	0.0233		0.0216	0.0216	0.0000	51.0011	51.0011	0.0144	0.0000	51.3600
Total	**0.0475**	**0.4716**	**0.3235**	**5.8000e-004**	**0.0496**	**0.0233**	**0.0729**	**7.5100e-003**	**0.0216**	**0.0291**	**0.0000**	**51.0011**	**51.0011**	**0.0144**	**0.0000**	**51.3600**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9300e-003	0.0634	0.0148	1.8000e-004	3.9400e-003	1.9000e-004	4.1300e-003	1.0800e-003	1.8000e-004	1.2600e-003	0.0000	17.4566	17.4566	1.2100e-003	0.0000	17.4869
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.7000e-004	7.5000e-004	8.5100e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2251	2.2251	7.0000e-005	0.0000	2.2267
Total	**2.9000e-003**	**0.0641**	**0.0233**	**2.0000e-004**	**6.4100e-003**	**2.1000e-004**	**6.6200e-003**	**1.7300e-003**	**2.0000e-004**	**1.9300e-003**	**0.0000**	**19.6816**	**19.6816**	**1.2800e-003**	**0.0000**	**19.7136**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0389	0.4050	0.2115	3.8000e-004		0.0204	0.0204		0.0188	0.0188	0.0000	33.4357	33.4357	0.0108	0.0000	33.7061
Total	**0.0389**	**0.4050**	**0.2115**	**3.8000e-004**	**0.1807**	**0.0204**	**0.2011**	**0.0993**	**0.0188**	**0.1181**	**0.0000**	**33.4357**	**33.4357**	**0.0108**	**0.0000**	**33.7061**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	6.0000e-004	6.8100e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.7801	1.7801	5.0000e-005	0.0000	1.7814
Total	**7.7000e-004**	**6.0000e-004**	**6.8100e-003**	**2.0000e-005**	**1.9700e-003**	**2.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7801**	**1.7801**	**5.0000e-005**	**0.0000**	**1.7814**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0389	0.4050	0.2115	3.8000e-004		0.0204	0.0204		0.0188	0.0188	0.0000	33.4357	33.4357	0.0108	0.0000	33.7060
Total	**0.0389**	**0.4050**	**0.2115**	**3.8000e-004**	**0.1807**	**0.0204**	**0.2011**	**0.0993**	**0.0188**	**0.1181**	**0.0000**	**33.4357**	**33.4357**	**0.0108**	**0.0000**	**33.7060**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	6.0000e-004	6.8100e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.7801	1.7801	5.0000e-005	0.0000	1.7814
Total	**7.7000e-004**	**6.0000e-004**	**6.8100e-003**	**2.0000e-005**	**1.9700e-003**	**2.0000e-005**	**1.9900e-003**	**5.2000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7801**	**1.7801**	**5.0000e-005**	**0.0000**	**1.7814**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1741	0.0000	0.1741	0.0693	0.0000	0.0693	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0796	0.8816	0.5867	1.1800e-003		0.0377	0.0377		0.0347	0.0347	0.0000	103.5405	103.5405	0.0335	0.0000	104.3776
Total	**0.0796**	**0.8816**	**0.5867**	**1.1800e-003**	**0.1741**	**0.0377**	**0.2118**	**0.0693**	**0.0347**	**0.1040**	**0.0000**	**103.5405**	**103.5405**	**0.0335**	**0.0000**	**104.3776**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6400e-003	1.2700e-003	0.0144	4.0000e-005	4.1600e-003	3.0000e-005	4.2000e-003	1.1100e-003	3.0000e-005	1.1400e-003	0.0000	3.7579	3.7579	1.1000e-004	0.0000	3.7607
Total	**1.6400e-003**	**1.2700e-003**	**0.0144**	**4.0000e-005**	**4.1600e-003**	**3.0000e-005**	**4.2000e-003**	**1.1100e-003**	**3.0000e-005**	**1.1400e-003**	**0.0000**	**3.7579**	**3.7579**	**1.1000e-004**	**0.0000**	**3.7607**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1741	0.0000	0.1741	0.0693	0.0000	0.0693	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0796	0.8816	0.5867	1.1800e-003		0.0377	0.0377		0.0347	0.0347	0.0000	103.5403	103.5403	0.0335	0.0000	104.3775
Total	**0.0796**	**0.8816**	**0.5867**	**1.1800e-003**	**0.1741**	**0.0377**	**0.2118**	**0.0693**	**0.0347**	**0.1040**	**0.0000**	**103.5403**	**103.5403**	**0.0335**	**0.0000**	**104.3775**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6400e-003	1.2700e-003	0.0144	4.0000e-005	4.1600e-003	3.0000e-005	4.2000e-003	1.1100e-003	3.0000e-005	1.1400e-003	0.0000	3.7579	3.7579	1.1000e-004	0.0000	3.7607
Total	**1.6400e-003**	**1.2700e-003**	**0.0144**	**4.0000e-005**	**4.1600e-003**	**3.0000e-005**	**4.2000e-003**	**1.1100e-003**	**3.0000e-005**	**1.1400e-003**	**0.0000**	**3.7579**	**3.7579**	**1.1000e-004**	**0.0000**	**3.7607**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0807	0.0000	0.0807	0.0180	0.0000	0.0180	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1360	0.1017	2.2000e-004		5.7200e-003	5.7200e-003		5.2600e-003	5.2600e-003	0.0000	19.0871	19.0871	6.1700e-003	0.0000	19.2414
Total	**0.0127**	**0.1360**	**0.1017**	**2.2000e-004**	**0.0807**	**5.7200e-003**	**0.0865**	**0.0180**	**5.2600e-003**	**0.0233**	**0.0000**	**19.0871**	**19.0871**	**6.1700e-003**	**0.0000**	**19.2414**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.1000e-004	2.4400e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6679	0.6679	2.0000e-005	0.0000	0.6684
Total	**2.8000e-004**	**2.1000e-004**	**2.4400e-003**	**1.0000e-005**	**7.7000e-004**	**1.0000e-005**	**7.7000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.6679**	**0.6679**	**2.0000e-005**	**0.0000**	**0.6684**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0807	0.0000	0.0807	0.0180	0.0000	0.0180	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1360	0.1017	2.2000e-004		5.7200e-003	5.7200e-003		5.2600e-003	5.2600e-003	0.0000	19.0871	19.0871	6.1700e-003	0.0000	19.2414
Total	**0.0127**	**0.1360**	**0.1017**	**2.2000e-004**	**0.0807**	**5.7200e-003**	**0.0865**	**0.0180**	**5.2600e-003**	**0.0233**	**0.0000**	**19.0871**	**19.0871**	**6.1700e-003**	**0.0000**	**19.2414**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.1000e-004	2.4400e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6679	0.6679	2.0000e-005	0.0000	0.6684
Total	**2.8000e-004**	**2.1000e-004**	**2.4400e-003**	**1.0000e-005**	**7.7000e-004**	**1.0000e-005**	**7.7000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.6679**	**0.6679**	**2.0000e-005**	**0.0000**	**0.6684**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2158	1.9754	2.0700	3.4100e-003		0.1023	0.1023		0.0963	0.0963	0.0000	293.1324	293.1324	0.0702	0.0000	294.8881
Total	**0.2158**	**1.9754**	**2.0700**	**3.4100e-003**		**0.1023**	**0.1023**		**0.0963**	**0.0963**	**0.0000**	**293.1324**	**293.1324**	**0.0702**	**0.0000**	**294.8881**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0527	1.6961	0.4580	4.5500e-003	0.1140	3.1800e-003	0.1171	0.0329	3.0400e-003	0.0359	0.0000	441.9835	441.9835	0.0264	0.0000	442.6435
Worker	0.4088	0.3066	3.5305	0.0107	1.1103	8.8700e-003	1.1192	0.2949	8.1700e-003	0.3031	0.0000	966.8117	966.8117	0.0266	0.0000	967.4773
Total	**0.4616**	**2.0027**	**3.9885**	**0.0152**	**1.2243**	**0.0121**	**1.2363**	**0.3278**	**0.0112**	**0.3390**	**0.0000**	**1,408.7952**	**1,408.7952**	**0.0530**	**0.0000**	**1,410.1208**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2158	1.9754	2.0700	3.4100e-003		0.1023	0.1023		0.0963	0.0963	0.0000	293.1321	293.1321	0.0702	0.0000	294.8877
Total	**0.2158**	**1.9754**	**2.0700**	**3.4100e-003**		**0.1023**	**0.1023**		**0.0963**	**0.0963**	**0.0000**	**293.1321**	**293.1321**	**0.0702**	**0.0000**	**294.8877**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0527	1.6961	0.4580	4.5500e-003	0.1140	3.1800e-003	0.1171	0.0329	3.0400e-003	0.0359	0.0000	441.9835	441.9835	0.0264	0.0000	442.6435
Worker	0.4088	0.3066	3.5305	0.0107	1.1103	8.8700e-003	1.1192	0.2949	8.1700e-003	0.3031	0.0000	966.8117	966.8117	0.0266	0.0000	967.4773
Total	**0.4616**	**2.0027**	**3.9885**	**0.0152**	**1.2243**	**0.0121**	**1.2363**	**0.3278**	**0.0112**	**0.3390**	**0.0000**	**1,408.7952**	**1,408.7952**	**0.0530**	**0.0000**	**1,410.1208**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1942	1.7765	2.0061	3.3300e-003		0.0864	0.0864		0.0813	0.0813	0.0000	286.2789	286.2789	0.0681	0.0000	287.9814
Total	**0.1942**	**1.7765**	**2.0061**	**3.3300e-003**		**0.0864**	**0.0864**		**0.0813**	**0.0813**	**0.0000**	**286.2789**	**286.2789**	**0.0681**	**0.0000**	**287.9814**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0382	1.2511	0.4011	4.3000e-003	0.1113	1.4600e-003	0.1127	0.0321	1.4000e-003	0.0335	0.0000	417.9930	417.9930	0.0228	0.0000	418.5624
Worker	0.3753	0.2708	3.1696	0.0101	1.0840	8.4100e-003	1.0924	0.2879	7.7400e-003	0.2957	0.0000	909.3439	909.3439	0.0234	0.0000	909.9291
Total	**0.4135**	**1.5218**	**3.5707**	**0.0144**	**1.1953**	**9.8700e-003**	**1.2051**	**0.3200**	**9.1400e-003**	**0.3292**	**0.0000**	**1,327.3369**	**1,327.3369**	**0.0462**	**0.0000**	**1,328.4916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1942	1.7765	2.0061	3.3300e-003		0.0864	0.0864		0.0813	0.0813	0.0000	286.2785	286.2785	0.0681	0.0000	287.9811
Total	**0.1942**	**1.7765**	**2.0061**	**3.3300e-003**		**0.0864**	**0.0864**		**0.0813**	**0.0813**	**0.0000**	**286.2785**	**286.2785**	**0.0681**	**0.0000**	**287.9811**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0382	1.2511	0.4011	4.3000e-003	0.1113	1.4600e-003	0.1127	0.0321	1.4000e-003	0.0335	0.0000	417.9930	417.9930	0.0228	0.0000	418.5624
Worker	0.3753	0.2708	3.1696	0.0101	1.0840	8.4100e-003	1.0924	0.2879	7.7400e-003	0.2957	0.0000	909.3439	909.3439	0.0234	0.0000	909.9291
Total	**0.4135**	**1.5218**	**3.5707**	**0.0144**	**1.1953**	**9.8700e-003**	**1.2051**	**0.3200**	**9.1400e-003**	**0.3292**	**0.0000**	**1,327.3369**	**1,327.3369**	**0.0462**	**0.0000**	**1,328.4916**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7100e-003	0.0663	0.0948	1.5000e-004		3.3200e-003	3.3200e-003		3.0500e-003	3.0500e-003	0.0000	13.0175	13.0175	4.2100e-003	0.0000	13.1227
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.7100e-003**	**0.0663**	**0.0948**	**1.5000e-004**		**3.3200e-003**	**3.3200e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**13.0175**	**13.0175**	**4.2100e-003**	**0.0000**	**13.1227**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.7000e-004	3.1200e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8963	0.8963	2.0000e-005	0.0000	0.8968
Total	**3.7000e-004**	**2.7000e-004**	**3.1200e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.8963**	**0.8963**	**2.0000e-005**	**0.0000**	**0.8968**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7100e-003	0.0663	0.0948	1.5000e-004		3.3200e-003	3.3200e-003		3.0500e-003	3.0500e-003	0.0000	13.0175	13.0175	4.2100e-003	0.0000	13.1227
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.7100e-003**	**0.0663**	**0.0948**	**1.5000e-004**		**3.3200e-003**	**3.3200e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**13.0175**	**13.0175**	**4.2100e-003**	**0.0000**	**13.1227**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.7000e-004	3.1200e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.8963	0.8963	2.0000e-005	0.0000	0.8968
Total	**3.7000e-004**	**2.7000e-004**	**3.1200e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.8963**	**0.8963**	**2.0000e-005**	**0.0000**	**0.8968**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0109	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.1048**	**0.1609**	**2.5000e-004**		**5.1500e-003**	**5.1500e-003**		**4.7400e-003**	**4.7400e-003**	**0.0000**	**22.0292**	**22.0292**	**7.1200e-003**	**0.0000**	**22.2073**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.1000e-004	4.9200e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4697	1.4697	4.0000e-005	0.0000	1.4706
Total	**5.9000e-004**	**4.1000e-004**	**4.9200e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4697**	**1.4697**	**4.0000e-005**	**0.0000**	**1.4706**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0109	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.1048**	**0.1609**	**2.5000e-004**		**5.1500e-003**	**5.1500e-003**		**4.7400e-003**	**4.7400e-003**	**0.0000**	**22.0292**	**22.0292**	**7.1200e-003**	**0.0000**	**22.2073**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.1000e-004	4.9200e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.4697	1.4697	4.0000e-005	0.0000	1.4706
Total	**5.9000e-004**	**4.1000e-004**	**4.9200e-003**	**2.0000e-005**	**1.8100e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.4697**	**1.4697**	**4.0000e-005**	**0.0000**	**1.4706**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.1372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1600e-003	0.0213	0.0317	5.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	4.4682	4.4682	2.5000e-004	0.0000	4.4745
Total	**4.1404**	**0.0213**	**0.0317**	**5.0000e-005**		**1.0700e-003**	**1.0700e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**4.4682**	**4.4682**	**2.5000e-004**	**0.0000**	**4.4745**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0101	6.9900e-003	0.0835	2.8000e-004	0.0307	2.3000e-004	0.0309	8.1500e-003	2.2000e-004	8.3700e-003	0.0000	24.9407	24.9407	6.1000e-004	0.0000	24.9558
Total	**0.0101**	**6.9900e-003**	**0.0835**	**2.8000e-004**	**0.0307**	**2.3000e-004**	**0.0309**	**8.1500e-003**	**2.2000e-004**	**8.3700e-003**	**0.0000**	**24.9407**	**24.9407**	**6.1000e-004**	**0.0000**	**24.9558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.1372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1600e-003	0.0213	0.0317	5.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	4.4682	4.4682	2.5000e-004	0.0000	4.4745
Total	**4.1404**	**0.0213**	**0.0317**	**5.0000e-005**		**1.0700e-003**	**1.0700e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**4.4682**	**4.4682**	**2.5000e-004**	**0.0000**	**4.4745**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0101	6.9900e-003	0.0835	2.8000e-004	0.0307	2.3000e-004	0.0309	8.1500e-003	2.2000e-004	8.3700e-003	0.0000	24.9407	24.9407	6.1000e-004	0.0000	24.9558
Total	**0.0101**	**6.9900e-003**	**0.0835**	**2.8000e-004**	**0.0307**	**2.3000e-004**	**0.0309**	**8.1500e-003**	**2.2000e-004**	**8.3700e-003**	**0.0000**	**24.9407**	**24.9407**	**6.1000e-004**	**0.0000**	**24.9558**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162
Unmitigated	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	145.75	154.25	154.00	506,227	506,227
Apartments Mid Rise	4,026.75	3,773.25	4075.50	13,660,065	13,660,065
General Office Building	288.45	62.55	31.05	706,812	706,812
High Turnover (Sit Down Restaurant)	2,368.80	2,873.52	2817.72	3,413,937	3,413,937
Hotel	192.00	187.50	160.00	445,703	445,703
Quality Restaurant	501.12	511.92	461.20	707,488	707,488
Regional Shopping Center	528.08	601.44	357.84	1,112,221	1,112,221
Total	8,050.95	8,164.43	8,057.31	20,552,452	20,552,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Apartments Mid Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
General Office Building	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
High Turnover (Sit Down Restaurant)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Hotel	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Quality Restaurant	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Regional Shopping Center	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,512.646 5	2,512.646 5	0.1037	0.0215	2,521.635 6
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,512.646 5	2,512.646 5	0.1037	0.0215	2,521.635 6
NaturalGas Mitigated	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	1,383.426 7	1,383.426 7	0.0265	0.0254	1,391.647 8
NaturalGas Unmitigated	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	1,383.426 7	1,383.426 7	0.0265	0.0254	1,391.647 8

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	408494	2.2000e-003	0.0188	8.0100e-003	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7988	21.7988	4.2000e-004	4.0000e-004	21.9284
Apartments Mid Rise	1.30613e+007	0.0704	0.6018	0.2561	3.8400e-003		0.0487	0.0487		0.0487	0.0487	0.0000	696.9989	696.9989	0.0134	0.0128	701.1408
General Office Building	468450	2.5300e-003	0.0230	0.0193	1.4000e-004		1.7500e-003	1.7500e-003		1.7500e-003	1.7500e-003	0.0000	24.9983	24.9983	4.8000e-004	4.6000e-004	25.1468
High Turnover (Sit Down Restaurant)	8.30736e+006	0.0448	0.4072	0.3421	2.4400e-003		0.0310	0.0310		0.0310	0.0310	0.0000	443.3124	443.3124	8.5000e-003	8.1300e-003	445.9468
Hotel	1.74095e+006	9.3900e-003	0.0853	0.0717	5.1000e-004		6.4900e-003	6.4900e-003		6.4900e-003	6.4900e-003	0.0000	92.9036	92.9036	1.7800e-003	1.7000e-003	93.4557
Quality Restaurant	1.84608e+006	9.9500e-003	0.0905	0.0760	5.4000e-004		6.8800e-003	6.8800e-003		6.8800e-003	6.8800e-003	0.0000	98.5139	98.5139	1.8900e-003	1.8100e-003	99.0993
Regional Shopping Center	91840	5.0000e-004	4.5000e-003	3.7800e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9009	4.9009	9.0000e-005	9.0000e-005	4.9301
Total		**0.1398**	**1.2312**	**0.7770**	**7.6200e-003**		**0.0966**	**0.0966**		**0.0966**	**0.0966**	**0.0000**	**1,383.4268**	**1,383.4268**	**0.0265**	**0.0254**	**1,391.6478**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	408494	2.2000e-003	0.0188	8.0100e-003	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7988	21.7988	4.2000e-004	4.0000e-004	21.9284
Apartments Mid Rise	1.30613e+007	0.0704	0.6018	0.2561	3.8400e-003		0.0487	0.0487		0.0487	0.0487	0.0000	696.9989	696.9989	0.0134	0.0128	701.1408
General Office Building	468450	2.5300e-003	0.0230	0.0193	1.4000e-004		1.7500e-003	1.7500e-003		1.7500e-003	1.7500e-003	0.0000	24.9983	24.9983	4.8000e-004	4.6000e-004	25.1468
High Turnover (Sit Down Restaurant)	8.30736e+006	0.0448	0.4072	0.3421	2.4400e-003		0.0310	0.0310		0.0310	0.0310	0.0000	443.3124	443.3124	8.5000e-003	8.1300e-003	445.9468
Hotel	1.74095e+006	9.3900e-003	0.0853	0.0717	5.1000e-004		6.4900e-003	6.4900e-003		6.4900e-003	6.4900e-003	0.0000	92.9036	92.9036	1.7800e-003	1.7000e-003	93.4557
Quality Restaurant	1.84608e+006	9.9500e-003	0.0905	0.0760	5.4000e-004		6.8800e-003	6.8800e-003		6.8800e-003	6.8800e-003	0.0000	98.5139	98.5139	1.8900e-003	1.8100e-003	99.0993
Regional Shopping Center	91840	5.0000e-004	4.5000e-003	3.7800e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9009	4.9009	9.0000e-005	9.0000e-005	4.9301
Total		**0.1398**	**1.2312**	**0.7770**	**7.6200e-003**		**0.0966**	**0.0966**		**0.0966**	**0.0966**	**0.0000**	**1,383.4268**	**1,383.4268**	**0.0265**	**0.0254**	**1,391.6478**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	106010	33.7770	1.3900e-003	2.9000e-004	33.8978
Apartments Mid Rise	3.94697e+006	1,257.5879	0.0519	0.0107	1,262.0869
General Office Building	584550	186.2502	7.6900e-003	1.5900e-003	186.9165
High Turnover (Sit Down Restaurant)	1.58904e+006	506.3022	0.0209	4.3200e-003	508.1135
Hotel	550308	175.3399	7.2400e-003	1.5000e-003	175.9672
Quality Restaurant	353120	112.5116	4.6500e-003	9.6000e-004	112.9141
Regional Shopping Center	756000	240.8778	9.9400e-003	2.0600e-003	241.7395
Total		**2,512.6465**	**0.1037**	**0.0215**	**2,521.6356**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	106010	33.7770	1.3900e-003	2.9000e-004	33.8978
Apartments Mid Rise	3.94697e+006	1,257.5879	0.0519	0.0107	1,262.0869
General Office Building	584550	186.2502	7.6900e-003	1.5900e-003	186.9165
High Turnover (Sit Down Restaurant)	1.58904e+006	506.3022	0.0209	4.3200e-003	508.1135
Hotel	550308	175.3399	7.2400e-003	1.5000e-003	175.9672
Quality Restaurant	353120	112.5116	4.6500e-003	9.6000e-004	112.9141
Regional Shopping Center	756000	240.8778	9.9400e-003	2.0600e-003	241.7395
Total		**2,512.6465**	**0.1037**	**0.0215**	**2,521.6356**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835
Unmitigated	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.3998					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0206	0.1763	0.0750	1.1200e-003		0.0143	0.0143		0.0143	0.0143	0.0000	204.1166	204.1166	3.9100e-003	3.7400e-003	205.3295
Landscaping	0.3096	0.1187	10.3054	5.4000e-004		0.0572	0.0572		0.0572	0.0572	0.0000	16.8504	16.8504	0.0161	0.0000	17.2540
Total	**5.1437**	**0.2950**	**10.3804**	**1.6600e-003**		**0.0714**	**0.0714**		**0.0714**	**0.0714**	**0.0000**	**220.9670**	**220.9670**	**0.0201**	**3.7400e-003**	**222.5835**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.3998					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0206	0.1763	0.0750	1.1200e-003		0.0143	0.0143		0.0143	0.0143	0.0000	204.1166	204.1166	3.9100e-003	3.7400e-003	205.3295
Landscaping	0.3096	0.1187	10.3054	5.4000e-004		0.0572	0.0572		0.0572	0.0572	0.0000	16.8504	16.8504	0.0161	0.0000	17.2540
Total	**5.1437**	**0.2950**	**10.3804**	**1.6600e-003**		**0.0714**	**0.0714**		**0.0714**	**0.0714**	**0.0000**	**220.9670**	**220.9670**	**0.0201**	**3.7400e-003**	**222.5835**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	585.8052	3.0183	0.0755	683.7567
Unmitigated	585.8052	3.0183	0.0755	683.7567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.62885 / 1.02688	10.9095	0.0535	1.3400e-003	12.6471
Apartments Mid Rise	63.5252 / 40.0485	425.4719	2.0867	0.0523	493.2363
General Office Building	7.99802 / 4.90201	53.0719	0.2627	6.5900e-003	61.6019
High Turnover (Sit Down Restaurant)	10.9272 / 0.697482	51.2702	0.3580	8.8200e-003	62.8482
Hotel	1.26834 / 0.140927	6.1633	0.0416	1.0300e-003	7.5079
Quality Restaurant	2.42827 / 0.154996	11.3934	0.0796	1.9600e-003	13.9663
Regional Shopping Center	4.14806 / 2.54236	27.5250	0.1363	3.4200e-003	31.9490
Total		**585.8052**	**3.0183**	**0.0755**	**683.7567**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.62885 / 1.02688	10.9095	0.0535	1.3400e-003	12.6471
Apartments Mid Rise	63.5252 / 40.0485	425.4719	2.0867	0.0523	493.2363
General Office Building	7.99802 / 4.90201	53.0719	0.2627	6.5900e-003	61.6019
High Turnover (Sit Down Restaurant)	10.9272 / 0.697482	51.2702	0.3580	8.8200e-003	62.8482
Hotel	1.26834 / 0.140927	6.1633	0.0416	1.0300e-003	7.5079
Quality Restaurant	2.42827 / 0.154996	11.3934	0.0796	1.9600e-003	13.9663
Regional Shopping Center	4.14806 / 2.54236	27.5250	0.1363	3.4200e-003	31.9490
Total		**585.8052**	**3.0183**	**0.0755**	**683.7567**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	207.8079	12.2811	0.0000	514.8354
Unmitigated	207.8079	12.2811	0.0000	514.8354

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	11.5	2.3344	0.1380	0.0000	5.7834
Apartments Mid Rise	448.5	91.0415	5.3804	0.0000	225.5513
General Office Building	41.85	8.4952	0.5021	0.0000	21.0464
High Turnover (Sit Down Restaurant)	428.4	86.9613	5.1393	0.0000	215.4430
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Quality Restaurant	7.3	1.4818	0.0876	0.0000	3.6712
Regional Shopping Center	58.8	11.9359	0.7054	0.0000	29.5706
Total		**207.8079**	**12.2811**	**0.0000**	**514.8354**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	11.5	2.3344	0.1380	0.0000	5.7834
Apartments Mid Rise	448.5	91.0415	5.3804	0.0000	225.5513
General Office Building	41.85	8.4952	0.5021	0.0000	21.0464
High Turnover (Sit Down Restaurant)	428.4	86.9613	5.1393	0.0000	215.4430
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Quality Restaurant	7.3	1.4818	0.0876	0.0000	3.6712
Regional Shopping Center	58.8	11.9359	0.7054	0.0000	29.5706
Total		**207.8079**	**12.2811**	**0.0000**	**514.8354**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Village South Specific Plan (Proposed)

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	45.00	1000sqft	1.03	45,000.00	0
High Turnover (Sit Down Restaurant)	36.00	1000sqft	0.83	36,000.00	0
Hotel	50.00	Room	1.67	72,600.00	0
Quality Restaurant	8.00	1000sqft	0.18	8,000.00	0
Apartments Low Rise	25.00	Dwelling Unit	1.56	25,000.00	72
Apartments Mid Rise	975.00	Dwelling Unit	25.66	975,000.00	2789
Regional Shopping Center	56.00	1000sqft	1.29	56,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	1.25	0.00
tblFireplaces	NumberWood	48.75	0.00
tblVehicleTrips	ST_TR	7.16	6.17
tblVehicleTrips	ST_TR	6.39	3.87
tblVehicleTrips	ST_TR	2.46	1.39
tblVehicleTrips	ST_TR	158.37	79.82
tblVehicleTrips	ST_TR	8.19	3.75
tblVehicleTrips	ST_TR	94.36	63.99
tblVehicleTrips	ST_TR	49.97	10.74
tblVehicleTrips	SU_TR	6.07	6.16
tblVehicleTrips	SU_TR	5.86	4.18
tblVehicleTrips	SU_TR	1.05	0.69
tblVehicleTrips	SU_TR	131.84	78.27

tblVehicleTrips	SU_TR	5.95	3.20
tblVehicleTrips	SU_TR	72.16	57.65
tblVehicleTrips	SU_TR	25.24	6.39
tblVehicleTrips	WD_TR	6.59	5.83
tblVehicleTrips	WD_TR	6.65	4.13
tblVehicleTrips	WD_TR	11.03	6.41
tblVehicleTrips	WD_TR	127.15	65.80
tblVehicleTrips	WD_TR	8.17	3.84
tblVehicleTrips	WD_TR	89.95	62.64
tblVehicleTrips	WD_TR	42.70	9.43
tblWoodstoves	NumberCatalytic	1.25	0.00
tblWoodstoves	NumberCatalytic	48.75	0.00
tblWoodstoves	NumberNoncatalytic	1.25	0.00
tblWoodstoves	NumberNoncatalytic	48.75	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2769	46.4588	31.6840	0.0643	18.2675	2.0461	20.3135	9.9840	1.8824	11.8664	0.0000	6,234.7974	6,234.7974	1.9495	0.0000	6,283.5352
2022	5.3304	38.8967	49.5629	0.1517	9.8688	1.6366	10.7727	3.6558	1.5057	5.1615	0.0000	15,251.5674	15,251.5674	1.9503	0.0000	15,278.5288
2023	4.8957	26.3317	46.7567	0.1472	9.8688	0.7794	10.6482	2.6381	0.7322	3.3702	0.0000	14,807.5269	14,807.5269	1.0250	0.0000	14,833.1521
2024	237.1630	9.5575	15.1043	0.0244	1.7884	0.4698	1.8628	0.4743	0.4322	0.5476	0.0000	2,361.3989	2,361.3989	0.7177	0.0000	2,379.3421
Maximum	**237.1630**	**46.4588**	**49.5629**	**0.1517**	**18.2675**	**2.0461**	**20.3135**	**9.9840**	**1.8824**	**11.8664**	**0.0000**	**15,251.5674**	**15,251.5674**	**1.9503**	**0.0000**	**15,278.5288**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2769	46.4588	31.6840	0.0643	18.2675	2.0461	20.3135	9.9840	1.8824	11.8664	0.0000	6,234.7974	6,234.7974	1.9495	0.0000	6,283.5352
2022	5.3304	38.8967	49.5629	0.1517	9.8688	1.6366	10.7727	3.6558	1.5057	5.1615	0.0000	15,251.5674	15,251.5674	1.9503	0.0000	15,278.5288
2023	4.8957	26.3317	46.7567	0.1472	9.8688	0.7794	10.6482	2.6381	0.7322	3.3702	0.0000	14,807.5269	14,807.5269	1.0250	0.0000	14,833.1520
2024	237.1630	9.5575	15.1043	0.0244	1.7884	0.4698	1.8628	0.4743	0.4322	0.5476	0.0000	2,361.3989	2,361.3989	0.7177	0.0000	2,379.3421
Maximum	**237.1630**	**46.4588**	**49.5629**	**0.1517**	**18.2675**	**2.0461**	**20.3135**	**9.9840**	**1.8824**	**11.8664**	**0.0000**	**15,251.5674**	**15,251.5674**	**1.9503**	**0.0000**	**15,278.5288**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208
Total	**41.1168**	**67.2262**	**207.5497**	**0.6278**	**45.9592**	**2.4626**	**48.4217**	**12.2950**	**2.4385**	**14.7336**	**0.0000**	**76,811.1816**	**76,811.1816**	**2.8282**	**0.4832**	**77,025.8786**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208
Total	**41.1168**	**67.2262**	**207.5497**	**0.6278**	**45.9592**	**2.4626**	**48.4217**	**12.2950**	**2.4385**	**14.7336**	**0.0000**	**76,811.1816**	**76,811.1816**	**2.8282**	**0.4832**	**77,025.8786**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Site Preparation	Site Preparation	10/13/2021	11/9/2021	5	20	
3	Grading	Grading	11/10/2021	1/11/2022	5	45	
4	Building Construction	Building Construction	1/12/2022	12/12/2023	5	500	
5	Paving	Paving	12/13/2023	1/30/2024	5	35	
6	Architectural Coating	Architectural Coating	1/31/2024	3/19/2024	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	458.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	801.00	143.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	160.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1273	4.0952	0.9602	0.0119	0.2669	0.0126	0.2795	0.0732	0.0120	0.0852		1,292.241 3	1,292.241 3	0.0877		1,294.433 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.1916**	**4.1394**	**1.5644**	**0.0136**	**0.4346**	**0.0139**	**0.4485**	**0.1176**	**0.0133**	**0.1309**		**1,463.056 8**	**1,463.056 8**	**0.0927**		**1,465.375 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**	**0.0000**	**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1273	4.0952	0.9602	0.0119	0.2669	0.0126	0.2795	0.0732	0.0120	0.0852		1,292.241 3	1,292.241 3	0.0877		1,294.433 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.1916**	**4.1394**	**1.5644**	**0.0136**	**0.4346**	**0.0139**	**0.4485**	**0.1176**	**0.0133**	**0.1309**		**1,463.056 8**	**1,463.056 8**	**0.0927**		**1,465.375 0**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0772	0.0530	0.7250	2.0600e-003	0.2012	1.6300e-003	0.2028	0.0534	1.5000e-003	0.0549		204.9786	204.9786	6.0400e-003		205.1296
Total	**0.0772**	**0.0530**	**0.7250**	**2.0600e-003**	**0.2012**	**1.6300e-003**	**0.2028**	**0.0534**	**1.5000e-003**	**0.0549**		**204.9786**	**204.9786**	**6.0400e-003**		**205.1296**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0772	0.0530	0.7250	2.0600e-003	0.2012	1.6300e-003	0.2028	0.0534	1.5000e-003	0.0549		204.9786	204.9786	6.0400e-003		205.1296
Total	**0.0772**	**0.0530**	**0.7250**	**2.0600e-003**	**0.2012**	**1.6300e-003**	**0.2028**	**0.0534**	**1.5000e-003**	**0.0549**		**204.9786**	**204.9786**	**6.0400e-003**		**205.1296**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0857	0.0589	0.8056	2.2900e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		227.7540	227.7540	6.7100e-003		227.9217
Total	**0.0857**	**0.0589**	**0.8056**	**2.2900e-003**	**0.2236**	**1.8100e-003**	**0.2254**	**0.0593**	**1.6600e-003**	**0.0610**		**227.7540**	**227.7540**	**6.7100e-003**		**227.9217**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0857	0.0589	0.8056	2.2900e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		227.7540	227.7540	6.7100e-003		227.9217
Total	**0.0857**	**0.0589**	**0.8056**	**2.2900e-003**	**0.2236**	**1.8100e-003**	**0.2254**	**0.0593**	**1.6600e-003**	**0.0610**		**227.7540**	**227.7540**	**6.7100e-003**		**227.9217**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0803	0.0532	0.7432	2.2100e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		219.7425	219.7425	6.0600e-003		219.8941
Total	**0.0803**	**0.0532**	**0.7432**	**2.2100e-003**	**0.2236**	**1.7500e-003**	**0.2253**	**0.0593**	**1.6100e-003**	**0.0609**		**219.7425**	**219.7425**	**6.0600e-003**		**219.8941**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0803	0.0532	0.7432	2.2100e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		219.7425	219.7425	6.0600e-003		219.8941
Total	**0.0803**	**0.0532**	**0.7432**	**2.2100e-003**	**0.2236**	**1.7500e-003**	**0.2253**	**0.0593**	**1.6100e-003**	**0.0609**		**219.7425**	**219.7425**	**6.0600e-003**		**219.8941**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4079	13.2032	3.4341	0.0364	0.9155	0.0248	0.9404	0.2636	0.0237	0.2873		3,896.548 2	3,896.548 2	0.2236		3,902.138 4
Worker	3.2162	2.1318	29.7654	0.0883	8.9533	0.0701	9.0234	2.3745	0.0646	2.4390		8,800.685 7	8,800.685 7	0.2429		8,806.758 2
Total	**3.6242**	**15.3350**	**33.1995**	**0.1247**	**9.8688**	**0.0949**	**9.9637**	**2.6381**	**0.0883**	**2.7263**		**12,697.23 39**	**12,697.23 39**	**0.4665**		**12,708.89 66**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4079	13.2032	3.4341	0.0364	0.9155	0.0248	0.9404	0.2636	0.0237	0.2873		3,896.548 2	3,896.548 2	0.2236		3,902.138 4
Worker	3.2162	2.1318	29.7654	0.0883	8.9533	0.0701	9.0234	2.3745	0.0646	2.4390		8,800.685 7	8,800.685 7	0.2429		8,806.758 2
Total	**3.6242**	**15.3350**	**33.1995**	**0.1247**	**9.8688**	**0.0949**	**9.9637**	**2.6381**	**0.0883**	**2.7263**		**12,697.23 39**	**12,697.23 39**	**0.4665**		**12,708.89 66**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3027	10.0181	3.1014	0.0352	0.9156	0.0116	0.9271	0.2636	0.0111	0.2747		3,773.8762	3,773.8762	0.1982		3,778.8300
Worker	3.0203	1.9287	27.4113	0.0851	8.9533	0.0681	9.0214	2.3745	0.0627	2.4372		8,478.4408	8,478.4408	0.2190		8,483.9160
Total	**3.3229**	**11.9468**	**30.5127**	**0.1203**	**9.8688**	**0.0797**	**9.9485**	**2.6381**	**0.0738**	**2.7118**		**12,252.3170**	**12,252.3170**	**0.4172**		**12,262.7460**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3027	10.0181	3.1014	0.0352	0.9156	0.0116	0.9271	0.2636	0.0111	0.2747		3,773.8762	3,773.8762	0.1982		3,778.8300
Worker	3.0203	1.9287	27.4113	0.0851	8.9533	0.0681	9.0214	2.3745	0.0627	2.4372		8,478.4408	8,478.4408	0.2190		8,483.9160
Total	**3.3229**	**11.9468**	**30.5127**	**0.1203**	**9.8688**	**0.0797**	**9.9485**	**2.6381**	**0.0738**	**2.7118**		**12,252.3170**	**12,252.3170**	**0.4172**		**12,262.7460**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0361	0.5133	1.5900e-003	0.1677	1.2800e-003	0.1689	0.0445	1.1700e-003	0.0456		158.7723	158.7723	4.1000e-003		158.8748
Total	**0.0566**	**0.0361**	**0.5133**	**1.5900e-003**	**0.1677**	**1.2800e-003**	**0.1689**	**0.0445**	**1.1700e-003**	**0.0456**		**158.7723**	**158.7723**	**4.1000e-003**		**158.8748**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0566	0.0361	0.5133	1.5900e-003	0.1677	1.2800e-003	0.1689	0.0445	1.1700e-003	0.0456		158.7723	158.7723	4.1000e-003		158.8748
Total	**0.0566**	**0.0361**	**0.5133**	**1.5900e-003**	**0.1677**	**1.2800e-003**	**0.1689**	**0.0445**	**1.1700e-003**	**0.0456**		**158.7723**	**158.7723**	**4.1000e-003**		**158.8748**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0535	0.0329	0.4785	1.5400e-003	0.1677	1.2600e-003	0.1689	0.0445	1.1600e-003	0.0456		153.8517	153.8517	3.7600e-003		153.9458
Total	**0.0535**	**0.0329**	**0.4785**	**1.5400e-003**	**0.1677**	**1.2600e-003**	**0.1689**	**0.0445**	**1.1600e-003**	**0.0456**		**153.8517**	**153.8517**	**3.7600e-003**		**153.9458**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0535	0.0329	0.4785	1.5400e-003	0.1677	1.2600e-003	0.1689	0.0445	1.1600e-003	0.0456		153.8517	153.8517	3.7600e-003		153.9458
Total	**0.0535**	**0.0329**	**0.4785**	**1.5400e-003**	**0.1677**	**1.2600e-003**	**0.1689**	**0.0445**	**1.1600e-003**	**0.0456**		**153.8517**	**153.8517**	**3.7600e-003**		**153.9458**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5707	0.3513	5.1044	0.0165	1.7884	0.0134	1.8018	0.4743	0.0123	0.4866		1,641.085 2	1,641.085 2	0.0401		1,642.088 6
Total	**0.5707**	**0.3513**	**5.1044**	**0.0165**	**1.7884**	**0.0134**	**1.8018**	**0.4743**	**0.0123**	**0.4866**		**1,641.085 2**	**1,641.085 2**	**0.0401**		**1,642.088 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5707	0.3513	5.1044	0.0165	1.7884	0.0134	1.8018	0.4743	0.0123	0.4866		1,641.085 2	1,641.085 2	0.0401		1,642.088 6
Total	**0.5707**	**0.3513**	**5.1044**	**0.0165**	**1.7884**	**0.0134**	**1.8018**	**0.4743**	**0.0123**	**0.4866**		**1,641.085 2**	**1,641.085 2**	**0.0401**		**1,642.088 6**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208
Unmitigated	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	145.75	154.25	154.00	506,227	506,227
Apartments Mid Rise	4,026.75	3,773.25	4075.50	13,660,065	13,660,065
General Office Building	288.45	62.55	31.05	706,812	706,812
High Turnover (Sit Down Restaurant)	2,368.80	2,873.52	2817.72	3,413,937	3,413,937
Hotel	192.00	187.50	160.00	445,703	445,703
Quality Restaurant	501.12	511.92	461.20	707,488	707,488
Regional Shopping Center	528.08	601.44	357.84	1,112,221	1,112,221
Total	8,050.95	8,164.43	8,057.31	20,552,452	20,552,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Apartments Mid Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
General Office Building	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
High Turnover (Sit Down Restaurant)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Hotel	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Quality Restaurant	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Regional Shopping Center	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.983 2	8,355.983 2	0.1602	0.1532	8,405.638 7
NaturalGas Unmitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.983 2	8,355.983 2	0.1602	0.1532	8,405.638 7

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1119.16	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35784.3	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1283.42	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22759.9	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4769.72	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5057.75	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	251.616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.11916	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35.7843	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1.28342	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22.7599	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4.76972	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5.05775	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	0.251616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

6.0 Area Detail

6.1 Mitigation Measures Area

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Unmitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Village South Specific Plan (Proposed)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	45.00	1000sqft	1.03	45,000.00	0
High Turnover (Sit Down Restaurant)	36.00	1000sqft	0.83	36,000.00	0
Hotel	50.00	Room	1.67	72,600.00	0
Quality Restaurant	8.00	1000sqft	0.18	8,000.00	0
Apartments Low Rise	25.00	Dwelling Unit	1.56	25,000.00	72
Apartments Mid Rise	975.00	Dwelling Unit	25.66	975,000.00	2789
Regional Shopping Center	56.00	1000sqft	1.29	56,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	1.25	0.00
tblFireplaces	NumberWood	48.75	0.00
tblVehicleTrips	ST_TR	7.16	6.17
tblVehicleTrips	ST_TR	6.39	3.87
tblVehicleTrips	ST_TR	2.46	1.39
tblVehicleTrips	ST_TR	158.37	79.82
tblVehicleTrips	ST_TR	8.19	3.75
tblVehicleTrips	ST_TR	94.36	63.99
tblVehicleTrips	ST_TR	49.97	10.74
tblVehicleTrips	SU_TR	6.07	6.16
tblVehicleTrips	SU_TR	5.86	4.18
tblVehicleTrips	SU_TR	1.05	0.69
tblVehicleTrips	SU_TR	131.84	78.27

tblVehicleTrips	SU_TR	5.95	3.20
tblVehicleTrips	SU_TR	72.16	57.65
tblVehicleTrips	SU_TR	25.24	6.39
tblVehicleTrips	WD_TR	6.59	5.83
tblVehicleTrips	WD_TR	6.65	4.13
tblVehicleTrips	WD_TR	11.03	6.41
tblVehicleTrips	WD_TR	127.15	65.80
tblVehicleTrips	WD_TR	8.17	3.84
tblVehicleTrips	WD_TR	89.95	62.64
tblVehicleTrips	WD_TR	42.70	9.43
tblWoodstoves	NumberCatalytic	1.25	0.00
tblWoodstoves	NumberCatalytic	48.75	0.00
tblWoodstoves	NumberNoncatalytic	1.25	0.00
tblWoodstoves	NumberNoncatalytic	48.75	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2865	46.4651	31.6150	0.0642	18.2675	2.0461	20.3135	9.9840	1.8824	11.8664	0.0000	6,221.4937	6,221.4937	1.9491	0.0000	6,270.2214
2022	5.7218	38.9024	47.3319	0.1455	9.8688	1.6366	10.7736	3.6558	1.5057	5.1615	0.0000	14,630.3099	14,630.3099	1.9499	0.0000	14,657.2663
2023	5.2705	26.4914	44.5936	0.1413	9.8688	0.7800	10.6488	2.6381	0.7328	3.3708	0.0000	14,210.3424	14,210.3424	1.0230	0.0000	14,235.9160
2024	237.2328	9.5610	15.0611	0.0243	1.7884	0.4698	1.8628	0.4743	0.4322	0.5476	0.0000	2,352.4178	2,352.4178	0.7175	0.0000	2,370.3550
Maximum	**237.2328**	**46.4651**	**47.3319**	**0.1455**	**18.2675**	**2.0461**	**20.3135**	**9.9840**	**1.8824**	**11.8664**	**0.0000**	**14,630.3099**	**14,630.3099**	**1.9499**	**0.0000**	**14,657.2663**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2865	46.4651	31.6150	0.0642	18.2675	2.0461	20.3135	9.9840	1.8824	11.8664	0.0000	6,221.4937	6,221.4937	1.9491	0.0000	6,270.2214
2022	5.7218	38.9024	47.3319	0.1455	9.8688	1.6366	10.7736	3.6558	1.5057	5.1615	0.0000	14,630.3099	14,630.3099	1.9499	0.0000	14,657.2663
2023	5.2705	26.4914	44.5936	0.1413	9.8688	0.7800	10.6488	2.6381	0.7328	3.3708	0.0000	14,210.3424	14,210.3424	1.0230	0.0000	14,235.9160
2024	237.2328	9.5610	15.0611	0.0243	1.7884	0.4698	1.8628	0.4743	0.4322	0.5476	0.0000	2,352.4178	2,352.4178	0.7175	0.0000	2,370.3550
Maximum	**237.2328**	**46.4651**	**47.3319**	**0.1455**	**18.2675**	**2.0461**	**20.3135**	**9.9840**	**1.8824**	**11.8664**	**0.0000**	**14,630.3099**	**14,630.3099**	**1.9499**	**0.0000**	**14,657.2663**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839
Total	**40.7912**	**67.7872**	**202.7424**	**0.6043**	**45.9592**	**2.4640**	**48.4231**	**12.2950**	**2.4399**	**14.7349**	**0.0000**	**74,422.3787**	**74,422.3787**	**2.8429**	**0.4832**	**74,637.4417**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839
Total	**40.7912**	**67.7872**	**202.7424**	**0.6043**	**45.9592**	**2.4640**	**48.4231**	**12.2950**	**2.4399**	**14.7349**	**0.0000**	**74,422.3787**	**74,422.3787**	**2.8429**	**0.4832**	**74,637.4417**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Site Preparation	Site Preparation	10/13/2021	11/9/2021	5	20	
3	Grading	Grading	11/10/2021	1/11/2022	5	45	
4	Building Construction	Building Construction	1/12/2022	12/12/2023	5	500	
5	Paving	Paving	12/13/2023	1/30/2024	5	35	
6	Architectural Coating	Architectural Coating	1/31/2024	3/19/2024	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	458.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	801.00	143.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	160.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1304	4.1454	1.0182	0.0117	0.2669	0.0128	0.2797	0.0732	0.0122	0.0854		1,269.855 5	1,269.855 5	0.0908		1,272.125 2
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.2019**	**4.1943**	**1.5706**	**0.0133**	**0.4346**	**0.0141**	**0.4487**	**0.1176**	**0.0135**	**0.1311**		**1,430.693 2**	**1,430.693 2**	**0.0955**		**1,433.081 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**	**0.0000**	**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1304	4.1454	1.0182	0.0117	0.2669	0.0128	0.2797	0.0732	0.0122	0.0854		1,269.855 5	1,269.855 5	0.0908		1,272.125 2
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.2019**	**4.1943**	**1.5706**	**0.0133**	**0.4346**	**0.0141**	**0.4487**	**0.1176**	**0.0135**	**0.1311**		**1,430.693 2**	**1,430.693 2**	**0.0955**		**1,433.081 2**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0858	0.0587	0.6629	1.9400e-003	0.2012	1.6300e-003	0.2028	0.0534	1.5000e-003	0.0549		193.0052	193.0052	5.6800e-003		193.1472
Total	**0.0858**	**0.0587**	**0.6629**	**1.9400e-003**	**0.2012**	**1.6300e-003**	**0.2028**	**0.0534**	**1.5000e-003**	**0.0549**		**193.0052**	**193.0052**	**5.6800e-003**		**193.1472**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0858	0.0587	0.6629	1.9400e-003	0.2012	1.6300e-003	0.2028	0.0534	1.5000e-003	0.0549		193.0052	193.0052	5.6800e-003		193.1472
Total	**0.0858**	**0.0587**	**0.6629**	**1.9400e-003**	**0.2012**	**1.6300e-003**	**0.2028**	**0.0534**	**1.5000e-003**	**0.0549**		**193.0052**	**193.0052**	**5.6800e-003**		**193.1472**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0954	0.0652	0.7365	2.1500e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		214.4502	214.4502	6.3100e-003		214.6080
Total	**0.0954**	**0.0652**	**0.7365**	**2.1500e-003**	**0.2236**	**1.8100e-003**	**0.2254**	**0.0593**	**1.6600e-003**	**0.0610**		**214.4502**	**214.4502**	**6.3100e-003**		**214.6080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0954	0.0652	0.7365	2.1500e-003	0.2236	1.8100e-003	0.2254	0.0593	1.6600e-003	0.0610		214.4502	214.4502	6.3100e-003		214.6080
Total	**0.0954**	**0.0652**	**0.7365**	**2.1500e-003**	**0.2236**	**1.8100e-003**	**0.2254**	**0.0593**	**1.6600e-003**	**0.0610**		**214.4502**	**214.4502**	**6.3100e-003**		**214.6080**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0896	0.0589	0.6784	2.0800e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		206.9139	206.9139	5.7000e-003		207.0563
Total	**0.0896**	**0.0589**	**0.6784**	**2.0800e-003**	**0.2236**	**1.7500e-003**	**0.2253**	**0.0593**	**1.6100e-003**	**0.0609**		**206.9139**	**206.9139**	**5.7000e-003**		**207.0563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0896	0.0589	0.6784	2.0800e-003	0.2236	1.7500e-003	0.2253	0.0593	1.6100e-003	0.0609		206.9139	206.9139	5.7000e-003		207.0563
Total	**0.0896**	**0.0589**	**0.6784**	**2.0800e-003**	**0.2236**	**1.7500e-003**	**0.2253**	**0.0593**	**1.6100e-003**	**0.0609**		**206.9139**	**206.9139**	**5.7000e-003**		**207.0563**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4284	13.1673	3.8005	0.0354	0.9155	0.0256	0.9412	0.2636	0.0245	0.2881		3,789.0750	3,789.0750	0.2381		3,795.0283
Worker	3.5872	2.3593	27.1680	0.0832	8.9533	0.0701	9.0234	2.3745	0.0646	2.4390		8,286.9013	8,286.9013	0.2282		8,292.6058
Total	**4.0156**	**15.5266**	**30.9685**	**0.1186**	**9.8688**	**0.0957**	**9.9645**	**2.6381**	**0.0891**	**2.7271**		**12,075.9763**	**12,075.9763**	**0.4663**		**12,087.6341**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4284	13.1673	3.8005	0.0354	0.9155	0.0256	0.9412	0.2636	0.0245	0.2881		3,789.075 0	3,789.075 0	0.2381		3,795.028 3
Worker	3.5872	2.3593	27.1680	0.0832	8.9533	0.0701	9.0234	2.3745	0.0646	2.4390		8,286.901 3	8,286.901 3	0.2282		8,292.605 8
Total	**4.0156**	**15.5266**	**30.9685**	**0.1186**	**9.8688**	**0.0957**	**9.9645**	**2.6381**	**0.0891**	**2.7271**		**12,075.97 63**	**12,075.97 63**	**0.4663**		**12,087.63 41**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3183	9.9726	3.3771	0.0343	0.9156	0.0122	0.9277	0.2636	0.0116	0.2752		3,671.400 7	3,671.400 7	0.2096		3,676.641 7
Worker	3.3795	2.1338	24.9725	0.0801	8.9533	0.0681	9.0214	2.3745	0.0627	2.4372		7,983.731 8	7,983.731 8	0.2055		7,988.868 3
Total	**3.6978**	**12.1065**	**28.3496**	**0.1144**	**9.8688**	**0.0803**	**9.9491**	**2.6381**	**0.0743**	**2.7124**		**11,655.13 25**	**11,655.13 25**	**0.4151**		**11,665.50 99**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3183	9.9726	3.3771	0.0343	0.9156	0.0122	0.9277	0.2636	0.0116	0.2752		3,671.4007	3,671.4007	0.2096		3,676.6417
Worker	3.3795	2.1338	24.9725	0.0801	8.9533	0.0681	9.0214	2.3745	0.0627	2.4372		7,983.7318	7,983.7318	0.2055		7,988.8683
Total	**3.6978**	**12.1065**	**28.3496**	**0.1144**	**9.8688**	**0.0803**	**9.9491**	**2.6381**	**0.0743**	**2.7124**		**11,655.1325**	**11,655.1325**	**0.4151**		**11,665.5099**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0633	0.0400	0.4677	1.5000e-003	0.1677	1.2800e-003	0.1689	0.0445	1.1700e-003	0.0456		149.5081	149.5081	3.8500e-003		149.6043
Total	**0.0633**	**0.0400**	**0.4677**	**1.5000e-003**	**0.1677**	**1.2800e-003**	**0.1689**	**0.0445**	**1.1700e-003**	**0.0456**		**149.5081**	**149.5081**	**3.8500e-003**		**149.6043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0633	0.0400	0.4677	1.5000e-003	0.1677	1.2800e-003	0.1689	0.0445	1.1700e-003	0.0456		149.5081	149.5081	3.8500e-003		149.6043
Total	**0.0633**	**0.0400**	**0.4677**	**1.5000e-003**	**0.1677**	**1.2800e-003**	**0.1689**	**0.0445**	**1.1700e-003**	**0.0456**		**149.5081**	**149.5081**	**3.8500e-003**		**149.6043**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0364	0.4354	1.4500e-003	0.1677	1.2600e-003	0.1689	0.0445	1.1600e-003	0.0456		144.8706	144.8706	3.5300e-003		144.9587
Total	**0.0601**	**0.0364**	**0.4354**	**1.4500e-003**	**0.1677**	**1.2600e-003**	**0.1689**	**0.0445**	**1.1600e-003**	**0.0456**		**144.8706**	**144.8706**	**3.5300e-003**		**144.9587**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.547 2**	**2,207.547 2**	**0.7140**		**2,225.396 3**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0364	0.4354	1.4500e-003	0.1677	1.2600e-003	0.1689	0.0445	1.1600e-003	0.0456		144.8706	144.8706	3.5300e-003		144.9587
Total	**0.0601**	**0.0364**	**0.4354**	**1.4500e-003**	**0.1677**	**1.2600e-003**	**0.1689**	**0.0445**	**1.1600e-003**	**0.0456**		**144.8706**	**144.8706**	**3.5300e-003**		**144.9587**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.6406	0.3886	4.6439	0.0155	1.7884	0.0134	1.8018	0.4743	0.0123	0.4866		1,545.2860	1,545.2860	0.0376		1,546.2262
Total	**0.6406**	**0.3886**	**4.6439**	**0.0155**	**1.7884**	**0.0134**	**1.8018**	**0.4743**	**0.0123**	**0.4866**		**1,545.2860**	**1,545.2860**	**0.0376**		**1,546.2262**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.6406	0.3886	4.6439	0.0155	1.7884	0.0134	1.8018	0.4743	0.0123	0.4866		1,545.286 0	1,545.286 0	0.0376		1,546.226 2
Total	**0.6406**	**0.3886**	**4.6439**	**0.0155**	**1.7884**	**0.0134**	**1.8018**	**0.4743**	**0.0123**	**0.4866**		**1,545.286 0**	**1,545.286 0**	**0.0376**		**1,546.226 2**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839
Unmitigated	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	145.75	154.25	154.00	506,227	506,227
Apartments Mid Rise	4,026.75	3,773.25	4075.50	13,660,065	13,660,065
General Office Building	288.45	62.55	31.05	706,812	706,812
High Turnover (Sit Down Restaurant)	2,368.80	2,873.52	2817.72	3,413,937	3,413,937
Hotel	192.00	187.50	160.00	445,703	445,703
Quality Restaurant	501.12	511.92	461.20	707,488	707,488
Regional Shopping Center	528.08	601.44	357.84	1,112,221	1,112,221
Total	8,050.95	8,164.43	8,057.31	20,552,452	20,552,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Apartments Mid Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
General Office Building	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
High Turnover (Sit Down Restaurant)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Hotel	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Quality Restaurant	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Regional Shopping Center	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.983 2	8,355.983 2	0.1602	0.1532	8,405.638 7
NaturalGas Unmitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.983 2	8,355.983 2	0.1602	0.1532	8,405.638 7

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1119.16	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35784.3	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1283.42	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22759.9	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4769.72	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5057.75	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	251.616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.11916	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35.7843	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1.28342	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22.7599	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4.76972	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5.05775	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	0.251616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Unmitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Village South Specific Plan (Proposed)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	45.00	1000sqft	1.03	45,000.00	0
High Turnover (Sit Down Restaurant)	36.00	1000sqft	0.83	36,000.00	0
Hotel	50.00	Room	1.67	72,600.00	0
Quality Restaurant	8.00	1000sqft	0.18	8,000.00	0
Apartments Low Rise	25.00	Dwelling Unit	1.56	25,000.00	72
Apartments Mid Rise	975.00	Dwelling Unit	25.66	975,000.00	2789
Regional Shopping Center	56.00	1000sqft	1.29	56,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Trips and VMT - Local hire provision

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	1.25	0.00
tblFireplaces	NumberWood	48.75	0.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblVehicleTrips	ST_TR	7.16	6.17
tblVehicleTrips	ST_TR	6.39	3.87
tblVehicleTrips	ST_TR	2.46	1.39
tblVehicleTrips	ST_TR	158.37	79.82

tblVehicleTrips	ST_TR	8.19	3.75
tblVehicleTrips	ST_TR	94.36	63.99
tblVehicleTrips	ST_TR	49.97	10.74
tblVehicleTrips	SU_TR	6.07	6.16
tblVehicleTrips	SU_TR	5.86	4.18
tblVehicleTrips	SU_TR	1.05	0.69
tblVehicleTrips	SU_TR	131.84	78.27
tblVehicleTrips	SU_TR	5.95	3.20
tblVehicleTrips	SU_TR	72.16	57.65
tblVehicleTrips	SU_TR	25.24	6.39
tblVehicleTrips	WD_TR	6.59	5.83
tblVehicleTrips	WD_TR	6.65	4.13
tblVehicleTrips	WD_TR	11.03	6.41
tblVehicleTrips	WD_TR	127.15	65.80
tblVehicleTrips	WD_TR	8.17	3.84
tblVehicleTrips	WD_TR	89.95	62.64
tblVehicleTrips	WD_TR	42.70	9.43
tblWoodstoves	NumberCatalytic	1.25	0.00
tblWoodstoves	NumberCatalytic	48.75	0.00
tblWoodstoves	NumberNoncatalytic	1.25	0.00
tblWoodstoves	NumberNoncatalytic	48.75	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1704	1.8234	1.1577	2.3800e-003	0.4141	0.0817	0.4958	0.1788	0.0754	0.2542	0.0000	210.7654	210.7654	0.0600	0.0000	212.2661
2022	0.5865	4.0240	5.1546	0.0155	0.9509	0.1175	1.0683	0.2518	0.1103	0.3621	0.0000	1,418.6554	1,418.6554	0.1215	0.0000	1,421.6925
2023	0.5190	3.2850	4.7678	0.0147	0.8497	0.0971	0.9468	0.2283	0.0912	0.3195	0.0000	1,342.4412	1,342.4412	0.1115	0.0000	1,345.2291
2024	4.1592	0.1313	0.2557	5.0000e-004	0.0221	6.3900e-003	0.0285	5.8700e-003	5.9700e-003	0.0118	0.0000	44.6355	44.6355	7.8300e-003	0.0000	44.8311
Maximum	**4.1592**	**4.0240**	**5.1546**	**0.0155**	**0.9509**	**0.1175**	**1.0683**	**0.2518**	**0.1103**	**0.3621**	**0.0000**	**1,418.6554**	**1,418.6554**	**0.1215**	**0.0000**	**1,421.6925**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1704	1.8234	1.1577	2.3800e-003	0.4141	0.0817	0.4958	0.1788	0.0754	0.2542	0.0000	210.7651	210.7651	0.0600	0.0000	212.2658
2022	0.5865	4.0240	5.1546	0.0155	0.9509	0.1175	1.0683	0.2518	0.1103	0.3621	0.0000	1,418.6550	1,418.6550	0.1215	0.0000	1,421.6921
2023	0.5190	3.2850	4.7678	0.0147	0.8497	0.0971	0.9468	0.2283	0.0912	0.3195	0.0000	1,342.4409	1,342.4409	0.1115	0.0000	1,345.2287
2024	4.1592	0.1313	0.2557	5.0000e-004	0.0221	6.3900e-003	0.0285	5.8700e-003	5.9700e-003	0.0118	0.0000	44.6354	44.6354	7.8300e-003	0.0000	44.8311
Maximum	**4.1592**	**4.0240**	**5.1546**	**0.0155**	**0.9509**	**0.1175**	**1.0683**	**0.2518**	**0.1103**	**0.3621**	**0.0000**	**1,418.6550**	**1,418.6550**	**0.1215**	**0.0000**	**1,421.6921**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2021**	**11-30-2021**	1.4091	1.4091
2	**12-1-2021**	**2-28-2022**	1.3329	1.3329
3	**3-1-2022**	**5-31-2022**	1.1499	1.1499
4	**6-1-2022**	**8-31-2022**	1.1457	1.1457
5	**9-1-2022**	**11-30-2022**	1.1415	1.1415
6	**12-1-2022**	**2-28-2023**	1.0278	1.0278
7	**3-1-2023**	**5-31-2023**	0.9868	0.9868
8	**6-1-2023**	**8-31-2023**	0.9831	0.9831

9	**9-1-2023**	**11-30-2023**	0.9798	0.9798
10	**12-1-2023**	**2-29-2024**	2.8757	2.8757
11	**3-1-2024**	**5-31-2024**	1.6188	1.6188
		Highest	2.8757	2.8757

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835
Energy	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	3,896.0732	3,896.0732	0.1303	0.0468	3,913.2833
Mobile	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162
Waste						0.0000	0.0000		0.0000	0.0000	207.8079	0.0000	207.8079	12.2811	0.0000	514.8354
Water						0.0000	0.0000		0.0000	0.0000	29.1632	556.6420	585.8052	3.0183	0.0755	683.7567
Total	**6.8692**	**9.5223**	**30.3407**	**0.0914**	**7.7979**	**0.2260**	**8.0240**	**2.0895**	**0.2219**	**2.3114**	**236.9712**	**12,294.1807**	**12,531.1519**	**15.7904**	**0.1260**	**12,963.4751**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835
Energy	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	3,896.0732	3,896.0732	0.1303	0.0468	3,913.2833
Mobile	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162
Waste						0.0000	0.0000		0.0000	0.0000	207.8079	0.0000	207.8079	12.2811	0.0000	514.8354
Water						0.0000	0.0000		0.0000	0.0000	29.1632	556.6420	585.8052	3.0183	0.0755	683.7567
Total	**6.8692**	**9.5223**	**30.3407**	**0.0914**	**7.7979**	**0.2260**	**8.0240**	**2.0895**	**0.2219**	**2.3114**	**236.9712**	**12,294.1807**	**12,531.1519**	**15.7904**	**0.1260**	**12,963.4751**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Site Preparation	Site Preparation	10/13/2021	11/9/2021	5	20	
3	Grading	Grading	11/10/2021	1/11/2022	5	45	
4	Building Construction	Building Construction	1/12/2022	12/12/2023	5	500	
5	Paving	Paving	12/13/2023	1/30/2024	5	35	
6	Architectural Coating	Architectural Coating	1/31/2024	3/19/2024	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	458.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	801.00	143.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	160.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0496	0.0000	0.0496	7.5100e-003	0.0000	7.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0475	0.4716	0.3235	5.8000e-004		0.0233	0.0233		0.0216	0.0216	0.0000	51.0012	51.0012	0.0144	0.0000	51.3601
Total	**0.0475**	**0.4716**	**0.3235**	**5.8000e-004**	**0.0496**	**0.0233**	**0.0729**	**7.5100e-003**	**0.0216**	**0.0291**	**0.0000**	**51.0012**	**51.0012**	**0.0144**	**0.0000**	**51.3601**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9300e-003	0.0634	0.0148	1.8000e-004	3.9400e-003	1.9000e-004	4.1300e-003	1.0800e-003	1.8000e-004	1.2600e-003	0.0000	17.4566	17.4566	1.2100e-003	0.0000	17.4869
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.3000e-004	6.0900e-003	2.0000e-005	1.6800e-003	1.0000e-005	1.6900e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5281	1.5281	5.0000e-005	0.0000	1.5293
Total	**2.6500e-003**	**0.0639**	**0.0209**	**2.0000e-004**	**5.6200e-003**	**2.0000e-004**	**5.8200e-003**	**1.5300e-003**	**1.9000e-004**	**1.7200e-003**	**0.0000**	**18.9847**	**18.9847**	**1.2600e-003**	**0.0000**	**19.0161**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0496	0.0000	0.0496	7.5100e-003	0.0000	7.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0475	0.4716	0.3235	5.8000e-004		0.0233	0.0233		0.0216	0.0216	0.0000	51.0011	51.0011	0.0144	0.0000	51.3600
Total	**0.0475**	**0.4716**	**0.3235**	**5.8000e-004**	**0.0496**	**0.0233**	**0.0729**	**7.5100e-003**	**0.0216**	**0.0291**	**0.0000**	**51.0011**	**51.0011**	**0.0144**	**0.0000**	**51.3600**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9300e-003	0.0634	0.0148	1.8000e-004	3.9400e-003	1.9000e-004	4.1300e-003	1.0800e-003	1.8000e-004	1.2600e-003	0.0000	17.4566	17.4566	1.2100e-003	0.0000	17.4869
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.2000e-004	5.3000e-004	6.0900e-003	2.0000e-005	1.6800e-003	1.0000e-005	1.6900e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.5281	1.5281	5.0000e-005	0.0000	1.5293
Total	**2.6500e-003**	**0.0639**	**0.0209**	**2.0000e-004**	**5.6200e-003**	**2.0000e-004**	**5.8200e-003**	**1.5300e-003**	**1.9000e-004**	**1.7200e-003**	**0.0000**	**18.9847**	**18.9847**	**1.2600e-003**	**0.0000**	**19.0161**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0389	0.4050	0.2115	3.8000e-004		0.0204	0.0204		0.0188	0.0188	0.0000	33.4357	33.4357	0.0108	0.0000	33.7061
Total	**0.0389**	**0.4050**	**0.2115**	**3.8000e-004**	**0.1807**	**0.0204**	**0.2011**	**0.0993**	**0.0188**	**0.1181**	**0.0000**	**33.4357**	**33.4357**	**0.0108**	**0.0000**	**33.7061**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.3000e-004	4.8700e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2225	1.2225	4.0000e-005	0.0000	1.2234
Total	**5.8000e-004**	**4.3000e-004**	**4.8700e-003**	**1.0000e-005**	**1.3400e-003**	**1.0000e-005**	**1.3500e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.2225**	**1.2225**	**4.0000e-005**	**0.0000**	**1.2234**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0389	0.4050	0.2115	3.8000e-004		0.0204	0.0204		0.0188	0.0188	0.0000	33.4357	33.4357	0.0108	0.0000	33.7060
Total	**0.0389**	**0.4050**	**0.2115**	**3.8000e-004**	**0.1807**	**0.0204**	**0.2011**	**0.0993**	**0.0188**	**0.1181**	**0.0000**	**33.4357**	**33.4357**	**0.0108**	**0.0000**	**33.7060**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	4.3000e-004	4.8700e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2225	1.2225	4.0000e-005	0.0000	1.2234
Total	**5.8000e-004**	**4.3000e-004**	**4.8700e-003**	**1.0000e-005**	**1.3400e-003**	**1.0000e-005**	**1.3500e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.2225**	**1.2225**	**4.0000e-005**	**0.0000**	**1.2234**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1741	0.0000	0.1741	0.0693	0.0000	0.0693	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0796	0.8816	0.5867	1.1800e-003		0.0377	0.0377		0.0347	0.0347	0.0000	103.5405	103.5405	0.0335	0.0000	104.3776
Total	**0.0796**	**0.8816**	**0.5867**	**1.1800e-003**	**0.1741**	**0.0377**	**0.2118**	**0.0693**	**0.0347**	**0.1040**	**0.0000**	**103.5405**	**103.5405**	**0.0335**	**0.0000**	**104.3776**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	9.0000e-004	0.0103	3.0000e-005	2.8300e-003	2.0000e-005	2.8600e-003	7.5000e-004	2.0000e-005	7.8000e-004	0.0000	2.5808	2.5808	8.0000e-005	0.0000	2.5828
Total	**1.2200e-003**	**9.0000e-004**	**0.0103**	**3.0000e-005**	**2.8300e-003**	**2.0000e-005**	**2.8600e-003**	**7.5000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.5808**	**2.5808**	**8.0000e-005**	**0.0000**	**2.5828**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1741	0.0000	0.1741	0.0693	0.0000	0.0693	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0796	0.8816	0.5867	1.1800e-003		0.0377	0.0377		0.0347	0.0347	0.0000	103.5403	103.5403	0.0335	0.0000	104.3775
Total	**0.0796**	**0.8816**	**0.5867**	**1.1800e-003**	**0.1741**	**0.0377**	**0.2118**	**0.0693**	**0.0347**	**0.1040**	**0.0000**	**103.5403**	**103.5403**	**0.0335**	**0.0000**	**104.3775**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	9.0000e-004	0.0103	3.0000e-005	2.8300e-003	2.0000e-005	2.8600e-003	7.5000e-004	2.0000e-005	7.8000e-004	0.0000	2.5808	2.5808	8.0000e-005	0.0000	2.5828
Total	**1.2200e-003**	**9.0000e-004**	**0.0103**	**3.0000e-005**	**2.8300e-003**	**2.0000e-005**	**2.8600e-003**	**7.5000e-004**	**2.0000e-005**	**7.8000e-004**	**0.0000**	**2.5808**	**2.5808**	**8.0000e-005**	**0.0000**	**2.5828**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0807	0.0000	0.0807	0.0180	0.0000	0.0180	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1360	0.1017	2.2000e-004		5.7200e-003	5.7200e-003		5.2600e-003	5.2600e-003	0.0000	19.0871	19.0871	6.1700e-003	0.0000	19.2414
Total	**0.0127**	**0.1360**	**0.1017**	**2.2000e-004**	**0.0807**	**5.7200e-003**	**0.0865**	**0.0180**	**5.2600e-003**	**0.0233**	**0.0000**	**19.0871**	**19.0871**	**6.1700e-003**	**0.0000**	**19.2414**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4587	0.4587	1.0000e-005	0.0000	0.4590
Total	**2.1000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4587**	**0.4587**	**1.0000e-005**	**0.0000**	**0.4590**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0807	0.0000	0.0807	0.0180	0.0000	0.0180	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1360	0.1017	2.2000e-004		5.7200e-003	5.7200e-003		5.2600e-003	5.2600e-003	0.0000	19.0871	19.0871	6.1700e-003	0.0000	19.2414
Total	**0.0127**	**0.1360**	**0.1017**	**2.2000e-004**	**0.0807**	**5.7200e-003**	**0.0865**	**0.0180**	**5.2600e-003**	**0.0233**	**0.0000**	**19.0871**	**19.0871**	**6.1700e-003**	**0.0000**	**19.2414**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4587	0.4587	1.0000e-005	0.0000	0.4590
Total	**2.1000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4587**	**0.4587**	**1.0000e-005**	**0.0000**	**0.4590**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2158	1.9754	2.0700	3.4100e-003		0.1023	0.1023		0.0963	0.0963	0.0000	293.1324	293.1324	0.0702	0.0000	294.8881
Total	**0.2158**	**1.9754**	**2.0700**	**3.4100e-003**		**0.1023**	**0.1023**		**0.0963**	**0.0963**	**0.0000**	**293.1324**	**293.1324**	**0.0702**	**0.0000**	**294.8881**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0527	1.6961	0.4580	4.5500e-003	0.1140	3.1800e-003	0.1171	0.0329	3.0400e-003	0.0359	0.0000	441.9835	441.9835	0.0264	0.0000	442.6435
Worker	0.3051	0.2164	2.5233	7.3500e-003	0.7557	6.2300e-003	0.7619	0.2007	5.7400e-003	0.2065	0.0000	663.9936	663.9936	0.0187	0.0000	664.4604
Total	**0.3578**	**1.9125**	**2.9812**	**0.0119**	**0.8696**	**9.4100e-003**	**0.8790**	**0.2336**	**8.7800e-003**	**0.2424**	**0.0000**	**1,105.9771**	**1,105.9771**	**0.0451**	**0.0000**	**1,107.1039**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2158	1.9754	2.0700	3.4100e-003		0.1023	0.1023		0.0963	0.0963	0.0000	293.1321	293.1321	0.0702	0.0000	294.8877
Total	**0.2158**	**1.9754**	**2.0700**	**3.4100e-003**		**0.1023**	**0.1023**		**0.0963**	**0.0963**	**0.0000**	**293.1321**	**293.1321**	**0.0702**	**0.0000**	**294.8877**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0527	1.6961	0.4580	4.5500e-003	0.1140	3.1800e-003	0.1171	0.0329	3.0400e-003	0.0359	0.0000	441.9835	441.9835	0.0264	0.0000	442.6435
Worker	0.3051	0.2164	2.5233	7.3500e-003	0.7557	6.2300e-003	0.7619	0.2007	5.7400e-003	0.2065	0.0000	663.9936	663.9936	0.0187	0.0000	664.4604
Total	**0.3578**	**1.9125**	**2.9812**	**0.0119**	**0.8696**	**9.4100e-003**	**0.8790**	**0.2336**	**8.7800e-003**	**0.2424**	**0.0000**	**1,105.9771**	**1,105.9771**	**0.0451**	**0.0000**	**1,107.1039**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1942	1.7765	2.0061	3.3300e-003		0.0864	0.0864		0.0813	0.0813	0.0000	286.2789	286.2789	0.0681	0.0000	287.9814
Total	**0.1942**	**1.7765**	**2.0061**	**3.3300e-003**		**0.0864**	**0.0864**		**0.0813**	**0.0813**	**0.0000**	**286.2789**	**286.2789**	**0.0681**	**0.0000**	**287.9814**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0382	1.2511	0.4011	4.3000e-003	0.1113	1.4600e-003	0.1127	0.0321	1.4000e-003	0.0335	0.0000	417.9930	417.9930	0.0228	0.0000	418.5624
Worker	0.2795	0.1910	2.2635	6.9100e-003	0.7377	5.9100e-003	0.7436	0.1960	5.4500e-003	0.2014	0.0000	624.5363	624.5363	0.0164	0.0000	624.9466
Total	**0.3177**	**1.4420**	**2.6646**	**0.0112**	**0.8490**	**7.3700e-003**	**0.8564**	**0.2281**	**6.8500e-003**	**0.2349**	**0.0000**	**1,042.5294**	**1,042.5294**	**0.0392**	**0.0000**	**1,043.5090**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1942	1.7765	2.0061	3.3300e-003		0.0864	0.0864		0.0813	0.0813	0.0000	286.2785	286.2785	0.0681	0.0000	287.9811
Total	**0.1942**	**1.7765**	**2.0061**	**3.3300e-003**		**0.0864**	**0.0864**		**0.0813**	**0.0813**	**0.0000**	**286.2785**	**286.2785**	**0.0681**	**0.0000**	**287.9811**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0382	1.2511	0.4011	4.3000e-003	0.1113	1.4600e-003	0.1127	0.0321	1.4000e-003	0.0335	0.0000	417.9930	417.9930	0.0228	0.0000	418.5624
Worker	0.2795	0.1910	2.2635	6.9100e-003	0.7377	5.9100e-003	0.7436	0.1960	5.4500e-003	0.2014	0.0000	624.5363	624.5363	0.0164	0.0000	624.9466
Total	**0.3177**	**1.4420**	**2.6646**	**0.0112**	**0.8490**	**7.3700e-003**	**0.8564**	**0.2281**	**6.8500e-003**	**0.2349**	**0.0000**	**1,042.5294**	**1,042.5294**	**0.0392**	**0.0000**	**1,043.5090**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7100e-003	0.0663	0.0948	1.5000e-004		3.3200e-003	3.3200e-003		3.0500e-003	3.0500e-003	0.0000	13.0175	13.0175	4.2100e-003	0.0000	13.1227
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.7100e-003**	**0.0663**	**0.0948**	**1.5000e-004**		**3.3200e-003**	**3.3200e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**13.0175**	**13.0175**	**4.2100e-003**	**0.0000**	**13.1227**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.2300e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6156	0.6156	2.0000e-005	0.0000	0.6160
Total	**2.8000e-004**	**1.9000e-004**	**2.2300e-003**	**1.0000e-005**	**7.3000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6156**	**0.6156**	**2.0000e-005**	**0.0000**	**0.6160**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.7100e-003	0.0663	0.0948	1.5000e-004		3.3200e-003	3.3200e-003		3.0500e-003	3.0500e-003	0.0000	13.0175	13.0175	4.2100e-003	0.0000	13.1227
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.7100e-003**	**0.0663**	**0.0948**	**1.5000e-004**		**3.3200e-003**	**3.3200e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**13.0175**	**13.0175**	**4.2100e-003**	**0.0000**	**13.1227**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.2300e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6156	0.6156	2.0000e-005	0.0000	0.6160
Total	**2.8000e-004**	**1.9000e-004**	**2.2300e-003**	**1.0000e-005**	**7.3000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6156**	**0.6156**	**2.0000e-005**	**0.0000**	**0.6160**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0109	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.1048**	**0.1609**	**2.5000e-004**		**5.1500e-003**	**5.1500e-003**		**4.7400e-003**	**4.7400e-003**	**0.0000**	**22.0292**	**22.0292**	**7.1200e-003**	**0.0000**	**22.2073**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	2.9000e-004	3.5100e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0094	1.0094	3.0000e-005	0.0000	1.0100
Total	**4.4000e-004**	**2.9000e-004**	**3.5100e-003**	**1.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0094**	**1.0094**	**3.0000e-005**	**0.0000**	**1.0100**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0109	0.1048	0.1609	2.5000e-004		5.1500e-003	5.1500e-003		4.7400e-003	4.7400e-003	0.0000	22.0292	22.0292	7.1200e-003	0.0000	22.2073
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.1048**	**0.1609**	**2.5000e-004**		**5.1500e-003**	**5.1500e-003**		**4.7400e-003**	**4.7400e-003**	**0.0000**	**22.0292**	**22.0292**	**7.1200e-003**	**0.0000**	**22.2073**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	2.9000e-004	3.5100e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0094	1.0094	3.0000e-005	0.0000	1.0100
Total	**4.4000e-004**	**2.9000e-004**	**3.5100e-003**	**1.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0094**	**1.0094**	**3.0000e-005**	**0.0000**	**1.0100**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.1372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1600e-003	0.0213	0.0317	5.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	4.4682	4.4682	2.5000e-004	0.0000	4.4745
Total	**4.1404**	**0.0213**	**0.0317**	**5.0000e-005**		**1.0700e-003**	**1.0700e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**4.4682**	**4.4682**	**2.5000e-004**	**0.0000**	**4.4745**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	4.9300e-003	0.0596	1.9000e-004	0.0209	1.6000e-004	0.0211	5.5500e-003	1.5000e-004	5.7000e-003	0.0000	17.1287	17.1287	4.3000e-004	0.0000	17.1394
Total	**7.4800e-003**	**4.9300e-003**	**0.0596**	**1.9000e-004**	**0.0209**	**1.6000e-004**	**0.0211**	**5.5500e-003**	**1.5000e-004**	**5.7000e-003**	**0.0000**	**17.1287**	**17.1287**	**4.3000e-004**	**0.0000**	**17.1394**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.1372					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1600e-003	0.0213	0.0317	5.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	4.4682	4.4682	2.5000e-004	0.0000	4.4745
Total	**4.1404**	**0.0213**	**0.0317**	**5.0000e-005**		**1.0700e-003**	**1.0700e-003**		**1.0700e-003**	**1.0700e-003**	**0.0000**	**4.4682**	**4.4682**	**2.5000e-004**	**0.0000**	**4.4745**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	4.9300e-003	0.0596	1.9000e-004	0.0209	1.6000e-004	0.0211	5.5500e-003	1.5000e-004	5.7000e-003	0.0000	17.1287	17.1287	4.3000e-004	0.0000	17.1394
Total	**7.4800e-003**	**4.9300e-003**	**0.0596**	**1.9000e-004**	**0.0209**	**1.6000e-004**	**0.0211**	**5.5500e-003**	**1.5000e-004**	**5.7000e-003**	**0.0000**	**17.1287**	**17.1287**	**4.3000e-004**	**0.0000**	**17.1394**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162
Unmitigated	1.5857	7.9962	19.1834	0.0821	7.7979	0.0580	7.8559	2.0895	0.0539	2.1434	0.0000	7,620.4986	7,620.4986	0.3407	0.0000	7,629.0162

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	145.75	154.25	154.00	506,227	506,227
Apartments Mid Rise	4,026.75	3,773.25	4075.50	13,660,065	13,660,065
General Office Building	288.45	62.55	31.05	706,812	706,812
High Turnover (Sit Down Restaurant)	2,368.80	2,873.52	2817.72	3,413,937	3,413,937
Hotel	192.00	187.50	160.00	445,703	445,703
Quality Restaurant	501.12	511.92	461.20	707,488	707,488
Regional Shopping Center	528.08	601.44	357.84	1,112,221	1,112,221
Total	8,050.95	8,164.43	8,057.31	20,552,452	20,552,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Apartments Mid Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
General Office Building	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
High Turnover (Sit Down Restaurant)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Hotel	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Quality Restaurant	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Regional Shopping Center	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,512.6465	2,512.6465	0.1037	0.0215	2,521.6356
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,512.6465	2,512.6465	0.1037	0.0215	2,521.6356
NaturalGas Mitigated	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	1,383.4267	1,383.4267	0.0265	0.0254	1,391.6478
NaturalGas Unmitigated	0.1398	1.2312	0.7770	7.6200e-003		0.0966	0.0966		0.0966	0.0966	0.0000	1,383.4267	1,383.4267	0.0265	0.0254	1,391.6478

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	408494	2.2000e-003	0.0188	8.0100e-003	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7988	21.7988	4.2000e-004	4.0000e-004	21.9284
Apartments Mid Rise	1.30613e+007	0.0704	0.6018	0.2561	3.8400e-003		0.0487	0.0487		0.0487	0.0487	0.0000	696.9989	696.9989	0.0134	0.0128	701.1408
General Office Building	468450	2.5300e-003	0.0230	0.0193	1.4000e-004		1.7500e-003	1.7500e-003		1.7500e-003	1.7500e-003	0.0000	24.9983	24.9983	4.8000e-004	4.6000e-004	25.1468
High Turnover (Sit Down Restaurant)	8.30736e+006	0.0448	0.4072	0.3421	2.4400e-003		0.0310	0.0310		0.0310	0.0310	0.0000	443.3124	443.3124	8.5000e-003	8.1300e-003	445.9468
Hotel	1.74095e+006	9.3900e-003	0.0853	0.0717	5.1000e-004		6.4900e-003	6.4900e-003		6.4900e-003	6.4900e-003	0.0000	92.9036	92.9036	1.7800e-003	1.7000e-003	93.4557
Quality Restaurant	1.84608e+006	9.9500e-003	0.0905	0.0760	5.4000e-004		6.8800e-003	6.8800e-003		6.8800e-003	6.8800e-003	0.0000	98.5139	98.5139	1.8900e-003	1.8100e-003	99.0993
Regional Shopping Center	91840	5.0000e-004	4.5000e-003	3.7800e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9009	4.9009	9.0000e-005	9.0000e-005	4.9301
Total		**0.1398**	**1.2312**	**0.7770**	**7.6200e-003**		**0.0966**	**0.0966**		**0.0966**	**0.0966**	**0.0000**	**1,383.4268**	**1,383.4268**	**0.0265**	**0.0254**	**1,391.6478**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	408494	2.2000e-003	0.0188	8.0100e-003	1.2000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	21.7988	21.7988	4.2000e-004	4.0000e-004	21.9284
Apartments Mid Rise	1.30613e+007	0.0704	0.6018	0.2561	3.8400e-003		0.0487	0.0487		0.0487	0.0487	0.0000	696.9989	696.9989	0.0134	0.0128	701.1408
General Office Building	468450	2.5300e-003	0.0230	0.0193	1.4000e-004		1.7500e-003	1.7500e-003		1.7500e-003	1.7500e-003	0.0000	24.9983	24.9983	4.8000e-004	4.6000e-004	25.1468
High Turnover (Sit Down Restaurant)	8.30736e+006	0.0448	0.4072	0.3421	2.4400e-003		0.0310	0.0310		0.0310	0.0310	0.0000	443.3124	443.3124	8.5000e-003	8.1300e-003	445.9468
Hotel	1.74095e+006	9.3900e-003	0.0853	0.0717	5.1000e-004		6.4900e-003	6.4900e-003		6.4900e-003	6.4900e-003	0.0000	92.9036	92.9036	1.7800e-003	1.7000e-003	93.4557
Quality Restaurant	1.84608e+006	9.9500e-003	0.0905	0.0760	5.4000e-004		6.8800e-003	6.8800e-003		6.8800e-003	6.8800e-003	0.0000	98.5139	98.5139	1.8900e-003	1.8100e-003	99.0993
Regional Shopping Center	91840	5.0000e-004	4.5000e-003	3.7800e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9009	4.9009	9.0000e-005	9.0000e-005	4.9301
Total		**0.1398**	**1.2312**	**0.7770**	**7.6200e-003**		**0.0966**	**0.0966**		**0.0966**	**0.0966**	**0.0000**	**1,383.4268**	**1,383.4268**	**0.0265**	**0.0254**	**1,391.6478**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	106010	33.7770	1.3900e-003	2.9000e-004	33.8978
Apartments Mid Rise	3.94697e+006	1,257.5879	0.0519	0.0107	1,262.0869
General Office Building	584550	186.2502	7.6900e-003	1.5900e-003	186.9165
High Turnover (Sit Down Restaurant)	1.58904e+006	506.3022	0.0209	4.3200e-003	508.1135
Hotel	550308	175.3399	7.2400e-003	1.5000e-003	175.9672
Quality Restaurant	353120	112.5116	4.6500e-003	9.6000e-004	112.9141
Regional Shopping Center	756000	240.8778	9.9400e-003	2.0600e-003	241.7395
Total		**2,512.6465**	**0.1037**	**0.0215**	**2,521.6356**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	106010	33.7770	1.3900e-003	2.9000e-004	33.8978
Apartments Mid Rise	3.94697e+006	1,257.5879	0.0519	0.0107	1,262.0869
General Office Building	584550	186.2502	7.6900e-003	1.5900e-003	186.9165
High Turnover (Sit Down Restaurant)	1.58904e+006	506.3022	0.0209	4.3200e-003	508.1135
Hotel	550308	175.3399	7.2400e-003	1.5000e-003	175.9672
Quality Restaurant	353120	112.5116	4.6500e-003	9.6000e-004	112.9141
Regional Shopping Center	756000	240.8778	9.9400e-003	2.0600e-003	241.7395
Total		**2,512.6465**	**0.1037**	**0.0215**	**2,521.6356**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835
Unmitigated	5.1437	0.2950	10.3804	1.6700e-003		0.0714	0.0714		0.0714	0.0714	0.0000	220.9670	220.9670	0.0201	3.7400e-003	222.5835

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.3998					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0206	0.1763	0.0750	1.1200e-003		0.0143	0.0143		0.0143	0.0143	0.0000	204.1166	204.1166	3.9100e-003	3.7400e-003	205.3295
Landscaping	0.3096	0.1187	10.3054	5.4000e-004		0.0572	0.0572		0.0572	0.0572	0.0000	16.8504	16.8504	0.0161	0.0000	17.2540
Total	**5.1437**	**0.2950**	**10.3804**	**1.6600e-003**		**0.0714**	**0.0714**		**0.0714**	**0.0714**	**0.0000**	**220.9670**	**220.9670**	**0.0201**	**3.7400e-003**	**222.5835**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4137					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.3998					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0206	0.1763	0.0750	1.1200e-003		0.0143	0.0143		0.0143	0.0143	0.0000	204.1166	204.1166	3.9100e-003	3.7400e-003	205.3295
Landscaping	0.3096	0.1187	10.3054	5.4000e-004		0.0572	0.0572		0.0572	0.0572	0.0000	16.8504	16.8504	0.0161	0.0000	17.2540
Total	**5.1437**	**0.2950**	**10.3804**	**1.6600e-003**		**0.0714**	**0.0714**		**0.0714**	**0.0714**	**0.0000**	**220.9670**	**220.9670**	**0.0201**	**3.7400e-003**	**222.5835**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	585.8052	3.0183	0.0755	683.7567
Unmitigated	585.8052	3.0183	0.0755	683.7567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.62885 / 1.02688	10.9095	0.0535	1.3400e-003	12.6471
Apartments Mid Rise	63.5252 / 40.0485	425.4719	2.0867	0.0523	493.2363
General Office Building	7.99802 / 4.90201	53.0719	0.2627	6.5900e-003	61.6019
High Turnover (Sit Down Restaurant)	10.9272 / 0.697482	51.2702	0.3580	8.8200e-003	62.8482
Hotel	1.26834 / 0.140927	6.1633	0.0416	1.0300e-003	7.5079
Quality Restaurant	2.42827 / 0.154996	11.3934	0.0796	1.9600e-003	13.9663
Regional Shopping Center	4.14806 / 2.54236	27.5250	0.1363	3.4200e-003	31.9490
Total		**585.8052**	**3.0183**	**0.0755**	**683.7567**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	1.62885 / 1.02688	10.9095	0.0535	1.3400e-003	12.6471
Apartments Mid Rise	63.5252 / 40.0485	425.4719	2.0867	0.0523	493.2363
General Office Building	7.99802 / 4.90201	53.0719	0.2627	6.5900e-003	61.6019
High Turnover (Sit Down Restaurant)	10.9272 / 0.697482	51.2702	0.3580	8.8200e-003	62.8482
Hotel	1.26834 / 0.140927	6.1633	0.0416	1.0300e-003	7.5079
Quality Restaurant	2.42827 / 0.154996	11.3934	0.0796	1.9600e-003	13.9663
Regional Shopping Center	4.14806 / 2.54236	27.5250	0.1363	3.4200e-003	31.9490
Total		**585.8052**	**3.0183**	**0.0755**	**683.7567**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	207.8079	12.2811	0.0000	514.8354
Unmitigated	207.8079	12.2811	0.0000	514.8354

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	11.5	2.3344	0.1380	0.0000	5.7834
Apartments Mid Rise	448.5	91.0415	5.3804	0.0000	225.5513
General Office Building	41.85	8.4952	0.5021	0.0000	21.0464
High Turnover (Sit Down Restaurant)	428.4	86.9613	5.1393	0.0000	215.4430
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Quality Restaurant	7.3	1.4818	0.0876	0.0000	3.6712
Regional Shopping Center	58.8	11.9359	0.7054	0.0000	29.5706
Total		**207.8079**	**12.2811**	**0.0000**	**514.8354**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	11.5	2.3344	0.1380	0.0000	5.7834
Apartments Mid Rise	448.5	91.0415	5.3804	0.0000	225.5513
General Office Building	41.85	8.4952	0.5021	0.0000	21.0464
High Turnover (Sit Down Restaurant)	428.4	86.9613	5.1393	0.0000	215.4430
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Quality Restaurant	7.3	1.4818	0.0876	0.0000	3.6712
Regional Shopping Center	58.8	11.9359	0.7054	0.0000	29.5706
Total		**207.8079**	**12.2811**	**0.0000**	**514.8354**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Village South Specific Plan (Proposed)

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	45.00	1000sqft	1.03	45,000.00	0
High Turnover (Sit Down Restaurant)	36.00	1000sqft	0.83	36,000.00	0
Hotel	50.00	Room	1.67	72,600.00	0
Quality Restaurant	8.00	1000sqft	0.18	8,000.00	0
Apartments Low Rise	25.00	Dwelling Unit	1.56	25,000.00	72
Apartments Mid Rise	975.00	Dwelling Unit	25.66	975,000.00	2789
Regional Shopping Center	56.00	1000sqft	1.29	56,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Trips and VMT - Local hire provision

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	1.25	0.00
tblFireplaces	NumberWood	48.75	0.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblVehicleTrips	ST_TR	7.16	6.17
tblVehicleTrips	ST_TR	6.39	3.87
tblVehicleTrips	ST_TR	2.46	1.39
tblVehicleTrips	ST_TR	158.37	79.82

tblVehicleTrips	ST_TR	8.19	3.75
tblVehicleTrips	ST_TR	94.36	63.99
tblVehicleTrips	ST_TR	49.97	10.74
tblVehicleTrips	SU_TR	6.07	6.16
tblVehicleTrips	SU_TR	5.86	4.18
tblVehicleTrips	SU_TR	1.05	0.69
tblVehicleTrips	SU_TR	131.84	78.27
tblVehicleTrips	SU_TR	5.95	3.20
tblVehicleTrips	SU_TR	72.16	57.65
tblVehicleTrips	SU_TR	25.24	6.39
tblVehicleTrips	WD_TR	6.59	5.83
tblVehicleTrips	WD_TR	6.65	4.13
tblVehicleTrips	WD_TR	11.03	6.41
tblVehicleTrips	WD_TR	127.15	65.80
tblVehicleTrips	WD_TR	8.17	3.84
tblVehicleTrips	WD_TR	89.95	62.64
tblVehicleTrips	WD_TR	42.70	9.43
tblWoodstoves	NumberCatalytic	1.25	0.00
tblWoodstoves	NumberCatalytic	48.75	0.00
tblWoodstoves	NumberNoncatalytic	1.25	0.00
tblWoodstoves	NumberNoncatalytic	48.75	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2561	46.4415	31.4494	0.0636	18.2032	2.0456	20.2488	9.9670	1.8820	11.8490	0.0000	6,163.4166	6,163.4166	1.9475	0.0000	6,212.1039
2022	4.5441	38.8811	40.8776	0.1240	8.8255	1.6361	10.4616	3.6369	1.5052	5.1421	0.0000	12,493.4403	12,493.4403	1.9485	0.0000	12,518.5707
2023	4.1534	25.7658	38.7457	0.1206	7.0088	0.7592	7.7679	1.8799	0.7136	2.5935	0.0000	12,150.4890	12,150.4890	0.9589	0.0000	12,174.4615
2024	237.0219	9.5478	14.9642	0.0239	1.2171	0.4694	1.2875	0.3229	0.4319	0.4621	0.0000	2,313.1808	2,313.1808	0.7166	0.0000	2,331.0956
Maximum	**237.0219**	**46.4415**	**40.8776**	**0.1240**	**18.2032**	**2.0456**	**20.2488**	**9.9670**	**1.8820**	**11.8490**	**0.0000**	**12,493.4403**	**12,493.4403**	**1.9485**	**0.0000**	**12,518.5707**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2561	46.4415	31.4494	0.0636	18.2032	2.0456	20.2488	9.9670	1.8820	11.8490	0.0000	6,163.4166	6,163.4166	1.9475	0.0000	6,212.1039
2022	4.5441	38.8811	40.8776	0.1240	8.8255	1.6361	10.4616	3.6369	1.5052	5.1421	0.0000	12,493.4403	12,493.4403	1.9485	0.0000	12,518.5707
2023	4.1534	25.7658	38.7457	0.1206	7.0088	0.7592	7.7679	1.8799	0.7136	2.5935	0.0000	12,150.4890	12,150.4890	0.9589	0.0000	12,174.4615
2024	237.0219	9.5478	14.9642	0.0239	1.2171	0.4694	1.2875	0.3229	0.4319	0.4621	0.0000	2,313.1808	2,313.1808	0.7166	0.0000	2,331.0955
Maximum	**237.0219**	**46.4415**	**40.8776**	**0.1240**	**18.2032**	**2.0456**	**20.2488**	**9.9670**	**1.8820**	**11.8490**	**0.0000**	**12,493.4403**	**12,493.4403**	**1.9485**	**0.0000**	**12,518.5707**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208
Total	**41.1168**	**67.2262**	**207.5497**	**0.6278**	**45.9592**	**2.4626**	**48.4217**	**12.2950**	**2.4385**	**14.7336**	**0.0000**	**76,811.1816**	**76,811.1816**	**2.8282**	**0.4832**	**77,025.8786**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208
Total	**41.1168**	**67.2262**	**207.5497**	**0.6278**	**45.9592**	**2.4626**	**48.4217**	**12.2950**	**2.4385**	**14.7336**	**0.0000**	**76,811.1816**	**76,811.1816**	**2.8282**	**0.4832**	**77,025.8786**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Site Preparation	Site Preparation	10/13/2021	11/9/2021	5	20	
3	Grading	Grading	11/10/2021	1/11/2022	5	45	
4	Building Construction	Building Construction	1/12/2022	12/12/2023	5	500	
5	Paving	Paving	12/13/2023	1/30/2024	5	35	
6	Architectural Coating	Architectural Coating	1/31/2024	3/19/2024	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	458.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	801.00	143.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	160.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1273	4.0952	0.9602	0.0119	0.2669	0.0126	0.2795	0.0732	0.0120	0.0852		1,292.241 3	1,292.241 3	0.0877		1,294.433 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0487	0.0313	0.4282	1.1800e-003	0.1141	9.5000e-004	0.1151	0.0303	8.8000e-004	0.0311		117.2799	117.2799	3.5200e-003		117.3678
Total	**0.1760**	**4.1265**	**1.3884**	**0.0131**	**0.3810**	**0.0135**	**0.3946**	**0.1034**	**0.0129**	**0.1163**		**1,409.521 2**	**1,409.521 2**	**0.0912**		**1,411.801 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**	**0.0000**	**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1273	4.0952	0.9602	0.0119	0.2669	0.0126	0.2795	0.0732	0.0120	0.0852		1,292.2413	1,292.2413	0.0877		1,294.4337
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0487	0.0313	0.4282	1.1800e-003	0.1141	9.5000e-004	0.1151	0.0303	8.8000e-004	0.0311		117.2799	117.2799	3.5200e-003		117.3678
Total	**0.1760**	**4.1265**	**1.3884**	**0.0131**	**0.3810**	**0.0135**	**0.3946**	**0.1034**	**0.0129**	**0.1163**		**1,409.5212**	**1,409.5212**	**0.0912**		**1,411.8015**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0584	0.0375	0.5139	1.4100e-003	0.1369	1.1400e-003	0.1381	0.0363	1.0500e-003	0.0374		140.7359	140.7359	4.2200e-003		140.8414
Total	**0.0584**	**0.0375**	**0.5139**	**1.4100e-003**	**0.1369**	**1.1400e-003**	**0.1381**	**0.0363**	**1.0500e-003**	**0.0374**		**140.7359**	**140.7359**	**4.2200e-003**		**140.8414**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0584	0.0375	0.5139	1.4100e-003	0.1369	1.1400e-003	0.1381	0.0363	1.0500e-003	0.0374		140.7359	140.7359	4.2200e-003		140.8414
Total	**0.0584**	**0.0375**	**0.5139**	**1.4100e-003**	**0.1369**	**1.1400e-003**	**0.1381**	**0.0363**	**1.0500e-003**	**0.0374**		**140.7359**	**140.7359**	**4.2200e-003**		**140.8414**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0649	0.0417	0.5710	1.5700e-003	0.1521	1.2700e-003	0.1534	0.0404	1.1700e-003	0.0415		156.3732	156.3732	4.6900e-003		156.4904
Total	**0.0649**	**0.0417**	**0.5710**	**1.5700e-003**	**0.1521**	**1.2700e-003**	**0.1534**	**0.0404**	**1.1700e-003**	**0.0415**		**156.3732**	**156.3732**	**4.6900e-003**		**156.4904**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0649	0.0417	0.5710	1.5700e-003	0.1521	1.2700e-003	0.1534	0.0404	1.1700e-003	0.0415		156.3732	156.3732	4.6900e-003		156.4904
Total	**0.0649**	**0.0417**	**0.5710**	**1.5700e-003**	**0.1521**	**1.2700e-003**	**0.1534**	**0.0404**	**1.1700e-003**	**0.0415**		**156.3732**	**156.3732**	**4.6900e-003**		**156.4904**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0607	0.0376	0.5263	1.5100e-003	0.1521	1.2300e-003	0.1534	0.0404	1.1300e-003	0.0415		150.8754	150.8754	4.2400e-003		150.9813
Total	**0.0607**	**0.0376**	**0.5263**	**1.5100e-003**	**0.1521**	**1.2300e-003**	**0.1534**	**0.0404**	**1.1300e-003**	**0.0415**		**150.8754**	**150.8754**	**4.2400e-003**		**150.9813**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0607	0.0376	0.5263	1.5100e-003	0.1521	1.2300e-003	0.1534	0.0404	1.1300e-003	0.0415		150.8754	150.8754	4.2400e-003		150.9813
Total	**0.0607**	**0.0376**	**0.5263**	**1.5100e-003**	**0.1521**	**1.2300e-003**	**0.1534**	**0.0404**	**1.1300e-003**	**0.0415**		**150.8754**	**150.8754**	**4.2400e-003**		**150.9813**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4079	13.2032	3.4341	0.0364	0.9155	0.0248	0.9404	0.2636	0.0237	0.2873		3,896.548 2	3,896.548 2	0.2236		3,902.138 4
Worker	2.4299	1.5074	21.0801	0.0607	6.0932	0.0493	6.1425	1.6163	0.0454	1.6617		6,042.558 5	6,042.558 5	0.1697		6,046.800 0
Total	**2.8378**	**14.7106**	**24.5142**	**0.0971**	**7.0087**	**0.0741**	**7.0828**	**1.8799**	**0.0691**	**1.9490**		**9,939.106 7**	**9,939.106 7**	**0.3933**		**9,948.938 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4079	13.2032	3.4341	0.0364	0.9155	0.0248	0.9404	0.2636	0.0237	0.2873		3,896.548 2	3,896.548 2	0.2236		3,902.138 4
Worker	2.4299	1.5074	21.0801	0.0607	6.0932	0.0493	6.1425	1.6163	0.0454	1.6617		6,042.558 5	6,042.558 5	0.1697		6,046.800 0
Total	**2.8378**	**14.7106**	**24.5142**	**0.0971**	**7.0087**	**0.0741**	**7.0828**	**1.8799**	**0.0691**	**1.9490**		**9,939.106 7**	**9,939.106 7**	**0.3933**		**9,948.938 4**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3027	10.0181	3.1014	0.0352	0.9156	0.0116	0.9271	0.2636	0.0111	0.2747		3,773.876 2	3,773.876 2	0.1982		3,778.830 0
Worker	2.2780	1.3628	19.4002	0.0584	6.0932	0.0479	6.1411	1.6163	0.0441	1.6604		5,821.402 8	5,821.402 8	0.1529		5,825.225 4
Total	**2.5807**	**11.3809**	**22.5017**	**0.0936**	**7.0088**	**0.0595**	**7.0682**	**1.8799**	**0.0552**	**1.9350**		**9,595.279 0**	**9,595.279 0**	**0.3511**		**9,604.055 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3027	10.0181	3.1014	0.0352	0.9156	0.0116	0.9271	0.2636	0.0111	0.2747		3,773.876 2	3,773.876 2	0.1982		3,778.830 0
Worker	2.2780	1.3628	19.4002	0.0584	6.0932	0.0479	6.1411	1.6163	0.0441	1.6604		5,821.402 8	5,821.402 8	0.1529		5,825.225 4
Total	**2.5807**	**11.3809**	**22.5017**	**0.0936**	**7.0088**	**0.0595**	**7.0682**	**1.8799**	**0.0552**	**1.9350**		**9,595.279 0**	**9,595.279 0**	**0.3511**		**9,604.055 4**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.584 1	2,207.584 1	0.7140		2,225.433 6
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.584 1**	**2,207.584 1**	**0.7140**		**2,225.433 6**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0427	0.0255	0.3633	1.0900e-003	0.1141	9.0000e-004	0.1150	0.0303	8.3000e-004	0.0311		109.0150	109.0150	2.8600e-003		109.0866
Total	**0.0427**	**0.0255**	**0.3633**	**1.0900e-003**	**0.1141**	**9.0000e-004**	**0.1150**	**0.0303**	**8.3000e-004**	**0.0311**		**109.0150**	**109.0150**	**2.8600e-003**		**109.0866**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0427	0.0255	0.3633	1.0900e-003	0.1141	9.0000e-004	0.1150	0.0303	8.3000e-004	0.0311		109.0150	109.0150	2.8600e-003		109.0866
Total	**0.0427**	**0.0255**	**0.3633**	**1.0900e-003**	**0.1141**	**9.0000e-004**	**0.1150**	**0.0303**	**8.3000e-004**	**0.0311**		**109.0150**	**109.0150**	**2.8600e-003**		**109.0866**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.547 2**	**2,207.547 2**	**0.7140**		**2,225.396 3**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0403	0.0233	0.3384	1.0600e-003	0.1141	8.8000e-004	0.1150	0.0303	8.1000e-004	0.0311		105.6336	105.6336	2.6300e-003		105.6992
Total	**0.0403**	**0.0233**	**0.3384**	**1.0600e-003**	**0.1141**	**8.8000e-004**	**0.1150**	**0.0303**	**8.1000e-004**	**0.0311**		**105.6336**	**105.6336**	**2.6300e-003**		**105.6992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.547 2**	**2,207.547 2**	**0.7140**		**2,225.396 3**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0403	0.0233	0.3384	1.0600e-003	0.1141	8.8000e-004	0.1150	0.0303	8.1000e-004	0.0311		105.6336	105.6336	2.6300e-003		105.6992
Total	**0.0403**	**0.0233**	**0.3384**	**1.0600e-003**	**0.1141**	**8.8000e-004**	**0.1150**	**0.0303**	**8.1000e-004**	**0.0311**		**105.6336**	**105.6336**	**2.6300e-003**		**105.6992**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4296	0.2481	3.6098	0.0113	1.2171	9.4300e-003	1.2266	0.3229	8.6800e-003	0.3315		1,126.7583	1,126.7583	0.0280		1,127.4583
Total	**0.4296**	**0.2481**	**3.6098**	**0.0113**	**1.2171**	**9.4300e-003**	**1.2266**	**0.3229**	**8.6800e-003**	**0.3315**		**1,126.7583**	**1,126.7583**	**0.0280**		**1,127.4583**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4296	0.2481	3.6098	0.0113	1.2171	9.4300e-003	1.2266	0.3229	8.6800e-003	0.3315		1,126.758 3	1,126.758 3	0.0280		1,127.458 3
Total	**0.4296**	**0.2481**	**3.6098**	**0.0113**	**1.2171**	**9.4300e-003**	**1.2266**	**0.3229**	**8.6800e-003**	**0.3315**		**1,126.758 3**	**1,126.758 3**	**0.0280**		**1,127.458 3**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208
Unmitigated	9.8489	45.4304	114.8495	0.4917	45.9592	0.3360	46.2951	12.2950	0.3119	12.6070		50,306.6034	50,306.6034	2.1807		50,361.1208

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	145.75	154.25	154.00	506,227	506,227
Apartments Mid Rise	4,026.75	3,773.25	4075.50	13,660,065	13,660,065
General Office Building	288.45	62.55	31.05	706,812	706,812
High Turnover (Sit Down Restaurant)	2,368.80	2,873.52	2817.72	3,413,937	3,413,937
Hotel	192.00	187.50	160.00	445,703	445,703
Quality Restaurant	501.12	511.92	461.20	707,488	707,488
Regional Shopping Center	528.08	601.44	357.84	1,112,221	1,112,221
Total	8,050.95	8,164.43	8,057.31	20,552,452	20,552,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Apartments Mid Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
General Office Building	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
High Turnover (Sit Down Restaurant)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Hotel	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Quality Restaurant	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Regional Shopping Center	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
NaturalGas Unmitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1119.16	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35784.3	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1283.42	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22759.9	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4769.72	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5057.75	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	251.616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.11916	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35.7843	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1.28342	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22.7599	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4.76972	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5.05775	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	0.251616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Unmitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Village South Specific Plan (Proposed)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	45.00	1000sqft	1.03	45,000.00	0
High Turnover (Sit Down Restaurant)	36.00	1000sqft	0.83	36,000.00	0
Hotel	50.00	Room	1.67	72,600.00	0
Quality Restaurant	8.00	1000sqft	0.18	8,000.00	0
Apartments Low Rise	25.00	Dwelling Unit	1.56	25,000.00	72
Apartments Mid Rise	975.00	Dwelling Unit	25.66	975,000.00	2789
Regional Shopping Center	56.00	1000sqft	1.29	56,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2028
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Consistent with the DEIR's model.

Land Use - See SWAPE comment regarding residential and retail land uses.

Construction Phase - See SWAPE comment regarding individual construction phase lengths.

Demolition - Consistent with the DEIR's model. See SWAPE comment regarding demolition.

Vehicle Trips - Saturday trips consistent with the DEIR's model. See SWAPE comment regarding weekday and Sunday trips.

Woodstoves - Woodstoves and wood-burning fireplaces consistent with the DEIR's model. See SWAPE comment regarding gas fireplaces.

Energy Use -

Construction Off-road Equipment Mitigation - See SWAPE comment on construction-related mitigation.

Area Mitigation - See SWAPE comment regarding operational mitigation measures.

Water Mitigation - See SWAPE comment regarding operational mitigation measures.

Trips and VMT - Local hire provision

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	1.25	0.00
tblFireplaces	NumberWood	48.75	0.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblTripsAndVMT	WorkerTripLength	14.70	10.00
tblVehicleTrips	ST_TR	7.16	6.17
tblVehicleTrips	ST_TR	6.39	3.87
tblVehicleTrips	ST_TR	2.46	1.39
tblVehicleTrips	ST_TR	158.37	79.82

tblVehicleTrips	ST_TR	8.19	3.75
tblVehicleTrips	ST_TR	94.36	63.99
tblVehicleTrips	ST_TR	49.97	10.74
tblVehicleTrips	SU_TR	6.07	6.16
tblVehicleTrips	SU_TR	5.86	4.18
tblVehicleTrips	SU_TR	1.05	0.69
tblVehicleTrips	SU_TR	131.84	78.27
tblVehicleTrips	SU_TR	5.95	3.20
tblVehicleTrips	SU_TR	72.16	57.65
tblVehicleTrips	SU_TR	25.24	6.39
tblVehicleTrips	WD_TR	6.59	5.83
tblVehicleTrips	WD_TR	6.65	4.13
tblVehicleTrips	WD_TR	11.03	6.41
tblVehicleTrips	WD_TR	127.15	65.80
tblVehicleTrips	WD_TR	8.17	3.84
tblVehicleTrips	WD_TR	89.95	62.64
tblVehicleTrips	WD_TR	42.70	9.43
tblWoodstoves	NumberCatalytic	1.25	0.00
tblWoodstoves	NumberCatalytic	48.75	0.00
tblWoodstoves	NumberNoncatalytic	1.25	0.00
tblWoodstoves	NumberNoncatalytic	48.75	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2621	46.4460	31.4068	0.0635	18.2032	2.0456	20.2488	9.9670	1.8820	11.8490	0.0000	6,154.337 7	6,154.337 7	1.9472	0.0000	6,203.018 6
2022	4.7966	38.8851	39.6338	0.1195	8.8255	1.6361	10.4616	3.6369	1.5052	5.1421	0.0000	12,035.34 40	12,035.34 40	1.9482	0.0000	12,060.60 13
2023	4.3939	25.8648	37.5031	0.1162	7.0088	0.7598	7.7685	1.8799	0.7142	2.5940	0.0000	11,710.40 80	11,710.40 80	0.9617	0.0000	11,734.44 97
2024	237.0656	9.5503	14.9372	0.0238	1.2171	0.4694	1.2875	0.3229	0.4319	0.4621	0.0000	2,307.051 7	2,307.051 7	0.7164	0.0000	2,324.962 7
Maximum	**237.0656**	**46.4460**	**39.6338**	**0.1195**	**18.2032**	**2.0456**	**20.2488**	**9.9670**	**1.8820**	**11.8490**	**0.0000**	**12,035.34 40**	**12,035.34 40**	**1.9482**	**0.0000**	**12,060.60 13**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2621	46.4460	31.4068	0.0635	18.2032	2.0456	20.2488	9.9670	1.8820	11.8490	0.0000	6,154.3377	6,154.3377	1.9472	0.0000	6,203.0186
2022	4.7966	38.8851	39.6338	0.1195	8.8255	1.6361	10.4616	3.6369	1.5052	5.1421	0.0000	12,035.3440	12,035.3440	1.9482	0.0000	12,060.6013
2023	4.3939	25.8648	37.5031	0.1162	7.0088	0.7598	7.7685	1.8799	0.7142	2.5940	0.0000	11,710.4080	11,710.4080	0.9617	0.0000	11,734.4497
2024	237.0656	9.5503	14.9372	0.0238	1.2171	0.4694	1.2875	0.3229	0.4319	0.4621	0.0000	2,307.0517	2,307.0517	0.7164	0.0000	2,324.9627
Maximum	**237.0656**	**46.4460**	**39.6338**	**0.1195**	**18.2032**	**2.0456**	**20.2488**	**9.9670**	**1.8820**	**11.8490**	**0.0000**	**12,035.3440**	**12,035.3440**	**1.9482**	**0.0000**	**12,060.6013**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839
Total	**40.7912**	**67.7872**	**202.7424**	**0.6043**	**45.9592**	**2.4640**	**48.4231**	**12.2950**	**2.4399**	**14.7349**	**0.0000**	**74,422.3787**	**74,422.3787**	**2.8429**	**0.4832**	**74,637.4417**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Energy	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.9832	8,355.9832	0.1602	0.1532	8,405.6387
Mobile	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839
Total	**40.7912**	**67.7872**	**202.7424**	**0.6043**	**45.9592**	**2.4640**	**48.4231**	**12.2950**	**2.4399**	**14.7349**	**0.0000**	**74,422.3787**	**74,422.3787**	**2.8429**	**0.4832**	**74,637.4417**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Site Preparation	Site Preparation	10/13/2021	11/9/2021	5	20	
3	Grading	Grading	11/10/2021	1/11/2022	5	45	
4	Building Construction	Building Construction	1/12/2022	12/12/2023	5	500	
5	Paving	Paving	12/13/2023	1/30/2024	5	35	
6	Architectural Coating	Architectural Coating	1/31/2024	3/19/2024	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 2,025,000; Residential Outdoor: 675,000; Non-Residential Indoor: 326,400; Non-Residential Outdoor: 108,800; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Village South Specific Plan (Proposed) - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	458.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	801.00	143.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	160.00	0.00	0.00	10.00	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**		**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1304	4.1454	1.0182	0.0117	0.2669	0.0128	0.2797	0.0732	0.0122	0.0854		1,269.855 5	1,269.855 5	0.0908		1,272.125 2
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0532	0.0346	0.3963	1.1100e-003	0.1141	9.5000e-004	0.1151	0.0303	8.8000e-004	0.0311		110.4707	110.4707	3.3300e-003		110.5539
Total	**0.1835**	**4.1800**	**1.4144**	**0.0128**	**0.3810**	**0.0137**	**0.3948**	**0.1034**	**0.0131**	**0.1165**		**1,380.326 2**	**1,380.326 2**	**0.0941**		**1,382.679 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3074	0.0000	3.3074	0.5008	0.0000	0.5008			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.944 9	3,747.944 9	1.0549		3,774.317 4
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.3074**	**1.5513**	**4.8588**	**0.5008**	**1.4411**	**1.9419**	**0.0000**	**3,747.944 9**	**3,747.944 9**	**1.0549**		**3,774.317 4**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1304	4.1454	1.0182	0.0117	0.2669	0.0128	0.2797	0.0732	0.0122	0.0854		1,269.855 5	1,269.855 5	0.0908		1,272.125 2
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0532	0.0346	0.3963	1.1100e-003	0.1141	9.5000e-004	0.1151	0.0303	8.8000e-004	0.0311		110.4707	110.4707	3.3300e-003		110.5539
Total	**0.1835**	**4.1800**	**1.4144**	**0.0128**	**0.3810**	**0.0137**	**0.3948**	**0.1034**	**0.0131**	**0.1165**		**1,380.326 2**	**1,380.326 2**	**0.0941**		**1,382.679 1**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0638	0.0415	0.4755	1.3300e-003	0.1369	1.1400e-003	0.1381	0.0363	1.0500e-003	0.0374		132.5649	132.5649	3.9900e-003		132.6646
Total	**0.0638**	**0.0415**	**0.4755**	**1.3300e-003**	**0.1369**	**1.1400e-003**	**0.1381**	**0.0363**	**1.0500e-003**	**0.0374**		**132.5649**	**132.5649**	**3.9900e-003**		**132.6646**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0638	0.0415	0.4755	1.3300e-003	0.1369	1.1400e-003	0.1381	0.0363	1.0500e-003	0.0374		132.5649	132.5649	3.9900e-003		132.6646
Total	**0.0638**	**0.0415**	**0.4755**	**1.3300e-003**	**0.1369**	**1.1400e-003**	**0.1381**	**0.0363**	**1.0500e-003**	**0.0374**		**132.5649**	**132.5649**	**3.9900e-003**		**132.6646**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0709	0.0462	0.5284	1.4800e-003	0.1521	1.2700e-003	0.1534	0.0404	1.1700e-003	0.0415		147.2943	147.2943	4.4300e-003		147.4051
Total	**0.0709**	**0.0462**	**0.5284**	**1.4800e-003**	**0.1521**	**1.2700e-003**	**0.1534**	**0.0404**	**1.1700e-003**	**0.0415**		**147.2943**	**147.2943**	**4.4300e-003**		**147.4051**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0709	0.0462	0.5284	1.4800e-003	0.1521	1.2700e-003	0.1534	0.0404	1.1700e-003	0.0415		147.2943	147.2943	4.4300e-003		147.4051
Total	**0.0709**	**0.0462**	**0.5284**	**1.4800e-003**	**0.1521**	**1.2700e-003**	**0.1534**	**0.0404**	**1.1700e-003**	**0.0415**		**147.2943**	**147.2943**	**4.4300e-003**		**147.4051**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0416	0.4861	1.4300e-003	0.1521	1.2300e-003	0.1534	0.0404	1.1300e-003	0.0415		142.1207	142.1207	4.0000e-003		142.2207
Total	**0.0665**	**0.0416**	**0.4861**	**1.4300e-003**	**0.1521**	**1.2300e-003**	**0.1534**	**0.0404**	**1.1300e-003**	**0.0415**		**142.1207**	**142.1207**	**4.0000e-003**		**142.2207**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0665	0.0416	0.4861	1.4300e-003	0.1521	1.2300e-003	0.1534	0.0404	1.1300e-003	0.0415		142.1207	142.1207	4.0000e-003		142.2207
Total	**0.0665**	**0.0416**	**0.4861**	**1.4300e-003**	**0.1521**	**1.2300e-003**	**0.1534**	**0.0404**	**1.1300e-003**	**0.0415**		**142.1207**	**142.1207**	**4.0000e-003**		**142.2207**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4284	13.1673	3.8005	0.0354	0.9155	0.0256	0.9412	0.2636	0.0245	0.2881		3,789.075 0	3,789.075 0	0.2381		3,795.028 3
Worker	2.6620	1.6677	19.4699	0.0571	6.0932	0.0493	6.1425	1.6163	0.0454	1.6617		5,691.935 4	5,691.935 4	0.1602		5,695.940 8
Total	**3.0904**	**14.8350**	**23.2704**	**0.0926**	**7.0087**	**0.0749**	**7.0836**	**1.8799**	**0.0699**	**1.9498**		**9,481.010 4**	**9,481.010 4**	**0.3984**		**9,490.969 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4284	13.1673	3.8005	0.0354	0.9155	0.0256	0.9412	0.2636	0.0245	0.2881		3,789.075 0	3,789.075 0	0.2381		3,795.028 3
Worker	2.6620	1.6677	19.4699	0.0571	6.0932	0.0493	6.1425	1.6163	0.0454	1.6617		5,691.935 4	5,691.935 4	0.1602		5,695.940 8
Total	**3.0904**	**14.8350**	**23.2704**	**0.0926**	**7.0087**	**0.0749**	**7.0836**	**1.8799**	**0.0699**	**1.9498**		**9,481.010 4**	**9,481.010 4**	**0.3984**		**9,490.969 1**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.209 9	2,555.209 9	0.6079		2,570.406 1
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.209 9**	**2,555.209 9**	**0.6079**		**2,570.406 1**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3183	9.9726	3.3771	0.0343	0.9156	0.0122	0.9277	0.2636	0.0116	0.2752		3,671.4007	3,671.4007	0.2096		3,676.6417
Worker	2.5029	1.5073	17.8820	0.0550	6.0932	0.0479	6.1411	1.6163	0.0441	1.6604		5,483.7974	5,483.7974	0.1442		5,487.4020
Total	**2.8211**	**11.4799**	**21.2591**	**0.0893**	**7.0088**	**0.0601**	**7.0688**	**1.8799**	**0.0557**	**1.9356**		**9,155.1981**	**9,155.1981**	**0.3538**		**9,164.0437**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3183	9.9726	3.3771	0.0343	0.9156	0.0122	0.9277	0.2636	0.0116	0.2752		3,671.4007	3,671.4007	0.2096		3,676.6417
Worker	2.5029	1.5073	17.8820	0.0550	6.0932	0.0479	6.1411	1.6163	0.0441	1.6604		5,483.7974	5,483.7974	0.1442		5,487.4020
Total	**2.8211**	**11.4799**	**21.2591**	**0.0893**	**7.0088**	**0.0601**	**7.0688**	**1.8799**	**0.0557**	**1.9356**		**9,155.1981**	**9,155.1981**	**0.3538**		**9,164.0437**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0282	0.3349	1.0300e-003	0.1141	9.0000e-004	0.1150	0.0303	8.3000e-004	0.0311		102.6928	102.6928	2.7000e-003		102.7603
Total	**0.0469**	**0.0282**	**0.3349**	**1.0300e-003**	**0.1141**	**9.0000e-004**	**0.1150**	**0.0303**	**8.3000e-004**	**0.0311**		**102.6928**	**102.6928**	**2.7000e-003**		**102.7603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0327**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0282	0.3349	1.0300e-003	0.1141	9.0000e-004	0.1150	0.0303	8.3000e-004	0.0311		102.6928	102.6928	2.7000e-003		102.7603
Total	**0.0469**	**0.0282**	**0.3349**	**1.0300e-003**	**0.1141**	**9.0000e-004**	**0.1150**	**0.0303**	**8.3000e-004**	**0.0311**		**102.6928**	**102.6928**	**2.7000e-003**		**102.7603**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310		2,207.5472	2,207.5472	0.7140		2,225.3963
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**		**2,207.5472**	**2,207.5472**	**0.7140**		**2,225.3963**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0444	0.0257	0.3114	1.0000e-003	0.1141	8.8000e-004	0.1150	0.0303	8.1000e-004	0.0311		99.5045	99.5045	2.4700e-003		99.5663
Total	**0.0444**	**0.0257**	**0.3114**	**1.0000e-003**	**0.1141**	**8.8000e-004**	**0.1150**	**0.0303**	**8.1000e-004**	**0.0311**		**99.5045**	**99.5045**	**2.4700e-003**		**99.5663**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9882	9.5246	14.6258	0.0228		0.4685	0.4685		0.4310	0.4310	0.0000	2,207.547 2	2,207.547 2	0.7140		2,225.396 3
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9882**	**9.5246**	**14.6258**	**0.0228**		**0.4685**	**0.4685**		**0.4310**	**0.4310**	**0.0000**	**2,207.547 2**	**2,207.547 2**	**0.7140**		**2,225.396 3**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0444	0.0257	0.3114	1.0000e-003	0.1141	8.8000e-004	0.1150	0.0303	8.1000e-004	0.0311		99.5045	99.5045	2.4700e-003		99.5663
Total	**0.0444**	**0.0257**	**0.3114**	**1.0000e-003**	**0.1141**	**8.8000e-004**	**0.1150**	**0.0303**	**8.1000e-004**	**0.0311**		**99.5045**	**99.5045**	**2.4700e-003**		**99.5663**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4734	0.2743	3.3220	0.0107	1.2171	9.4300e-003	1.2266	0.3229	8.6800e-003	0.3315		1,061.3818	1,061.3818	0.0264		1,062.0410
Total	**0.4734**	**0.2743**	**3.3220**	**0.0107**	**1.2171**	**9.4300e-003**	**1.2266**	**0.3229**	**8.6800e-003**	**0.3315**		**1,061.3818**	**1,061.3818**	**0.0264**		**1,062.0410**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	236.4115					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**236.5923**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4734	0.2743	3.3220	0.0107	1.2171	9.4300e-003	1.2266	0.3229	8.6800e-003	0.3315		1,061.3818	1,061.3818	0.0264		1,062.0410
Total	**0.4734**	**0.2743**	**3.3220**	**0.0107**	**1.2171**	**9.4300e-003**	**1.2266**	**0.3229**	**8.6800e-003**	**0.3315**		**1,061.3818**	**1,061.3818**	**0.0264**		**1,062.0410**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839
Unmitigated	9.5233	45.9914	110.0422	0.4681	45.9592	0.3373	46.2965	12.2950	0.3132	12.6083		47,917.8005	47,917.8005	2.1953		47,972.6839

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	145.75	154.25	154.00	506,227	506,227
Apartments Mid Rise	4,026.75	3,773.25	4075.50	13,660,065	13,660,065
General Office Building	288.45	62.55	31.05	706,812	706,812
High Turnover (Sit Down Restaurant)	2,368.80	2,873.52	2817.72	3,413,937	3,413,937
Hotel	192.00	187.50	160.00	445,703	445,703
Quality Restaurant	501.12	511.92	461.20	707,488	707,488
Regional Shopping Center	528.08	601.44	357.84	1,112,221	1,112,221
Total	8,050.95	8,164.43	8,057.31	20,552,452	20,552,452

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Apartments Mid Rise	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
General Office Building	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
High Turnover (Sit Down Restaurant)	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Hotel	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Quality Restaurant	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821
Regional Shopping Center	0.543088	0.044216	0.209971	0.116369	0.014033	0.006332	0.021166	0.033577	0.002613	0.001817	0.005285	0.000712	0.000821

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.983 2	8,355.983 2	0.1602	0.1532	8,405.638 7
NaturalGas Unmitigated	0.7660	6.7462	4.2573	0.0418		0.5292	0.5292		0.5292	0.5292		8,355.983 2	8,355.983 2	0.1602	0.1532	8,405.638 7

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1119.16	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35784.3	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1283.42	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22759.9	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4769.72	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5057.75	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	251.616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	1.11916	0.0121	0.1031	0.0439	6.6000e-004		8.3400e-003	8.3400e-003		8.3400e-003	8.3400e-003		131.6662	131.6662	2.5200e-003	2.4100e-003	132.4486
Apartments Mid Rise	35.7843	0.3859	3.2978	1.4033	0.0211		0.2666	0.2666		0.2666	0.2666		4,209.9164	4,209.9164	0.0807	0.0772	4,234.9339
General Office Building	1.28342	0.0138	0.1258	0.1057	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9911	150.9911	2.8900e-003	2.7700e-003	151.8884
High Turnover (Sit Down Restaurant)	22.7599	0.2455	2.2314	1.8743	0.0134		0.1696	0.1696		0.1696	0.1696		2,677.6342	2,677.6342	0.0513	0.0491	2,693.5460
Hotel	4.76972	0.0514	0.4676	0.3928	2.8100e-003		0.0355	0.0355		0.0355	0.0355		561.1436	561.1436	0.0108	0.0103	564.4782
Quality Restaurant	5.05775	0.0545	0.4959	0.4165	2.9800e-003		0.0377	0.0377		0.0377	0.0377		595.0298	595.0298	0.0114	0.0109	598.5658
Regional Shopping Center	0.251616	2.7100e-003	0.0247	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.6019	29.6019	5.7000e-004	5.4000e-004	29.7778
Total		**0.7660**	**6.7463**	**4.2573**	**0.0418**		**0.5292**	**0.5292**		**0.5292**	**0.5292**		**8,355.9832**	**8,355.9832**	**0.1602**	**0.1532**	**8,405.6387**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192
Unmitigated	30.5020	15.0496	88.4430	0.0944		1.5974	1.5974		1.5974	1.5974	0.0000	18,148.5950	18,148.5950	0.4874	0.3300	18,259.1192

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.2670					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	24.1085					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.6500	14.1000	6.0000	0.0900		1.1400	1.1400		1.1400	1.1400	0.0000	18,000.0000	18,000.0000	0.3450	0.3300	18,106.9650
Landscaping	2.4766	0.9496	82.4430	4.3600e-003		0.4574	0.4574		0.4574	0.4574		148.5950	148.5950	0.1424		152.1542
Total	**30.5020**	**15.0496**	**88.4430**	**0.0944**		**1.5974**	**1.5974**		**1.5974**	**1.5974**	**0.0000**	**18,148.5950**	**18,148.5950**	**0.4874**	**0.3300**	**18,259.1192**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment C

Local Hire Provision Net Change	
Without Local Hire Provision	
Total Construction GHG Emissions (MT CO2e)	3,623
Amortized (MT CO2e/year)	120.77
With Local Hire Provision	
Total Construction GHG Emissions (MT CO2e)	3,024
Amortized (MT CO2e/year)	100.80
% Decrease in Construction-related GHG Emissions	***17%***

EXHIBIT B

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Attn: Paul Rosenfeld, Ph.D.
Mobil: (310) 795-2335
Office: (310) 452-5555
Fax: (310) 452-5550
Email: prosenfeld@swape.com

Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment & Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from unconventional oil drilling operations, oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, and many other industrial and agricultural sources. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at dozens of sites and has testified as an expert witness on more than ten cases involving exposure to air contaminants from industrial sources.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health.* 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P**., (2015) Modeling the Effect of Refinery Emission On Residential Property Value. Journal of Real Estate Research. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.,** Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermod and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries.* Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution,* 123 (17), 319-327.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

Rosenfeld, P. E., M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities.* Boston Massachusetts: Elsevier Publishing

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

Rosenfeld P. E., J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004.* New Orleans, October 2-6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49(9), 171-178.

Rosenfeld, P. E., Grey, M. A., Sellew, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office*, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008.

Rosenfeld, P.E., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

Rosenfeld, P.E., and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality.* 29, 1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

Rosenfeld, P.E., and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

Rosenfeld, P.E., and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld. (**1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

Rosenfeld, P. E. (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

Rosenfeld, P. E. (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

Rosenfeld, P. E. (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

Rosenfeld, P. E. (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society.* Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution.* Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water.* Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The *23rd Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting.* Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition.* Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference.* Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference.* Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference.* Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference.* Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants*.. Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conferenc*e. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation.* Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest.* Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell.* Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest.* Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University.
Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

Deposition and/or Trial Testimony:

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs,* vs. United States Metals Refining Company et. al. *Defendant.*
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs,* vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS "Conti Perdido" *Defendant.*
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case: No 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 8-23-2017

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs,* vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Jerry Dovico, et al., Plaintiffs vs. Valley View Sine LLC, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Iowa District Court For Wapello County
Doug Pauls, et al.,, et al., Plaintiffs vs. Richard Warren, et al., Defendants
Law No,: LALA105144 - Division A
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action N0. 14-C-30000
Rosenfeld Deposition, June 2015

In The Third Judicial District County of Dona Ana, New Mexico
Betty Gonzalez, et al. Plaintiffs vs. Del Oro Dairy, Del Oro Real Estate LLC, Jerry Settles and Deward DeRuyter, Defendants
Rosenfeld Deposition: July 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the United States District Court Western District of Oklahoma
Tommy McCarty, et al., Plaintiffs, v. Oklahoma City Landfill, LLC d/b/a Southeast Oklahoma City Landfill, et al. Defendants.
Case No. 5:12-cv-01152-C
Rosenfeld Deposition: July 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant.*
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs,* vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court of Southern District of Texas Galveston Division
Kyle Cannon, Eugene Donovan, Genaro Ramirez, Carol Sassler, and Harvey Walton, each Individually and on behalf of those similarly situated, *Plaintiffs,* vs. BP Products North America, Inc., *Defendant.*
Case 3:10-cv-00622
Rosenfeld Deposition: February 2012
Rosenfeld Trial: April 2013

In the Circuit Court of Baltimore County Maryland
Philip E. Cvach, II et al., *Plaintiffs* vs. Two Farms, Inc. d/b/a Royal Farms, Defendants
Case Number: 03-C-12-012487 OT
Rosenfeld Deposition: September 2013

EXHIBIT C

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

1640 5th St.., Suite 204 Santa
Santa Monica, California 90401
Tel: (949) 887-9013
Email: mhagemann@swape.com

Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

Geologic and Hydrogeologic Characterization
Industrial Stormwater Compliance
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
CEQA Review

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist
Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989– 1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt's responsibilities have included:

- Lead analyst and testifying expert in the review of over 100 environmental impact reports since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, Valley Fever, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Manager of a project to provide technical assistance to a community adjacent to a former Naval shipyard under a grant from the U.S. EPA.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt's duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.

- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt taught physical geology (lecture and lab and introductory geology at Golden West College in Huntington Beach, California from 2010 to 2014.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal repesentatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.

From: Joseph Ingraffia <jingraffia@morrobayca.gov>
Sent: Saturday, June 25, 2022 10:19 AM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Subject: Vistra informational meeting

Hi Cindy,

I see that there will be an informational meeting about the Vista battery storage proposal on Wednesday, 6/29 and that questions are being collected. I have a question that's related to fire prevention and suppression technology. I'd like to know, in the event of a fire at the facility, what would be the plan in our sometimes-windy city to prevent particulate substances including lithium ash from spreading to other parts of the city and what might be the consequences of this kind of exposure? Thanks for your help.

Joe Ingraffia

From: betty winholtz <winholtz@sbcglobal.net>
Sent: Sunday, July 03, 2022 1:29 AM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Subject: nop scoping comments for bess

Dear Ms. Jacinth:

These NOP scoping comments reference the General Plan's FEIR. They are in addition to my July 29, 2022 verbal scoping comments.

First, however, in the NOP under Project Location, there is a confusing statement that needs clarification, "locally accessible from Main Street, Beach Street, and Embarcadero" (page 2). The way it reads it sounds like the site is accessible from each of 3 individual streets, rather than from the succession of the 3 streets in order.

Regarding tiering with the General Plan's FEIR--

1. The FEIR actually seems to contradict building the BESS, though the BESS seems aligned with DTSC and PG&E restrictions: "Therefore, consistent with General Plan and LCP Update Land Use Element Policy LU-3.5 to “Promote infill development on vacant or underutilized properties in the city as the preferred strategy for most new development in Morro Bay,” development and redevelopment under the General Plan and LCP Update would primarily occur on the Morro Bay Power Plant and City wastewater treatment plant sites. (4.11-9) And, under the Public Services and Recreation section, "However, as shown in Section 2, Project Description, the planned Morro Bay Power Plant/WWTP redevelopment areas would designate additional land as Open Space/Recreational land use, allowing for potential future development of City owned and operated open space and parkland (refer to Figure 2-4). (4.12-13)

2. Alternative 2 in the FEIR lists all the environmental changes--Aesthetics, Biological, Cultural, Geological, Hazards, Hydrology, Land Use, Noise, Recreation, Tribal--this site would undergo for this development. It

concludes, "Based on the information presented herein, Alternative 2 would be the environmentally superior alternative when considering overall environmental impacts relative to the performance metrics." (7-10 to 7-18)

Regarding the Battery Storage component--

1. How will the project comply with this statement from the Hazards section in the FEIR: "The SWRCB maintains a separate list of sites with hazardous materials that may contaminate groundwater supplies. Cases for three facilities are still open: the Morro Bay Power Plant, where cleanup actions have finished and monitoring activities are ongoing to ensure the cleanup was successful." (4.7-3)

2. In the FEIR's Emergency Response Plans statement, the power plant site is not listed as an emergency. "In addition, the City of Morro Bay has a Comprehensive Emergency Response Plan revised in 2019 and developed by the Morro Bay Fire Department. The Emergency Response Plan covers policies and concepts for responding to any and all emergencies that could affect the health, safety, and property of the public within city limits, including earthquakes, hazardous materials, multi-casualty events, storms and floods, wildland fires, terrorism, nuclear power plant events, and tsunamis (City of Morro Bay 2019)." (4.7-4) Will this Plan be revised with the associated cost to do so?

Regarding the Stacks Removal component--

1. Should the City Council have given Vistra "permission" to demolish the 3 stacks before an EIR is complete?

2. The smokestacks are considered a Visual Resource in the General Plan's FEIR under Aesthetics: "It is possible that some of the existing power plant buildings would be reused, including the three prominent smokestacks that serve as a visually dominant feature of this area, under the General Plan and LCP Update....redevelopment of these sites in the North Embarcadero neighborhood could affect views of scenic resources such as Morro Rock and the Morro Bay Power Plant smokestacks. (4.1-11)

3. The FEIR continues, "Impact AES-2 C OMPLIANCE WITH EXISTING STANDARDS AND G ENERAL PLAN AND LCP UPDATE GOALS AND POLICIES WOULD ENSURE THAT REDEVELOPMENT OR NEW DEVELOPMENT COMPLEMENTS THE EXISTING VISUAL CHARACTER AND QUALITY OF MORRO BAY. In other words, the Mitigation Measure assume the stacks will stay as an "existing visual character and quality giving the General Plan "a less than significant impact on visual character and quality." (4.1-13)

Regarding the Land Use designation change component--

In the NOP under Existing Site characteristics, Current Land Use Designation and Zoning is this quote, "land use designation of Visitor Serving Commercial with a Mixed-Use Residential Overlay. The Project Site is currently zoned M-2/PD/I with a Planned Development overlay and Interim Use overlay designation under the City’s current Zoning Code." (page 2) The Zoning Ordinance is in the process of being changed to match the newly adopted General Plan. If this project goes through, will the General Plan have to be changed rather than the Zoning Ordinance so the two documents are synchronized?

Sincerely,
Betty Winholtz

From: Nicole Dorfman <nicole@briandorfman.com>
Sent: Sunday, July 03, 2022 11:44 AM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Subject: Public Comment on BESS EIR

Dear Ms. Jacinth
I am writing to express my deep opposition to the Battery Energy Storage System being proposed for the Morro Bay waterfront. This project is ill-suited for that location which is on the beach and in a prime visitor serving location.

Similar battery storage plants have had significant problems, such as fires spontaneously combusting. What would be the impact on Morro Bay residents should such a happening occur here? What sorts of toxic materials would be released into the air and ocean? While I understand that Morro Bay has little authority to deny this project, I urge our elected leaders to apply the brakes and slow down the process and consider these and other questions.

Batteries are not environmentally friendly. They are toxic to create and to dispose of. A lot of "green washing" has gone into marketing this project to the public. Has the City developed a list of pros and cons of the project?

Thank you for your consideration of this important matter,
Nicole Dorfman

From: Terry Simons <terryatwork@sbcglobal.net>
Sent: Sunday, July 03, 2022 12:17 PM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Cc: Scott Collins <scollins@morrobayca.gov>; Jeff Heller <Jeffheller3@gmail.com>
Subject: NOP Scoping Comments for the BESS project

CAUTION: This is an external email. Please take care when clicking links or opening attachments.

Ms.Jacinth:

Please include my comments below in the Administrative Record for the proposed Vistra BESS project EIR review by the City.

Public Safety-
The Lithium Battery technology proposed with the BESS does not have a particularly positive record as to public safety. The risk of overheating of the components and resultant fire has proven to be a fundamental problem in the other projects developed to date that use this form of electric energy storage. Will our local Fire responders (MB and SLOCO joint assistance forces) be able to deal with this potential extreme risk to the nearby public? At what cost to local agencies for additional specialty equipment and training? Will there be a considered review of the heat/fire management and containment systems to be employed in the proposed BESS? Who will be in charge of insuring adequate public safety provisions in the design and construction of the proposed facilities and operational system contained therein.

Overall Economic Benefit-
Much has been said lately regarding the needed “Community Benefits” of development projects to be proposed in this area. Will the EIR address specific economic benefits to the **citizens** of Morro Bay in the context of the associated risks as noted in Public Safety above? The statements that the City of Morro Bay will receive increased tax revenue from the project when put in context with other revenue generators recently approved seems like a fundamentally bad deal for the community. Specifically, the recently approved and ongoing operations of our two Cannabis retail shops would appear to each generate local tax revenue ($480K/yr) roughly equal to this massive $900M BESS project that will only return $490K in taxes/year. Our Cannabis facilities have a negligible impact to our community environment when compared to the BESS. Clearly the predominant economic benefit of the BESS is going out of our community. How will this be analyzed in the EIR?

Compliance with LCP and General Zoning Plan-

There seem to be fundamental conflicts between the project and the Local Coastal Plan and Zoning Plan (yet to be approved). These are technical as to designated Land Use and philosophical as to overall visual and environment objectives (like ESHA preservation). Hopefully the EIR will address how the resolution of these conflicts with public planning documents will be managed. For 70 years the community has been impacted by the original PG&E power plant. And when PG&E left the community, they left a lot of unresolved environmental damage. Will the EIR provide sufficient analysis to make sure that the BESS when retired does not leave us a similar environmental legacy.

Thank you for the opportunity to comment and I look forward to further information coming from the EIR to enhance our understanding of the proposed Vistra BESS.

Yours,
Terry Simons
805-440-1219

From: Jeffrey Heller <jheller@morrobayca.gov>
Sent: Sunday, July 03, 2022 11:50 AM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Cc: Scot Graham <sgraham@morrobayca.gov>
Subject: BESS NOP Draft EIR Review Comments

Cindy
Please see attached WORD document expressing my concerns re: the environmental impacts of the proposed BESS project in Morro Bay.

Thank you
Jeff Heller

7/3/22

BESS Draft EIR NOP Review Comments

AESTHETIC/VISUAL

Most views from residents and businesses of Morro Bay face the ocean and the "rock" to the west. A 40 ft. high industrial building covering 22 acres, with several 100 ft. towers with high voltage wiring will be a permanent visual blight, adding to the unsightly PG&E substation. The Moss Landing project and most other large scale BESS' projects are in purely industrial areas which are not close to residential and city centers. The planned BESS project at Morro Bay is in the heart of the tourist district and the beautiful surrounding spaces which make the City so special. The existing power plant and stacks are iconic structures with great appeal. The BESS project will have none.

If the project goes forward, perhaps the best way to mitigate this visual blight is to plant mature Monterey Cypress trees around the entire perimeter of the project site.

ARCHEOLOGICAL/HISTORICAL

Will there be archeological/paleontological resources in the area of the proposed BESS project?

PUBLIC SAFETY

Geologic/Seismic:

Site is subject to *"moderate potential liquefaction",* Plan MB, Fig. PS-3.

Flood Plain/Flooding/Tsunami:

Site is in a *"100 yr flood zone",* Plan MB, Fig. PS-5
Site is in a *"Tsunami inundation zone",* Plan MB, Fig. PS-6

Sea Level Rise:

Plan Morro Bay suggests SLR of 2 ft over the next 20 years. How will the BESS plant be protected?

Fire Hazard/Toxic/Hazardous Materials:

Lithium ion batteries *subject to fire, explosions, and release of toxic chemicals*. There are over 300 lithium-ion BESS' world-wide; the have been 50 fires over the past 4 years. The failures at the MOSS Landing BESS suggest this technology is not sufficiently safe, particularly for a location adjacent to the heavy tourist populations of Morro Bay.

TRAFFIC CIRCULATION

Inadequate streets:

Existing surrounding streets inadequate for construction and/or emergency vehicle access and/or tourism traffic. Critical "waterfront route" and "North Morro Bay Route" are undersized for proposed development, Plan MB, Fig. CIR-1A.

Evaluation and improvements/upgrades of vehicular connections across Morro Creek to Main St. & SR1/Main St. interchange, as well as Embarcadero Rd. from Beach Street to the Rock Parking lot need to be made part of the BESS Project. Plan MB, Fig. CIR-1B.

LINKs:
Energy Article Overview
Ventura Battery Project
220612-Excellent Article Moss Landing and others
PowerMag article--adding scale to Moss Landing
Neil Farrel Article
Great Neil Farrell Article on EIR

-----Original Message-----
From: The Spielmans <thespielmans@comcast.net>
Sent: Sunday, July 03, 2022 1:54 PM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Subject: Morro Bay Bess Project

CAUTION: This is an external email. Please take care when clicking links or opening attachments.

Dear Cynthia,

While doing some research on the proposed BESS project on the old Morro Bay Power Plant site, there appears to be a similar project that was built by Vistra 1-2 years ago at the Moss Landing Power Plant site. Unfortunately, on 2 separate occasions several batteries melted and started fires that required assistance from local fire agencies. Is it known whether Vistra or its representatives have addressed this overheating issue?

Steve Spielman

Sent from my iPad

-----Original Message-----
From: Metzger Tina <tinametzger755@gmail.com>
Sent: Sunday, July 03, 2022 8:24 PM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Cc: Metzger Tina <tinametzger755@gmail.com>
Subject: Comments - BESS Project

CAUTION: This is an external email. Please take care when clicking links or opening attachments.

Hi Cindy,
Please see attached letter concerning my Comments regarding the MB BESS Project EIR.

Thank you,

Tina Metzger

From: **Metzger Tina** tinametzger755@gmail.com
Subject: Comments - Battery Energy Storage System Project
Date: July 3, 2022 at 8:15 PM
To: cjacinth@morrobayca.gov
Cc: Metzger Tina tinametzger755@gmail.com

MT

Dear Ms. Jacinth,

I have reviewed the Notice of Preparation (NOP) of a Project Environmental Impact Report (EIR) for the proposed project of the Morro Bay Battery Energy Storage System Project (BESS). Thank you for this opportunity to submit my comments concerning the scope and content of the environmental information to be included in the Project EIR.

My Comments:

1.) The Project NOP does not address the plan for the old Power Plant Water Intake Building on the bay across the street from the Power Plant. **What are the plans for the Water Intake Building?**

2.) According to the NOP, following the construction of the BESS, Vistra would remediate and demolish the existing power plant building and stacks. According to the NOP, these activities would be expected to commence within six months of completion of the BESS. **Why not demolish the existing power plant building and stacks <u>first</u>, then complete the construction of the BESS?** This would allow for more construction lay-down area, and other benefits, such as local Morro Bay citizens' trust that demolition of stacks and power plant will actually happen.

3.) Explain the NOP's proposed "public access improvements through and/or along the Project Site's Embarcadero street frontage."

4.) Concerning Traffic/Circulation, describe in detail the Project's **off-site haul routes**, including number of diesel trucks per day, during old power plant demolition; and construction, and operation of BESS.

5.) Describe in detail in the EIR the "site specific fire prevention plan," including the identification of major fire hazards, storage procedures for flammable and hazardous material, potential ignition sources and site-specific fire protection equipment and procedures to address fire hazards.

6.) Address in detail the proposed Project's water needs in Project construction, old power plant/stacks demolition, BESS operation, and emergency fire suppression.

7.) Describe the proposed Projects's noise levels during stacks/power plant demolition; Project construction, and daily operation of the Project.

8.) Describe the Project's night lighting in detail; and day time reflection of sunlight off the large mass of Project buildings.

9.) Viewshed Analysis/Visual Resources – provide Key Observation Points (KOPs) of the Project from the following locations: Morro Strand Beach Campground Entrance (Beachcomber Drive and Whidbey Street); Harbor/Bayfront area; Old Town Morro Bay; Morro Dunes Trailer Park and Resort Campground; Morro Rock parking lot; Harbor entrance; Morro Strand State Park Atascadero Road Parking Area; Coleman Drive; North T Pier; top of Black Mountain; west side of Highway 1 at San Jacinto Street Crossing; The Cloisters Tract Public Park; Highway 41 at Ironwood Avenue; Morro Del Mar Subdivision at Casitas Street; Harbor Front Tract (near Radcliff Street on Berwick Drive); Sunset Plateau (vacant lot at end of Sunset Court); Morro Heights Neighborhood (Piney Way at Olive Street); Public Dock at Tidelands Park; steps above Giant Chessboard at Centennial Park; Morro Creek at Embarcadero Road.

10.) Toxic/Hazardous – a complete description of any and all toxic and hazardous materials on site concerning the proposed Project.

Again, thank you for this opportunity to submit my comments concerning the scope and content of the environmental information to be included in the Morro Bay BESS Project EIR.

Sincerely,

Tina Metzger
Morro Bay Resident

From: betty winholtz <winholtz@sbcglobal.net>
Sent: Sunday, July 03, 2022 11:12 PM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Subject: last scoping comment on bess

CAUTION: This is an external email. Please take care when clicking links or opening attachments.

Ms. Jacinth:

Please consider this--poisonous fumes--another change in the environment regarding the operation of the BESS.

https://santansun.com/2022/05/12/chandler-fire-learns-much-from-lithium-battery-fire/

Sincerely,
Betty Winholtz

RECEIVED
RECEIVED

JUL 05 2022

City of Morro Bay
Community Development Dept.

JULY 3, 2022

MORRO BAY SENIOR PLANNER, CINDY JACINTH

CITY OF MORRO BAY, COMMUNITY DEVELOPMENT DEPARTMENT

955 SHASTA AVE., MORRO BAY, CA 93442

DEAR MS. JACINTH:

A LARGE GROUP OF US MORRO BAY CITIZENS VEHEMENTLY OBJECT TO ANYONE ERECTIING OR INSTALLING THE WORLD'S LARGEST BATTERY ENERGY STORAGE FACILITY ANYWHERE HERE IN OR NEAR OUR BEAUTIFUL CITY OF MORRO BAY, CALIFORNIA!

WE CAN'T BELIEVE OUR "CITY FATHERS" OR ANY MEMBER OF THE CITY COUNCIL WOULD EVEN CONSIDER ALLOWING SUCH A THING IN OR NEAR OUR CITY OR ON OUR BEAUTIFUL SHORELINE AT THAT!

AND WHERE IS THE COASTAL COMMISSION? WHY AREN'T THEY OBJECTING TO THIS OUTRAGEOUS IDEA WHICH DEFYS ANY AND ALL PARTS OF THE COASTAL ACT?? IS THE COASTAL COMMISSION GOING TO SIT BACK AND ALLOW THIS, TOO?

THIS BATTERY FACILITY IS A DANGEROUS PROPOSITION FOR OUR CITY. WHAT IF THE BATTERIES INEVITABLY EXPLODE AND CATCH FIRE? IS THE TOWN PREPARED?

WHAT ABOUT THE ENVIRONMENT? WHAT ABOUT CLEAN AIR IF IT BLOWS UP? WHAT ABOUT THE SEA LIFE AND THE BIRDS? MORRO BAY IS SUPPOSED TO BE A BIRD SANCTUARY. DON'T YOU CARE ABOUT THAT? YOU WOULD DESTROY EVERYTHING!

THE LAND SHOULD BE USED TO BUILD A BEAUTIFUL RESORT WITH SWIMMING POOL AND RECREATION AREA WHICH WOULD BRING TOURISTS TO OUR COMMUNITY.

MALIBU WOULD NOT ALLOW SUCH A TERRIBLE, UNSIGHTLY, DANGEROUS PROJECT TO RUIN THEIR BEAUTIFUL CITY. NEITHER WOULD SAN DIEGO, CARMEL, SANTA BARBARA OR ANY OTHER CITY WITH ANY INTELLIGENT CITY COUNCIL MEMBERS IN CHARGE.

PUT THIS AWFUL IDEA WAY OUT IN THE MIDDLE OF THE DESERT - NOT HERE. IT'S UNBELIEVABLE OUR CITY COUNCIL AND THE COASTAL COMMISSION WOULD EVEN CONSIDER SUCH A THING. IT SHOULD HAVE BEEN SHOT DOWN LONG AGO RIGHT FROM THE START! DON'T RAILROAD THIS THROUGH LIKE YOU USUALLY DO!

WE WILL NOT GIVE UP. LEGAL ACTION MAY BE NECESSARY.

THIS OBJECTION IS TIMELY SUBMITTED ON JULY 3, 2022 PER THE JULY 3, 2022 DEADLINE PRINTED IN THE VOLUME #4, ISSUE #12 ESTERO BAY NEWS.

From: Kenneth Green <Kenneth.Green@csulb.edu>
Sent: Friday, July 08, 2022 4:05 PM
To: Cindy Jacinth <cjacinth@morrobayca.gov>
Cc: Kenneth Green <Kenneth.Green@csulb.edu>
Subject: BESS EIR

CAUTION: This is an external email. Please take care when clicking links or opening attachments.

Hi Cindy,

I just read the article on the BESS in the Estero Bay News published June 30, 2022. I see that public comments were to be submitted by July 3, 2022. I am late but hope my basic input can be taken into account.

I favor the BESS. It is a forward-looking asset to the grid as well as to the finances of Morro Bay and SLO County

As a forward-looking assert, two factors stand out. One is that electricity from such green sources as sun and wind is notoriously variable. BESS helps level the supply. The other is that BESS can eventually hook input from the offshore wind farm with existing connections to the grid.

As a financial asset, estimated property taxes to the County and City are $4.9M and $490,000, respectively. Additional income can be expected from employees and their spending in the community, to say nothing of connections with the wind farm. Thus, property-tax income is assured and additional income is highly likely.

Thank you for your attention to this email.

Best regards,
Ken Green
Morro Bay

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 8, 2022

Cindy Jacinth, Senior Planner
City of Morro Bay
Community Development Department
955 Shasta Avenue
Morro Bay, California 93442
(805) 772-6261

Subject: 600-Megawatt Morro Bay Battery Energy Storage System Morro Bay Power Company Project (Project)
Notice of Preparation (NOP)
State Clearinghouse No: 2022060083

Dear Ms. Jacinth:

The California Department of Fish and Wildlife (CDFW) received a NOP for a draft Environmental Impact Report from the City of Morro Bay for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code. While the comment period may have ended, CDFW would appreciate if you will still consider our comments.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

(a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

In this role, CDFW is responsible for providing, as available, biological expertise during public agency environmental review efforts (e.g., CEQA), focusing specifically on Project activities that have the potential to adversely affect fish and wildlife resources. CDFW provides recommendations to identify potential impacts and possible measures to avoid or reduce those impacts.

PROJECT DESCRIPTION SUMMARY

Proponent: Morro Bay Power Company LLC

Objective: The proposed Project includes three components: (1) construction and operation of a 600-megawatt (MW) Battery Energy Storage System (BESS) on approximately 24 acres of the Project Site (BESS Site), (2) demolition and removal of the existing Power Plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial.

The BESS would provide power to utility customers by interconnecting to the existing PG&E switchyard located east of the Project parcel and Project site. The BESS would operate year-round to store and discharge electricity to support demand on the power grid and improve grid reliability. The proposed BESS includes three enclosed buildings with fire protection systems to house the batteries. Each building would be approximately 350 feet by 260 feet, for a total building area of 91,000 square feet (sf). The buildings would be two stories and 30 feet in height. Additional equipment installed on the roof of the buildings may extend up to an additional 2-6 feet in height; this equipment would be screened from views using either mesh or slatted screens. Each building would require approximately 1,000 to 1,500 pilings to a cement depth of 75 feet. Each building would contain approximately 2,400 battery racks and be surrounded by approximately 60 Power Conversion Systems (PCSs) composed of inverters and transformers to convert the direct current to alternating current. The PCSs would be located on concrete pads outside the buildings. The BESS would also include three substations with transformers, a transmission line (Gen-tie) connecting to the existing dead-end structures on the southwestern side of the existing PG&E switchyard (the final structures before the connection with the substation), water supply system improvements, and internal access roads.

The Morro Bay Power Plant was operational on the Project parcel since the 1950s but has been idle since its retirement in 2014. The Project parcel currently contains the idled power plant building and smokestacks (stacks), Lila Keiser Park, and facilities operated by Pacific Wildlife Care and Marine Mammal Center.

Location: The approximately 95-acre Morro Bay Power Plant property (Project parcel) (Assessor's Parcel Number [APN] 066-331-046) is located at 1290 Embarcadero, south of State Route 1 (SR 1)/Cabrillo Highway and north of Embarcadero in the City of Morro Bay.

The Project parcel is surrounded by Pacific Gas and Electric (PG&E) property (switchyards) and State Route 1 (SR-1) to the northeast; the Embarcadero, commercial uses and a marina to the southwest; Morro Creek, which is approximately 340-feet to the north of the Project site and flows into the ocean, a recreational vehicle (RV) park on the opposite side of Morro Creek, and temporary lodging facilities (hotel and motel) to the north; and Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west. Per Google aerial photography and street view images, the area between the proposed Project site and Morro Creek contains numerous large trees that appear to be mainly Monterey Cypress (*Cupressus macrocarpa*).

Timeframe: Construction of the BESS is anticipated to take 36 to 48 months. Construction would generally occur in three phases, which would overlap.

- Phase 1: Site Preparation, would extend for a duration of 12-18 months;
- Phase 2: Installation, would extend for a duration of 18-36 months; and

▪ Phase 3: Commissioning (Start-up and Testing), would extend for a duration of 12-18 months.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the City of Morro Bay in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document for this Project.

Special-Status Species: Based on aerial imagery, and species occurrence records from the California Natural Diversity Database (CNDDB, 2022), the proposed Project site and/or surrounding area is known to and/or has the potential to support several special-status species, and these resources may need to be evaluated and addressed prior to any approvals that would allow ground-disturbing activities. CDFW is concerned regarding potential impacts to special-status species including, but not limited to, the Federally threatened steelhead-south-central California coast DPS (*Oncorhynchus mykiss irideus* pop. 9), which have been observed in Morro Creek, and western snowy plover (*Charadrius nivosus nivosus*), which were observed approximately 0.38-mile northwest on the beach, the Federal candidate and State species of special concern (SSC) monarch-California overwintering population (*Danaus plexippus* pop.1), and the SSC pallid bat (*Antrozous pallidus*).

CDFW requests that the final environmental document fully identify potential impacts to biological resources, including the above-mentioned species. In order to adequately assess any potential impacts to biological resources, focused biological surveys should be conducted by a qualified wildlife biologist/botanist during the appropriate survey period(s) in order to determine whether any special-status species and/or suitable habitat features may be present within the Project area. Properly conducted biological surveys, and the information assembled from them, are essential to identify any mitigation, minimization, and avoidance measures and/or the need for additional or protocol-level surveys, and to identify any Project-related impacts under CESA and other species of concern.

Therefore, CDFW recommends the subsequent final document address potential impacts to these species and provide measurable mitigation measures that, as needed, will reduce impacts to less than significant levels. Information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols).

Federally Listed Species: CDFW also recommends consulting with the USFWS on potential impacts to Federally listed species, specifically, but not limited to, the Federally threatened steelhead-south-central California coast DPS, and western snowy plover, and the Federal candidate and State SSC monarch-California overwintering population. Take under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any ground disturbing activities.

Waters of the State and U.S.: Pursuant to Fish and Game Code section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native species. It is possible that without mitigation measures this Project could result in pollution of Waters of the State from storm water runoff or construction-related erosion. Potential impacts to the wildlife resources that utilize watercourses in the Project area include the following: increased sediment input from road or structure runoff; construction-related activity runoff associated with Project-related activities and implementation; and/or impairment of wildlife movement through the area. The Regional Water Quality Control Board and United States Army Corps of Engineers (USACE) also have jurisdiction regarding discharge and pollution to Waters of the State.

Lake and Streambed: The Project is subject to CDFW's regulatory authority pursuant Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake; or (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent, as well as those that are perennial in nature.

For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593. It is important to note, CDFW is required to comply with CEQA, as a Responsible Agency, when issuing a Lake or Streambed Alteration Agreement. If inadequate, or no environmental review, has occurred, for the Project activities that are subject to notification under Fish and Game Code 1602, CDFW will not be able to issue the Final LSAA Lake and Streambed Alteration Agreement until CEQA analysis for the project is complete. This may lead to considerable Project delays.

Nesting birds: Project information states that six Monterey cypress trees will be removed. Although additional Project information states that the trees will be replaced, CDFW encourages that Project implementation occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the breeding season (February through mid-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above.

To evaluate Project-related impacts on nesting birds, CDFW recommends that a qualified wildlife biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project sites to identify nests and determine their status. A sufficient area means any area potentially affected by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. Prior to initiation of construction activities, CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the construction areas would be concealed from a nest site by topography. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

Cumulative Impacts: CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the project, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the project, even if those impacts are relatively small (i.e. less than significant). Cumulative impacts should be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and should be focused specifically on the resource, not the project. An appropriate resource study area should be identified and utilized for this analysis. CDFW staff is available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

If it is determined that the Project has the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CDFW appreciates the opportunity to comment on the Project to assist the City of Morro Bay in identifying and mitigating the Project's impacts on biological resources.

More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). If you have any questions, please contact Kelley Nelson, Environmental Scientist, at the address provided on this letterhead, or by electronic mail at Kelley.Nelson@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...

Julie A. Vance
Regional Manager

LITERATURE CITED

California Department of Fish and Wildlife (CDFW). 2022. Biogeographic Information and Observation System (BIOS). https://www.wildlife.ca.gov/Data/BIOS. Accessed June 29, 2022.

Appendix B

Air Quality Technical Report

Prepared by
Ramboll US Consulting, Inc
San Francisco, California

Project Number
1690027676

Date
July 2023

AIR QUALITY TECHNICAL REPORT

MORRO BAY BATTERY ENERGY STORAGE SYSTEM PROJECT

MORRO BAY, CALIFORNIA

CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

2001 CAP	2001 Clean Air Plan
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Air Dispersion Model
AERMET	AERMOD's Meteorological Preprocessor
APCD	Air Pollution Control District
AQI	Air Quality Index
ARB	California Air Resources Board
ASF	Age-sensitivity Factor
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAMP	Construction Area Management Plan
CAP	Criteria Air Pollutant
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CPF	Cancer Potency Factor
DPM	Diesel Particulate Matter
EDFZ	Electricity demand forecast zone
EIR	Environmental Impact Report
EMFAC	EMission FACtor model
GHG	Greenhouse Gas
HI	Hazard Index
HRA	Health Risk Assessment
I-SIP	California Infrastructure State Implementation Plan
KSBP	San Luis County Regional Airport meteorological station
lb(s)	pound(s)
MEIR	Maximally Exposed Individual Receptor
mph	miles per hour

NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSR	New Source Review
OEHHA	California Office of Environmental Health Hazard Assessment
PG&E	Pacific Gas and Electric
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter Less than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Particulate Matter Less than 10 Micrometers in Aerodynamic Diameter
ppb	Parts Per Billion
ppm	Parts Per Million
ROG	Reactive Organic Gases
SLO	San Luis Obispo
SFDPH	San Francisco Department of Public Health
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
tpy	tons per year
$\mu g/m^3$	Micrograms Per Cubic Meter
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

1. INTRODUCTION

Morro Bay Power Company LLC ("Vistra"), is proposing to develop a 600-megawatt (MW) battery energy storage system (BESS) (referred to hereafter as "Project") in the City of Morro Bay ("City"), California. The project includes three components: (1) construction and operation of a 600-MW Battery Energy Storage System, (2) demolition and removal of the existing Morro Bay Power Plant building and stacks, and (3) adoption of a Master Plan. The BESS Facility would be constructed on a 24-acre portion of the Project Site and would consist of three two-story buildings with a total building area of 91,000 sq ft. Supporting infrastructure, including power conversion systems, substations, and tie-ins to the existing Pacific Gas and Electric substation adjacent to the project site, would also be included. The project also includes demolition of the existing Morro Bay Power Plant building and stacks and backfill and restoration of the site. A Master Plan would be developed in accordance with the requirements of Plan Morro Bay Policy LU-5.4 to change the land use designation of the 24-acre BESS portion of the Project Site from Visitor Serving Commercial to General (Light) Industrial.

This technical report discusses the existing air quality conditions in the Proposed Project area, presents the regulatory framework for air quality management, and analyzes the potential for the Proposed Project to affect existing air quality conditions, both regionally and locally, from activities that emit criteria and non-criteria air pollutants (CAPs). The technical report analyzes short-term CAP emissions that would be generated from the Project's construction activities and long-term CAP emissions from Project operation. The analysis determines whether the Project emissions are significant in relation to applicable air quality criteria and identifies feasible mitigation measures for significant adverse impacts, if required. This report also includes an analysis of cumulative air quality impacts. The Project's emissions of greenhouse gases (GHGs) and potential impacts on climate change and the City's and state's goals for GHG emissions are discussed in the GHG Technical Report. The Project's energy usage characteristics are discussed in the Energy Technical Report.

The analysis is based on a review of existing conditions in the Project's region and air quality regulations administered by the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the San Luis Obispo County Air Pollutant Control District (SLO County APCD). This analysis includes methodologies identified in SLO County APCD's 2012 California Environmental Quality Act (CEQA) Air Quality Guidelines[1] and its 2017 Clarification Memo.[2] Calculations were prepared to quantitatively assess the air quality contributions of the Project (see Appendix Tables); this information forms the basis of much of the assessment of air quality impacts presented here.

The air quality impact methodologies and approaches to the analysis (described under "Approach to Analysis") assume that the Project is built out in a single phase from 2023 to 2028. The Project construction would consist of two components: 1) construction between 2023 and 2026 and subsequent operation of the BESS on approximately 24 acres of the 107-

---

1 SLO County APCD, CEQA Air Quality Handbook, 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

2 SLO County APCD, CEQA Air Quality Clarification Memo, 2017, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/FINAL_Clarification%20Memorandum%202017%28UpdatedTable1-1_July2021%29.pdf, accessed November 2022.

acre project site, and 2) demolition and removal of the existing Power Plant building and stack beginning in 2026 with completion in 2028. Operational impacts are analyzed assuming full occupancy immediately after the end of BESS construction in 2026. Further details on the air quality impact methodologies and approaches to the analyses are presented below.

2. ENVIRONMENTAL SETTING

2.1 Climate and Meteorology

The City of Morro Bay is located within the South Central Coast Air Basin ("air basin"), which includes all of San Luis Obispo, Santa Barbara, and Ventura counties. SLO County APCD is the local agency with jurisdictional authority in SLO County. The regional climate can be generally characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. This effect is diminished inland in proportion to distance from the ocean or by major intervening terrain features, such as the coastal mountain ranges. As a result, inland areas are characterized by a considerably wider range of temperature conditions. Maximum summer temperatures average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90's. Minimum winter temperatures average from the low 30's along the coast to the low 20's inland.

Regional meteorology is largely dominated by a persistent high-pressure area that commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause seasonal changes in the weather patterns of the area. The Pacific High remains generally fixed several hundred miles offshore from May through September, enhancing onshore winds and opposing offshore winds. From November through April the Pacific High tends to migrate southward, allowing northern storms to move across the county. About 90 percent of the total annual rainfall is received during this period. Prevailing winds are onshore winds from the west and north.

Two types of temperature inversions (warmer air on top of cooler air) are created in the area: subsidence and radiational. The subsidence inversion is a regional effect created by the Pacific High in which air is heated as it is compressed and is further enhanced by the presence of relatively cold ocean waters which cool the air below the inversion. This type of inversion generally forms at about 1,000 to 2,000 feet and can occur throughout the year, but it is most evident during the summer months. Radiational, or surface, inversions are formed by the more rapid cooling of air near the ground at night, especially during winter. This type of inversion is typically lower and is generally accompanied by stable air. Both types of inversions limit the dispersal of air pollutants within the regional airshed, with the more stable the air (low wind speeds, uniform temperatures), the lower the amount of pollutant dispersion.

2.2 Ambient Air Quality – Criteria Air Pollutants

As required by the 1970 Federal Clean Air Act, the USEPA initially identified six CAPs that are pervasive in urban environments and for which state and federal health-based ambient air quality standards have been established. The USEPA calls these pollutants "criteria air pollutants," because it has regulated them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six CAPs originally identified by the USEPA. Since adoption of the 1970 act, subsets of PM have been identified for which permissible levels have been established. These include PM of 10 microns in diameter or less (PM_{10}) and PM of 2.5 microns in diameter or less ($PM_{2.5}$).

SLO County APCD is the regional agency with jurisdiction for regulating air quality within SLO County. The region's air quality monitoring network provides information on ambient concentrations of CAPs at various monitoring sites. **Table 1**[3] presents the most recent highest annual CAP concentrations at the Morro Bay site, and other available sites if the Morro Bay site data are not available. **Table 1** also compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (state or federal). These concentrations are health-based standards established with an adequate margin of safety. To determine attainment with air quality standards, exceedances are assessed on a region-wide basis (and in some cases over a 3-year period). Concentrations shown in boldface type indicate only a localized exceedance of the standard. Since SLO County has never exceeded State CO standards since 1975 and because of the consistently low lead concentration in the region, ambient CO and lead concentrations are not monitored.

TABLE 1: SUMMARY OF PROJECT AREA AIR QUALITY MONITORING DATA

Pollutant [A]	Most Stringent Applicable Standard [B]	Concentrations Measured (2020) [C]
Ozone		
Maximum 1-Hour Concentration (ppb)	90	72
Maximum 8-Hour Concentration (ppb)	70	58
Suspended Particulates (PM_{10})		
Maximum 24-Hour Concentration (µg/m^3)	50	**131**
Annual Average (µg/m^3)	20	15.8
Suspended Particulates ($PM_{2.5}$)		
Maximum 24-Hour Concentration (µg/m^3)	35	**113.7**
Annual Average (µg/m^3)	12	7.92
Nitrogen Dioxide (NO_2)		
Maximum 1-Hour Concentration (ppb)	100	33

Notes: ppb = parts per billion; µg/m^3 = micrograms per cubic meter
[A] SLO County does not conduct monitoring for CO and lead, so the concentrations of these two criteria air pollutants are not available
[B] The Most Stringent Applicable Standard is either Federal or California Standard, based on the San Luis Obispo Attainment Status Table available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/AttainmentStatus29January2019.pdf
[C] Concentration measured are from the Morro Bay monitoring site, or other sites in SLO County if the Morro Bay site data are not available

Source: SLO County APCD, 2020 Annual Air Quality Report

Table 2[4] presents the California and Federal Ambient Air Quality Standards for different CAPs and their respective attainment statuses for SLO County. An attainment status shown

[3] SLO County APCD, Annual Air Quality Report, 2020, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/%28E-2%29.pdf, accessed November 2022.

[4] SLO County, Attainment Status, 2019, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/AttainmentStatus29January2019.pdf, accessed November 2022.

in boldface type with an "N" indicates that SLO County has a non-attainment status for the given pollutant.

TABLE 2: STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR SLO COUNTY

Pollutant	Averaging Time	State (CAAQS [A])		Federal (NAAQS [B])	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	1-hour	0.09 ppm	**N**	NA	See Note D
	8-hour	0.070 ppm	**N**	0.070 ppm [C]	
Carbon Monoxide (CO)	1-hour	20 ppm	A	35 ppm	U
	8-hour	9.0 ppm	A	9 ppm	U
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	A	0.100 ppm [E]	U
	Annual	0.030 ppm	A	0.053 ppm	U
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	0.075 ppm [F]	U
	24-hour	0.04 ppm	A	0.14 ppm	U
	3-hour	NA	A	0.5 ppm	U
Particulate Matter (PM_{10})	24-hour	50 µg/m^3	**N**	150 µg/m^3	U
	Annual	20 µg/m^3	**N**	NA	A
Fine Particulate Matter ($PM_{2.5}$)	24-hour	NA	A	35 µg/m^3	U
	Annual	12 µg/m^3	A	12.0 µg/m^3	A
Sulfates	24-hour	25 µg/m^3	A	NA	U
Lead	30-day	1.5 µg/m^3	A	NA	NA
	Cal. Quarter	NA	NA	1.5 µg/m^3	NA
	Rolling 3-month	NA	NA	0.15 µg/m^3	NA
Hydrogen Sulfide	1-hour	0.03 ppm	A	NA	NA

Notes: A = Attainment; CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; **N** = Non-attainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[A] CAAQS for ozone, CO (except 8-hour Lake Tahoe), SO_2 (1-hour and 24-hour), NO_2, PM, and visibility reducing particles are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

[B] NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentration is 0.070 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile is less than the standard.

[C] This federal 8-hour ozone standard was approved by USEPA in October 2015 and became effective on December 28, 2015.

[D] Non-attainment Eastern SLO County/ Attainment Western SLO County.

[E] To attain the 1-hour NO_2 NAAQS, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations must not exceed 100 parts per billion.

[F] To attain the 1-hour SO_2 NAAQS, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations must not exceed 75 parts per billion.

Source: SLO County Attainment Status, 2019

2.2.1 Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds [VOCs] by some regulatory agencies) and oxides of nitrogen (NO_x) in the presence of sunlight. The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. If project-generated concentrations of ROG and/or NO_x exceed the applicable thresholds of significance, concentrations of ground level ozone resulting from these pollutants could potentially result in significant adverse human health impacts.

2.2.2 Carbon Monoxide

CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Concentration of carbon monoxide is a direct function of vehicle idling time and, thus, traffic flow conditions. Transport of CO emissions is extremely limited; it disperses rapidly from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthy levels, affecting local sensitive receptors (residents, school children, hospital patients, the elderly, etc.). Emissions thresholds established for CO apply to direct or stationary sources.

Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.

2.2.3 Particulate Matter

PM is a class of air pollutants that consists of a complex mix of solid and liquid airborne particles from human-made and natural sources. Particulate matter is measured in two size ranges: PM_{10} and $PM_{2.5}$. According to CARB, studies in the United States and elsewhere "have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks," and studies of children's health in California have demonstrated that particle pollution "may significantly reduce lung function growth in children."[5] CARB also reports that statewide attainment of PM standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.[6] While particulate matter has many natural sources like wildfire, human derived sources such as vehicle exhaust, road dust, mineral quarries, grading, demolition, agricultural tilling, and burning are major contributors to exceedances in SLO County. Inter-regional transport of particles from the San Joaquin Valley also contributed to PM exceedances. [7]

---

[5] ARB, Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution, November 2007, p. 1.

[6] Ibid.

[7] SLO County APCD, 2020 Annual Air Quality Report, 2020, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/%28E-2%29.pdf, accessed November 2022.

2.2.4 Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of the air on high-pollution days, especially in conjunction with high ozone levels. In 2010, the USEPA implemented a new 1-hour NO_2 standard (0.10 ppm), which is presented in **Table 2**.

2.2.5 Sulfur Dioxide

SO_2 is a colorless, acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease.[8] Monitoring data show that SLO County currently meets the state standard for SO_2.

2.2.6 Lead

Leaded gasoline (phased out from use in automobiles in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which put children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline in automobiles was eliminated.

Ambient lead concentrations are monitored only on an as-warranted, site-specific basis in California. On October 15, 2008, the USEPA strengthened the NAAQS for lead by lowering it from 1.50 $\mu g/m^3$ to 0.15 $\mu g/m^3$ on a rolling 3-month average. The USEPA revised the monitoring requirements for lead in December 2010.[9] These requirements focus on airports and large urban areas and resulted in an increase in 76 monitors nationally.

2.2.7 Naturally Occurring Asbestos (NOA)

Asbestos is commonly found in serpentine rock, which is in many regions of SLO County. If a project site is located within the green "buffer" area on the SLO County APCD NOA map, then the Proposed Project would need to comply with CARB's Airborne Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (17 CCR 93105). While Project construction activities would occur outside of the buffer area, demolition activities would partially occur within the buffer area; therefore, the Proposed Project is subject to the NOA ATCM.

2.3 Air Quality Index (AQI)

The USEPA developed the AQI scale to make the public health impacts of air pollution concentrations easily understandable. The AQI, much like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500, and assigns the number to one of the following six color-coded ranges that rank air quality:

---

[8] ARB, Sulfur Dioxide & Health, https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health, accessed November 2022.

[9] USEPA, Fact Sheet: Revisions to Lead Ambient Air Quality Monitoring Requirements, https://www.epa.gov/sites/production/files/2016-03/documents/leadmonitoring_finalrule_factsheet.pdf, accessed November 2022.

- **Good (Green, AQI = 0 to 50):** Air quality is considered satisfactory, and air pollution poses little or no risk.
- **Moderate (Yellow, AQI = 51 to 100):** Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution. Unusually sensitive people should consider reducing prolonged or heavy outdoor exertion.
- **Unhealthy for Sensitive Groups (Orange, AQI = 101 to 150):** Although the general public is not likely to be affected at this AQI range, people with lung disease as well as older adults and children are at a greater risk from exposure to ozone, whereas persons with heart and lung disease, older adults, and children are at greater risk from the presence of particles in the air. Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged or heavy outdoor exertion.
- **Unhealthy (Red, AQI = 151 to 200):** Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects. Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
- **Very Unhealthy (Purple, AQI = 201 to 300):** The rating of "very unhealthy" air quality would trigger a health alert signifying that everyone may experience more serious health effects. Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit outdoor exertion.
- **Hazardous (Maroon, AQI = 301 to 500):** The rating of "hazardous" air quality would trigger health warnings of emergency conditions. The entire population is more likely to be affected. Everyone, especially children, should limit outdoor exertion.

The AQI numbers refer to specific amounts of pollution in the air. They are based on the federal air quality standards for ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the AQI chart. If the concentration of any of these pollutants rises above its respective standard, the air quality can be unhealthy for the public.

2.4 Toxic Air Contaminants and Local Health Risks and Hazards

In addition to CAPs, individual projects may emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that can cause chronic (i.e., of long duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects.[10] Human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike CAPs, TACs are not subject to ambient air quality standards but are regulated by SLO County APCD using a risk-based approach to determine which sources and pollutants to

[10] "Carcinogenic" indicates that scientific studies have shown that exposure to a substance or mixture of substances at certain levels for some period of time has the potential to promote the formation of cancer.

control as well as the degree of control. A health risk assessment (HRA) is an analysis that estimates human health exposure to toxic substances and, when considered together with information regarding the toxic potency of the substances, provides quantitative estimates of health risks.[11] Diesel PM (DPM), a by-product of diesel fuel combustion, is a major source of TAC. CARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.[12] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

2.4.1 Fine Particulate Matter

Exposures to fine PM ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and lung development in children, as well as other end results, such as hospitalization for cardiopulmonary disease.[13] In April 2011, the USEPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*. In this document, USEPA staff concludes that the then-current federal annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$. The current California and National annual average ambient air quality standard for $PM_{2.5}$ is 12 $\mu g/m^3$.

2.4.2 Toxic Air Contaminants

Certain air pollutants have been classified as TACs because they are known to increase the risk of cancer and/or other serious health effects, ranging from eye irritation to neurological damage. Air toxics can come from a variety of sources including on-road mobile sources, all types of burning, business and industry, indoor sources like paints and solvents, and natural sources like wildfires. Negative health impacts from nearly 200 TACs have been estimated using toxicity information and methods developed by California's Office of Environmental Health Hazard Assessment (OEHHA)[14].

Generally, TACs are classified into carcinogens and non-carcinogens, depending on the level of physiological effects associated with the exposure to a pollutant. Carcinogens are TACs with the potential to cause cancer effects. Non-carcinogenic substances typically have a safe level of exposure below which no negative health impacts occur due to exposure. Chronic and acute exposures to non-carcinogens are expressed as a Hazard Index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure level[15]. Monitoring stations have been established in California to measure the ambient concentrations of carcinogenic TACs. Currently, there is no ambient TAC monitoring site in SLO County.

---

[11] In general, a health risk assessment is required if the air district concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

[12] ARB, Fact Sheet: The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines, October 1998.

[13] SFDPH, Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review, May 2008.

[14] OEHHA, Toxic Air Contaminants, https://oehha.ca.gov/air/toxic-air-contaminants, accessed November 2022.

[15] BAAQMD, CEQA Air Quality Guidelines, May 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 2022.

2.4.3 Roadway Related Pollutants

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions contain diverse forms of particles and gases, and vehicles also contribute to particulates by generating road dust through tire wear. Epidemiological studies[16] have demonstrated that people living close to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and lung development in children. While SLO County APCD CEQA guidelines do not identify a quantitative impact threshold for roadway related pollutants, the Bay Area Air Quality Management District (BAAQMD) requires that roadway health impact should be analyzed for receptors within 1,000 feet from the nearest significant traffic volume roadway (i.e., defined as a freeway or arterial roadway with greater than 10,000 vehicles per day). [17]

2.4.4 Diesel Particulate Matter

As previously stated, CARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent regulations approved by CARB apply to new trucks and diesel fuel. With new controls and fuel requirements, a medium-heavy duty or heavy-heavy duty truck built in 2010 or later has particulate exhaust emissions that are over 50 times lower than a medium-heavy duty or heavy-heavy duty truck built before 1990.[18] The regulations are anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. Those most vulnerable to non-cancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

2.5 Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include the elderly and the young, those with higher rates of respiratory disease, such as asthma and chronic obstructive pulmonary disease, and those with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. These sensitive receptors are commonly associated with specific land uses such as residential dwelling units, schools, day care centers, nursing homes, and hospitals. In addition, certain air pollutants, such as CO, only have significant effects if they directly affect a sensitive population. SLO County APCD's

---

[16] Brugge, D., Durant, J. L., & Rioux, C. (2007). Near-highway pollutants in motor vehicle exhaust: a review of epidemiologic evidence of cardiac and pulmonary health risks. Environmental health, 6(1), 23.

[17] BAAQMD, CEQA Air Quality Guidelines, May 2017, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 2022.

[18] ARB, Methods to Find the Cost-Effectiveness of Funding Air Quality Projects for Evaluating Motor Vehicle Registration Fee Projects and Congestion Mitigation and Air Quality Improvement (CMAQ) Projects Table 5-A, May 2005, https://ww2.arb.ca.gov/sites/default/files/2020-06/Congestion_Mitigation_Air%20_Quality_Improvement_Program_cost-effectiveness_methods_may2005.pdf, accessed November 2022.

CEQA Guidelines suggests that the proximity of sensitive individuals (receptors) to a construction site constitutes a special condition and may require a more comprehensive evaluation of toxic DPM impacts. SLO County APCD also identifies areas where sensitive receptors are most likely to spend time such as schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The proximity of sensitive receptors to motor vehicles is an air pollution concern. Vehicles also contribute to particulates by generating road dust and through brake and tire wear.

Existing areas evaluated in this analysis include a representative sample of permanent residents living in the adjacent RV park, located approximately 400 feet from the northern border of the construction area, and a baseball park located within 1,000 feet of the northern tip of the construction area. The health risk impact analysis includes locations out to 1,000 feet from the Proposed Project site, which is conservative because the maximum impacts identified from the Proposed Project would be adjacent to the site. All off-site sensitive receptors are evaluated using residential exposure assumptions consistent with OEHHA Guidance. [19]

2.6 Existing Stationary Sources of Air Pollution

According to a public information request returned by SLO County APCD, there are as many as fourteen permitted operational sources in a one-mile radius. These sources include four gas stations, a wastewater treatment plant, and retail stores. Though risk estimates are not available for these sources through SLO County APCD, all of these sources contribute to the background levels of cancer risk.

2.7 Major Roadways Contributing to Air Pollution

Nearby on-road traffic emits $PM_{2.5}$, DPM and other air pollutants that can harm the health of workers at the Project site. The closest major freeway, SR-1, is approximately 2,000 feet away from the Project site. According to BAAQMD's recommended screening method[20], on-road mobile source impacts would occur if the nearest significant traffic volume roadway is within 1,000 feet of the Project. Therefore, workers on the Project site are unlikely to be adversely affected by the air pollutants emitted from on-road motor vehicles.

[19] OEHHA, Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015, http://www.oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf, accessed November 2022.

[20] BAAQMD, CEQA Air Quality Guidelines Update, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 2022.

3. REGULATORY FRAMEWORK

3.1 Federal Regulations

3.1.1 Federal Clean Air Act

The 1970 Clean Air Act (last amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants are planned to be controlled in order to achieve all standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an ample margin of safety) to which the public can be exposed without adverse health effects. They are designed in consideration of those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards without observing adverse health effects.

The current attainment status for SLO County, with respect to federal standards, is summarized in **Table 2**. In general, the air basin experiences low concentrations of most pollutants, except for ozone.

3.1.2 Emission Standards for New Off-Road Equipment

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, USEPA established emission standards for hydrocarbons, NO_x, CO, and PM to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by USEPA, as well as by CARB. Each adopted emission standard was phased in over time. New engines built in and after 2015 across all horsepower sizes must meet Tier 4 final emission standards. In other words, new manufactured engines cannot exceed the emissions established for Tier 4 final emissions standards. This has resulted in increasingly lower emissions from off-road equipment over time.

3.2 State Regulations

3.2.1 California Clean Air Act

Although the Federal Clean Air Act established the NAAQS, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological problems in California, there is considerable diversity between the state and national ambient air quality standards, as shown in **Table 2**. California ambient standards are at least as protective as national ambient standards, except for the 1-hour NO_2 and SO_2 standards, and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code sections 39600 et seq.), which, like its federal counterpart, required the designation of areas as attainment or non-attainment, but based these designations on state ambient air quality standards rather than the federal standards. As indicated in **Table 2**, SLO County is designated as "non-attainment" for state ozone and PM_{10} standards, and as "attainment" or "unclassified" for other pollutants.

3.2.2 Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Assembly Bill 2588), also known as the Hot Spots Act. Assembly Bill 1807 created a program with a two-step process of risk identification followed by risk management. TAC emissions are identified from a variety of sources (risk identification), after which an ATCM is developed (risk management). CARB has twenty-six mobile and stationary source ATCMs.[21] The fire pump is subject to the ATCM for Stationary Compression Engines (17 CCR 93115) and demolition activities would be subject to the NOA ATCM (17 CCR 93105).

Assembly Bill (AB) 2588 requires facilities to report the type and quantity of specified toxics released into the air by stationary sources. The Proposed Project does not include any stationary sources that would be subject to AB 2588 reporting requirements.

To date, CARB has identified more than 21 TACs in addition to adopting USEPA's list of hazardous air pollutants as TACs.

3.2.3 California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulation

In 2007, CARB adopted a regulation to reduce DPM and NO_x emissions from in-use off-road heavy-duty diesel vehicles in California.[22] The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. In December 2010, major amendments were made to the regulation, including a delay of the first performance standards compliance date to no earlier than January 1, 2014.

3.2.4 Sales of GHG-emitting Cars After 2035

In August 2022, CARB issued a rule that will require that all new cars sold in the state by 2035 be free of GHG emissions. The rule also sets interim targets, requiring that 35 percent of new passenger vehicles sold by 2026 produce zero emissions. That requirement climbs to 68 percent by 2030. This will rapidly reduce fossil-fuel fired vehicles in the fleet in the state, which would also reduce criteria pollutant emissions from the reduction of gasoline and diesel consumption.

3.3 Regional Regulations and Plans

3.3.1 San Luis Obispo County Air Pollution Control District

SLO County APCD is the local agency working to protect the health of over 283,000 residents in SLO County by preserving good air quality. San Luis Obispo Council of Governments, cities and counties, local transportation agencies, and various non-governmental organizations also participated in efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of

[21] ARB, Airborne Toxic Control Measures, https://ww2.arb.ca.gov/resources/documents/airborne-toxic-control-measures, accessed November 2022.

[22] California Code of Regulations, title 13, sections 2449, 2449.1, 2449.2, and 2449.3.

extensive education and public outreach programs. SLO County APCD is responsible for implementing regulations and programs to reduce air pollution and assist the county in reaching federal and state ambient air quality standards.

SLO County APCD does not have authority to regulate emissions from motor vehicles. Specific rules and regulations adopted by SLO County APCD limit the emissions that can be generated by various stationary sources and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six CAPs, but TAC emissions sources are also subject to these rules and are regulated through the district's permitting process and standards of operation.

3.3.1.1 SLO County APCD CEQA Air Quality Guidelines

SLO County APCD developed quantitative thresholds of significance for its CEQA Air Quality Guidelines in 2012[23] and subsequently developed a Clarification Memo in November 2017.[24] The 2017 CEQA Memo provide updated measures for mitigating potential air quality impacts consistent with CEQA requirements.

The CEQA guidelines specify recommended thresholds of significance for operational and construction criteria air pollutants and precursor emissions, GHG emissions, and risks and hazards associated with TACs from an individual project and cumulative impact. These thresholds are outlined below.

Operational Emissions Thresholds

Most adverse impacts on air quality come from the long-term operations of a project. **Table 3**, Criteria Air Pollutant Threshold, provides SLO County's project-level operational thresholds of significance for criteria air pollutants**.**

Construction Emissions Thresholds

Construction activities result in temporary impacts that, depending on the size and type of project, commonly occur in limited time periods. SLO County APCD has developed specific daily and quarterly numeric thresholds that apply to projects within the county. Daily thresholds are for projects that would be completed in less than one quarter (90 days). SLO County APCD's quarterly construction thresholds are applicable to the proposed project because construction would last for more than one quarter.

- **ROG and NO_X Emissions**
    - Quarterly – Tier 1. For construction projects exceeding the 2.5 ton/quarter threshold, Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment are required. Off-site mitigation may be required if feasible mitigation measures are not implemented, or if no mitigation measures are feasible for the project; and

---

[23] SLO County APCD, CEQA Air Quality Handbook, 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

[24] SLO County APCD, CEQA Air Quality Clarification Memo, 2017. https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/FINAL_Clarification%20Memorandum%202017%28UpdatedTable1-1_July2021%29.pdf, accessed November 2022.

  - Quarterly – Tier 2. For construction projects exceeding the 6.3 ton/quarter threshold, Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and off-site mitigation are required.

- **DPM Emissions**
  - Quarterly - Tier 1: For construction projects lasting more than one quarter, exceedance of the 0.13 tons/quarter threshold requires Standard Mitigation Measures, BACT for construction equipment; and,
  - Quarterly - Tier 2: For construction projects lasting more than one quarter, exceedance of the 0.32 ton/quarter threshold requires Standard Mitigation Measures, BACT, implementation of a Construction Area Management Plan (CAMP), and off-site mitigation.

- **PM_{10}, Dust Emissions**
  - Quarterly: Exceedance of the 2.5 tons/quarter threshold requires Fugitive PM_{10} Mitigation Measures and may require the implementation of a CAMP.

3.3.1.2 The SLO County Ozone Emergency Episode Plan

The SLO County Ozone Emergency Episode Plan[25] developed in 2020 provides the basis for taking actions when ambient ozone concentrations reach a level that could endanger public health in SLO County. It identifies criteria for the four levels of emergency episodes and related components for public announcements whenever an episode has been identified. This document will be incorporated into the California Infrastructure State Implementation Plan (I-SIP).

3.3.1.3 2001 Clean Air Plan

As part of the California Clean Air Act, SLO County APCD is required to develop a plan to achieve and maintain the state ozone standard by the earliest practicable date. The 2001 Clean Air Plan (2001 CAP) [26] was adopted by SLO County APCD on March 26, 2002. This remains the currently adopted plan. The 2001 CAP is the third update to the 1991 CAP, which was adopted by SLO County APCD in January 1992. The 1991 CAP contained a comprehensive set of control measures designed to reduce ozone precursor emissions from a wide variety of stationary and mobile sources. The 1995 CAP was an extensive update of the 1991 CAP but with fewer control strategies. The 2001 CAP is primarily a continuation of the 1995 CAP and proposed no new control measures for adoption. Implementation of the control measures adopted through previous plans is expected bring the county into attainment of the State ozone standard. These controls, combined with measures implemented by CARB, are expected to reduce over 5 tons per day of ROG emissions by the year 2003, with NO_X reductions projected at over 12 tons per day.

---

[25] SLO County APCD, SLO County Ozone Emergency Episode Plan, 2020, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/San%20Luis%20Obispo%20County%20Ozone%20Emergency%20Episode%20Plan%2022%20January%202020.pdf, accessed November 2022

[26] SLO County APCD, 2001 Clean Air Plan, 2001, https://www.slocleanair.org/rules-regulations/clean-air-plan.php accessed November 2022.

3.4 Local Regulations and Plans

3.4.1 City of Morro Bay General Plan

The General Plan for the City of Morro Bay contains several environmental management policies aimed at air quality and sustainability within the city. They are outlined below[27]:

- POLICY C-3.1: State Attainment Levels. Reach and maintain state attainment levels for PM_{10}
- POLICY C-3.2: Interagency Cooperation. Continue to cooperate with SLO County APCD and other regional, state, and national agencies to implement the County Clean Air Plan, including enforcing air quality standards and improving air quality.
- POLICY C-3.3: Pollutant Sites. Identify opportunities to locate new air pollutant sources away from the general population.
- POLICY C-4.1: Emissions Reduction Target. By 2040, reduce GHG emissions by 53.33 percent below the 2020 target, placing the community on a path to meet the state's 2050 GHG emissions reduction goals.
- POLICY C-4.4: GHG Reduction Strategies. Pursue a variety of a GHG reduction strategies across the transportation, residential, waste, and commercial sectors, commensurate with their share of the community's GHG emissions

[27] Plan Morro Bay, 2021, https://www.morrobayca.gov/DocumentCenter/View/15424/Plan-Morro-Bay-GP-LCP-Final, accessed November 2022.

4. IMPACTS AND MITIGATION MEASURES

4.1 Significance Thresholds

Consistent with Appendix G of the California CEQA Guidelines, for the impacts analyzed in this section, the Proposed Project would have a significant impact related to air quality if it were to:

- conflict with or obstruct implementation of the applicable air quality plan;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;
- expose sensitive receptors to substantial pollutant concentrations; or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

4.2 Approach to Analysis

As stated in the CEQA Guidelines[28] the Proposed Project would result in two types of potential air quality impacts: impacts from construction activities and impacts from project operations due to increased vehicle travel, energy consumption, consumer product usage, landscaping, and architectural coating.

Each of these types of direct impacts is, in turn, separated into impacts from CAP emissions, which are generally regional in nature, and impacts associated with exposure to $PM_{2.5}$ and TACs, which are localized health impacts expressed in terms of exposure to $PM_{2.5}$ concentrations, probability of developing cancer per 10 in a million persons exposed to TAC concentrations, and non-cancer chronic HI. The assessment of CAP impacts addresses the second and third bulleted significance thresholds identified above. The assessment of exposure to $PM_{2.5}$ concentrations and localized health risk addresses the fourth bulleted significance threshold identified above.

The air quality analysis conducted for this impact assessment uses emission factors, models, and tools distributed by a variety of agencies, including CARB, the California Air Pollution Officers Association, OEHHA, and the USEPA. Additionally, the analysis includes methodologies identified in the SLO County APCD CEQA Handbook[29,30]. These analyses are described in detail in Section 4.9, and assumptions are shown in **Appendix A**.

4.3 Air Quality Plan

The applicable air quality plan is SLO County APCD's 2001 Clean Air Plan. Consistency with the 2001 Clean Air Plan can be determined if the Proposed Project supports the goals of the plan, includes applicable control measures from the plan, and would not disrupt or hinder implementation of any control measures from the plan. Consistency with the 2001 Clean Air

---

[28] SLO County APCD, CEQA Air Quality Handbook, 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

[29] Ibid

[30] SLO County APCD, 2017 Clarification Memo, 2017, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/FINAL_Clarification%20Memorandum%202017%28UpdatedTable1-1_July2021%29.pdf, accessed November 2022.

Plan is the basis for determining whether the Proposed Project would conflict with or obstruct implementation of an applicable air quality plan, the first bulleted significance criterion previously identified.

4.4 Criteria Air Pollutants

As described above under "Regulatory Framework," SLO County experiences low concentrations of most pollutants when compared to federal or state standards and is designated as either in attainment or unclassified for most criteria pollutants, except for ozone and PM_{10}, for which these pollutants are designated as non-attainment for either the state or federal standards.

By definition, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions are considered to contribute to the existing, cumulative air quality conditions. According to the SLO County APCD CEQA guidelines, if a project's contribution to cumulative air quality conditions is considerable, then the project's impact on air quality would be considered significant. [31]

Table 3 identifies quantitative CAP significance thresholds published by SLO County APCD. The emission thresholds are based on the California Health & Safety Code and the CARB Carl Moyer Guidelines.[32]

TABLE 3: CRITERIA AIR POLLUTANT THRESHOLDS

Pollutant	Construction			Operation	
	Daily (lbs)	Quarterly Tier 1 (tons)	Quarterly Tier 2 (tons)	Daily (lbs)	Annual (tons)
ROG+ NO_x	137	2.5	6.3	25	25
Diesel Particulate Matter (DPM)	7	0.13	0.32	1.25	--
Fugitive Particulate Matter (PM_{10}), Dust	--	2.5	--	25	25

Source: SLO County APCD, CEQA Air Quality Handbook, 2012

The construction emission thresholds include both daily and quarterly limits. For projects lasting longer than a quarter, quarterly threshold will be applied. For construction projects, exceedance of the quarterly Tier 1 threshold requires Standard Mitigation Measures and BACT for construction equipment. Off-site mitigation may be required if feasible mitigation measures are not implemented, or if no mitigation measures are feasible for the project. If mitigated emissions (i.e., those that include Standard Mitigation Measures and BACT) exceed

[31] SLO County APCD, CEQA Air Quality Handbook, 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

[32] Ibid, p2-2

the Tier 2 threshold (6.3 tons per quarter), then implementation of a Construction Activity Management Plan (CAMP)and off-site mitigation is additionally required.

The operation emission thresholds include both daily and annual limits. Projects that exceed the daily limits for ROG+ NO_x have the potential to cause significant air quality impacts and should be submitted to SLO County APCD for review. On-site mitigation measures are recommended to reduce air quality impacts to a level of insignificance. Projects that exceed the annual ROG+ NO_x limits require the preparation of an environmental impact report (EIR). Projects that emit more than 1.25 lbs/day of DPM need to implement on-site BACT measures. If sensitive receptors are within 1,000 feet of the project site, an HRA may also be required. Projects that emit more than 25 lbs/day or 25 tons/year of fugitive PM need to implement permanent dust control measures to mitigate the emissions below these thresholds or provide suitable off-site mitigation approved by the SLO County APCD. [33]

4.5 Other Criteria Pollutants

Regional concentrations of SO_2 in SLO County are below the state standards. Construction-related SO_2 emissions represent a negligible portion of the total basin-wide emissions. Given SLO County's attainment status and the limited SO_2 emissions that could result from the Proposed Project, the Proposed Project would not result in a project or cumulatively considerable net increase in SO_2, and a quantitative analysis is not required.

4.6 Local Health Risks and Hazards

In addition to CAPs, individual projects may emit TACs. These include TACs from vehicles, construction equipment, demolition, and operations. These potential sources of TACs are discussed Section 4.9.

As part of the environmental review for the Proposed Project, an HRA was conducted to provide quantitative estimates of health risks from exposures to TACs because of the Proposed Project. There are two health risk thresholds put forth by SLO County APCD, and the relevant threshold depends on the planned project type. Type A projects are "new proposed land use projects that generate toxic air contaminants (such as gasoline stations, distribution facilities or asphalt batch plants) that impact sensitive receptors." Type B projects are those that "…will place sensitive receptors (e.g., residential units) in close proximity to existing toxics sources (e.g., freeway)." The Proposed Project is a Type A project and would therefore be considered to have a significant health risk impact if it would result in excess cancer risk greater than 10.0 in a million[34].

4.7 Cumulative Impacts

As discussed above, the contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and future projects in the vicinity of the Proposed Project also have or will contribute to adverse regional air quality impacts on a cumulative basis. Typically, no single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. As described above, the project-level thresholds for CAPs are based on levels at which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase

[33] Ibid

[34] SLO County APCD, CEQA Air Quality Handbook, April 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

in CAPs. Therefore, if a project's emissions are below the project-level thresholds, the project would not be considered to result in a considerable contribution to cumulative regional air quality impacts. Similarly, for air pollution associated HRA, the cumulative impacts can be analyzed based on the Project's health risks relative to risk thresholds. This is because risk is localized and all nearby projects would be compliant with SLO County APCD rule requirements.

4.8 Odor Impacts

For odors, SLO County APCD CEQA Guidelines states that "*If a project has the potential to cause an odor or other nuisance problem which could impact a considerable number of people, then it may be considered significant*." SLO County APCD also lists the types of projects that should be evaluated for potential odor impacts and the associated screening distances. [35] Because the Project is not in the list of project types and no special circumstances warrant further evaluation, the Project does not qualify for an odor impact analysis.

4.9 Impact Evaluation

4.9.1 Impact AQ-1

The Proposed Project would not conflict with implementation of the 2001 Clean Air Plan for San Luis Obispo County. (Less than Significant)

The most recently adopted air quality plan for SLO County is the 2001 Clean Air Plan.[36] The 2001 Clean Air Plan is a road map that demonstrates how SLO County will, in accordance with the requirements of the California Clean Air Act, implement all feasible measures to reduce ozone precursors (ROG and NO_x) and reduce transport of ozone and its precursors to neighboring air basins. It also provides a climate and air pollution control strategy to reduce ozone, PM, toxic air contaminants, and GHGs that builds upon existing regional, state, and national programs. In determining consistency with the 2001 Clean Air Plan, this analysis considers whether the Proposed Project would (1) support the primary goals of the 2001 Clean Air Plan, (2) include applicable control measures from the 2001 Clean Air Plan, and (3) avoid disrupting or hindering implementation of control measures identified in the 2001 Clean Air Plan.

The goals of the 2001 Clean Air Plan are to protect air quality and health at the regional and local scale and protect the climate. Since climate change is addressed in another report, this section addresses only the air quality and health aspects of the 2001 SLO County Clean Air Plan. Air quality protection and the safeguarding of public health from harmful air pollutants is accomplished through meeting state and national ambient air quality standards. To meet these goals, the 2001 SLO County Clean Air Plan recommends specific control measures and actions to reduce emissions and decrease concentrations of harmful air pollutants. To this end, the 2001 Clean Air Plan includes over 30 control measures aimed at reducing air pollutants in the air basin.[37] These control measures are grouped into various categories: stationary source sector, transportation sector, and land use planning sector. Primary

---

[35] Ibid

[36] SLO County APCD, 2001 San Luis Obispo Clean Air Plan, December 2001, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/business/pdf/CAP.pdf, accessed November 2022.

[37] SLO County APCD, 2001 Clean Air Plan for SLO County, Tables 8-1 to 8-3.

emission control techniques used by many of the control measures include vapor recovery, solvent content reduction, improved transfer efficiency, improved fuel combustion, fuel-switching or electrification, chemical or catalytic reduction, reduced vehicle use, new source review, and indirect source review. Only those sectors relevant to the Proposed Project are discussed in this section.

The control measures identified in the 2001 Clean Air Plan that are most applicable to the Proposed Project are associated with the stationary source sector and transportation strategies. The Proposed Project would comply with all applicable regulations to reduce energy consumption and reduce fossil fuel combustion.

Stationary source sector control measures that are identified in the 2001 Clean Air Plan and would be incorporated into the Proposed Project include Fueling-Switching/Electrification, Energy Conservation (N-5), and Internal Combustion Engines (N-14). Related to measure N-5, as explained by the 2001 Clean Air Plan:

> "There are currently no APCD regulations specifying energy efficiency or energy conservation requirements…Potential energy conservations measures may include retrofit weather proofing and insulation of existing homes, incorporation of passive solar features in new construction, improving heating, ventilation, and air conditioning system efficiency in government buildings; replacing natural gas water heaters with solar water heaters; and adding flue gas dampers to existing residential water heaters." [38]

Given that the Project is not a residential or government project, the only applicable recommendations include passive solar features in construction and elimination of natural gas water heaters. Given the extremely limited occupancy during Project operation, the need for passive solar features such as improved lighting or heating is negligible. Additionally, the Project does not plan to include natural gas water heaters.

Control measure N-14 refers to the applicable APCD Rule 431 Stationary Internal Combustion Engines, wherein emissions of NO_x from spark-ignited engines are limited to 50 ppm and 125 ppm for rich- and lean-burn engines, respectively, and emissions of CO are limited to 4,500 ppm for both engine types.

An alternative to these limits for rich- and lean-burn engines is a demonstrated reduction of NO_x by volume of 90% and 80%, respectively. Under Rule 431, diesel engines must not emit more than 600 ppm_v (parts per million by volume) of NO_x, or else achieve a 30% reduction of NO_x emissions by volume. In addition, diesel engines must not emit more than 4,500 ppm_v of CO and 20 ppm_v of ammonia.

For the reasons described above, the Proposed Project would not interfere with implementation of the 2001 Clean Air Plan, and because the Proposed Project would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, this impact would be less than significant, and no mitigation measures are necessary.

[38] SLO County APCD, 2001 San Luis Obispo Clean Air Plan, December 2001. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/business/pdf/CAP.pdf, Accessed February 2023.

4.9.2 Impact AQ-2

During construction, the Proposed Project would not result in a cumulatively considerable net increase of any CAP for which the project region is in non-attainment under an applicable federal or state ambient air quality standard. (Less than Significant with Mitigation)

During the Proposed Project's construction period, construction activities would result in emissions of ozone precursors and PM in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions), as discussed below in more detail. Emissions of ozone precursors and PM (exhaust) are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, ROGs are also emitted from activities that involve paint, other types of architectural coatings, or asphalt paving.

As previously noted, the Proposed Project development is expected to occur following the schedule presented in **Appendix A**, **Table 1** and would include fencing and site preparation, foundation and pile installation, BESS, substation, and Gen-tie installation, and demolition of existing power plant stacks. Construction activities would require the use of heavy trucks, graders, material loaders, dozers, forklifts, cranes, and other mobile and stationary construction equipment. Off-road equipment activity was provided by the Project Sponsor.

4.9.2.1 Fugitive Dust

Project-related excavation, grading, and other construction activities may cause wind-blown dust that could contribute PM to the local atmosphere. Despite the established federal standards for air pollutants and ongoing implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Depending on exposure, adverse health effects can occur due to PM in general as well as specific contaminants, such as lead or asbestos that may be constituents of dust.

Dust that is generated during construction activities primarily constitutes PM_{10}, with smaller amounts of $PM_{2.5}$. Even though most of the dust will settle down in or near the Proposed Project area, sensitive receptors near the Proposed Project site could still be exposed to small particulates that remain in the atmosphere. Sensitive individuals including those that may be living nearby could be exposed to fugitive dust from construction sources. Although construction emissions from the Proposed Project are temporary in duration, the Project includes grading areas that are within 1,000 feet of sensitive receptors and will therefore comply with mitigation measures set forth by SLO County APCD (Section 2.4 Fugitive Dust Mitigation Measures: Expanded List)[39], and repeated below.

The following measures are required by SLO County for all projects with grading areas that are greater than 4-acres or are within 1,000 feet of any sensitive receptor. These control measures were incorporated into CalEEMod as project design features in the unmitigated scenario to ensure that potential dust-related emissions would be lower than limits presented in Table 3 of Section 4.4, and that construction air quality impacts of the Proposed Project would be less than significant.

---

[39] SLO County APCD, CEQA Guidelines Section 2.4 Fugitive Dust Mitigation Measures: Expanded List, 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

4.9.2.2 Construction Fugitive Dust Control Measures

Fugitive dust control measures to be implemented by the Project Sponsor during construction activities:

- Reduce the amount of the disturbed area where possible.
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
- Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
- All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets or wash off trucks and equipment leaving the site.
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
- All of these fugitive dust mitigation measures shall be shown on grading and building plans.
- The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork, or demolition.

4.9.2.3 Naturally Occurring Asbestos

Because demolition activities would occur in an area that could contain asbestos, the construction contractor must comply with the NOA ATCM before any grading activities can commence. The following requirements apply:

- For grading projects qualifying for NOA ATCM exemption:
    - Submit NOA Exemption form with geologic evaluation.
- For grading projects in serpentine rock less than 1 acre:
    - Submit Project Form with geologic evaluation.
    - Mini Dust Control Measures in Section 93105(e)(A-F)
- For grading projects in serpentine rock greater than 1 acre:
    - Submit Project Form with geologic evaluation
    - Asbestos Dust Mitigation Plan

The Project would be consistent with these requirements, and therefore asbestos impacts would be less than significant.

4.9.2.4 Criteria Air Pollutants from Construction

Construction-related emissions of CAPs were calculated using methods consistent with the California Emissions Estimator Model (CalEEMod) emissions calculator model (version 2022.1) developed for the California Air Pollution Control Officers Association.[40] Where available, the analysis used project-specific information for each phase of the construction program provided by the project sponsor, otherwise, defaults were used. The construction schedule is shown in **Appendix A**, **Table 1**.

All diesel-fueled off-road construction equipment was assumed to have equipment-wide average emission factors, consistent with CalEEMod default assumptions. Off-road construction equipment assumptions are presented in **Appendix A**, **Table 2**.

No on-road haul truck traffic is expected during construction, as the site will be balanced during the Site Preparation and Grading phases. Material/vendor trips are assumed to occur during the Grading, Building Construction, Paving, and Demolition subphases, based on information provided by the project sponsor. Material/vendor trip rates for each of these phases are 30, 40, 10, and 5 one-way trips per day, respectively. Worker trips are also assumed to occur throughout the construction of the Project, with an average of approximately 355 one-way trips per day. When combining haul trips, material/vendor trips, and worker trips, the average daily construction trips is approximately 127 one-way trips per day. CalEEMod default trip lengths are assumed. On-road construction trip generation inputs are presented in **Appendix A**, **Table 3**.

The emission factors used by CalEEMod for on-road vehicles are based on the CARB EMission FACtor model (EMFAC2021) program.

---

[40] SLO County APCD encourages the use of CalEEMod version 2022.1, noting that emissions estimates will likely be more accurate using this version as opposed to 2020.4.0: https://www.slocleanair.org/rules-regulations/land-use-ceqa.php

Emissions from architectural coating off-gassing were estimated using CalEEMod. Architectural coating emissions were based on the building square footage, as indicated by the Project Sponsor, as well as CalEEMod defaults regarding the size of coated areas.

Tables 1 through **3** in **Appendix A** provide detailed input values for construction emission calculations. Emissions from Proposed Project construction are shown in shown in the CalEEMod output files in **Appendix C**.

4.9.2.5 Proposed Project Unmitigated Emissions

Table 4 presents unmitigated construction-related emissions that would result from the Proposed Project, calculated in terms of annual emissions for each year of the construction period. The maximum year's quarterly emission rate during construction of the Proposed Project is compared to significance thresholds to establish a significance determination.

Construction emissions include emissions from both off-road construction equipment and on-road construction vehicles, including haul trucks and vendor/worker trips. As discussed in Section 4.1, ROG and NO_x are compared against thresholds jointly. As shown in **Table 4,** construction activities would result in emissions of ROG, NO_x, and DPM that would exceed the Tier 1 quarterly thresholds.

Therefore, criteria pollutant emissions generated from the Proposed Project during construction would have a significant air quality impact with no mitigation.

TABLE 4: EMISSIONS FROM THE PROPOSED PROJECT DURING CONSTRUCTION USING UNMITIGATED FLEET AVERAGE FOR ALL OFF-ROAD CONSTRUCTION EQUIPMENT

Year	Maximum Quarterly Emissions (tons/quarter) [A]		
	ROG + NO_x	**DPM[B]**	**Fugitive PM_{10}[C]**
2023	1.75	0.066	0.14
2024	**11.13**	**0.43**	**0.32**
2025	**14.74**	**0.564**	0.01
2026	**8.68**	0.285	0.06
2027	2.19	0.086	0.26
2028	0.92	0.036	0.11
Tier 1 Significance Threshold	2.5	0.13	3
Above Threshold?	***Yes***	***Yes***	***No***
Tier 2 Significance Threshold	6.3	0.32	2.5
Above Threshold?	***Yes***	***Yes***	***No***

***Notes*:**
A Construction emissions for each Project were estimated using CalEEMod and activity assumptions from the Project Sponsor.
B PM emissions shown include exhaust emissions only.
C PM emissions shown include fugitive dust emissions only.

Source: Ramboll, 2022, Appendix C.

4.9.2.6 Proposed Project Mitigated Emissions

Since the Tier 1 thresholds for ROG+NOx and DPM would be exceeded, SLO County APCD CEQA guidance calls for implementation of standard mitigation measures (see Section 4.4) and BACT for construction equipment, and comparison of these mitigated emissions to the Tier 2 threshold. Table 5 shows estimates of mitigated emissions from project construction with a BACT measure applied, specifically, the use of CARB Tier 4 Interim offroad diesel engines. Implementation of this measure would reduce emissions below the Tier 2 quarterly threshold of significance.

TABLE 5: MITIGATED EMISSIONS FROM THE PROPOSED PROJECT DURING CONSTRUCTION USING TIER 4 INTERIM ENGINE TIERS FOR ALL OFF-ROAD CONSTRUCTION EQUIPMENT

Year	Maximum Quarterly Emissions (tons/quarter) [A]		
	ROG + NO_x	**DPM[B]**	**Fugitive PM_{10}[C]**
2023	0.8	0.009	0.14
2024	3.45	0.02	0.32
2025	1.6	0.011	0.01
2026	2.0	0.015	0.06
2027	1.6	0.016	0.26
2028	0.7	0.006	0.11
Tier 2 Significance Threshold	6.3	0.32	2.5
Above Threshold?	***No***	***No***	***No***

***Notes*:**
A Construction emissions were estimated using CalEEMod and activity assumptions from the Project Sponsor.
B PM emissions shown include exhaust emissions only.
C PM emissions shown include fugitive dust emissions only.

Source: Ramboll, 2022, Appendix C.

Specifically, **Table 5** indicates that the maximum average quarterly emissions from Project construction would be 3.45 tons/quarter for ROG and NO_x combined, 0.02 tons/quarter for DPM, and 0.32 tons/quarter for Fugitive PM_{10} each of which is below the respective thresholds of 6.3 tons/quarter for ROG and NO_x combined, 0.32 tons/quarter of DPM, and 3 tons/quarter for Fugitive PM_{10}.

Therefore, criteria pollutant emissions generated from the Proposed Project during construction would be a less than significant air quality impact with mitigation.

The Project will implement the following measures because quarterly ROG + NOx and DPM emissions exceed the quarterly Tier 1 threshold.

4.9.2.7 Construction Standard Mitigation Measures

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Fuel all off-road and portable diesel-powered equipment with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).
- Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines and comply with the State Off-Road Regulation.
- Use on-road heavy-duty trucks that meet CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines and comply with the State On-Road Regulation.
- Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g., captive or NOx exempt area fleets) may be eligible by proving alternative compliance.
- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5-minute idling limit.
- Diesel idling within 1,000 feet of sensitive receptors is not permitted.
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors.
- Electrify equipment when feasible
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible.
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

4.9.3 Impact AQ-3

At Project build-out, the operation of the Proposed Project would not result in a cumulatively considerable net increase of any CAP for which the project region is in non-attainment under an appliable federal or state ambient air quality standard. (Less than Significant)

The Proposed Project would generate operational emissions from a variety of sources, including area sources (consumer products, architectural coatings), stationary sources, and mobile sources (daily trips). Because there would be no natural gas infrastructure, there would be no local emissions from building energy usage. **Table 4** in **Appendix A** contains a summary of the different land uses analyzed at full project buildout.

Emissions from all sources were calculated using CalEEMod 2022.1, which estimates emissions based on the type and size of land uses associated with the Proposed Project. Where not specified otherwise, CalEEMod default assumptions were used to estimate emissions. Edits to CalEEMod default assumptions include:

- Mobile trip generation was updated from CalEEMod default assumptions based on trip generation data provided by the Project Sponsor. This information is shown in **Appendix A**, **Table 3**.
- Because the CalEEMod analysis was conducted with a user-defined land use, energy use takes a default value of zero. Electricity consumption was updated using electricity intensity of a General Light Industry land use in electricity demand forecast zone (EDFZ) 6, from CalEEMod Appendix G. As explained above, no natural gas usage is expected at full build-out.
- A diesel-fueled emergency fire pump was added to the stationary source list based on information provided by the Project Sponsor.

The CalEEMod output file is included as **Appendix C**.

4.9.3.1 Proposed Project

The Proposed Project proposes one new operational stationary source of air pollution: a 350-horsepower emergency fire pump. The ATCM for Stationary Compression Engines contains emission standards and operating limits for various diesel engines. Section 93115.6(a)(4) sets emission standards and hours of operating requirements for new direct-drive emergency standby fire pump engines. Operating hours are limited to those necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 – "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 2002 edition. As such, based on the DPM emission factor requirements for a 350-hp engine, the maximum operating hours for routine maintenance are limited to 30 hours per year; there is no limit for emergency use and for emission testing to show compliance with the ATCM. However, the annual hours can be increased to 50 hours per year if approved by the SLO County APCD.

The daily and annual increase in emissions associated with the Proposed Project are shown in **Table 6** for ROG (precursor of ozone) and NO_x (precursor of ozone), PM_{10}, and $PM_{2.5}$ with results showing the contribution by source. As shown in **Table 6,** these emissions are well below the respective SLO County APCD CEQA significance thresholds of 25 lb/day for ROG and NO_x combined, 1.25 lb/day for DPM, 25 lb/day for fugitive PM_{10}, and 550 lb/day of carbon monoxide (CO), and below the annual thresholds of 25 tpy for ROG and NO_X combined, and 25 tpy of fugitive PM_{10}.

TABLE 6: EMISSIONS FROM THE PROPOSED PROJECT DURING FULL BUILDOUT OPERATION

Emissions Source	Average Daily Emissions (lb/day)[A,B]			
	$ROG + NO_x$	DPM	Fugitive PM_{10}	CO
Area Sources	7.57	0	0	0
Building Energy Sources	0	0	0	0
Mobile Sources	0.11	0.005	0.005	0.35
Stationary Sources	0.18	0.01	0	0.12
Total Daily Emissions (lb/day)	**7.86**	**0.01**	**0**	**0.47**
Daily Significance Threshold (lb/day)	**25**	**1.25**	**25**	**550**
Above Daily Threshold?	***No***	***No***	***No***	***No***
Emissions Source	**Average Annual Emissions (tpy)**			
	$ROG + NO_x$	DPM	Fugitive PM_{10}	CO
Area Sources	1.73	*N/A*	0	*N/A*
Building Energy Sources	0		0	
Mobile Sources	0.02		0.005	
Stationary Sources	0.03		0	
Total Annual Emissions (tpy)	***1.78***		***0.005***	
Annual Significance Threshold (tpy)	***25***		***25***	
Above Annual Threshold?	***No***		***No***	

Notes:

[A] Emissions estimated using CalEEMod version 2022.1

[B] Operational Criteria Air Pollutant (CAP) emissions were estimated for the Proposed Project assuming full project buildout in 2028.

Source: Ramboll, 2022, Appendix C.

Because the Proposed Project's operational emissions at full project buildout would be below the operational significance criteria, the Proposed Project would have a less-than-significant air quality impacts.

4.9.4 Impact AQ-4

Construction and operation of the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Construction activities including site preparation, grading, building construction, paving, architectural coating, and demolition would affect localized air quality during the construction phases of the Proposed Project. Short-term emissions from construction equipment during these site preparation activities would include directly emitted PM ($PM_{2.5}$ and PM_{10}) and TACs such as DPM. Additionally, the long-term emissions from operation of the Proposed Project such as the emergency fire pump, as described under Impact AQ-1 and Impact AQ-2, would include PM ($PM_{2.5}$) and TACs such as DPM. The generation of these short and long-term emissions could potentially expose sensitive receptors to substantial pollutant concentrations of TACs, resulting in a localized health risk. Therefore, an HRA was conducted for the Proposed Project to evaluate the potential health risks to nearby residents resulting from project implementation.

4.9.4.1 Methodology

In general, an HRA is used to determine if chemicals pose a significant risk to human health and, if so, under what circumstances. For the Proposed Project, an HRA was conducted to identify maximum off-site health risks due to inhalation of DPM. The HRA results were based on the latest (2015) guidance by the OEHHA, as well as the latest (2012) CEQA guidance by SLO County APCD.[41,42] Detailed inputs and methods used for this analysis are provided in **Appendix A**, **Tables 6** to **11**.

Ramboll characterized cancer risk associated with construction risks by estimating ambient air concentrations of DPM within 1,000 feet of the Project. This boundary represents the “zone of influence” recommended for the cumulative evaluation of a project in the SLO County APCD CEQA Guidelines. Acute non-cancer health effects were not estimated, as the only TAC evaluated is DPM, which does not have acute health impacts. This is standard practice and consistent with the current OEHHA guidance. While individual speciated components of DPM might have acute health impacts, the cancer impacts associated with DPM will almost always exceed the total acute health impact across the speciated components barring unusual circumstances (e.g., a sensitive receptor located directly above the emissions release point for a point source); according to OEHHA Guidance, if DPM is the only pollutant of concern, the air district should be consulted prior to performing an acute non-cancer health analysis to determine appropriate procedures and confirm the assessment is warranted.[43] Quantitative non-cancer chronic HI and $PM_{2.5}$ concentrations were also not calculated because SLO County APCD does not currently have risk thresholds for these parameters.

Construction-Related TAC Emissions

As noted in **Section 4.9.2.6**, Table 5, CalEEMod was used to estimate TAC emissions from off-road construction equipment with Tier 4 engines and on-road sources. As discussed below, diesel particulate matter (DPM) emissions were used as a surrogate for all TACs because it provides a protective approach to estimating health risks. The TAC emissions associated with the Project construction were estimated from the CalEEMod outputs, with the following conservative assumptions:

1. Diesel Particulate Matter (DPM): DPM emissions were used to evaluate the cancer risk from Project construction. In this analysis, both onsite (i.e., construction equipment) and local offsite (i.e., construction mobile sources) PM_{10} exhaust emissions were calculated

---

41 OEHHA Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015, http://www.oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf, accessed November 2022.

42 SLO County APCD, SLO County APCD CEQA Air Quality Handbook, April 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf, accessed November 2022.

43 Ibid.

as DPM.[44] Diesel exhaust, a complex mixture that includes hundreds of individual constituents, is identified by the State of California as a known carcinogen.[45,46] Under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. The California Environmental Protection Agency (CalEPA) and other proponents of using the surrogate approach to quantifying excess lifetime cancer risks associated with the diesel mixture indicate that this method is preferable to use of a component-based approach because it provides a protective approach to estimating health risks. A component-based approach involves estimating risks for each of the individual components of a mixture. Critics of the component-based approach believe it will underestimate the risks associated with diesel as a whole mixture because the identity of all chemicals in the mixture may not be known and/or exposure and health effects information for all chemicals identified within the mixture may not be available. Furthermore, CalEPA has concluded that "potential cancer risk from inhalation exposure to whole diesel exhaust will exceed the multi-pathway cancer risk from the speciated components".[47] This analysis was based on the surrogate approach, as recommended by CalEPA. This analysis also conservatively assumed the small fraction of non-diesel PM_{10} (i.e., PM_{10} emissions from gasoline fueled or natural gas fueled vehicles in the CalEEMod default vendor fleet) was DPM, which has greater human health impacts than the speciated components of other fuels.[48] Worker trips are not evaluated, consistent with BAAQMD CEQA Guidelines, which state that 10,000 passenger vehicles per day or fewer is considered a minor, low-impact source that does not pose a significant health impact even in combination with other sources nearby. This screening criteria was developed prior to updated exposure parameters from OEHHA (2015).[49] To account for the updated exposure parameters, Ramboll conservatively assumes that traffic of less than 5,000 passenger vehicles per day is a minor source of TACs. Since the Project construction would have a maximum of 600 worker trips per day, these trips are considered minor and are not evaluated.

The modelled emissions and the sources they were attributed to are presented in **Appendix A**, **Table 6**.

---

[44] On-road construction worker trips are primarily gasoline-fueled which contribute negligible TAC emissions and are therefore not included in the HRA analysis.

[45] CalEPA, OEHHA, 1998, Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting.

[46] CalEPA, OEHHA, OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values, May 2018, https://www.arb.ca.gov/toxics/healthval/contable.pdf, accessed November 2022.

[47] CalEPA, OEHHA, Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. Appendix D: Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines. February 2015, https://oehha.ca.gov/media/downloads/crnr/2015gmappendices.pdf, accessed November 2022.

[48] A comprehensive analysis of human health impacts associated with diesel and gasoline exhaust by the International Agency for Research on Cancer (IARC) found that while there is sufficient evidence for the carcinogenicity of diesel engine exhaust, there is inadequate evidence in humans for the carcinogenicity of gasoline engine exhaust. For more information, see: IARC. 2014, Diesel and Gasoline Engine Exhausts and Some Nitroarenes, Volume 105, https://www.ncbi.nlm.nih.gov/books/NBK294269/pdf/Bookshelf_NBK294269.pdf

[49] Ibid.

Estimated Air Concentrations

To estimate air concentrations of DPM, Ramboll used the American Meteorological Society/Environmental Protection Agency Regulatory Air Dispersion Model (AERMOD) (version 22112), a steady-state Gaussian plume model developed by USEPA for regulatory applications.[50] AERMOD requires emission source locations and release parameters, receptor locations, and processed meteorological data. The construction and operational source parameters are shown in **Appendix A**, **Table 7**. Ramboll used five years of meteorological data from the San Luis County Regional Airport meteorological station (KSBP), which was the best available dataset to represent the Project site conditions, based on terrain and wind data. The KSBP site was chosen because it is close to the Project site with the most comprehensive available meteorological data. Additionally, it exhibits similar terrain to the Project site, without major disturbances between them (e.g., mountain ranges or influences from large bodies of water). Meteorological data were processed by SLO County APCD using AERMOD's Meteorological Preprocessor (AERMET) (version 18018).

In order to evaluate health impacts to nearby off-site receptors, Ramboll modelled receptors at every structure within the vicinity of the Project. Off-site receptors were modelled at a height of 1.5 meters above terrain height. **Figure 1** shows the modeling extent and nearby off-site sensitive receptor locations evaluated in the HRA.

Exposure Assessment

This analysis evaluates nearby off-site sensitive receptors based on the updated Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015), which combines information from previously released and adopted technical support documents to delineate OEHHA's revised risk assessment methodologies based on current science. SLO County APCD has issued HRA Guidelines formally adopting the OEHHA 2015 Guidance Manual. This analysis followed the recommended methodology from the 2015 OEHHA Hot Spots Guidance. Ramboll conservatively evaluated Project impacts due to construction emissions using default exposure assumptions for a resident child from OEHHA (2015) unless otherwise noted. The resident child scenario assumes a much higher daily breathing rate and age-sensitivity factor (ASF)[51] than other sensitive receptor populations and therefore is the most conservative scenario to evaluate for this analysis. The exposure parameters used to estimate excess lifetime cancer risks for a resident child are presented in **Appendix A, Table 8**.

The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

$$IF_{inh} = \frac{DBR * FAH * EF * ED * CF}{AT}$$

Where:

IF_{inh} = Intake Factor for Inhalation (m^3/kg-day)

[50] USEPA, User's Guide for the AMS/EPA Regulatory Model - AERMOD, August 2019, https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf, accessed November 2022.

[51] Ibid.

DBR = Daily Breathing Rate (L/kg-day)

FAH = Fraction of Time at Home (unitless)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

AT = Averaging Time (days)

CF = Conversion Factor, 0.001 (m^3/L)

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the OEHHA Hot Spots guidance (CalEPA 2003).

Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. This HRA evaluated theoretical exposures to TACs for one category of potential adverse health effects, cancer endpoints. Toxicity values used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

Excess lifetime cancer risk calculations for Project construction utilized the toxicity values for DPM. Toxicity values for DPM (CalEPA 2016) are as presented in **Appendix A**, **Table 10**.

Risk Characterization

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_{inh} = Ci \times CF \times IF_{inh} \times CPF_i \times ASF$$

Where:

$Risk_{inh}$ = Cancer risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unitless)

C_i = Annual average air concentration for $chemical_i$ ($\mu g/m^3$)

CF = Conversion factor (mg/µg)

IF_{inh} = Intake factor for inhalation (m^3/kg-day)

CPF_i	=	Cancer potency factor for $chemical_i$ (mg chemical/kg body weight-day)$^{-1}$
ASF	=	Age sensitivity factor (unitless)

Cancer risk was calculated from ambient annual concentrations using intake factors, cancer potency factors, and chronic reference exposure levels calculated consistent with the 2015 OEHHA Hot Spots Guidance. The analysis evaluated excess cancer risk as a result of exposure to construction and screening-level operational emissions together. The health risk results for the Proposed Project are presented below.

Health Impacts from Proposed Project Operational Sources

BAAQMD CEQA Guidance defines a project traffic source as significant if the project increases traffic on nearby freeways or roadways by at least 10,000 vehicles per day.[52] This guidance was released prior to the updated OEHHA Guidance, so this threshold may be lower due to the updated exposure assumptions. Because the Proposed Project is anticipated to generate approximately 15 operational trips per day, which is substantially lower than 10,000 trips per day, the quantitative HRA does not include operational mobile emission sources as these impacts are anticipated to be less than significant when added to construction sources. The use of an emergency fire pump is the only operational source included in the HRA. The fire pump is expected to operate 30 hours a year for emergency testing, which is consistent with ARB's Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines regulation[53].

4.9.4.2 Health Impacts from Proposed Project Construction and Operation at Off-Site Residents

The maximum estimated excess lifetime cancer risk from Proposed Project sources (assuming a residential receptor was born at the start of construction) at off-site residential locations is presented for the Proposed Project in **Table 7.** The location of the maximally exposed individual receptor is shown in **Figure 2**. As shown in **Table 7**, exposure to Proposed Project air emissions results in health impacts of a total excess cancer risk at the maximally exposed individual sensitive residential receptor of 2.47 in a million, which is below 10 in a million, the SLO County APCD threshold of significance for Type A projects. Therefore, the Proposed Project would result in a less-than-significant impact.

[52] BAAQMD, CEQA Air Quality Guidelines Update, 2017, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed November 2022.

[53] ARB. Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines, 2011, https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf, accessed November 2022

TABLE 7: LIFETIME HEALTH IMPACTS FROM THE PROPOSED PROJECT AT MAXIMALLY EXPOSED OFF-SITE RESIDENT

Source	Lifetime Excess Cancer Risk (in a million) [A]
Proposed Project Contribution	2.47
SLO County APCD Threshold	*10*
Significant?	No

Notes:

[A] Lifetime excess cancer risks from construction are assumed to begin during the first year of construction. The cancer risks were estimated using the equations specified in **Section 4.9.3.1**

Source: Ramboll, 2022; Table 11 in Appendix A.

4.9.5 Impact AQ-5

Construction and operation of the Proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant)

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source, the wind speeds and direction, and the sensitivity of the receiving location each contribute to the intensity of the impact. While offensive odors rarely cause any physical harm, they can be unpleasant and cause distress among the public and generate citizen complaints. SLO County APCD describes odor sources of concern in its CEQA guidelines and provides project screening distances for various types of operations including wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, coffee roasting facilities, etc. Facilities that are regulated by California Department of Resources Recycling and Recovery (CalRecycle) (e.g., landfills, composting facilities) are required to have Odor Impact Minimization Plans in place to mitigate potential odor impacts. None of these source types are proposed as part of the Proposed Project, and thus the Project does not anticipate any odor impacts.

During construction and operation, diesel exhaust from construction equipment and the emergency fire pump would generate some odors. Construction-related odors would be temporary and would not persist upon construction completion. The only source of operation-related odors would be from an emergency fire pump that would operate no more than 30 hours annually. Therefore, odor impacts from operation and construction would be less than significant.

The Proposed Project would have a less than significant impact with respect to generating odor.

4.10 Cumulative Impacts

This section provides a qualitative assessment of the cumulative impacts to air quality that could result from the Proposed Project in conjunction with past, present, and reasonably foreseeable future projects. SLO County APCD declares that a cumulative air quality impact analysis should encompass all planned construction activities within one mile of the project.

4.10.1 Impact C-AQ-1

The Proposed Project, in combination with past, present, and reasonably foreseeable future development in the project area, would not contribute to cumulative regional air quality impacts. (Less than Significant)

The contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and future projects in the region also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions.[54] As described above, the project-level thresholds for CAPs are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in CAPs. Therefore, because the Proposed Project's emissions do not exceed the project-level thresholds, the Proposed Project would not result in a considerable contribution to cumulative regional air quality impacts. Therefore, this impact would be less than significant.

4.10.2 Impact C-AQ-2

The Proposed Project, in combination with past, present, and reasonably foreseeable future development in the project area, would not contribute to cumulative health risk impacts on sensitive receptors. (Less than Significant)

A mix of commercial, including hotels and mixed-use commercial developments, and residential development is planned within 1-mile of the Proposed Project. These sources are not expected to have significant sources of TACs, except possibly emergency generators. Additionally, these projects could induce additional traffic near the Proposed Project. However, the health risks from these projects are expected to be minimal and the Proposed Project would not contribute to or cause a health risk impact on sensitive receptors.

[54] BAAQMD, CEQA Air Quality Guidelines, May 2017, p. 2-1.

APPENDIX A

SUPPLEMENTARY CALCULATION TABLES

Table 1
Land Use Summary
Vistra BESS
Morro Bay, California

Land Use[1]	CalEEMod Land Use	Size	Units
Industrial	User Defined Industrial	273	1000sqft

Notes:
1. Land uses analyzed based on information provided by the Project Sponsor. The site location is shown in Figure 1.

Table 2
Construction Schedule
Vistra BESS
Morro Bay, California

Construction Subphase[1]	CalEEMod Subphase	Start Date	End Date	Year	Number of Work Days	Days per Week
Fencing and Site Preparation	Site Preparation	9/30/2023	10/31/2023	2023	22	5
Foundation and Pile Installation	Grading	11/1/2023	7/30/2024	2024	195	5
BESS, substation, and Gen-tie installation	Building Construction	7/31/2024	7/31/2026	2026	523	5
	Paving	8/1/2026	8/28/2026	2026	20	5
	Architectural Coating	8/29/2026	9/30/2026	2026	23	5
Demolition of Existing Power Plant Stacks	Demolition	10/30/2026	5/31/2028	2028	414	5

Notes:

1. All construction phasing information was provided by the Project Sponsor. Construction is generally expected to occur between 7am-7pm Monday-Friday per San Luis Obispo County's construction ordinance.

Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA

Anticipated Construction Start Date:	9/30/2023

Construction Subphase(s)	Equipment Name[1]	CalEEMod Equipment Name[2]	Fuel[3]	Number[1]	Horsepower[1]	Daily Usage (hours/day)[1]	Utilization[4]	Controlled Engine Tier[5]
Site Preparation	Scrapers	Scrapers	Diesel	2	500	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
Grading	Pile Drivers	Excavators	Diesel	10	600	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
Building Construction	Cranes	Cranes	Diesel	16	750	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
	Trenchers	Trenchers	Diesel	4	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
Paving	Pavers	Pavers	Diesel	2	81	8	100%	Tier 4 Interim
	Paving Equipment	Paving Equipment	Diesel	2	89	8	100%	Tier 4 Interim
	Rollers	Rollers	Diesel	2	36	8	100%	Tier 4 Interim
Architectural Coating	Air Compressors	Air Compressors	Diesel	2	37	6	100%	Tier 4 Interim
Demolition	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim
	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	85	5	100%	Average
	Skid Steer Loaders	Skid Steer Loaders	Diesel	2	85	6	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	435	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	2	360	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	355	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	290	4	100%	Tier 4 Interim
	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	225	4	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim

Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA

Notes:

1. Equipment information was provided by the Project Sponsor.
2. CalEEMod equipment types are assigned using CalEEMod Appendix G.
3. All equipment is conservatively assumed to be diesel-fueled.
4. Equipment horsepower is based on information provided by the Project Sponsor. Where no horsepower was provided, CalEEMod Appendix G defaults were used.
5. Controlled equipment engine tiers are conservatively assumed to be Tier 4 Interim.

References:

The California Emissions Estimator Model (CalEEMod). Available at: http://www.caleemod.com/

Table 4
Construction Trips
Vistra BESS
Morro Bay, California

Construction Area	Construction Activity	Year	Construction Days	Worker Trip Rates[1] (one-way trips/day)	Vendor Trip Rates[2] (one-way trips/day)	Hauling Trips[3] (one-way trips/day)	Trip Lengths[4] (miles/one way trip)		
							Worker	Vendor	Hauling
Project Site	Site Preparation	2023	22	100	0	0	10.8	6.9	20
	Grading	2023	44	200	30	0	10.8	6.9	20
		2024	151	200	30	0	10.8	6.9	20
	Building Construction	2024	110	600	40	0	10.8	6.9	20
		2025	262	600	40	0	10.8	6.9	20
		2026	151	600	40	0	10.8	6.9	20
	Paving	2026	20	600	10	0	10.8	6.9	20
	Architcectural Coating	2026	23	600	0	0	10.8	6.9	20
	Demolition	2026	45	134	5	32	10.8	6.9	101
		2027	261	134	5	32	10.8	6.9	101
		2028	108	134	5	32	10.8	6.9	101

EMFAC Data[5]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Luis Obispo County Calendar Years 2023-2028 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		100% MHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

1. Worker trip rates are based on the number of expected staff in each phase provided by the Project Sponsor.
2. Vendor trip rates are based on the number of expected daily deliveries in each phase provided by the Project Sponsor.
3. Hauling trips were estimated based on the demolition tonnage provided by the Project Sponsor assuming no import material. Export quantities are converted from tons to corresponding one-way trips per phase by assuming 20 tons per truck. Default truck capacities are consistent with CalEEMod User Guide.
4. Worker, vendor and haul trip lengths are based on CalEEMod Appendix G defaults for San Luis Obispo County.
5. Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References:

The California Emissions Estimator Model (CalEEMod). Available at: http://www.caleemod.com/
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 5
CAP and GHG Emissions Comparison to Thresholds
Vistra BESS
Morro Bay, California

ROG + NOx, DPM

Pollutant[1]	Unmitigated Emissions (tons/quarter)[2]	Tier 1 Threshold (tons/quarter)	Exceeds Threshold?	Mitigated Emissions (tons/quarter)[3]	Tier 2 Threshold (tons/quarter)	Exceeds Threshold?
ROG + NO_x (Combined)	14.97	2.5	***Yes***	3.45	6.3	***No***
DPM	0.56	0.13	***Yes***	0.02	0.32	***No***

Fugitive Particulate Matter (PM10), Dust

Unmitigated Emissions (tons/quarter)[4]	Threshold (tons/quarter)	Exceeds Threshold?
0.32	3	***No***

GHGs

Annual Emissions		
Output (MT CO2e/year)	**Threshold[5]**	**Exceeds Threshold?**
1094	1,100	***No***

Notes:

1. Maximum annual emissions of ROG and NOx were divided by four and summed to obtain a quarterly average for comparison with the applicable SLO County APCD threshold. Because these maximums occurred in different years, the total emissions presented here is a conservative estimate. Maximum annual emissions of Diesel Particulate Matter was also divided by four to obtain a quarterly average for comparison with the applicable SLO County APCD threshold.
2. Unmitigated emissions were modeled using off-road construction equipment with an average Tier emissions standards rating.
3. Mitigated emissions were modeled using off-road construction equipment with a Tier 4 Interim emissions standards rating.
4. Maximum annual emissions of fugitive PM_{10} were divided by four to obtain a quarterly average for comparison with applicable SLO County APCD threshold.
5. Greenhouse gas threshold is based on the Sacramento Metropolitan Air Quality Management District's GHG thresholds, based on conversations with SLO County APCD. In addition to having emissions less than the threshold, the project must implement the following Best Management Practices (BMPs) to be less than significant:

   BMP 1 - No natural gas: projects shall be designed and constructed without natural gas infrastructure.

   BMP 2 - Electric vehicle (EV) ready: projects shall meet the current CalGreen Tier 2 standards, except all EV capable spaces shall be instead EV ready.

Abbreviations:

CO2e - Carbon dioxide equivalent
ROG - Reactive organic gases
NOx - Oxides of nitrogen
GHG - Greenhouse gases
PM10 - Particulate matter <10 microns
SLO County APCD - San Luis Obispo Air Pollution Control District
MT - Metric ton

References:

SLO County APCD. CEQA Air Quality Handbook. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf

Table 6
Modeling Parameters
Vistra BESS
Morro Bay, California

Construction Sources

Source	Source Type	Number of Sources	Source Dimension	Release Height	Initial Vertical Dimension	Initial Lateral Dimension
			[m]	[m]	[m]	[m]
Construction	Area	1	Approximate Equipment Area	5.0	1.4	--
Demolition	Area	1	Approximate Equipment Area	5.0	1.4	--

Operational Sources

Source	Source Type	Number of Sources	Stack Height	Stack Velocity	Exit Diameter	Stack Temperature
			[m]	[m/s]	[m]	°F
Emergency Fire Pump[2]	Point	1	1.52	111.65	0.10	1097

Notes:

1. Construction and demolition off-road equipment was modeled as one area source covering the parcel under construction. This information was provided by the Project Sponsor. Consistent with SCAQMD LST methods, the initial vertical dimension of the modeled construction equipment area source will be set to 1.4 meters and the release height will be set to 5 meters. Emissions from truck travel were also applied to these area sources.

2. The emergency fire pump was modeled by compiling parameters (i.e., stack height and exit diameter) representative of a 350-hp model.

Abbreviations:

AERMOD - Atmospheric Dispersion MODeling
°F - Fahrenheit
s - second
LST - Localized Significance Threshold
m - meter

References:

South Coast Air Quality Management District (SCAQMD). 2008. Final Localized Significance Threshold Methodology. July. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2

Table 7
Exposure Parameters
Vistra BESS
Morro Bay, California

Scenarios:
Construction+Demolition+Operation

Receptor Type	Project Phase	Year	Receptor Age Group	Exposure Parameters						
				Daily Breathing Rate (DBR)[1]	Exposure Duration (ED)[2]	Fraction of Time at Home (FAH)[3]	Exposure Frequency (EF)[4]	Age Sensitivity Factor (ASF)[5]	Averaging Time (AT)[6]	ASF-Weighted Intake Factor, Inhalation (IF_{inh})
				[L/kg-day]	[years]	[unitless]	[days/year]		[days]	[m^3/kg-day]
Residential	Construction	2023	3rd Trimester	361	0.25	0.85	350	10	25,500	1.06E-02
		2023	0-<2	1090	0.003	0.85		10		3.48E-04
		2024	0-<2	1090	1.00	0.85		10		1.27E-01
		2025	0-<2	1090	1.00	0.85		10		1.27E-01
		2025	2-<16	745	0.003	0.72		3		6.05E-05
		2026	2<-16	745	0.75	0.72		3		1.65E-02
	Demolition	2026	2<-16	745	0.17	0.72		3		3.81E-03
		2027	2<-16	745	1.00	0.72		3		2.21E-02
		2028	2<-16	745	0.42	0.72		3		9.17E-03
	Operation	All	2-<16	745	12	0.72		3		2.58E-01
		All	16<30	335	14	0.73		1		4.70E-02

Notes:

1. Daily breathing rates reflect 95th percentile default breathing rates from OEHHA (OEHHA 2015) section 5.4.1.
2. Exposure duration for residential receptors is assumed to begin at the start of construction and continue for 30 years of operation.
3. Fraction of time spent at home reflects the default numbers in OEHHA section 8.2.2.
4. Exposure frequency reflects the default value recommended in OEHHA Equation 5.4.3.1.1.A. for residential receptors.
5. Age sensitivity factor reflects the default numbers in OEHHA section 8.2.1.
6. Averaging time reflects the recommended value in OEHHA section 8.2.4.

Calculation:

IF_{inh} = DBR * FAH * EF * ED * CF / AT
CF = 0.001 (m^3/L)

Abbreviations:

AT - averaging time
DBR - daily breathing rate
ED - exposure duration
EF - exposure frequency
FAH - fraction of time at home
IF_{inh} - intake factor
kg - kilogram
L - liter
m^3 - cubic meter
OEHHA - Office of Environmental Health Hazard Assessment

References:

OEHHA. February 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

Table 8
Age Sensitivity Factors
Vistra BESS
Morro Bay, California

Receptor Age Group	Value[1]
3rd Trimester	10
Age 0-<2 Years	10
Age 2-<9 Years	3
Age 2-<16 Years	3
Age >16 Years	1

Notes:

1. Based on OEHHA 2015. Age sensitivity factors are unitless.

Abbreviations:

OEHHA - Office of Environmental Health Hazard Assessment

References:

OEHHA. 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 9
Toxicity Values
Vistra BESS
Morro Bay, California

Source	Chemical[1]	CAS Number	Cancer Potency Factor
			(mg/kg-day)$^{-1}$
PM_{10}	Diesel PM	9-90-1	1.1

Notes:

1. Toxicity values are taken from ARB's Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values.

Abbreviations:

ARB - Air Resources Board
Cal/EPA - California Environmental Protection Agency
CAS - chemical abstract services
mg/kg-day - milligrams per kilogram per day
OEHHA - Office of Environmental Health Hazard Assessment

References:

Cal/EPA. 2016. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. March. Available at: http://www.arb.ca.gov/toxics/healthval/contable.pdf.

Table 10
Modeled Emission Rates from Construction and Operational Sources
Morro Bay BESS Installation
Morro Bay, California

Year	Source Description	Modeled Source Group Name	Uncontrolled DPM Emission Rate (g/s)[1]	Controlled DPM Emission Rate (g/s)[2]
2023	Site Preparation	CON	1.73E-03	2.88E-04
2023	Grading		5.90E-03	7.19E-04
2024	Grading		1.71E-02	1.87E-03
2024	Building Construction		3.27E-02	4.31E-04
2025	Building Construction		6.49E-02	1.29E-03
2026	Building Construction		3.06E-02	7.19E-04
2026	Paving		2.88E-04	2.88E-04
2026	Architectural Coating		1.44E-04	1.44E-04
2026	Demolition	DEM	1.73E-03	5.75E-04
2027	Demolition		9.92E-03	1.87E-03
2028	Demolition		4.17E-03	7.19E-04
All	Fire Pump	PUMP	1.44E-04	1.44E-04

Notes:

1. Uncontrolled DPM emissions represent emisisons from average-tier offroad construction equipment.
2. Controlled DPM emissions represent emissions from Tier 4 Interim offroad construction equipment.

Abbreviations:

CalEEMod - California Emissions Estimator Model
DPM - diesel particulate matter
g - gram
s - second

References:

The California Emissions Estimator Model (CalEEMod). Available at: http://www.caleemod.com/

Table 11
Project Health Impacts
Morro Bay BESS Installation
Morro Bay, California

Receptor Type	**Offsite Resident**	
Source	**Unmitigated Lifetime Excess Cancer Risk (in a million)[1,2]**	**Mitigated Lifetime Excess Cancer Risk (in a million)[1,3]**
RID	**R1646**	**R1646**
Construction	77.3	0.6
Demolition	0.3	0.02
Operation	0.08	0.04
Total Project Contribution	**77.6**	**2.62**
SLO County APCD Threshold[4]	10	10
Exceeds Threshold?	Yes	No
Location		
UTMx (m)	694,359	694,359
UTMy (m)	3,916,913	3,916,913

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to the emissions associated with the Project was calculated based on the modeled annual average DPM concentration, the intake factor for a resident child, the Cancer Potency Factors (CPF) for Diesel Particulate Matter (DPM), and the Age Sensitivity Factors (ASF).

2. Unmitigated lifetime excess cancer risk represent impacts from construction activites using average-tier offroad construction equipment.

3. Mitigated lifetime excess cancer risk represents health impacts from construction activities using Tier 4 Interim offroad construction equipment.

4. Air districts across California are uniform in their recommendation to use the significance thresholds that have been established under each district's "Hot Spots" and permitting programs. SLO County APCD has defined the excess cancer risk significance threshold at 10 in a million for Type A projects in SLO County. Type A projects are defined as: new proposed land use projects that generate toxic air contaminants (such as gasoline stations, distribution facilities or asphalt batch plants) that impact sensitive receptors.

Abbreviations:

CARB - California Air Resources Board

g - gram

kg - kilogram

m - meter

MEIR - maximally exposed individual receptor

mg - milligram

SLO County APCD - San Luis Obispo Air Pollution Control District

References:

OEHHA. 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Available online at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

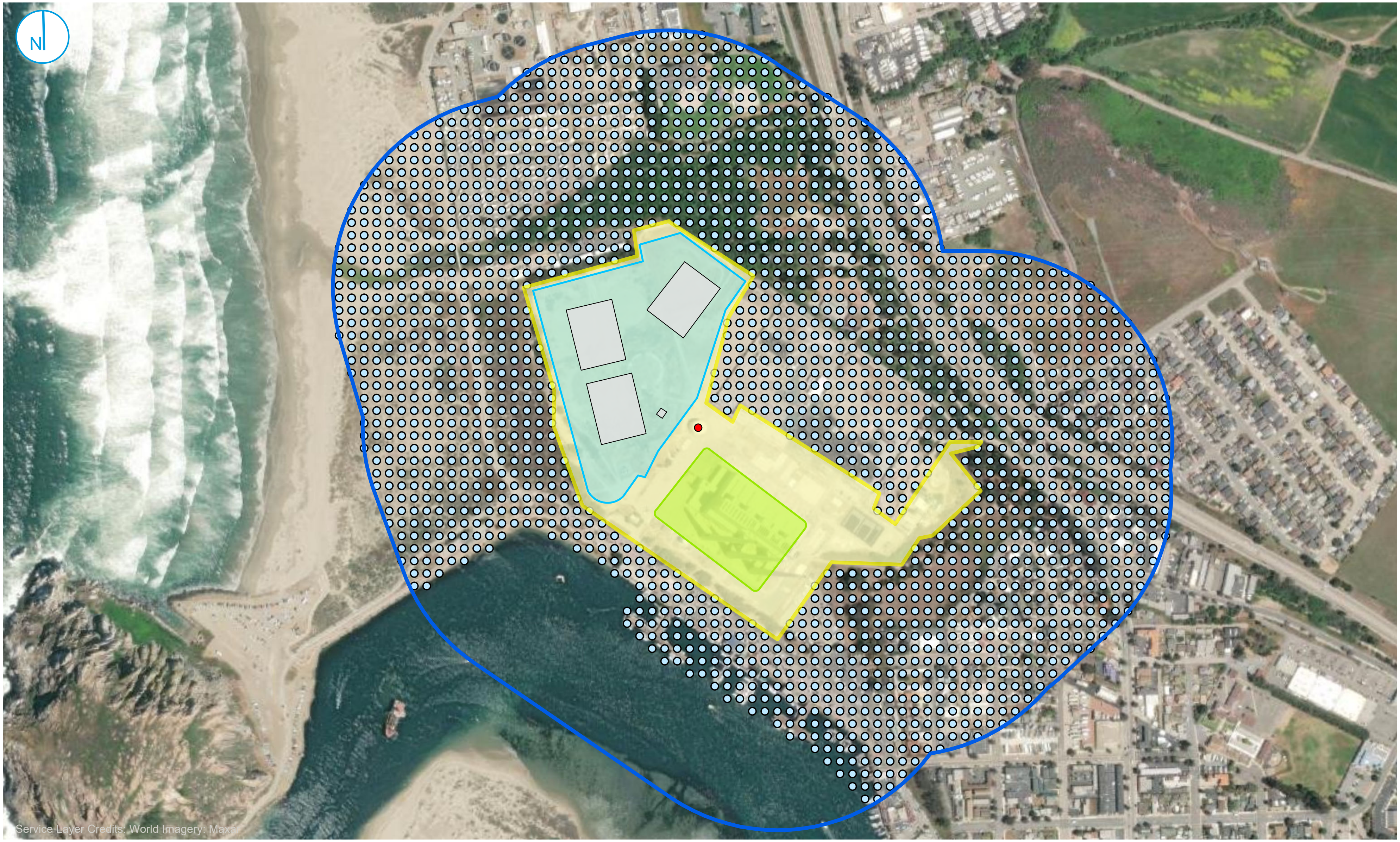
SLO County APCD. 2012. SLO County APCD CEQA Air Quality Handbook. Available online at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf

APPENDIX B

FIGURES

PROJECT: 169000XXXX | DATED: 11/30/2022 | DESIGNER: KFERGUSON

C:\Users\KFERGUSON\Documents\VistraBESS\VistraBESS.aprx\Fig1



Demolition Area
Buildings
Construction Area
Fire Pump
Project Site Boundary
Receptor Grid
Modeling Extent (1,000 ft. Buffer)

0 600 1,200 Feet

PROJECT BOUNDARY AND MODELING EXTENT

Morro Bay BESS Installation
City of Morro Bay
Morro Bay, California

FIGURE 01

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

Project Site Boundary
Modeling Extent (1,000 ft. Buffer)
Maximally Exposed Individual Resident

0 600 1,200 Feet

MAXIMALLY EXPOSED INDIVIDUAL RECEPTOR LOCATION

Morro Bay BESS Installation
City of Morro Bay
Morro Bay, California

FIGURE 02

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

APPENDIX C

CALEEMOD OUTPUT FILES

APPENDIX C.1

UMITIGATED CALEEMOD EMISSIONS

Vistra BESS - Tier Mitigated v2 Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vistra BESS - Tier Mitigated v2
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	24.0
Location	35.37488204736745, -120.85921757800375
County	San Luis Obispo
City	Morro Bay
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3324
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	24.0	273,000	0.00	—	—	Buildings housing battery energy storage system

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	50.4	278	468	364	0.40	20.6	18.3	26.1	18.9	8.42	20.1	—	48,061	48,061	2.02	1.95	24.4	48,335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	50.3	42.4	469	363	0.40	20.6	18.3	27.3	18.9	8.42	20.1	—	47,853	47,853	2.05	1.95	0.68	48,105
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	31.1	31.4	297	223	0.28	12.3	8.99	18.5	11.4	3.83	12.5	—	34,130	34,130	1.35	1.40	7.39	34,314
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.67	5.74	54.1	40.6	0.05	2.25	1.64	3.37	2.07	0.70	2.29	—	5,651	5,651	0.22	0.23	1.22	5,681
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	Yes	—	—	—	—	—	Yes	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshol	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	No	Yes	—	—	—	—	—	Yes	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	16.7	14.1	136	105	0.23	5.45	18.2	23.6	5.01	8.28	13.3	—	25,585	25,585	1.05	0.23	3.94	25,685
2024	50.4	42.5	468	364	0.40	20.6	18.3	26.1	18.9	8.42	20.1	—	48,061	48,061	2.02	0.67	24.4	48,335
2025	43.6	36.8	415	313	0.40	17.3	4.80	22.1	15.9	1.13	17.0	—	47,952	47,952	2.01	0.67	22.7	48,225
2026	37.0	278	362	263	0.40	14.0	4.80	18.8	12.9	1.13	14.0	—	47,813	47,813	1.86	0.66	21.0	48,079
2027	8.34	6.65	60.1	45.1	0.19	2.60	11.1	13.7	2.33	2.15	4.48	—	25,165	25,165	1.06	1.95	24.0	25,796
2028	8.37	6.76	61.0	45.2	0.19	2.59	11.1	13.7	2.40	2.15	4.55	—	24,833	24,833	0.99	1.88	21.9	25,439
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	26.0	21.9	222	167	0.38	8.99	18.3	27.3	8.27	8.42	16.7	—	43,164	43,164	1.78	0.50	0.25	43,357
2024	50.3	42.4	469	363	0.40	20.6	18.3	26.1	18.9	8.42	20.1	—	47,853	47,853	2.05	0.67	0.63	48,105
2025	43.5	36.8	415	312	0.40	17.3	4.80	22.1	15.9	1.13	17.0	—	47,750	47,750	1.89	0.67	0.59	47,998
2026	36.9	31.2	362	262	0.40	14.0	11.1	18.8	12.9	2.15	14.0	—	47,615	47,615	1.89	1.95	0.68	47,860
2027	8.33	6.64	60.4	44.8	0.19	2.60	11.1	13.7	2.33	2.15	4.48	—	25,122	25,122	1.07	1.95	0.62	25,731
2028	8.36	6.75	61.3	45.0	0.19	2.59	11.1	13.7	2.40	2.15	4.55	—	24,791	24,791	0.99	1.88	0.57	25,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	4.11	3.46	34.7	26.2	0.06	1.40	3.27	4.67	1.29	1.50	2.79	—	6,694	6,694	0.28	0.07	0.60	6,724
2024	25.0	21.1	222	174	0.28	9.46	8.99	18.5	8.71	3.83	12.5	—	32,299	32,299	1.35	0.41	4.79	32,459
2025	31.1	26.2	297	223	0.28	12.3	3.38	15.7	11.4	0.80	12.1	—	34,130	34,130	1.35	0.48	7.01	34,314

2026	16.7	31.4	159	117	0.19	6.15	3.86	10.0	5.66	0.85	6.51	—	23,544	23,544	0.93	0.54	6.14	23,734
2027	5.95	4.74	43.2	32.0	0.14	1.85	7.91	9.76	1.67	1.53	3.19	—	17,949	17,949	0.76	1.40	7.39	18,391
2028	2.49	2.01	18.3	13.4	0.06	0.77	3.29	4.06	0.71	0.64	1.35	—	7,376	7,376	0.29	0.56	2.81	7,553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.75	0.63	6.34	4.78	0.01	0.26	0.60	0.85	0.24	0.27	0.51	—	1,108	1,108	0.05	0.01	0.10	1,113
2024	4.57	3.85	40.6	31.7	0.05	1.73	1.64	3.37	1.59	0.70	2.29	—	5,347	5,347	0.22	0.07	0.79	5,374
2025	5.67	4.79	54.1	40.6	0.05	2.25	0.62	2.87	2.07	0.15	2.22	—	5,651	5,651	0.22	0.08	1.16	5,681
2026	3.05	5.74	29.0	21.4	0.03	1.12	0.70	1.83	1.03	0.16	1.19	—	3,898	3,898	0.15	0.09	1.02	3,930
2027	1.09	0.87	7.89	5.84	0.03	0.34	1.44	1.78	0.30	0.28	0.58	—	2,972	2,972	0.13	0.23	1.22	3,045
2028	0.45	0.37	3.34	2.44	0.01	0.14	0.60	0.74	0.13	0.12	0.25	—	1,221	1,221	0.05	0.09	0.47	1,250

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Area	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Area	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.04	0.25	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	58.9	58.9	< 0.005	< 0.005	0.08	59.9
Area	1.91	9.34	0.09	10.7	< 0.005	0.01	—	0.01	0.02	—	0.02	—	44.1	44.1	< 0.005	< 0.005	—	44.3

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.2	24.2	< 0.005	< 0.005	—	24.2
Total	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Area	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	255	255	0.04	< 0.005	—	257
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.06	5.94	47.2	36.4	0.12	2.40	—	2.40	2.21	—	2.21	—	12,924	12,924	0.52	0.10	—	12,969

Demolitio	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.87	0.73	5.82	4.48	0.01	0.30	—	0.30	0.27	—	0.27	—	1,593	1,593	0.06	0.01	—	1,599
Demolition	—	—	—	—	—	—	0.88	0.88	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.06	0.82	< 0.005	0.05	—	0.05	0.05	—	0.05	—	264	264	0.01	< 0.005	—	265
Demolition	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.53	0.43	4.81	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,015	1,015	0.03	0.04	0.11	1,029
Vendor	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	110	110	< 0.005	0.02	0.01	114
Hauling	0.67	0.16	14.2	4.02	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,363	11,363	0.51	1.79	0.56	11,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	126	126	< 0.005	0.01	0.22	128
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.1

Hauling	0.08	0.02	1.76	0.49	0.01	0.03	0.10	0.12	0.02	0.04	0.05	—	1,401	1,401	0.06	0.22	1.15	1,469
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.34
Hauling	0.02	< 0.005	0.32	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	232	232	0.01	0.04	0.19	243

3.3. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.09	5.96	46.4	36.4	0.12	2.38	—	2.38	2.19	—	2.19	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.09	5.96	46.4	36.4	0.12	2.38	—	2.38	2.19	—	2.19	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.07	4.26	33.2	26.0	0.09	1.70	—	1.70	1.56	—	1.56	—	9,230	9,230	0.37	0.07	—	9,261

Demolitio	—	—	—	—	—	—	5.11	5.11	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	0.78	6.05	4.75	0.02	0.31	—	0.31	0.29	—	0.29	—	1,528	1,528	0.06	0.01	—	1,533
Demolition	—	—	—	—	—	—	0.93	0.93	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.35	4.74	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,040	1,040	0.02	0.04	3.88	1,057
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.25	112
Hauling	0.67	0.16	13.2	3.87	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,095	11,095	0.51	1.79	19.9	11,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.40	4.49	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	997	997	0.03	0.04	0.10	1,011
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.01	112
Hauling	0.67	0.16	13.5	3.88	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,096	11,096	0.51	1.79	0.51	11,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.36	0.28	3.19	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	717	717	0.02	0.03	1.20	728
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	76.6	76.6	< 0.005	0.01	0.08	80.1
Hauling	0.48	0.12	9.71	2.76	0.05	0.15	0.56	0.71	0.10	0.20	0.31	—	7,925	7,925	0.36	1.28	6.12	8,321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.58	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	119	119	< 0.005	0.01	0.20	121
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3

Hauling	0.09	0.02	1.77	0.50	0.01	0.03	0.10	0.13	0.02	0.04	0.06	—	1,312	1,312	0.06	0.21	1.01	1,378

3.5. Demolition (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.24	6.08	48.0	37.0	0.12	2.45	—	2.45	2.25	—	2.25	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.24	6.08	48.0	37.0	0.12	2.45	—	2.45	2.25	—	2.25	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.15	1.81	14.3	11.0	0.04	0.73	—	0.73	0.67	—	0.67	—	3,839	3,839	0.16	0.03	—	3,852
Demolition	—	—	—	—	—	—	2.13	2.13	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.39	0.33	2.61	2.01	0.01	0.13	—	0.13	0.12	—	0.12	—	636	636	0.03	0.01	—	638
Demolition	—	—	—	—	—	—	0.39	0.39	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.51	0.31	4.46	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,022	1,022	0.02	0.04	3.56	1,039
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	104	104	< 0.005	0.02	0.22	109
Hauling	0.60	0.16	12.5	3.72	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,800	10,800	0.44	1.72	18.1	11,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.50	0.36	4.26	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	980	980	0.03	0.04	0.09	993
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	105	105	< 0.005	0.02	0.01	109
Hauling	0.60	0.16	12.8	3.73	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,801	10,801	0.44	1.72	0.47	11,324
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	293	293	0.01	0.01	0.46	298
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.5
Hauling	0.18	0.05	3.85	1.11	0.02	0.04	0.23	0.28	0.04	0.08	0.13	—	3,213	3,213	0.13	0.51	2.33	3,371
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.08	49.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.14	5.14	< 0.005	< 0.005	< 0.005	5.37
Hauling	0.03	0.01	0.70	0.20	< 0.005	0.01	0.04	0.05	0.01	0.02	0.02	—	532	532	0.02	0.08	0.39	558

3.7. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	16.2	13.6	136	100	0.23	5.45	—	5.45	5.01	—	5.01	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	16.2	13.6	136	100	0.23	5.45	—	5.45	5.01	—	5.01	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.82	8.17	6.04	0.01	0.33	—	0.33	0.30	—	0.30	—	1,492	1,492	0.06	0.01	—	1,497
Dust From Material Movement	—	—	—	—	—	—	1.05	1.05	—	0.49	0.49	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.49	1.10	< 0.005	0.06	—	0.06	0.06	—	0.06	—	247	247	0.01	< 0.005	—	248
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.37	4.64	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	835	835	0.05	0.03	3.94	850
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.43	4.41	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	800	800	0.05	0.03	0.10	811
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.10	49.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.04	8.04	< 0.005	< 0.005	0.02	8.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	24.9	20.9	220	157	0.38	8.98	—	8.98	8.26	—	8.26	—	40,873	40,873	1.66	0.33	—	41,013
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.97	2.50	26.3	18.8	0.05	1.07	—	1.07	0.99	—	0.99	—	4,879	4,879	0.20	0.04	—	4,896
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.96	0.96	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.46	4.80	3.43	0.01	0.20	—	0.20	0.18	—	0.18	—	808	808	0.03	0.01	—	811

Dust From Material Movement	—	—	—	—	—	—	0.36	0.36	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.94	0.86	8.82	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,600	1,600	0.10	0.07	0.20	1,622
Vendor	0.06	0.03	1.11	0.46	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	691	691	0.02	0.10	0.05	722
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	192	192	0.01	0.01	0.40	195
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.5	82.5	< 0.005	0.01	0.09	86.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	31.8	31.8	< 0.005	< 0.005	0.07	32.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	14.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	22.8	19.2	194	147	0.38	7.85	—	7.85	7.22	—	7.22	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	22.8	19.2	194	147	0.38	7.85	—	7.85	7.22	—	7.22	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.47	7.96	80.3	60.9	0.16	3.26	—	3.26	3.00	—	3.00	—	16,928	16,928	0.69	0.14	—	16,986
Dust From Material Movement	—	—	—	—	—	—	6.88	6.88	—	3.32	3.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.73	1.45	14.7	11.1	0.03	0.59	—	0.59	0.55	—	0.55	—	2,803	2,803	0.11	0.02	—	2,812

Dust From Material Movement	—	—	—	—	—	—	1.25	1.25	—	0.61	0.61	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.98	0.87	0.69	8.63	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,641	1,641	0.09	0.07	7.34	1,670
Vendor	0.06	0.03	1.03	0.42	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	1.76	713
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.93	0.86	0.76	8.18	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,572	1,572	0.10	0.07	0.19	1,594
Vendor	0.06	0.03	1.07	0.43	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	0.05	712
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.35	0.31	3.39	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	657	657	0.04	0.03	1.31	667
Vendor	0.02	0.01	0.44	0.18	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	283	283	0.01	0.04	0.31	296
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.62	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	109	109	0.01	< 0.005	0.22	110
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	46.8	46.8	< 0.005	0.01	0.05	48.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	47.4	39.8	465	338	0.39	20.6	—	20.6	18.9	—	18.9	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	47.4	39.8	465	338	0.39	20.6	—	20.6	18.9	—	18.9	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	14.3	12.0	140	102	0.12	6.20	—	6.20	5.70	—	5.70	—	12,727	12,727	0.52	0.10	—	12,771
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.61	2.19	25.6	18.6	0.02	1.13	—	1.13	1.04	—	1.04	—	2,107	2,107	0.09	0.02	—	2,114
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.95	2.61	2.06	25.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,922	4,922	0.27	0.20	22.0	5,010
Vendor	0.08	0.04	1.38	0.56	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	908	908	0.03	0.13	2.35	951
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.57	2.28	24.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,715	4,715	0.30	0.20	0.57	4,781
Vendor	0.07	0.04	1.42	0.58	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	909	909	0.03	0.13	0.06	949
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.77	0.68	7.38	0.00	0.00	0.09	0.09	0.00	0.00	0.00	—	1,431	1,431	0.09	0.06	2.86	1,454
Vendor	0.02	0.01	0.43	0.17	< 0.005	< 0.005	0.01	0.02	< 0.005	0.01	0.01	—	274	274	0.01	0.04	0.30	286
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	237	237	0.01	0.01	0.47	241
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	45.3	45.3	< 0.005	0.01	0.05	47.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	40.8	34.3	412	288	0.39	17.3	—	17.3	15.9	—	15.9	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	40.8	34.3	412	288	0.39	17.3	—	17.3	15.9	—	15.9	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	29.1	24.5	294	206	0.28	12.3	—	12.3	11.3	—	11.3	—	30,163	30,163	1.22	0.24	—	30,267
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.32	4.47	53.7	37.6	0.05	2.25	—	2.25	2.07	—	2.07	—	4,994	4,994	0.20	0.04	—	5,011
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.70	2.51	1.89	24.1	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,831	4,831	0.26	0.20	20.4	4,916
Vendor	0.07	0.04	1.31	0.53	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	892	892	0.03	0.13	2.34	935
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.69	2.47	2.11	22.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,628	4,628	0.15	0.20	0.53	4,690
Vendor	0.07	0.04	1.35	0.54	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	893	893	0.03	0.13	0.06	933
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.89	1.74	1.49	16.4	0.00	0.00	0.20	0.20	0.00	0.00	0.00	—	3,329	3,329	0.10	0.14	6.29	3,380
Vendor	0.05	0.03	0.96	0.38	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	638	638	0.02	0.10	0.72	667
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.32	0.27	2.99	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	551	551	0.02	0.02	1.04	560
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	106	106	< 0.005	0.02	0.12	110

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	34.3	28.8	359	240	0.39	14.0	—	14.0	12.9	—	12.9	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	34.3	28.8	359	240	0.39	14.0	—	14.0	12.9	—	12.9	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	14.2	12.0	149	99.4	0.16	5.81	—	5.81	5.34	—	5.34	—	17,505	17,505	0.71	0.14	—	17,565

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.60	2.18	27.2	18.1	0.03	1.06	—	1.06	0.98	—	0.98	—	2,898	2,898	0.12	0.02	—	2,908
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.06	0.03	1.25	0.50	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	2.18	917
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.38	1.94	21.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,545	4,545	0.15	0.20	0.49	4,607
Vendor	0.06	0.03	1.28	0.51	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	0.06	915
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	0.98	0.79	8.87	0.00	0.00	0.12	0.12	0.00	0.00	0.00	—	1,899	1,899	0.05	0.08	3.38	1,928
Vendor	0.03	0.01	0.53	0.21	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	364	364	0.01	0.05	0.39	380
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	1.62	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	314	314	0.01	0.01	0.56	319
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	60.2	60.2	< 0.005	0.01	0.06	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.02	0.01	0.31	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	219	219	0.01	0.03	0.54	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.17	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	251	251	0.01	0.01	0.45	255
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.21	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	41.5	41.5	< 0.005	< 0.005	0.07	42.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.44
Architectural Coatings	—	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.39	1.39	< 0.005	< 0.005	—	1.40
Architectural Coatings	—	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	0.51	293
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.25	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.8	47.8	< 0.005	< 0.005	0.09	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Total	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257
Total	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.11	1.95	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Total	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.35	0.32	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Total	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/30/2026	5/31/2028	5.00	414	—
Site Preparation	Site Preparation	9/30/2023	10/31/2023	5.00	22.0	—
Grading	Grading	11/1/2023	7/30/2024	5.00	195	—
Building Construction	Building Construction	7/31/2024	7/31/2026	5.00	523	—
Paving	Paving	8/1/2026	8/28/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	8/29/2026	9/30/2026	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Skid Steer Loaders	Diesel	Average	1.00	5.00	85.0	0.37
Demolition	Cranes	Diesel	Average	1.00	4.00	335	0.29
Demolition	Skid Steer Loaders	Diesel	Average	1.00	5.00	85.0	0.37
Site Preparation	Scrapers	Diesel	Average	2.00	8.00	500	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Average	6.00	8.00	300	0.40
Grading	Excavators	Diesel	Average	10.0	8.00	600	0.38
Grading	Forklifts	Diesel	Average	4.00	8.00	150	0.20
Grading	Rubber Tired Loaders	Diesel	Average	2.00	8.00	300	0.40
Grading	Graders	Diesel	Average	6.00	8.00	250	0.41
Grading	Off-Highway Trucks	Diesel	Average	3.00	8.00	350	0.37
Building Construction	Cranes	Diesel	Average	16.0	8.00	750	0.29
Building Construction	Forklifts	Diesel	Average	4.00	8.00	150	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	120	0.37
Building Construction	Trenchers	Diesel	Average	4.00	8.00	250	0.50
Building Construction	Off-Highway Trucks	Diesel	Average	3.00	8.00	350	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Demolition	Excavators	Diesel	Average	1.00	8.00	700	0.38
Demolition	Concrete/Industrial Saws	Electric	Average	1.00	5.00	85.0	0.73
Demolition	Skid Steer Loaders	Diesel	Average	2.00	6.00	85.0	0.37

Demolition	Excavators	Diesel	Average	1.00	8.00	700	0.38
Demolition	Excavators	Diesel	Average	1.00	8.00	435	0.38
Demolition	Excavators	Diesel	Average	2.00	8.00	360	0.38
Demolition	Excavators	Diesel	Average	1.00	8.00	355	0.38
Demolition	Excavators	Diesel	Average	1.00	4.00	290	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.00	225	0.37
Demolition	Cranes	Diesel	Average	1.00	4.00	335	0.29
Site Preparation	Graders	Diesel	Average	6.00	8.00	250	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Average	2.00	8.00	300	0.36
Site Preparation	Off-Highway Trucks	Diesel	Average	3.00	8.00	350	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	5.00	8.00	120	0.37
Grading	Rubber Tired Dozers	Diesel	Average	6.00	8.00	300	0.40
Building Construction	Rubber Tired Loaders	Diesel	Average	2.00	8.00	300	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	134	10.8	LDA,LDT1,LDT2
Demolition	Vendor	5.00	6.85	HHDT,MHDT
Demolition	Hauling	32.0	101	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	100	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.85	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	10.8	LDA,LDT1,LDT2
Grading	Vendor	30.0	6.85	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	600	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	40.0	6.85	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	600	10.8	LDA,LDT1,LDT2
Paving	Vendor	10.0	6.85	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	600	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.85	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	409,500	136,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	134,000	—
Site Preparation	—	—	176	0.00	—
Grading	—	—	1,170	0.00	—
Building Construction	—	—	24.0	0.00	—
Paving	0.00	0.00	0.00	0.00	5.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	5.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	231	204	0.03	< 0.005
2027	231	204	0.03	< 0.005
2028	231	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Industrial	13.0	0.00	0.00	3,389	105	0.00	0.00	27,266

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	409,500	136,500	—

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	330

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Industrial	2,753,533	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Fire Pump	Diesel	1.00	0.08	30.0	350	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.70	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	36.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack	N/A	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	13.6
AQ-PM	8.43
AQ-DPM	16.6
Drinking Water	44.2
Lead Risk Housing	54.6
Pesticides	61.6
Toxic Releases	11.4
Traffic	40.3
Effect Indicators	—
CleanUp Sites	78.0
Groundwater	35.0
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	83.0
Solid Waste	59.2
Sensitive Population	—
Asthma	40.0
Cardio-vascular	25.3

Low Birth Weights	98.9
Socioeconomic Factor Indicators	—
Education	26.4
Housing	17.4
Linguistic	—
Poverty	52.1
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—

Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	75.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	9.6
Physically Disabled	23.7
Heart Attack ER Admissions	73.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	65.9
Children	94.5
Elderly	6.6
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	87.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	54.0
Traffic Density	0.0
Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0

Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use changed to reflect information provided by project sponsor.
Construction: Construction Phases	All phases - updated duration to match information provided by project sponsor
Construction: Off-Road Equipment	All phases - updated construction equipment list to match information provided by project sponsor
Operations: Vehicle Data	Weekday trip rate - adjusted to reflect information provided by project sponsor
Operations: Energy Use	Energy use - used electricity intensity defaults for General Light Industry in EDFZ 6 (Central Coast). The buildings housing the batteries are not expected to use any natural gas, as there will be no refrigeration or heating capacity.
Construction: Trips and VMT	Updated trip numbers and trip length to match information provided by the project sponsor.
Construction: Dust From Material Movement	In the data request, water trucks are associated with building construction and are added here to reflect that. Total acres graded for Building Construction was set to 24 to reflect the project acreage
Construction: Paving	Update paved area acreage to reflect information provided by the project sponsor.

APPENDIX C.2

MITIGATED CALEEMOD EMISSIONS

Vistra BESS - Tier Mitigated v3 Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vistra BESS - Tier Mitigated v3
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	24.0
Location	35.37488204736745, -120.85921757800375
County	San Luis Obispo
City	Morro Bay
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3324
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	24.0	273,000	0.00	—	—	Buildings housing battery energy storage system

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.70	278	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	1.95	24.4	48,335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.73	5.63	103	212	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	1.95	0.68	48,105
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	19.6	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	34,130	34,130	1.35	1.40	7.39	34,314
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	3.58	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,651	5,651	0.22	0.23	1.22	5,681
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshol	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.39	3.36	64.1	131	0.23	0.47	18.2	18.6	0.47	8.28	8.75	—	25,585	25,585	1.05	0.23	3.94	25,685
2024	5.70	5.56	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	0.67	24.4	48,335
2025	4.51	4.28	43.2	101	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,952	47,952	2.01	0.67	22.7	48,225
2026	4.40	278	43.0	100.0	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,813	47,813	1.86	0.66	21.0	48,079
2027	2.74	2.18	46.5	73.9	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,165	25,165	1.06	1.95	24.0	25,796
2028	2.63	2.17	45.8	73.5	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,833	24,833	0.99	1.88	21.9	25,439
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.73	5.63	103	212	0.38	0.78	18.3	19.0	0.78	8.42	9.20	—	43,164	43,164	1.78	0.50	0.25	43,357
2024	5.65	5.54	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	0.67	0.63	48,105
2025	4.50	4.24	43.5	100	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,750	47,750	1.89	0.67	0.59	47,998
2026	4.39	4.14	47.6	98.8	0.40	0.46	11.1	11.6	0.39	2.15	2.54	—	47,615	47,615	1.89	1.95	0.68	47,860
2027	2.74	2.18	46.9	73.7	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,122	25,122	1.07	1.95	0.62	25,731
2028	2.62	2.17	46.2	73.3	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,791	24,791	0.99	1.88	0.57	25,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.89	0.87	16.2	33.1	0.06	0.12	3.27	3.39	0.12	1.50	1.62	—	6,694	6,694	0.28	0.07	0.60	6,724
2024	3.72	3.60	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	32,299	32,299	1.35	0.41	4.79	32,459
2025	3.19	3.01	31.0	71.6	0.28	0.20	3.38	3.58	0.20	0.80	1.00	—	34,130	34,130	1.35	0.48	7.01	34,314

2026	2.46	19.6	24.5	53.3	0.19	0.18	3.86	4.04	0.17	0.85	1.02	—	23,544	23,544	0.93	0.54	6.14	23,734
2027	1.95	1.55	33.6	52.6	0.14	0.33	7.91	8.24	0.28	1.53	1.80	—	17,949	17,949	0.76	1.40	7.39	18,391
2028	0.78	0.64	13.8	21.8	0.06	0.12	3.29	3.41	0.12	0.64	0.75	—	7,376	7,376	0.29	0.56	2.81	7,553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.16	0.16	2.95	6.04	0.01	0.02	0.60	0.62	0.02	0.27	0.30	—	1,108	1,108	0.05	0.01	0.10	1,113
2024	0.68	0.66	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,347	5,347	0.22	0.07	0.79	5,374
2025	0.58	0.55	5.66	13.1	0.05	0.04	0.62	0.65	0.04	0.15	0.18	—	5,651	5,651	0.22	0.08	1.16	5,681
2026	0.45	3.58	4.47	9.72	0.03	0.03	0.70	0.74	0.03	0.16	0.19	—	3,898	3,898	0.15	0.09	1.02	3,930
2027	0.36	0.28	6.12	9.60	0.03	0.06	1.44	1.50	0.05	0.28	0.33	—	2,972	2,972	0.13	0.23	1.22	3,045
2028	0.14	0.12	2.51	3.98	0.01	0.02	0.60	0.62	0.02	0.12	0.14	—	1,221	1,221	0.05	0.09	0.47	1,250

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Area	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Area	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.04	0.25	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	58.9	58.9	< 0.005	< 0.005	0.08	59.9
Area	1.91	9.34	0.09	10.7	< 0.005	0.01	—	0.01	0.02	—	0.02	—	44.1	44.1	< 0.005	< 0.005	—	44.3

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.2	24.2	< 0.005	< 0.005	—	24.2
Total	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Area	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	255	255	0.04	< 0.005	—	257
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,924	12,924	0.52	0.10	—	12,969

Demolitio	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.05	8.04	0.01	0.03	—	0.03	0.03	—	0.03	—	1,593	1,593	0.06	0.01	—	1,599
Demolitio n	—	—	—	—	—	—	0.88	0.88	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	264	264	0.01	< 0.005	—	265
Demolitio n	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.53	0.43	4.81	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,015	1,015	0.03	0.04	0.11	1,029
Vendor	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	110	110	< 0.005	0.02	0.01	114
Hauling	0.67	0.16	14.2	4.02	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,363	11,363	0.51	1.79	0.56	11,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	126	126	< 0.005	0.01	0.22	128
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.1

Hauling	0.08	0.02	1.76	0.49	0.01	0.03	0.10	0.12	0.02	0.04	0.05	—	1,401	1,401	0.06	0.22	1.15	1,469
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.34
Hauling	0.02	< 0.005	0.32	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	232	232	0.01	0.04	0.19	243

3.3. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	1.07	23.5	46.6	0.09	0.17	—	0.17	0.17	—	0.17	—	9,230	9,230	0.37	0.07	—	9,261

Demolitio	—	—	—	—	—	—	5.11	5.11	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	4.28	8.50	0.02	0.03	—	0.03	0.03	—	0.03	—	1,528	1,528	0.06	0.01	—	1,533
Demolitio n	—	—	—	—	—	—	0.93	0.93	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.35	4.74	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,040	1,040	0.02	0.04	3.88	1,057
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.25	112
Hauling	0.67	0.16	13.2	3.87	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,095	11,095	0.51	1.79	19.9	11,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.40	4.49	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	997	997	0.03	0.04	0.10	1,011
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.01	112
Hauling	0.67	0.16	13.5	3.88	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,096	11,096	0.51	1.79	0.51	11,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.36	0.28	3.19	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	717	717	0.02	0.03	1.20	728
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	76.6	76.6	< 0.005	0.01	0.08	80.1
Hauling	0.48	0.12	9.71	2.76	0.05	0.15	0.56	0.71	0.10	0.20	0.31	—	7,925	7,925	0.36	1.28	6.12	8,321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.58	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	119	119	< 0.005	0.01	0.20	121
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3

Hauling	0.09	0.02	1.77	0.50	0.01	0.03	0.10	0.13	0.02	0.04	0.06	—	1,312	1,312	0.06	0.21	1.01	1,378

3.5. Demolition (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	9.77	19.4	0.04	0.07	—	0.07	0.07	—	0.07	—	3,839	3,839	0.16	0.03	—	3,852
Demolition	—	—	—	—	—	—	2.13	2.13	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	1.78	3.54	0.01	0.01	—	0.01	0.01	—	0.01	—	636	636	0.03	0.01	—	638
Demolition	—	—	—	—	—	—	0.39	0.39	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.51	0.31	4.46	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,022	1,022	0.02	0.04	3.56	1,039
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	104	104	< 0.005	0.02	0.22	109
Hauling	0.60	0.16	12.5	3.72	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,800	10,800	0.44	1.72	18.1	11,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.50	0.36	4.26	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	980	980	0.03	0.04	0.09	993
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	105	105	< 0.005	0.02	0.01	109
Hauling	0.60	0.16	12.8	3.73	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,801	10,801	0.44	1.72	0.47	11,324
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	293	293	0.01	0.01	0.46	298
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.5
Hauling	0.18	0.05	3.85	1.11	0.02	0.04	0.23	0.28	0.04	0.08	0.13	—	3,213	3,213	0.13	0.51	2.33	3,371
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.08	49.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.14	5.14	< 0.005	< 0.005	< 0.005	5.37
Hauling	0.03	0.01	0.70	0.20	< 0.005	0.01	0.04	0.05	0.01	0.02	0.02	—	532	532	0.02	0.08	0.39	558

3.7. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	3.84	7.59	0.01	0.03	—	0.03	0.03	—	0.03	—	1,492	1,492	0.06	0.01	—	1,497
Dust From Material Movement	—	—	—	—	—	—	1.05	1.05	—	0.49	0.49	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.70	1.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	247	247	0.01	< 0.005	—	248
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.37	4.64	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	835	835	0.05	0.03	3.94	850
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.43	4.41	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	800	800	0.05	0.03	0.10	811
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.10	49.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.04	8.04	< 0.005	< 0.005	0.02	8.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,873	40,873	1.66	0.33	—	41,013
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.56	12.1	24.2	0.05	0.09	—	0.09	0.09	—	0.09	—	4,879	4,879	0.20	0.04	—	4,896
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.96	0.96	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	808	808	0.03	0.01	—	811

Dust From Material Movement	—	—	—	—	—	—	0.36	0.36	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.94	0.86	8.82	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,600	1,600	0.10	0.07	0.20	1,622
Vendor	0.06	0.03	1.11	0.46	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	691	691	0.02	0.10	0.05	722
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	192	192	0.01	0.01	0.40	195
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.5	82.5	< 0.005	0.01	0.09	86.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	31.8	31.8	< 0.005	< 0.005	0.07	32.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	14.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.93	1.93	41.9	84.0	0.16	0.32	—	0.32	0.32	—	0.32	—	16,928	16,928	0.69	0.14	—	16,986
Dust From Material Movement	—	—	—	—	—	—	6.88	6.88	—	3.32	3.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.35	7.65	15.3	0.03	0.06	—	0.06	0.06	—	0.06	—	2,803	2,803	0.11	0.02	—	2,812

Dust From Material Movement	—	—	—	—	—	—	1.25	1.25	—	0.61	0.61	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.98	0.87	0.69	8.63	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,641	1,641	0.09	0.07	7.34	1,670
Vendor	0.06	0.03	1.03	0.42	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	1.76	713
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.93	0.86	0.76	8.18	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,572	1,572	0.10	0.07	0.19	1,594
Vendor	0.06	0.03	1.07	0.43	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	0.05	712
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.35	0.31	3.39	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	657	657	0.04	0.03	1.31	667
Vendor	0.02	0.01	0.44	0.18	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	283	283	0.01	0.04	0.31	296
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.62	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	109	109	0.01	< 0.005	0.22	110
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	46.8	46.8	< 0.005	0.01	0.05	48.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.52	12.1	23.2	0.12	0.08	—	0.08	0.08	—	0.08	—	12,727	12,727	0.52	0.10	—	12,771
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.22	0.02	0.01	—	0.01	0.01	—	0.01	—	2,107	2,107	0.09	0.02	—	2,114
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.95	2.61	2.06	25.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,922	4,922	0.27	0.20	22.0	5,010
Vendor	0.08	0.04	1.38	0.56	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	908	908	0.03	0.13	2.35	951
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.57	2.28	24.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,715	4,715	0.30	0.20	0.57	4,781
Vendor	0.07	0.04	1.42	0.58	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	909	909	0.03	0.13	0.06	949
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.77	0.68	7.38	0.00	0.00	0.09	0.09	0.00	0.00	0.00	—	1,431	1,431	0.09	0.06	2.86	1,454
Vendor	0.02	0.01	0.43	0.17	< 0.005	< 0.005	0.01	0.02	< 0.005	0.01	0.01	—	274	274	0.01	0.04	0.30	286
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	237	237	0.01	0.01	0.47	241
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	45.3	45.3	< 0.005	0.01	0.05	47.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	1.24	28.6	54.9	0.28	0.19	—	0.19	0.19	—	0.19	—	30,163	30,163	1.22	0.24	—	30,267
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	5.22	10.0	0.05	0.04	—	0.04	0.04	—	0.04	—	4,994	4,994	0.20	0.04	—	5,011
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.70	2.51	1.89	24.1	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,831	4,831	0.26	0.20	20.4	4,916
Vendor	0.07	0.04	1.31	0.53	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	892	892	0.03	0.13	2.34	935
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.69	2.47	2.11	22.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,628	4,628	0.15	0.20	0.53	4,690
Vendor	0.07	0.04	1.35	0.54	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	893	893	0.03	0.13	0.06	933
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.89	1.74	1.49	16.4	0.00	0.00	0.20	0.20	0.00	0.00	0.00	—	3,329	3,329	0.10	0.14	6.29	3,380
Vendor	0.05	0.03	0.96	0.38	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	638	638	0.02	0.10	0.72	667
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.32	0.27	2.99	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	551	551	0.02	0.02	1.04	560
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	106	106	< 0.005	0.02	0.12	110

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.72	16.6	31.9	0.16	0.11	—	0.11	0.11	—	0.11	—	17,505	17,505	0.71	0.14	—	17,565

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.03	5.82	0.03	0.02	—	0.02	0.02	—	0.02	—	2,898	2,898	0.12	0.02	—	2,908
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.06	0.03	1.25	0.50	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	2.18	917
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.38	1.94	21.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,545	4,545	0.15	0.20	0.49	4,607
Vendor	0.06	0.03	1.28	0.51	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	0.06	915
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	0.98	0.79	8.87	0.00	0.00	0.12	0.12	0.00	0.00	0.00	—	1,899	1,899	0.05	0.08	3.38	1,928
Vendor	0.03	0.01	0.53	0.21	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	364	364	0.01	0.05	0.39	380
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	1.62	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	314	314	0.01	0.01	0.56	319
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	60.2	60.2	< 0.005	0.01	0.06	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.39	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.02	0.01	0.31	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	219	219	0.01	0.03	0.54	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.17	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	251	251	0.01	0.01	0.45	255
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.21	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	41.5	41.5	< 0.005	< 0.005	0.07	42.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.44
Architectural Coatings	—	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.39	1.39	< 0.005	< 0.005	—	1.40
Architectural Coatings	—	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	0.51	293
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.25	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.8	47.8	< 0.005	< 0.005	0.09	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Total	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257
Total	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.11	1.95	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Total	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.35	0.32	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Total	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/30/2026	5/31/2028	5.00	414	—
Site Preparation	Site Preparation	9/30/2023	10/31/2023	5.00	22.0	—
Grading	Grading	11/1/2023	7/30/2024	5.00	195	—
Building Construction	Building Construction	7/31/2024	7/31/2026	5.00	523	—
Paving	Paving	8/1/2026	8/28/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	8/29/2026	9/30/2026	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	500	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Grading	Excavators	Diesel	Tier 4 Interim	10.0	8.00	600	0.38
Grading	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Grading	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.40
Grading	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Grading	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	16.0	8.00	750	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Building Construction	Trenchers	Diesel	Tier 4 Interim	4.00	8.00	250	0.50
Building Construction	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Concrete/Industrial Saws	Electric	Average	1.00	5.00	85.0	0.73
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	6.00	85.0	0.37

Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	435	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	2.00	8.00	360	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	355	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	4.00	290	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.00	225	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Site Preparation	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36
Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Building Construction	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	134	10.8	LDA,LDT1,LDT2
Demolition	Vendor	5.00	6.85	HHDT,MHDT
Demolition	Hauling	32.0	101	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	100	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.85	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	10.8	LDA,LDT1,LDT2
Grading	Vendor	30.0	6.85	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	600	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	40.0	6.85	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	600	10.8	LDA,LDT1,LDT2
Paving	Vendor	10.0	6.85	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	600	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.85	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	409,500	136,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	134,000	—
Site Preparation	—	—	176	0.00	—
Grading	—	—	1,170	0.00	—
Building Construction	—	—	24.0	0.00	—
Paving	0.00	0.00	0.00	0.00	5.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	5.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	231	204	0.03	< 0.005
2027	231	204	0.03	< 0.005
2028	231	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Industrial	13.0	0.00	0.00	3,389	105	0.00	0.00	27,266

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	409,500	136,500	—

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	330

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Industrial	2,753,533	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Fire Pump	Diesel	1.00	0.08	30.0	350	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.70	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	36.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	13.6
AQ-PM	8.43
AQ-DPM	16.6
Drinking Water	44.2
Lead Risk Housing	54.6
Pesticides	61.6
Toxic Releases	11.4
Traffic	40.3
Effect Indicators	—
CleanUp Sites	78.0
Groundwater	35.0
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	83.0
Solid Waste	59.2
Sensitive Population	—
Asthma	40.0
Cardio-vascular	25.3

Low Birth Weights	98.9
Socioeconomic Factor Indicators	—
Education	26.4
Housing	17.4
Linguistic	—
Poverty	52.1
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—

Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	75.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	9.6
Physically Disabled	23.7
Heart Attack ER Admissions	73.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	65.9
Children	94.5
Elderly	6.6
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	87.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	54.0
Traffic Density	0.0
Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0

Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use changed to reflect information provided by project sponsor.
Construction: Construction Phases	All phases - updated duration to match information provided by project sponsor
Construction: Off-Road Equipment	All phases - updated construction equipment list to match information provided by project sponsor
Operations: Vehicle Data	Weekday trip rate - adjusted to reflect information provided by project sponsor
Operations: Energy Use	Energy use - used electricity intensity defaults for General Light Industry in EDFZ 6 (Central Coast). The buildings housing the batteries are not expected to use any natural gas, as there will be no refrigeration or heating capacity.
Construction: Trips and VMT	Updated trip numbers and trip length to match information provided by the project sponsor.
Construction: Dust From Material Movement	In the data request, water trucks are associated with building construction and are added here to reflect that. Total acres graded for Building Construction was set to 24 to reflect the project acreage
Construction: Paving	Update paved area acreage to reflect information provided by the project sponsor.

Vistra BESS - Tier Mitigated Quarterly Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vistra BESS - Tier Mitigated
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	24.0
Location	35.37488204736745, -120.85921757800375
County	San Luis Obispo
City	Morro Bay
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3324
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	24.0	273,000	0.00	—	—	Buildings housing battery energy storage system

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions

2.1.1. Construction Emissions Compared Against Thresholds

Emissions shown here are not consistent with project assumptions and should not be used for assessment of significance.

Criteria Pollutants (ton/quarter) and GHGs (MT/quarter)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Q1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.41	8.95	17.9	0.03	0.07	1.25	1.25	0.07	0.69	0.69	—	3,278	3,278	0.13	0.03	0.26	3,289
Q2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	0.64	13.8	27.6	0.05	0.11	1.92	1.92	0.11	1.06	1.06	—	5,056	5,056	0.21	0.04	0.40	5,073
Q3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	0.64	13.8	27.6	0.05	0.11	1.92	1.92	0.11	1.06	1.06	—	5,056	5,056	0.21	0.04	0.40	5,073
Q4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.39	7.08	13.6	0.07	0.05	0.74	0.74	0.05	0.37	0.37	—	6,779	6,779	0.27	0.05	1.87	6,802
Q5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491
Q6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491
Q7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491
Q8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491
Q9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491

Q10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491
Q11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	0.61	10.9	21.0	0.11	0.07	1.14	1.14	0.07	0.28	0.28	—	10,456	10,456	0.42	0.08	2.89	10,491
Q12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	3.85	4.20	8.07	0.04	0.03	0.44	0.44	0.03	0.11	0.11	—	4,021	4,021	0.16	0.03	1.11	4,035
Q13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.21	0.69	4.68	9.30	0.02	0.03	0.94	0.94	0.03	0.14	0.14	—	1,670	1,670	0.07	0.23	1.24	1,675
Q14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.34	7.47	14.8	0.03	0.06	1.49	1.49	0.06	0.23	0.23	—	2,666	2,666	0.11	0.37	1.97	2,675
Q15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.34	7.47	14.8	0.03	0.06	1.49	1.49	0.06	0.23	0.23	—	2,666	2,666	0.11	0.37	1.97	2,675
Q16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.34	7.47	14.8	0.03	0.06	1.49	1.49	0.06	0.23	0.23	—	2,666	2,666	0.11	0.37	1.97	2,675
Q17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.34	7.47	14.8	0.03	0.06	1.49	1.49	0.06	0.23	0.23	—	2,666	2,666	0.11	0.37	1.97	2,675
Q18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.34	0.34	7.47	14.8	0.03	0.06	1.49	1.49	0.06	0.23	0.23	—	2,666	2,666	0.11	0.37	1.97	2,675
Q19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.25	5.58	11.1	0.02	0.04	1.12	1.12	0.04	0.17	0.17	—	1,992	1,992	0.08	0.28	1.47	1,999
Quarterly (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.64	3.85	13.8	27.6	0.11	0.11	1.92	1.92	0.11	1.06	1.06	—	10,456	10,456	0.42	0.37	2.89	10,491
Exceeds	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	0.00	—	—	—	0.00	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	Yes	—	—	—	Yes	—	—	—	—	—	—	—	—	—	—	—

2.1.2. Construction Quarters

Quarter	Start Date	End Date	Length (days)
Q1	9/30/2023	12/29/2023	91
Q2	12/30/2023	3/29/2024	91
Q3	3/30/2024	6/28/2024	91
Q4	6/29/2024	9/27/2024	91
Q5	9/28/2024	12/27/2024	91
Q6	12/28/2024	3/28/2025	91
Q7	3/29/2025	6/27/2025	91
Q8	6/28/2025	9/26/2025	91
Q9	9/27/2025	12/26/2025	91
Q10	12/27/2025	3/27/2026	91
Q11	3/28/2026	6/26/2026	91
Q12	6/27/2026	9/25/2026	91
Q13	9/26/2026	12/25/2026	91
Q14	12/26/2026	3/26/2027	91
Q15	3/27/2027	6/25/2027	91
Q16	6/26/2027	9/24/2027	91
Q17	9/25/2027	12/24/2027	91
Q18	12/25/2027	3/24/2028	91
Q19	3/25/2028	5/31/2028	68

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (ton/quarter) and GHGs (MT/quarter)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Quarterly	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.09	0.27	0.01	0.49	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	63.7	63.7	0.01	< 0.005	< 0.005	64.3

Appendix C

Biological Resources Assessment Report

BIOLOGICAL RESOURCES ASSESSMENT REPORT

MORRO BAY POWER COMPANY, LLC
BATTERY ENERGY STORAGE SYSTEM
CITY OF MORRO BAY, CALIFORNIA

Project No. 1902-1173

Prepared for:

EMC Planning Group
301 Lighthouse Avenue, Suite C
Monterey, California 93940

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

REVISED JANUARY 2024

padre associates, inc.
ENGINEERS, GEOLOGISTS &
ENVIRONMENTAL SCIENTISTS

Authenticity and Signature Page

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401
805-786-2650

Padre Associates, Inc. hereby certifies that all statements furnished in the following Biological Resources Assessment Report and all supporting information reviewed and referenced within this Report are true and correct to the best of our knowledge and belief. Further, we certify that all field surveys associated with this Report were performed by Padre Associates, Inc. using standards accepted by San Luis Obispo County and accurately represent all information retained from field visits to the Morro Bay Power Plant – Battery Energy Storage Solutions Project site located in Morro Bay, California.

Alyssa Berry
Senior Biologist

Christina Santala
Project Biologist

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 INTRODUCTION

Padre Associates, Inc. (Padre) has prepared this Biological Resources Assessment Report (Report), on behalf of EMC Planning Group (EMC) to document the results of a biological resources survey completed in support of the Morro Bay Power Company, LLC – Battery Energy Storage System (BESS) Project (Project) located in the City of Morro Bay, California. This Report presents a review of the biological resources within the Project site that have the potential to be impacted by the Project. The information in this Report was obtained through review of existing literature and focused biological resources surveys. Padre conducted a biological field survey on December 16, 2020, which served to update data from a previous field survey completed within the Morro Bay Power Plant (MBPP) in September 2015 and encompassed a larger biological survey area (BSA) based on the proposed Project plan, followed by additional biological resources field surveys completed in 2021 and 2022. The BSA includes areas outside of the Project site to account for adjacent biological resources that have the potential to be indirectly impacted by the Project. The following information is presented in support of the Project: 1) a comprehensive review of the existing biological resources within the Project site; 2) a review of the anticipated regulatory setting/permitting process; 3) a review of the impacts of Project construction; and 4) recommended avoidance measures.

1.1 PROJECT LOCATION

The approximately 95-acre MBPP property (Project site) (Assessor's Parcel Numbers [APN] 066-331-046, 066-461-044, 066-461-045, and 066-461-016) is located at 1290 Embarcadero south of State Route 1 (SR 1)/Cabrillo Highway and north of Embarcadero and is situated directly north of Morro Bay Harbor and just south of Morro Creek within the City of Morro Bay (Figure 1-1 Project Location). Prominent natural features in the Project vicinity include Morro Creek to the north and Morro Rock Natural Preserve, Morro Bay Harbor, and the Morro Bay National Estuary to the south.

1.2 PROJECT DESCRIPTION

The Proposed Project includes three components (1) construction and operation of a 600 megawatt (MW) Battery Energy Storage System (BESS) on approximately 24 acres of the Project Site (BESS Site), (2) demolition and removal of the existing Power Plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial. The Project components are described below (Figure 1-2 Site Plan).

1.2.1 BESS Component

The proposed BESS includes three enclosed buildings with fire protection systems to house the batteries. Construction of the 30-foot tall BESS buildings would require 1,000 to 1,500 steel piles which would be driven into the soil. Piles would be driven to a depth of 75 feet. Once the piles are in place, a 36-inch concrete foundation of would be poured and the buildings would be erected using a steel frame and pre-cast concrete side panels. The BESS would also include three substations with transformers, a transmission line connecting to the existing dead-end structures on the southwestern side of the existing PG&E switchyard (the final structures before the connection with the substation), water supply system improvements, and internal access roads. At the request of the City of Morro Bay, an area has been identified on the site plan for a multi-use path within an existing easement for a meandering multi-use path along Embarcadero Road within the MBPP property boundary.

The open areas surrounding the buildings will include access roads and paths. According to the Site Plan, the multi-use path is not to exceed 12 feet in width. Approximately 6 Monterey cypress trees, approximately 17 Monterey pine trees, and vegetation within the former tank farm will be removed as part of the Project. Additional trees and ESHA may be removed and/or impacted during installation of the multi-use path depending on the final design.

1.2.2 Demolition Component

Following construction of the BESS, Vistra would remediate and demolish the existing power plant building and stacks. Demolition of the stacks would occur following abatement of any regulated materials, demolition of the interior of the existing buildings, and demolition of any connecting ductwork. The stacks would be removed by conventional means without using explosives, one stack at a time.

1.2.3 Master Plan Component

Plan Morro Bay Policy Land Use-5.4 requires a Master Plan for the redevelopment of the former MBPP property and surrounding area. The proposed project includes a Master Plan that would amend the General Plan and Local Coastal Plan (LCP) Land Use Permit (LUP) designation on the BESS Site from Visitor Serving Commercial to General (Light) Industrial. This is an administrative Project component and as such will not impact biological resources within the proposed Project site.

Source: USGS Topo 7.5' Quad, City of Morro Bay NOP Report (June 2022)
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only

0 1,000 2,000
FEET
1:24,000

USGS 7.5' Quadrangle: Morro Bay North & Morro Bay South
Legal Description: T29S, R10E, Sec. 25

LEGEND:

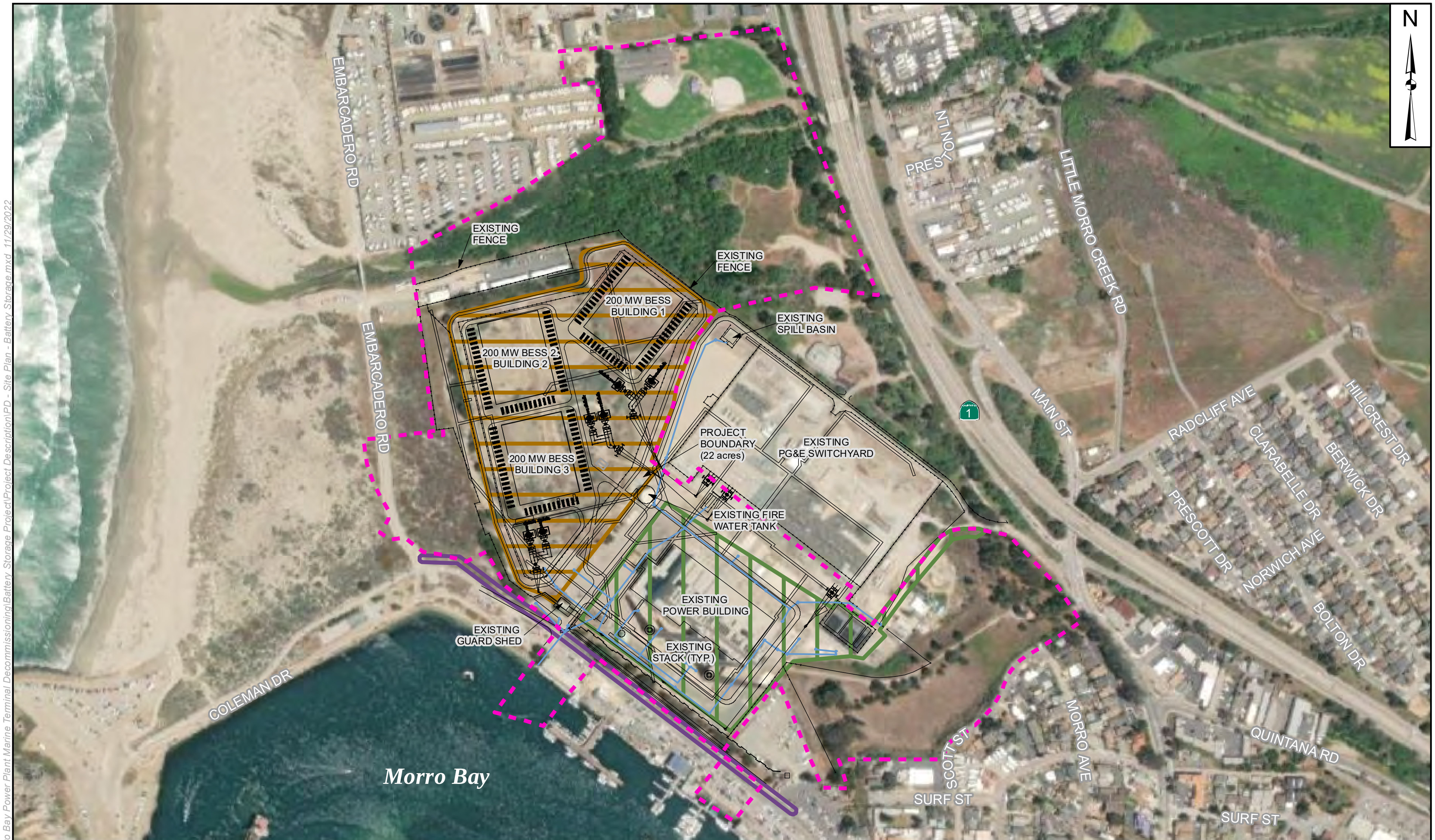
- Project Boundary
- Multi-Use Path

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	BATTERY STORAGE PROJECT MORRO BAY POWER PLANT SAN LUIS OBISPO COUNTY, CA
PROJECT NUMBER: 1902-1173	DATE: November 2022

PROJECT LOCATION

FIGURE 1-1



LEGEND:

Site Feature
Electrical Enclosure
Stormdrain
BESS Area
Multi-Use Path
Demolition Area
Parcel Boundary

Source: Vistra / Sargent & Lundy (December 2020), City of Morro Bay NOP Report (June 2022)
Notes: This map was created for informational and display purposes only.

0 300 600
Feet

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: BATTERY STORAGE PROJECT MORRO BAY POWER PLANT SAN LUIS OBISPO COUNTY, CA		SITE PLAN	FIGURE 1-2
PROJECT NUMBER: 1902-1173	DATE: November 2022		

2.0 REGULATORY SETTING

The regulatory setting identifies those laws and policies administered by resource agencies pertaining to those biological resources that are known to exist and/or have the potential to occur within the Project site.

2.1 FEDERAL AUTHORITY

2.1.1 Special-Status Species

The Federal Endangered Species Act (FESA) administered by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration – Fisheries (NOAA Fisheries), provides protection to species listed as threatened or endangered. FESA also provides protection to those species proposed to be listed under FESA or critical habitats proposed to be designated for such species. In addition to the listed species, the Federal government also maintains lists of species that are neither formally listed nor proposed but could potentially be listed in the future. Species on this list receive "special attention" from federal agencies during environmental review, although they are not protected otherwise under the FESA. The candidate species include taxa for which substantial information on biological vulnerability and potential threats exist and are maintained in order to support the appropriateness of proposing to list the taxa as an endangered or threatened species.

Section 9 of the FESA prohibits the "take" of any member of a listed species. Take is defined as, "…*to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct*." Harass is "*an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering*." Harm is defined as "…*significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering*."

Projects that would result in the take of a federally listed or proposed species are required to consult with USFWS or NOAA Fisheries. The objective of consultation is to determine whether the project would jeopardize the continued existence of a listed or proposed species, and to determine what mitigation measures would be required to avoid jeopardy.

Consultations are conducted under Sections 7 or 10 of FESA depending on the involvement by the Federal government. Section 7 requires agencies to make a finding on all federal actions, including the approval by an agency of a public or private action, such as the issuance of a permit pursuant to Section 10/404 of the Clean Water Act, on the potential to jeopardize the continued existence of any listed or proposed species potentially impacted by the action. Section 10 is conducted when there is no Federal involvement in a project except compliance with FESA.

Under Section 7, the USFWS and NOAA Fisheries are authorized to issue Incidental Take Permits (ITP) for the take of a listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency. The ITP includes measures to minimize the take. Under Section 10(a), the USFWS and NOAA Fisheries can issue ITPs for non-Federal projects.

The USFWS also administers the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). Under the MBTA, it is unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts of birds, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).

2.1.2 Waters and Wetlands

2.1.2.1 Federal Waters

The U.S. Army Corps of Engineers (ACOE) is responsible for the issuance of permits for the placement of dredged or fill material into waters of the U.S. pursuant to Section 404 of the Clean Water Act (33 USC 1344).

In non-tidal waters the lateral extent of federal jurisdiction is determined by the OHWM, which is defined as the: "…*line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."* (33 CFR 328[e]). Additional physical characteristics, including matted vegetation, sediment sorting, multiple observed flow events, water staining, and others, have also been used to determine the OHWM (U.S. Army Corps of Engineers, 2005).

In tidal areas, the ACOE jurisdiction under Section 404 extends to the high tide line (HTL), which, in the absence of actual data, is defined as…" *a line of oil or scum along shore objects, a more or less continuous deposit of fine shells or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide*."

Wetlands could also be regulated as waters of the U.S. if they were adjacent to jurisdictional waters (other than waters that are themselves wetlands). The ACOE regulation concerning wetlands adjacent to jurisdictional waters is defined at 33 CFR 328.4(c)(4).

Current interpretation of "waters of the United States" is consistent with the pre-2015 regulations (United States Environmental Protection Agency, 2021). According to the United States Environmental Protection Agency, under the current implementation of CWA regulation, the term waters of the United States means:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

c. Which are used or could be used for industrial purposes by industries in interstate commerce;

4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in (1) through (4) of this section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in (1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

2.1.2.2 Federal Wetlands

Wetlands are a special category of waters of the U.S. and are defined at 33 CFR 328.3(b) as: "*...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*"

The ACOE utilizes the *Corps of Engineers Wetland Delineation Manual* (1987), herein referred to as *1987 ACOE Manual*, to identify wetlands subject to regulatory jurisdiction (jurisdictional wetlands) under the CWA. In central and southern California, Nevada, Arizona, and the other arid regions of the western U.S. the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* prepared by the ACOE's Engineer Research and Development Center (2008) is used to delineate jurisdictional wetlands.

The ACOE identifies jurisdictional wetlands using a three-parameter definition using vegetation, soil, and hydrological characteristics. Excluding unusual conditions (atypical conditions or disturbed sites), all three parameters must be present for a site to be considered a jurisdictional wetland.

2.1.2.3 Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

The ACOE is also responsible for authorizing work affecting navigable waters of the United States. Structures or work under or over a navigable water of the United States is considered to have an impact on the navigable capacity of the waterbody (33 CFR 322.3[a]).

2.2 STATE AUTHORITY

2.2.1 Special-Status Species

The California Department of Fish and Wildlife (CDFW) administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA - Fish and Game Code Section 2050) that regulates the listing and take of threatened and endangered species. Under Section 2081 of CESA, CDFW may authorize the take of an endangered and/or threatened species, or candidate species by a permit or Memorandum of Understanding for scientific, educational, or management purposes.

CDFW also maintains lists of "candidate species" which are species that CDFW has formally noticed as under review for addition to the threatened or endangered species lists. California candidate species are afforded the same level of protection as listed species. CDFW also designates "species of special concern" which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species but may be added to official lists in the future. The species of special concern list is intended by CDFW as a management tool to call attention to declining populations and focus efforts on decreasing threats to long-term viability.

CDFW also administers other State laws designed to protect wildlife and plants, including those laws stated within Fish and Game Code Section 3511, 3503, 3503.5. Under Section 3511 of the Fish and Game Code, CDFW designates species that are afforded "fully protected" status. Fish and Game Code 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of *any bird*. Section 3503.5 of the Fish and Game Code states that it is "*unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest of eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto*."

CDFW also manages the California Native Plant Protection Act of 1977 (Fish and Game Code Section 1900, et seq), which was enacted to identify, designate and protect rare plants. In accordance with CDFG guidelines, California Native Plant Society (CNPS) Rare Plant Rank 1B plants are considered "rare" under the Act and are evaluated in California Environmental Quality Act reports.

Project-related adverse impacts on special-status species are considered significant for California Environmental Quality Act (CEQA) purposes. Section 15065 of CEQA states that a Lead Agency shall find that a project may have a significant effect on the environment and thereby require an Environmental Impact Report (EIR) to be prepared for the project where the project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

2.2.2 Waters and Wetlands

Pursuant to Section 1602 of the California Fish and Game Code, CDFW requires a Lake or Streambed Alteration Agreement between CDFW and any State or local governmental agency, public utility, or private entity before the initiation of any construction project that will: 1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake; 2) use materials from a streambed; or 3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

The California Fish and Game Commission adopted a modification of the USFWS definition of wetlands on March 9, 1987 as its principal means of wetland identification in conjunction with on-site inspections for implementation of the Fish and Game Commission's policy. Unlike USFWS, the CDFW definition only requires the presence of one wetland indicator for an area to qualify as a wetland. CDFW does not have a wetland regulatory program but advises other state agencies on wetland issues.

The Regional Water Quality Control Board (RWQCB) issues Water Quality Certifications per Section 401 of the Clean Water Act, and pursuant to the Porter-Cologne Water Quality Control Act of 1969 (CA Water Code §§ 13000-13999.10) that mandates that waters of the State shall be protected. Water quality certification is required prior to issuance of the 404 permit from the USACE. Section 401 of the Clean Water Act gives the RWQCB the authority to prohibit an activity, including any grading or construction project, if that project can impact water quality or have other unacceptable environmental consequences.

The Project site is located within the "coastal zone". Wetlands found in the coastal zone are regulated by the California Coastal Commission (CCC) under the California Coastal Act of 1976 (CCA) and the federal Coastal Zone Management Act. Under the CCA, wetlands are defined as land within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. (Pub. Res. Code §30121). Seaward of the mean high tide line is the original jurisdiction of the CCC, and is therefore, also subject to the policies of the CCA.

2.3 LOCAL AUTHORITY

The Project site is located within the Coastal Zone of Morro Bay and is therefore within the jurisdiction of the CCC and City of Morro Bay. The City of Morro Bay adopted its General Plan/Local Coastal Plan on May 25, 2021, referred to as "Plan Morro Bay" (Morro Bay, 2022) which presents a plan for Morro Bay through 2040. The CCC certified Plan Morro Bay on August 12, 2021. Plan Morro Bay includes the following policies related to biological resources.

2.3.1 Environmentally Sensitive Habitat Areas

Special-status species and habitats of the Project site are afforded protection under the CCA through enforcement of goals and policies contained in the City of Morro Bay's LCP. To address Environmentally Sensitive Habitat Areas (ESHAs) consistent with the CCA, the LCP applies the following criteria for designating ESHAs:

- Unique, rare or fragile communities which should be preserved to ensure their survival in the future;
- Rare and endangered species habitats that are also protected by state and federal laws;
- Specialized wildlife habitat which are vital to species survival;
- Outstanding representative natural communities which have an unusual variety or diversity of plant and animal species;
- Areas with outstanding educational values that should be protected for scientific research and education uses now and in the future. (Morro Bay, 1982).

Policy 11.01 provides protections for ESHA, including wetlands. A minimum 100-foot Project setback is required around all wetlands; except for uses listed in Section 30233(c) of the CCA (Morro Bay, 1982).

Policy 11.02 requires development within an ESHA to be “sited and designed to prevent impacts which would significantly degrade such areas, and shall maintain the habitat’s functional capacity” (Morro Bay, 1982).

Policy 11.05 requires that all projects within 250 feet of ESHA conform with applicable habitat protection policies with the LCP and depict ESHA boundaries on development plans (Morro Bay, 1982).

Policy 11.06 requires a minimum 100-foot setback from ESHA for permanent structures, with the exception of minor structures such as fences and at-grade improvements (Morro Bay, 1982).

Policy C-1.3 requires biological assessments of proposed developments that are within 100 feet of mapped ESHA (Morro Bay, 2020).

Policy C-1.4 requires preparation of a dune stabilization and/or restoration plan for all new developments that could impact dune ESHA (Morro Bay, 2020).

Policy C-1.5 requires setbacks from ESHA that are sufficient to protect sensitive resources (Morro Bay, 2020). These setbacks range from 100 to 50 feet and may be further reduce to 25 feet with City approval if deemed equally protective of the ESHA (Morro Bay, 2020).

Policy C-1.8 stipulates that if development with ESHA or required ESHA boundary “must be allowed to avoid an unconstitutional taking of private property without just compensation, the amount and type of development allowed shall be the least necessary to avoid a taking, and shall be as consistent with LCP policies as possible”. All impacts to ESHA and required ESHA boundaries must be restored and fully mitigated (Morro Bay, 2020).

Policy C-1.16 provides requirements for replacing trees that are native or measure 6 inches at 54 inches above grade (Morro Bay, 2020).

Policy C-1.17 provides guidelines for reducing impacts to wildlife from fencing and light (Morro Bay, 2020).

3.0 METHODS

3.1 DESKTOP REVIEW

The initial desktop review included an aerial imagery review of the BSA and surrounding region. The Project region, for the purposes of this Biological Resources Assessment Report, includes a five-mile radius from the boundaries of the BSA, within United States Geological Survey (USGS) 7.5-minute quadrangles Cayucos, Morro Bay North, and Morro Bay South. These USGS 7.5-minute quadrangles were selected due to the coastal location of the Project site. Additional review included the incorporation of Geographic Information Systems (GIS) layers to analyze potential migratory routes, habitat connectivity and landscape fragmentation, and investigation of surrounding land uses. These layers were also used in the field to further assist in defining and mapping existing vegetation communities and sensitive habitats identified within the BSA.

The desktop review included a query of the CDFW California Natural Diversity Database (CNDDB) to identify reported occurrences of special-status plant and wildlife species and sensitive habitats within the Project region. The CNDDB is a statewide digital database utilized to locate the nearest occurrences of all rare, threatened, endangered, and special-status species and natural communities in California. All wildlife taxa listed in the CNDDB are considered "Special Animals," which the CDFW is interested in tracking, regardless of their legal protection status. The CNDDB occurrences are displayed as polygons and/or points that depict the accuracy of the data that was used to map the occurrence. Each polygon is provided an accuracy class that describes the level of the location detail. A polygon, therefore, does not necessarily reflect that a species occurs in all areas of the polygon, but may represent a non-specific area that documents habitat resources and/or simply a buffer distance around a specific point.

The USFWS Critical Habitat Portal (USFWS, 2022a) was reviewed to determine location of Critical Habitat for federally protected species that may potentially occur in the region. The USFWS Critical Habitat Portal is an online database that provides most recent datasets for federally defined Critical Habitat areas.

The USFWS Information for Planning and Consultation (IPaC) platform was queried as part of the desktop review (USFWS, 2022). An official species list was generated (Ventura Fish and Wildlife Office Project Code 2023-0006632) that documents USFWS Federal special-status plant and wildlife species potentially occurring within the Project region.

The USFWS National Wetland Inventory (NWI) was queried to identify potential wetlands and waters in the BSA and the Project region (USFWS, 2022c). The NWI is an online resource that provides detailed information on the abundance, characteristics, and distribution of USFWS-defined wetlands, and NWI data are used to promote the understanding, conservation and restoration of wetlands throughout the United States.

The desktop review also examined multiple sources of technical survey information completed in the vicinity of the BSA, including the following:

- Dynegy Morro Bay, LLC, Morro Bay Power Plant Marine Terminal Decommissioning Project Initial Study/Mitigated Negative Declaration, prepared by the California State Lands Commission (SLC, 2018);
- Dynegy Morro Bay, LLC Morro Bay Power Plant Marine Terminal Decommissioning Project Execution Plan, prepared by Padre Associates, Inc. (Padre, 2016);
- Morro Shoulderband Snail Protocol Survey Report, Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California (EAM, 2021);
- Chevron/Estero Marine Terminal Source Removal Project Execution Plan, prepared by Padre Associates, Inc. (Padre, 2015);
- Biological Survey Report for Duke Energy, prepared by V.L. Holland, Ph.D. & Villablanca, Ph.D. (Holland and Villablanca, 2000); and
- City of Morro Bay, Morro Creek Multi-Use Trail and Bridge Project, Initial Study-Mitigated Negative Declaration prepared by Rincon Consultants, Inc. (Rincon, 2013).

3.2 FIELD SURVEYS

Several field surveys have been completed by Padre biologists to assess the biological resources of the Project site. These surveys were scheduled to capture various seasons and updates to the Project description. During all field surveys, biologists walked the terrain within the BSA documenting all wildlife species observed. Direct visual observations, indirect signs (e.g., tracks, scat, skeletal remains, and burrows), and auditory cues (i.e., calls and songs) were documented. All identifiable plant species were recorded and presence of suitable habitat for potentially occurring special-status plants was noted. Plant specimens that were not positively identified in the field were further examined using a dissecting microscope and appropriate botanical keys, including The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al., 2012) and The Jepson Herbarium Online Interchange California Floristics (University of California, 2022). Vegetation types identified during the surveys were classified based on the CNPS A Manual of California Vegetation, Second Edition (Sawyer et al., 2009) (MCVII) and Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland, 1986), as appropriate.

Padre biologists, Christina Santala and Shannon Gonzalez, conducted a biological field survey on December 16, 2020, which served to update data from a previous field survey completed within the MBPP in September 2015 and to encompass a larger BSA based on the proposed Project plans.

On March 30, 2021, Padre completed a supplemental spring botanical survey focused on the presence/absence of special-status plant species during the typical blooming period for many of the special-status plant species known to occur in the Project region. A supplemental spring botanical letter-report was prepared to document the results and is included in this Report as Appendix F – Spring Botanical Report.

On October 18, 2022, Padre conducted an additional field survey within the BSA that encompassed the proposed multi-use path alignment and stacks that were not captured during previous field surveys. The survey was focused on the existing biological resources, potentially occurring special-status plant and wildlife species, and the suitability of the habitat to support special-status species. Rare plant species identified within the main Project site were identifiable during the survey and therefore no additional spring botanical surveys were warranted.

Ecological Assessment Management, LLC (EAM) completed protocol surveys for Morro shoulderband snail (*Helminthoglypta walkeriana*) during the rainy seasons, 2020 to 2021 and 2022 to 2023. The methodology for these surveys is included in the respective reports, included as Appendix G and Appendix H. The surveys were completed separately to cover the Project site and then the multi-use path component of the Project.

On August 17, 2023, Padre conducted a follow-up survey of the multi-purpose path focused on sensitive habitats and trees within the proposed alignment. The report of this survey effort is included in this Report as Appendix I.

4.0 FINDINGS

The following discussion of biological resources is limited primarily to those resources that were observed within the immediate vicinity of the BSA or resources that would be expected to occur and/or frequent a particular area based on the presence of suitable habitat. All documented resources discussed below are based on findings during field surveys completed in September 2015, December 2020, March 2021, and October 2022. Supporting documents include Figure 4-1 – Biological Resources Assessment Results, Figure 4-2 – Sensitive Habitats, Appendix A – Site Photographs, Appendix B – Plant Inventory, Appendix C – Wildlife Inventory, Appendix D – VRAP Data Sheets, Appendix E – CNDDB and IPaC Documentation, and Appendix F – Spring Botanical Report.

4.1 REGIONAL SETTING

The Project is located on the site of the former tank farm within the MBPP in the City of Morro Bay, between State Highway 1 and the Pacific Ocean. The Project site is at an elevation of approximately 20 feet above sea level, approximately 0.2 miles east of the Pacific Ocean with steep topographic relief associated with the former tank locations. The nearest residences are approximately 0.25 miles southeast. West of the Project site and extending north approximately two miles is Morro Strand State Beach. Morro Bay, Morro Bay State Park, Montaña De Oro State Park, and Morro Dunes Natural Preserve are located to the south of the Project site. Northeast of the Project is the valley of Morro Creek and due east of the Project site the hills of the Coast Range rise to heights of 500 to 600 feet within one mile. Approximately 0.6 miles west-southwest of the Project site lies Morro Rock, elevation 578 feet.

4.1.1 Aquatic Resources

The Project site is situated between three water bodies, including Morro Bay estuary to the south, Morro Creek to the north, and the Pacific Ocean to the west. The Morro Bay estuary is located along the Pacific Flyway and is recognized as part of the National Estuary Program. Additionally, a portion of the estuary is considered a bird sanctuary (i.e., within the City of Morro Bay). Morro Creek is a seasonal stream with areas of freshwater emergent wetland and includes mostly willow woodland and scrub habitat along the creek corridor.

Based on the query of the USFWS National Wetlands Inventory (NWI) database and the field survey observations, aquatic features recorded within the vicinity of the BSA included the Pacific Ocean (Estuarine and Marine Deepwater), Estuarine and Marine Wetland, Morro Creek (Riverine) and the surrounding riparian corridor (Freshwater/Forested Shrub Wetland) (USFWS, 2022b). Morro Creek is located along the northern boundary of the proposed Project footprint, Morro Bay Harbor is approximately 200 feet southwest, Morro Bay (Pacific Ocean) is approximately 1,200 feet west of the Project site however, there are no NWI aquatic features located within the Project site footprint. In addition, no aquatic features or vernal pool habitat was observed during the 2020, 2021, or 2022 field surveys within the BSA.

4.1.2 Climate

The region of Morro Bay has a mild climate with coastal fog common especially in the summer months. The prevailing wind direction is northwest to southeast off the Pacific Ocean. Annual average temperatures range from the low 50s to the 70s with little diurnal or seasonal variation. Average rainfall within the area is approximately 18 inches per year (U.S. Climate Data, 2020).

LEGEND:

- Blochman's leafy daisy
- Eucalyptus
- Monterey Cypress
- VRAP Locations (1-6)
- Potentially Active Roost/Nest Tree (2022)
- Trees to be Removed (Monterey Cypress and Monterey Pine)

Project Components

- BESS Area
- Multi-Use Path
- Demolition Area
- Biological Survey Area (BSA)

Environmentally Sensitive Habitat Areas (ESHA): City of Morro Bay

- Backdune / Dune Scrub
- Foredune
- Freshwater Emergent Wetland
- Monarch Overwintering Site
- Outer Limit of Sea Level Rise-Related Hazard Zones
- Rivers & Streams (Stream Mouth)
- Rookeries
- Shallow Bay / Mudflat / and Eelgrass Potential Habitat
- Willow Woodland and Scrubland

Vegetation Communities

- Arroyo Willow Thicket
- Ruderal/Developed
- Iceplant Mat
- Mixed Dune
- Ornamental
- Silver Bush Lupine Scrub

MAP EXTENT:

0 150 300
FEET

Source: Esri Online Imagery Basemap (2022), City of Morro Bay NOP Report (June 2022), County of San Luis Obispo (2022)
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: BATTERY STORAGE PROJECT
MORRO BAY POWER PLANT
SAN LUIS OBISPO COUNTY, CA

PROJECT NUMBER: 1902-1173
DATE: November 2022

BIOLOGICAL RESOURCES ASSESSMENT RESULTS MAP

FIGURE 4-1

Z:\GIS Projects\GIS Maps\Map Project\Dynegy Morro Bay Power Plant Marine Terminal Decommissioning\Battery Storage Project\Project Description\PD - Biological Resources Assessment Results Map - Battery Storage.mxd 11/29/2022

4.2 VEGETATION TYPES

Based on species composition, life form, and community membership rules, the vegetation identified within the BSA can be classified into distinct vegetation types (i.e., alliances, associations) as described in the Manual of California Vegetation; Second Edition (MCV2) (Sawyer et al., 2009), or designated as site-specific vegetation types/land use areas. Refer to Appendix B for a list of plants observed within the BSA during the December 2020 field survey. CDFW Vegetation Rapid Assessment Protocol (VRAP) Data Sheets are provided as Appendix D. Vegetation types identified within the BSA are listed in Table 4-1 – Vegetation Types within the BSA, illustrated in Figure 4-1 - Biological Resources Assessment Results, and described in detail in this section.

Table 4-1. Vegetation Types within the BSA

Vegetation Type / (Holland Community)	Sensitivity Status CDFW / City of Morro Bay)
Arroyo willow thickets	None, ESHA
Ice plant mats	None
Silver bush lupine scrub / (Central Dune Scrub)	G3, S3
Mixed dune / (Central Dune Scrub)	G3, S3 / ESHA
Ornamental[1]	None
Ruderal/Developed	None

Notes:
[1]Ornamental vegetation includes mixed and distinct stands of Eucalyptus, Monterey cypress, and Monterey pine. The stands of these species are planted and considered ornamental and are not considered as sensitive communities (CDFW, 2022a); however, individual trees are considered to be special-status species (CNPS, 2022b).
Notes:
ESHA Environmentally Sensitive Habitat Area (Rincon, 2018)
Global and State Rarity Ranks (CDFW, 2020):
G3 S3 Vulnerable - Restricted range, relatively few populations (often 80 or fewer).

4.2.1 Arroyo willow thickets

Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance) occurs along stream banks and benches, slope seeps, and stringers along drainages and is characterized by presence of arroyo willow as dominant or co-dominant within the shrub or tree canopy; canopy is open to continuous and the herbaceous layer is variable (Sawyer et al., 2009). As observed during the field survey, this alliance occurred along Morro Creek and Willow Camp Creek in the north and northeastern portion of the BSA. The quantitative vegetation assessment (Appendix D: data sheet MBPP003) identified native and non-native tree, shrub, and herbaceous species with arroyo willow as the dominant species. Component and intermittent species observed includes blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), and Monterey cypress (*Hesperocyparis macrocarpa*). Arroyo willow thicket associated with riparian habitat is designated as ESHA by the City of Morro Bay.

4.2.2 Ice plant mats

Ice plant mats (*Carpobrotus edulis* or Other Ice Plants Semi-Natural Herbaceous Stands Alliance) occur on bluffs, disturbed land, sand dunes of immediate coastline, coastal and alkaline terraces characterized by the presence of ice plant as dominant in the herbaceous canopy, emergent trees and shrubs may be present; canopy is intermittent to continuous (Sawyer et al., 2009). As observed during the field survey, this alliance occurred primarily in the southeastern portion of the BSA. The quantitative vegetation assessment (Appendix D: data sheet MBPP006) identified native and non-native, shrub and herbaceous species with ice plant (*Carpobrotus edulis*) as the dominant species. Component species included telegraph weed (*Heterotheca grandiflora*), coyote brush (*Baccharis pilularis*), and remnant annual grasses. This alliance is not considered sensitive by the CDFW and is not protected under CEQA.

4.2.3 Silver bush lupine scrub

Silver bush lupine scrub (*Lupinus chamissonis* Shrubland Alliance) occurs on stabilized dunes, river mouths, and coastal spits, bluffs and terraces (Sawyer et. al., 2009) and is characterized by the presence of silver bush lupine as dominant or co-dominant in the shrub layer, canopy is open to continuous, herbaceous layer is open to intermittent. As observed during the field survey, silver bush lupine occurs in stands intermittently throughout the former tank farm area where the Ruderal/Developed habitat has experienced natural recruitment. The quantitative vegetation assessment (Appendix D: data sheet MBPP001) identified silver dune lupine as the dominant species, with minimal understory comprised of remnant annual grasses and ice plant. Bush lupine (*Lupinus arboreus*) was identified as a component or intermittent species within this Alliance during subsequent field surveys conducted in 2021 and 2022. The Silver bush lupine scrub has established on fill soils within Ruderal/Developed habitat that has been disturbed during operation and decommissioning of the MBPP. As such, Project impacts to this alliance should be evaluated within the context of the stands' limited and fragmented distribution throughout the former tank farm area and not be considered ESHA under the category of Stabilized Dune with Dune Scrub. This alliance is considered sensitive by the CDFW (rarity ranking S3) and impacts to sensitive habitats may be considered significant under CEQA.

4.2.4 Mixed dune

A distinct stand of vegetation comprised of an assemblage of upland coastal species was observed along the northwestern boundary of the BSA. This area has been the focus of past restoration efforts, and existing vegetation varies in degree of establishment. Past studies completed in this location designated this assemblage of vegetation as Mixed dune (Padre, 2015a). As observed during the 2020, 2021, and 2022 field surveys, the composition of species within the Mixed dune vegetation species was similar to previously assessed conditions, and consisted of ice plant, beach bur (*Ambrosia chamissonis*), coyote brush, and remnant annual grasses (Appendix A – Site Photographs, Photo 8). This alliance (referred to as Central Dune Scrub) is considered sensitive by the CDFW and is designated as ESHA (referred to as Back Dune/Dune Scrub in the GIS layer) by the City of Morro Bay. Impacts to Mixed dune may be considered significant under CEQA.

4.2.5 Ornamental

Several stands of trees have been planted as windrows within the BSA, and within this Report, are collectively referred to and mapped as Ornamental. Three quantitative vegetation assessments were conducted to evaluate species composition and cover of this site-specific vegetation type. The quantitative vegetation assessments identified three distinct vegetation types including Monterey cypress stands, Eucalyptus groves, and Monterey pine stands (Appendix D: data sheets MBPP002, MBPP004, and MBPP005) which were comprised of native and non-native tree species including Monterey cypress (*Hesperocyparis macrocarpa*), Monterey pine (*Pinus radiata*), and eucalyptus (*Eucalyptus globulus*) as either the dominant or as components in the tree canopy of a stand. Component shrub and herbaceous species included silver bush lupine, ice plant, and Russian thistle (*Salsola tragus*).

There is a distinct stand of Ornamental vegetation comprised of Eucalyptus and Monterey Cypress located between the Embarcadero and the southeastern MBPP boundary that supports a rookery for multiple species of heron and is designated as ESHA, as well as protected under CEQA. In addition, Monterey cypress is a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1B.1 species, and Monterey pine is a CNPS CRPR 1B.2 species; however, the stands themselves are not considered to be sensitive by the CDFW. Stands of trees often provide suitable nesting habitat for birds and overwintering habitat for monarch butterflies. Refer to Section 4.5.1 Special-Status Plants for further details regarding these special-status tree species.

4.2.6 Ruderal/Developed

Within this Report, Ruderal/Developed habitat is a term used to describe those areas that have been disturbed by past land-use practices, recent ground disturbance or are currently developed. Ruderal/Developed habitat includes office facilities, paved and unpaved roads, industrial and commercial structures, and areas of vegetation along these features and within abandoned facilities. As observed during the December 2020, 2021, and 2022 field surveys, this vegetation type consisted primarily of remnant annual grasses, pampas grass (*Cortaderia jubata*), telegraph weed, ice plant, coyote brush, and scattered volunteer eucalyptus. Developed areas within the Ruderal/Developed habitat type generally do not support vegetative cover due to the presence of impervious surfaces.

4.3 WILDLIFE

Wildlife observed within the BSA during the field studies included both invertebrate and vertebrate species. This includes species seen or detected by tracks, scat, skeletal remains, burrows and/or vocalization during the field surveys conducted within the BSA. Limitations in the quantitative assessment of both terrestrial vertebrate and invertebrate populations include:

- Many species may occur in the area only for short periods during migrations;
- Many species of amphibians and reptiles become inactive during one or more seasons;
- Seasonal or annual fluctuations in climate or weather patterns may confound observations;
- No focused protocol-level surveys, mist-netting, trapping, tracking surveys, aquatic surveys or nocturnal surveys were completed by Padre biologists; and

- Protocol surveys for Morro shoulderband snail were completed during the rainy season of 2020-2021 and the rainy season of 2022-2023 and are attached to this Report as Appendix G –No-Take Concurrence Request and Morro Shoulderband Snail Protocol Survey Report (EAM, 2021) and Appendix H – No-Take Concurrence Request and Morro Shoulderband Snail Protocol Survey Report (EAM, 2023).

Following are descriptions of several classifications of invertebrate and vertebrate species either observed or considered likely to be present within the BSA. Several wildlife species in the region may inhabit the Project area seasonally such as overwintering monarch butterfly (*Danaus plexippus*), migratory birds, and bats. The comprehensive desktop review and completion of field surveys conducted at various times of the year have provided sufficient information to ensure that resident, seasonal, and migratory wildlife (existing and potentially occurring special-status species) have been evaluated within this Report. Further descriptions of special-status species that have potential to occur within the BSA can be found in Section 4.5.2.

4.3.1 Invertebrates

Invertebrates observed during field surveys within the BSA included European snail (*Helix aspersa*) and dentate stink beetle (*Eleodes dentipes*). In addition, the following special-status species have the potential to occur within the BSA based on their prevalence throughout the region and/or the presence of suitable habitat: monarch butterfly, globose dune beetle (*Coleus globosus*), Morro Bay blue butterfly (*Plebejus icarioides moroensis*), Morro shoulderband snail, obscure bumble bee (*Bombus caliginosus*), and sandy beach tiger beetle (*Cicindela hirticollis gravida*).

4.3.2 Amphibians

Amphibians detected during field surveys were limited to Sierran treefrog (*Pseudacris sierra*) which was heard calling at the north end of the BSA near Morro Creek. No additional amphibians were observed during field surveys within the BSA; however, the following species have the potential to occur within Morro Creek just outside of the BSA based on their prevalence throughout the region and the presence of suitable habitat: black-bellied slender salamander (*Batrachoseps nigriventris*.), arboreal salamander (*Aneides lugubris*), California toad (*Anaxyrus boreas halophilus*), and California red-legged frog (*Rana draytonii*). These salamander species are members of the Plethodontid family, or Lungless Salamanders and are found in damp environments on land, under rocks, logs, and other debris and do not live or breed in water (Nafis, 2022). California toad and California red-legged frog are semi-aquatic species that utilize both wetland and upland habitats for their life/reproductive cycles (Stebbins, 2003). The Project site does not contain suitable aquatic and/or moist habitat for these amphibians however, California toad and California red-legged frog have the potential to disperse and/or migrate through the upland habitat within the Project site.

4.3.3 Fish

No aquatic habitat suitable for fish is present within the BSA.

4.3.4 Reptiles

No reptiles were observed during field surveys; however, coast range fence lizard (*Sceloporus occidentalis bocourtii*) has been previously documented at the MBPP. In addition, the following species have the potential to occur within the BSA based on their prevalence throughout the region and/or the presence of suitable habitat: woodland alligator lizard (*Elgaria multicarinata webbii*), San Diego gopher snake (*Pituophis catenifer annectens*), gartersnake species (*Thamnophi*s sp.), coast horned lizard (*Phrynosoma blainvillii*), northern legless lizard (*Anniella pulchra*), and southwestern pond turtle (*Actinemys pallida*).

4.3.5 Birds

Birds observed during field surveys within the BSA include Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), American crow (*Corvus brachyrhynchos*), yellow-rumped warbler (*Setophaga coronata*), black phoebe (*Sayornis nigricans*), California thrasher (*Toxostoma redivivum*), Hutton's vireo (*Vireo huttoni*), wrentit (*Chamaea fasciata*), blue-gray gnatcatcher (*Polioptila caerula*), turkey vulture (*Carthartes aura*), red-tailed hawk (*Buteo jamaicensis*), Bewick's wren (*Thrymanes bewickii*), white-crowned sparrow (*Zonotrichia leucophrys*), and great blue heron (*Ardea Herodias*).

In addition, black-crowned night herons (*Nycticorax nycticorax*) were observed within the BSA along the proposed multi-use path area adjacent to Embarcadero. Several large Eucalyptus trees in this area have been identified on Figure 4-1 as potential roost trees, based on observations of white-wash or roosting individuals.

4.3.6 Mammals

Mammals detected during field surveys within the BSA include raccoon (*Procyon lotor*), mule deer (*Odocoileus hemionus*), Virginia opossum (*Didelphis virginiana*), and coyote (*Canis latrans*). Other common mammal species expected to occur within the BSA based on the presence of suitable habitat include California ground squirrel (*Otospermophilus beecheyi*), California vole (*Microtus californicus*), brush rabbit (*Sylvilagus bachmani*), black-tailed jackrabbit (*Lepus californicus*), and striped skunk (*Mephitis mephitis*).

4.3.7 Marine Mammals and Reptiles

Marine mammals or reptiles were not observed during the field surveys within the BSA. The Project site is situated within approximately 0.22 miles of the Morro Bay estuary; however, the Project site does not contain marine or shoreline habitats and therefore is not suitable for marine mammals or reptiles. Special-status marine species that have been documented to occur offshore the BSA are discussed in Section 4.5.2 Special-Status Wildlife.

4.3.8 Wildlife Migratory Corridor

Wildlife migration corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local, such as those between foraging and nesting/denning areas, or they may be regional in nature. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. These natural linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional fitness of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

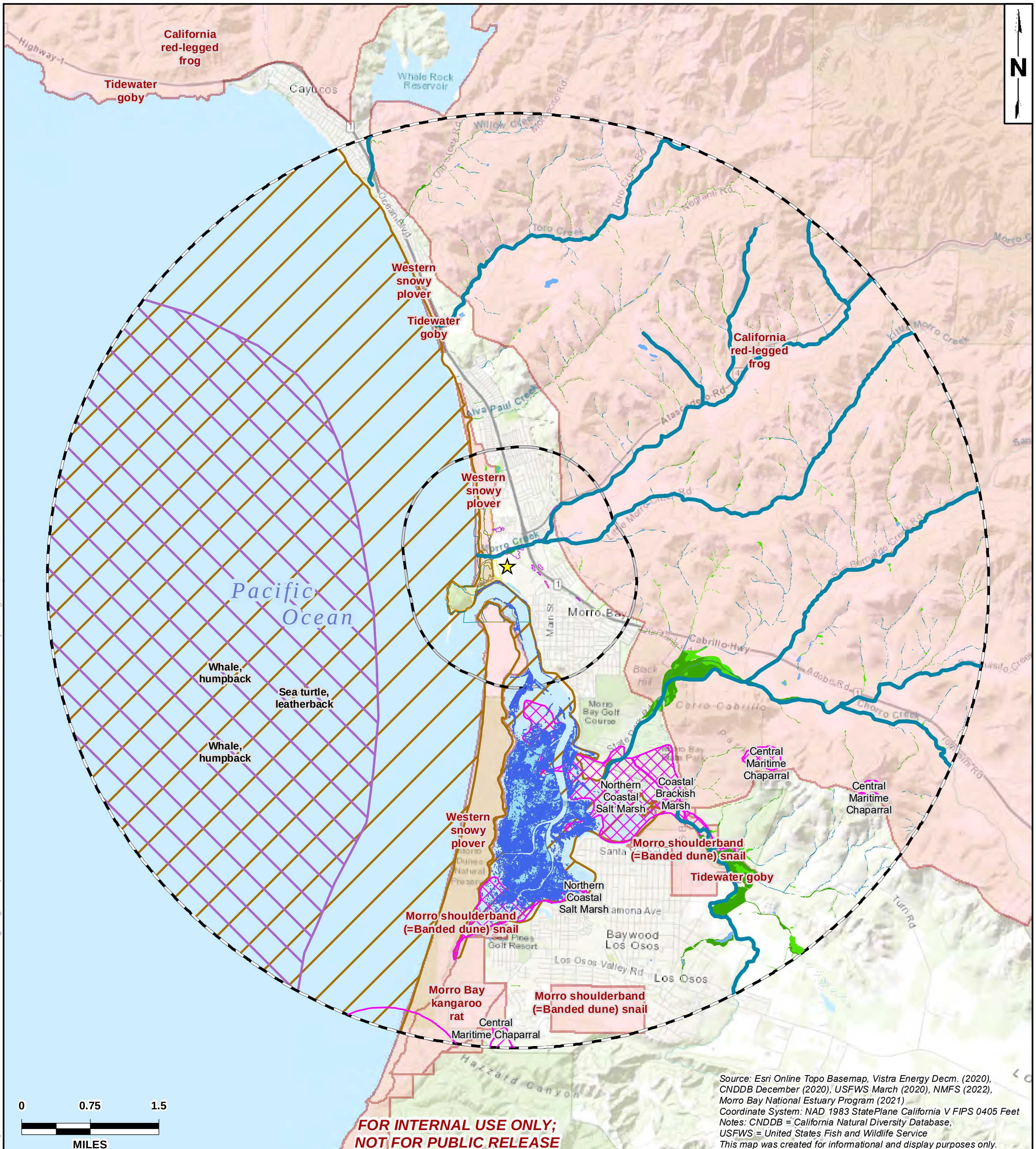
The Project region consists of the coastal range with drainages flowing west into the Pacific Ocean, and coastal bluffs and beach habitat which provide open spaces that serve as movement and dispersal corridors for a variety of wildlife species. However, the Project site is situated in the City of Morro Bay and the land use surrounding the Project site consists of Highway 1, paved streets, residential, and commercial development which restrict regional wildlife movement and dispersal into the Project site area. There is potential for wildlife to migrate through offsite habitats such as Morro Creek and/or mature stands of eucalyptus trees to the west and south to temporarily utilize the Project site for roosting, foraging, and/or denning.

4.4 SENSITIVE HABITATS OF THE PROJECT REGION

Based on information obtained from the desktop review, several habitats occur in the region that are afforded protection by a Federal, State, or local authority, and may support special-status plants and wildlife. For the purpose of this report, sensitive habitats include the following:

- Critical Habitat defined by the FESA under Section 3, and protected by the USFWS and/or National Marine Fisheries Service (Figure 4-2 – Sensitive Habitats);
- Sensitive habitats defined by the CESA and protected by the CDFW and/or local agencies; the CDFW considers vegetation types with an imperilment status of S3/G3 or rarer to be addressed in the environmental review processes of CEQA or its equivalents. (CDFW, 2018b).
- ESHAs protected by the City of Morro Bay and outlined in the City of Morro Bay Environmental Sensitive Habitat Area (ESHA) Analysis: 2050 Sea Level Rise Scenario Plan (Rincon, 2018); and
- Rare habitats identified by local professional organizations and/or the scientific community.

Sensitive habitats occurring within the Project region are summarized in Table 4-2 – Sensitive Habitats in the Project Region and illustrated in Figure 4-1 -Biological Resources Assessment Results Map and Figure 4-2 – Sensitive Habitats.



LEGEND:

- Project Site
- Project Site Buffer - 1 mile
- Project Site Buffer - 5 mile
- USFWS Critical Habitat
- Eelgrass
- Steelhead Critical Habitat

CNDDB Occurrences
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)

NWI Wetland Type
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

NMFS Critical Habitats
- Sea turtle, leatherback
- Whale, humpback

Environmentally Sensitive Habitat Areas (ESHA)
- Backdune / Dune Scrub
- Foredune
- Freshwater Emergent Wetland
- Monarch Overwintering Site
- Morro Rock (Peregrine Falcon Nest Site)
- Outer Limit of SLR-Related Hazard Zones
- Rivers & Streams (Stream Mouth)
- Rookeries
- Shallow Bay / Mudflat / and Eelgrass Potential Habitat
- Willow Woodland and Scrubland

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: BATTERY STORAGE PROJECT
MORRO BAY POWER PLANT
SAN LUIS OBISPO COUNTY, CA

PROJECT NUMBER: 1902-1173

DATE: November 2022

REGIONAL SENSITIVE HABITATS

FIGURE 4-2

Z:\GIS Projects\GIS Maps\Map Project\Dynegy Morro Bay Power Plant Marine Terminal Decommissioning\Regional Special-Status Sensitive Communities and Habitats - Battery Storage.mxd 11/11/2022

Table 4-2. Sensitive Habitats of the Project Region

Sensitive Habitat	Protection Status and Critical Habitat Designations	Located within BSA	Located within Project site
USFWS/NMFS Designated Critical Habitat[1]			
California red-legged frog *Rana draytonii*	Federally threatened; USFWS-Designated Critical Habitat	No	No
Tidewater goby; Unit SLO-8, and SLO-9 *Eucyclogobius newberryi*	Federally endangered, USFWS-Designated Critical Habitat	No	No
Morro Shoulderband Snail *Helminthoglypta walkeriana*	Federally endangered; USFWS-Designated Critical Habitat	No	No
Morro Bay Kangaroo Rat *Dipodomys heermanni morroensis*	Federally Endangered, State endangered; USFWS-Designated Critical Habitat	No	No
Steelhead trout, South-Central California Coast DPS *Oncorhynchus mykiss irideus*	Federally threatened; NMFS-Designated Critical Habitat	No	No
Leatherback sea turtle *Dermochelys coriacea*	Federally endangered, State Candidate Endangered; NMFS-Designated Critical Habitat	No	No
Central America and Mexico humpback whale Distinct Population Segments (DPS) *Megaptera novaeangliae*	Federally endangered; NMFS-Designated Critical Habitat	No	No
CDFW CNDDB Sensitive Natural Communities[2]			
Central Dune Scrub (Mixed dune)	G2, S2.2	Yes	Yes
Central Maritime Chaparral	G2, S2.2	No	No
Coastal Brackish Marsh	G2, S2.1	No	No
Northern Coastal Salt Marsh	G3, S3.2	No	No

Table 4-2. Sensitive Habitats of the Project Region

Sensitive Habitat	Protection Status and Critical Habitat Designations	Located within BSA	Located within Project site
Alliances Designated as CDFW Sensitive Natural Communities / ESHA[3]			
Willow Woodland and Scrub [Arroyo willow thickets]	ESHA	Yes	No
Rookeries	ESHA	Yes	Yes[4]
Monarch Overwintering Site	ESHA	Yes	No
Silver bush lupine scrub	G3, S3	Yes	Yes
Back Dune/Dune Scrub (Mixed dune)	ESHA	Yes	Yes[4]

Notes:
[1]USFWS Federal Register
[2]The CDFW Sensitive Natural Communities listed in this table are results of the CNDDB query of the Project region (CDFW, 2022). Site-specific vegetation type equivalent is provided in parentheses and MCV2 equivalent is provide in brackets. The ranking codes are part of the Heritage Methodology that provides information about the status of the taxon/community throughout their entire range and within California.
G Global Rank
S State Rank
G1-G5 Globally critically imperiled (G1) to demonstrably secure (G5)
S1-S5 State critically imperiled (S1) to demonstrably secure (S5)
[3]Communities listed and described in the Natural Communities List based on life form (CDFW, 2019), and ESHA designated by the City of Morro Bay (Rincon, 2018).
[4]The multi-use path will traverse rookeries designated as ESHA and Back Dune/Dune Scrub ESHA.

4.4.1 Critical Habitat

Five USFWS-designated and two NMFS-designated Critical Habitat areas are located within five miles of the Project site; however, none overlap the Project site limits. These Critical Habitats are discussed below.

4.4.1.1 California Red-Legged Frog Critical Habitat

USFWS-designated Critical Habitat for California red-legged frog was finalized in March of 2001 for core areas selected based on the following criteria: 1) areas that are occupied by California red-legged frog; 2) areas where populations of California red-legged frog appear to be source populations; 3) areas that provide connectivity between source populations; and 4) areas that represent areas of ecological significance (USFWS, 2002). Critical habitat may include an area that is not currently occupied by the species but is important for its recovery. Further, California red-legged frog are ultimately protected if occurring outside designated Critical Habitat areas. California red-legged frog Critical Habitat is located less than one mile from the BSA but does not extend into the BSA.

4.4.1.2 Tidewater Goby Critical Habitat

Tidewater goby is federally listed as Endangered under the FESA, and USFWS-designated Critical Habitat includes all locations where this species is known or likely to occur. The nearest tidewater goby Critical Habitats, referred to as SLO-8 and SLO-9, are located within Toro Creek approximately 2.5 miles northwest of the BSA and Los Osos Creek less than five miles south of the BSA. Critical Habitat does not extend into the BSA.

4.4.1.3 Western Snowy Plover Critical Habitat

The Pacific Coast population of western snowy plover is federally listed under the FESA as Threatened. USFWS-designated Critical Habitat for this species was finalized in June of 2012 for areas along the coasts of California, Oregon, and Washington. Critical Habitat areas for western snowy plover consist of sandy beaches, dune systems immediately inland of an active beach face, salt flats, and mud flats, that were selected based on the following criteria: 1) areas that will allow the species to move and expand; 2) known breeding areas; 3) known wintering areas; 4) habitat that is unique or that provides interchange between otherwise widely separated units; 5) areas to maintain connectivity of habitat; and 6) areas in which restoration activities will occur. Western snowy plover Critical Habitat occurs within the coastal dune habitat adjacent to the BSA but does not extend into the BSA.

4.4.1.4 Morro Shoulderband Snail Critical Habitat

USFWS-designated Critical Habitat for Morro shoulderband snail was finalized in March of 2001. Critical Habitat designated by the USFWS includes these elements: 1) sand or sandy soils which are necessary for reproduction 2) to permit movement, no greater than a ten percent slope, 3) and native coastal dune scrub vegetation. Morro shoulderband snail Critical Habitat occurs less than one mile from the BSA but does not extend into the BSA.

4.4.1.5 Morro Bay Kangaroo Rat Critical Habitat

USFWS-designated Critical Habitat for Morro Bay Kangaroo Rat (*Dipodomys heermanni morroensis*) was finalized August 1977. The Critical Habitat was originally delineated because it contained a significant population of the species. Since the designation, the population has decreased and is now restricted to an area of approximately five square miles, generally corresponding to the distribution of Baywood fine sand, south and southeast of Morro Bay. The species has not been observed in the wild since 1986. Morro Bay Kangaroo Rat Critical Habitat occurs less than five miles south of the BSA within Montaña De Oro State Park. Critical Habitat does not extend into the BSA.

4.4.1.6 South-Central California Coast Steelhead Critical Habitat

NMFS-designated Critical Habitat occurs in Morro Creek but does not extend into the BSA or the Project site. Project activities will occur approximately 25 feet south of the riparian vegetation corridor associated with Morro Creek.

4.4.1.7 Marine Critical Habitats

NMFS-designated Critical Habitat occurs offshore of the Project site for leatherback sea turtle and Central America and Mexico humpback whale Distinct Population Segments (DPS); however, Project activities will only occur within the boundaries of the Project site and will not occur in or impact the marine environment.

4.4.2 Sensitive Natural Communities, Alliances, and ESHA

Based on the CNDDB query conducted during the desktop review, the following Sensitive Natural Communities were documented within the region: Central Dune Scrub, Central Maritime Chaparral, Coastal Brackish Marsh, and Northern Coastal Salt Marsh (CDFW, 2022b), with Central Dune Scrub as the only CDFW Sensitive Natural Community identified within the BSA.

Sensitive vegetation alliances (CDFW, 2022a, CNPS, 2022a) are based on life form of the dominant plant species found within a vegetation type. These vegetation types are described in the MCV2 (Sawyer et.al., 2009, CNPS, 2022a) and are assigned a rarity rank by the CDFW (CDFW, 2022a). The one sensitive vegetation alliance identified within the BSA was Silver bush lupine scrub, which corresponds to the Holland Community, Central Dune Scrub (CNPS, 2022a). The ESHAs as designated by the City of Morro Bay (Rincon, 2018) identified within the BSA included Rookeries, Back Dune/Dune Scrub, Willow Woodland and Scrub, and Monarch Overwintering Site (Rincon, 2018). Table 4-1 above provides a summary of these sensitive natural communities and alliances.

An additional ESHA referred to as Shallow Bay/Mudflat/and Eelgrass Potential mapped within the water off the Coleman Park Beach area (Rincon, 2018). Further, the Morro Bay harbor and estuary supports areas of seagrass beds comprised of eel grass (*Zostera marina*) that are considered to be a valuable coastal habitat worldwide (Morro Bay Estuary Program, 2021). The Project site is located approximately 150 feet east of the harbor and does not contain marine or shoreline habitats and therefore no eelgrass beds or ESHA are present within the BSA.

4.5 SPECIAL-STATUS BIOLOGICAL RESOURCES

4.5.1 Special-Status Plants

Special-status plants are either listed as Endangered or Threatened under FESA or CESA, considered Rare under the California Native Plant Protection Act, or considered rare (but not legally listed) by resources agencies, professional organizations, and the scientific community under the following categories.

- Plants listed or proposed for listing as Threatened or Endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species,).
- Plants that are candidates for possible future listing as Threatened or Endangered under the Federal Endangered Species Act (Federal Register May 3, 2022).
- Plants that meet the definitions of rare or endangered species under the CEQA (State CEQA Guidelines, Section 15380).
- Plants considered by the CNPS to be "Rare, Threatened, or Endangered" in California (Ranks 1B and 2 in CNPS, CNPS, 2022).

- Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Ranks 3 and 4 in CNPS, 2020b).
- Plants listed or proposed for listing by the State of California as Threatened or Endangered under the California Endangered Species Act (14 CCR 670.5).
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).
- Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), state and local agencies or jurisdictions.
- Plants considered sensitive or unique by the scientific community or occurring at the limits of their natural range (State CEQA Guidelines).

The results of the desktop review indicated that 49 special-status plant species have been documented within approximately five miles of the BSA (Project region) (CDFW, 2022, CNPS, 2022). Appendix E – CNDDB Documentation lists species documented in the three quadrangles that encompass the region, and IPaC documentation lists species with the potential to occur in the region. Padre evaluated the documented species to identify which species had the potential to occur within the BSA. This evaluation compared the habitat preferences, including elevation, of the documented species to the existing habitats and conditions of the BSA, and nearest documented occurrence to the BSA. Based on the evaluation and field survey, six special-status plant species had the potential to occur. Three special-status plant species were observed within the Project site as shown in Table 4-3 - Special-Status Species of the Project Region and discussed further.

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description[1]**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence**	**Observed in Project Site**
Abronia maritima Sticky sand verbena	CRPR 4.2	Coastal dunes.	X	X	X	
Agrostis hooveri Hoover's bent grass	CRPR 1B.2	Foothill woodlands, chaparral, valley grassland.				
Arenaria paludicola Marsh sandwort	FE, SE, CRPR 1B.1	Freshwater wetlands, wetland-riparian				

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description[1]**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence**	**Observed in Project Site**
Arctostaphylos luciana Santa Lucia manzanita	CRPR 1B.2	Coastal chaparral and shale outcrops and slopes.				
Arctostaphylos morroensis Morro manzanita	FT, CRPR 1B.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub in sandy loam.				
Arctostaphylos osoensis Oso manzanita	CRPR 1B.2	Chaparral, cismontane woodland, narrowly endemic to mountains north of Los Osos Valley.				
Arctostaphylos pechoensis Pecho manzanita	CRPR 1B.2	Chaparral, coastal sage scrub, closed-cone coniferous forest.				
Arctostaphylos pilosula Santa Margarita manzanita	CRPR 1B.2	Coastal chaparral and shale outcrops and slopes.				
Arctostaphylos tomentosa ssp. *daciticola* Dacite manzanita	CRPR 1B.1	Chaparral, cismontane woodland.				
Arenaria paludicola Marsh sandwort	FE, SE, CRPR 1B.1	Marshes and swamps.				
Astragalus didymocarpus var. *milesianus* Miles' milk vetch	CRPR 1B.2	Coastal scrub.	X	X	X	
Atriplex coulteri Coulter's saltbush	CRPR 1B.2	Coastal strand, valley grassland, coastal sage scrub, occasionally in wetlands.				
Bryoria spiralifera Twisted horsehair lichen	CRPR 1B.1	North coast coniferous forest.				

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description[1]**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence**	**Observed in Project Site**
Calochortus obispoensis San Luis mariposa-lily	CRPR 1B.2	Coastal sage scrub, chaparral, valley grassland.				
Calystegia subacaulis ssp. *episcopalis* Cambria morning-glory	CRPR 4.2	Chaparral and cismontane woodland.				
Camissoniopsis hardhamiae Hardham's evening-primrose	CRPR 1B.2	Closed-cone coniferous forest, chaparral in serpentine soils.				
Carex obispoensis San Luis Obispo sedge	CRPR 1B.2	Coastal sage scrub, closed-cone pine forest, chaparral, coastal prairie, coastal prairie, valley grassland.				
Castilleja densiflora var. *Obispoensis* San Luis Obispo owl's-clover	CRPR 1B.2	Meadows and seeps, valley and foothill grassland, sometimes in serpentine soil.		X		
Caulanthus californicus California jewelflower	FE, SE, CRPR 1B.1	Shadescale scrub, valley grassland, pinyon-juniper woodland.				
Ceanothus thyrsiflorus var. *Obispoensis* San Luis Obispo ceanothus	CRPR 1B.1	Chaparral, cismontane woodland.				
Chenopodium littoreum Coastal goosefoot	CRPR 1B.2	Coastal dunes.				
Chloropyron maritimum ssp. *maritimum* Salt marsh bird's-beak	FE, SE, CRPR 1B.2	Coastal salt marsh, coastal dunes.				
Chlorogalum pomeridianum var. *minus* Dwarf soaproot	CRPR 1B.2	Chaparral.				
Chloropyron maritimum ssp *palustre* Point Reyes salty bird's-beak	CRPR 1B.2	Coastal salt marsh, wetland-riparian.				

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description[1]**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence**	**Observed in Project Site**
Chorizanthe breweri *Brewer's spineflower*	CRPR 1B.3	Coastal sage scrub, closed-cone pine forest, foothill woodland, chaparral.				
Cirsium fontinale var. *obispoense* Chorro Creek bog thistle	FE, SE, CRPR 1B.2	Chaparral, foothill woodland, wetland-riparian, seeps.				
Cirsium occidentale var. *compactum* Compact cobwebby thistle	CRPR 1B.2	Coastal strand, coastal sage scrub, chaparral, coastal prairie.				
Cirsium occidentale var. *lucianum* Cuesta Ridge thistle	CRPR 1B.2	Chaparral, cypress conifer forests, mixed evergreen forests, oak woodlands.				
Cladonia firma Popcorn lichen	CRPR 2B.2	Maritime habitats, stabilized dunes along the coast.	X			
Clarkia speciosa ssp. immaculata Pismo clarkia	FE, SR, CRPR 1B.1	Openings and edges in foothill woodlands, chaparral, and valley grasslands.				
Cordylanthus maritimus ssp. maritimus Salt marsh birds beak	FE, SE, CRPR 1B.2	Coastal strand, coastal salt marsh, wetland-riparian.				
Delphinium parryi ssp. *blochmaniae* Dune larkspur	CRPR 1B.2	Coastal strand, chaparral, dunes.		X		
Delphinium parryi ssp. *eastwoodiae* Eastwood's larkspur	CRPR 1B.2	Chaparral, valley and foothill grassland.		X		
Dithyrea maritima Beach spectaclepod	ST, CRPR 1B.1	Dunes, coastal strands, coastal sage scrub.	X			
Dudleya abramsii ssp. *bettinae* Betty's dudleya	CRPR 1B.2	Chaparral, coastal scrub, valley and foothill grassland on rocky barren exposures of serpentine.				

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name Common Name	Status	Habitat Description[1]	Habitat Present	Occurrence <1 mile	Potential for Occurrence	Observed in Project Site
Dudleya abramsii ssp. *murina* Mouse-gray dudleya	CRPR 1B.3	Chaparral, cismontane woodland, valley and foothill grassland on rocky barren exposures of serpentine rock/soils.		X		
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	CRPR 1B.1	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland with shallow rocky slopes in clays over serpentine.		X		
Dithyrea maritima Beach spectaclepod	ST, CRPR 1B.1	Coastal dunes and coastal scrub.	X			
Erigeron blochmaniae Blochman's leafy daisy	CRPR 1B.2	Coastal dunes, coastal scrub, endemic to San Luis Obispo County.	X	X	X	X
Eriodictyon altissimum Indian Knob mountainbalm	FE, SE, CRPR 1B.1	Maritime chaparral, cismontane woodland, coastal scrub, endemic to San Luis Obispo County.				
Erythranthe serpentinicola Irish Hills monkeyflower	CRPR 1B.1	Serpentine spring and rock outcroppings in shrubland and chaparral.				
Extriplex joaquinana San Joaquin spearscale	CRPR 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland in alkaline. soil.		X		
Fritillaria ojaiensis Ojai fritillary	CRPR 1B.2	Mixed evergreen forests and chaparral.				
Hesperocyparis macrocarpa Monterey cypress[2]	CRPR 1B.2	Closed-cone pine forest.	X	X	X	X

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description[1]**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence**	**Observed in Project Site**
Horkelia cuneata var. *puberula* Mesa horkelia	CRPR 1B.1	Chaparral (maritime), cismontane Woodland, coastal scrub; sandy gravely soils.	X			
Horkelia cuneata var. *sericea* Kellogg's horkelia	CRPR 1B.1	Northern coastal scrub, coastal sage scrub, closed-cone pine forest.	X	X	X	
Lasthenia californica ssp. *macrantha* Perennial goldfields	CRPR 1B.2	Northern coastal scrub	X			
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	CRPR 1B.1	Coastal salt marsh, playas, vernal pools.				
Layia jonesii Jones' layia	CRPR 1B.2	Chaparral and grasslands areas with clay and serpentine outcrops and soil.		X		
Malacothamnus palmeri var. palmeri Santa Lucia Bush mallow	CRPR 1B.2	Chaparral and interior valley foothills.				
Monardella palmeri Palmer's monardella	CRPR 1B.2	Foothill woodland and chaparral.				
Monardella sinuata ssp. *sinuata* Southern curly-leaved monardella	CRPR 1B.2	Coastal dunes, coastal scrub, chaparral, cismontane woodlands.	X			
Navarretia fossalis Spreading navarretia	FT, CRPR 1B.1	Freshwater marsh, vernal pools.				
Nemacaulis denudata var. *denudata* Coast woolly-heads	CRPR 1B.2	Coastal strand (beach).				
Pinus radiata Monterey pine[2]	CRPR 1B.1	Closed-cone coniferous forest, cismontane woodland.	X	X	X	X

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description[1]**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence**	**Observed in Project Site**
Poa diaboli Diablo Canyon blue grass	CRPR 1B.2	Slopes in shrubland and chaparral.				
Sanicula maritima Adobe sanicle	SR, CRPR 1B.1	Chaparral, coastal prairie, valley grassland, wetland-riparian.				
Streptanthus albidus ssp. *peramoenus* Most beautiful jewelflower	CRPR 1B.2	Foothill woodland, chaparral, valley grassland.				
Senecio aphanactis Chaparral ragwort	CRPR 2B.2	Foothill woodland, northern coastal scrub, coastal sage scrub.	X			
Senecio blochmaniae Dune ragwort	CRPR 4.2	Coastal sand dunes, sandy floodplains.	X	X[3]	X	
Suaeda californica California seablight	FE, CRPR 1B.1	Coastal salt marshes and swamps.		X		
Sulcaria isidiifer Splitting yarn lichen	CRPR 1B.1	Chaparral, cismontane woodland.				

Table 4-3. Special-Status Plant Species within the Project Region

Scientific Name Common Name	Status	Habitat Description[1]	Habitat Present	Occurrence <1 mile	Potential for Occurrence	Observed in Project Site

Notes:
[1]Habitat descriptions found in CDFW, 2022, CalFlora, 2022, and/or CNPS, 2022b. Habitat presence and potential for occurrence based on evaluation of the Project site.
[2]Planted as landscape windrow trees within the BSA.
[3]Observed by Padre in Mixed dune habitat outside of the BSA (Padre, 2015a).
NA Not applicable
FE Federally endangered
FT Federally threatened
SE State endangered
ST State threatened
CNPS Ranking System (CNPS, 2022); CRPR California Rare Plant Rank:
1A Plants presumed extirpated in California and either rare or extinct elsewhere
1B Plants rare, threatened, or endangered in California and elsewhere
2A Plants presumed extirpated in California, but common elsewhere
2B Plants, rare, threatened, or endangered in California, but more common elsewhere
3 Plants about which more information is needed – a review list
4 Plant of limited distribution – a watch list
CRPR Threat Ranks (CNPS, 2022)
0.1 Seriously threatened in California
0.2 Moderately threatened in California
0.3 Not very threatened in California

Three special-status species were observed during the field survey: Monterey cypress (*Hesperocyparis macrocarpa*), Monterey pine (*Pinus radiata*), and Blochman's leafy daisy (*Erigeron blochmaniae*). The initial field survey was conducted in December 2020, outside of the typical blooming period for most of the special-status species with the potential to occur. However, although not in bloom in December, the perennial species and would likely be identifiable based on the plant's structure and morphological characteristics visible at any time of the year.

A follow-up spring botanical survey was completed in March 2021, and the survey results are attached to this document as Appendix F – Spring Botanical Report. The spring botanical survey focused on the annual special-status plant species that were determined to have potential to occur based on suitable habitat but may not have been identifiable during the December 2020 survey including: Sticky sand verbena (*Abronia maritima*), Miles' milk vetch (*Astragalus didymocarpus* var. *milesianus*), Blochman's leafy daisy, Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), and dune ragwort (*Senecio blochmaniae*). Note that Monterey cypress and Monterey Pine are not included in the blooming table because they are identifiable at all times of the year. The blooming periods for these species are shown in Table 4-4 - Blooming Periods for Potentially Occurring Special-Status Annual Herbs and Lichen. Details on the three species observed within the BSA are described below Table 4-4. In October 2022, a field survey was completed to assess the botanical resources within the BSA including the multi-use path area.

Table 4-4. Blooming Periods for Potentially Occurring Special-Status Species

Common Name	Blooming Period[1] (month)											
	Jan	Feb	Mar*	Apr	May	Jun	Jul	Aug	Sep	Oct*	Nov	Dec*
Sticky sand verbena												
Miles' milk vetch												
Blochman's leafy												
Kellogg's horkelia												
Dune ragwort												

Notes:
[1]Blooming period information was provided by Baldwin et al., 2012 and CNPS, 2022.
*Indicates botanical field survey month.

4.5.1.1 Monterey cypress

Monterey cypress is a perennial evergreen tree in the Cypress Family (Cupressaceae) that is native to California and endemic to central coast of California, occurs in coastal pine forest habitats, and is a CNPS CRPR 1B.2 species. This species is widely planted and has been naturalized outside its native range (University of California, 2022). In the wild, this species is limited to two small populations, near Monterey and Carmel, California (Calflora, 2022, CNPS, 2022b). As observed during the field surveys, there were several stands (shown on Figure 4-1 as Ornamental vegetation) and individual trees that appeared to be planted as landscape trees within the BSA. There were approximately 43 individual trees within the stands, all appeared healthy and ranged in height from approximately ten to 30 feet tall. It is expected that approximately six Monterey cypress will be removed as part of Project activities within the BESS area. Additional tree removals and impacts may result from installation of the multi-use path, refer to Appendix I for more details. Refer to Section 5.0 for information on replacement trees plantings.

4.5.1.2 Monterey pine

Monterey pine is a perennial evergreen tree in the Pine Family (Pinaceae) that is native to California, occurs in coastal pine forest habitats, and is a CNPS CRPR 1B.1 species. Monterey pine is native to three very limited areas located in Santa Cruz, Monterey peninsula, and San Luis Obispo Counties, and in these stands is co-dominant with Monterey cypress. This species is extensively cultivated around the world for lumber and can be invasive in parts of California (Calflora, 2022, CNPS, 2022b). As observed during the field surveys, there were several stands (shown on Figure 4-1 as Ornamental vegetation) and individual trees that appeared to be planted as landscape trees within the BSA. There were approximately 17 individual trees within the stand, all appeared healthy and ranged in height from approximately 10 to 20 feet tall. It is expected that all Monterey pine trees will be removed as part of Project activities. Refer to Section 5.0 for information on replacement trees plantings.

4.5.1.3 Blochman's leafy daisy

Blochman's leafy daisy is a perennial herb in the Sunflower Family (Asteraceae) family that occurs in dunes and coastal strand habitat, is a CNPS CRPR 1B.2 species, and typically blooms from June through October. Padre observed this species in Ruderal and Silver bush lupine scrub situated on remnant tank ring berms. Seed was collected from doner plants in August 2021 for future mitigation restoration activities. Refer to Section 5.0 for information on restoration activities.

4.5.2 Special-Status Wildlife

Special-status wildlife species are either listed as Endangered or Threatened under FESA or CESA, or considered rare (but not formally listed) by resources agencies, professional organizations, and the scientific community under the following categories:

- Animals listed or proposed for listing as Threatened or Endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species).
- Animals that are candidates for possible future listing as Threatened or Endangered under the Federal Endangered Species Act (Federal Register May 3, 2022).
- Animals that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380)
- Animal considered Species of Special Concern (SSC) by CDFW (Checklist of the American Ornithologists' Union, 2022 for birds; American Society of Mammologists, 2022 for mammals; Fricke, R., Eschmeyer, W. N. & R. van der Laan (eds), 2022 for fish; and Center for North American Herpetology, 2022 for amphibians and reptiles).
- Animals listed or proposed for listing by the State of California as Threatened and Endangered under the California Endangered Species Act (14 CCR 670.5).
- Animal species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Animal species protected under the Marine Mammal Protection Act (as amended in 1994).
- Birds of Conservation Concern. Migratory and nonmigratory bird species (beyond those already designated as federally Threatened or Endangered) that represent the USFWS highest conservation priorities in effort to draw attention to species in need of conservation action (Shuford and Gardali, 2008).
- Birds on the CDFW Watch List include "Taxa to Watch" (Shuford and Gardali, 2008) 1) not on the current Special Concern list but were on previous lists and they have not been state listed under CESA; 2) were previously state or federally listed and now are on neither list; or 3) are on the list of "Fully Protected" species.
- The Western Bat Working Group is comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Species designated as "High Priority" are imperiled or

are at high risk of imperilment based on available information on distribution, status, ecology and known threats.

Based on the literature review and species lists obtained from CNDDB, USFWS (IPaC Trust Resource Report) (Ventura Office Project code: 2023-0006632) and from National Marine Fisheries Service (NMFS) for the Project region, 52 special-status wildlife species have been documented and/or have the potential to occur within the Project region (CDFW, 2022, USFWS, 2022c). All species lists are provided in Appendix E. Padre evaluated the documented species to identify which species had a higher potential to occur within the Project site. An analysis of the likelihood of occurrence for each species was conducted on the basis of species ranges, previous observations, contemporary sightings, and presence of suitable habitat elements. Although the Project is located in the coastal zone, Project activities are planned to occur within the boundaries of the Project site and would not impact marine or aquatic environments; therefore, exclusively marine species were not included in the analysis. In addition, the Project is located outside of the known range of some species, or within the geographic range for a certain species, but suitable aquatic or terrestrial habitats, such as nesting, foraging, or migrating corridors are absent from the BSA.

Based on the evaluation and field survey, eleven special-status wildlife species have the potential to occur within the Project site as shown in Table 4-5 - Special-Status Wildlife Species of the Project Region and discussed below.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Invertebrates					
Bombus caliginosus Obscure bumble bee	SA	Coastal areas from Santa Barbara County north to the state of Washington.	X	X	**This species was not observed during field surveys; however, based on the presence of suitable habitat, as well as nearby occurrences and their transitory nature, this species has the potential to occur within the Project site.**
Branchinecta conservation Conservancy fairy shrimp	FE	The habitat characteristics typical of the pools that support the conservancy fairy shrimp are clear to turbid pools often in alkaline soils. These include clear-water depressions in sandstone outcroppings, grass-bottomed pools, and claypan pools.			No suitable habitat is present on the Project Site and there have been no documented occurrences of vernal pool fairy shrimp within the vicinity to date. This species is not likely to occur within the Project site.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Branchinecta lynchi Vernal pool fairy shrimp	FT	Grassland vernal pools or similar seasonal wetlands. They require cool water with low alkalinity and low total dissolved solids and tend to be found in smaller pools about six inches (fifteen centimeters) deep that stay flooded for relatively short amounts of time.			No suitable habitat is present on the Project site and there have been no documented occurrences of vernal pool fairy shrimp within the vicinity to date. This species is not likely to occur within the Project site.
Cicindela hirticollis gravida Sandy beach tiger beetle	SA	Habitats adjacent to non-brackish water.		X	The Project site does not support non-brackish water nor is it directly adjacent, this species is not likely to occur within the Project site.
Coelus globosus Globose dune beetle	SA	Coastal sand dune habitat.		X	The Project site is predominantly comprised of previously disturbed soils, no suitable habitat is present. This species is not likely to occur within the Project site.
Danaus plexippus Monarch - California overwintering population (Pop. 1)	SA, FC	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	X	X	**Overwintering monarchs were not observed within the Project site, but a nearby overwintering population has been documented southeast of the Project site, this species has the potential to occur within the Project site.**

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Helminthoglypta walkeriana Morro shoulderband snail	FT	Coastal dune and coastal scrub.	X	X	Protocol surveys conducted within the Project site and adjacent habitats from1999 to 2023 were negative. This species is not likely to occur within the Project site.
Plebeius icarioides moroensis Morro Bay blue butterfly	SA	Coastal dune scrub containing silver dune lupine (*Lupinus chamissonis).*	X	X	**This species was not observed during field surveys; however, based on the presence of suitable habitat, as well as nearby occurrences and their transitory nature, this species has the potential to occur within the Project site.**
Tryonia imitator Mimic tryonia	SA	Inhabits coastal lagoons, estuaries and salt marshes.	-	-	No suitable habitat is present on the Project site. This species is not likely to occur within the Project site.
Fish					
Eucyclogobius newberryi Tidewater goby	FE	Brackish water habitats. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	-	X	No suitable habitat is present, the nearest occurrence is located in Morro Creek, north of the Project site. This species is not likely to occur within the Project site; but have a low potential to occur in Morro Creek outside of the Project site limits.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Oncorhynchus mykiss irideus Steelhead – south-central California coast DPS (Pop. 9)	FT	Coastal streams.	-	X	No suitable habitat is present on the Project site, the nearest occurrence is located in Morro Creek, north of the Project site. This species is not likely to occur within the Project site; but have a low potential to occur in Morro Creek outside of the Project site limits.
Amphibians					
Amystoma californiense California tiger salamander -Central CA DPS Pop.1	FT, ST	Grassland, oak savanna, edges of mixed woodland and lower elevation coniferous forest. Requires temporary breeding ponds and habitat with small mammal burrows.			No suitable habitat is present, the nearest occurrence is greater than five miles from the Project site. This species is not likely to occur within the Project site.
Rana boylii Foothill yellow-legged frog -South Coast DPS	PFE	Streams with shallow, flowing water with some cobble substrate.			No suitable habitat is present, the nearest occurrence is greater than five miles from the Project site. This species is not likely to occur within the Project site.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Rana draytonii California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	X	X	**The Project site does not provide aquatic habitat, the nearest occurrence is located in Morro Creek, north of the Project site. There is a low potential for this species to disperse through the Project site during migration between breeding sites.**
Reptiles					
Anniella pulchra Northern California legless lizard	SSC	Sandy soils, sparse vegetation.	X	X	**The Project site is predominantly comprised of previously disturbed soils, however, there is potential for this species to occur within the Silver bush lupine scrub and along the perimeter of the Project site adjacent to Mixed Dune.**
Actinemys pallida Southwestern pond turtle	SSC	Ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation, and adjacent upland habitats.			No suitable habitat is present on the Project site. Morro Creek to the north of the Project site has suitable aquatic habitat for this species, however, there is an existing chain link fence that would prevent entry into the Project site during upland dispersal. This species is not likely to occur within the Project site.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Phrynosoma blainvillii Coast horned lizard	SSC	Wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	X	X	**The Project site is predominantly comprised of previously disturbed soils, however, there is potential for this species to occur within the Silver bush lupine scrub and along the perimeter of the Project site adjacent to Mixed Dune habitat.**

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Birds					
Accipiter cooperii Cooper's hawk	WL	Found in riparian forest and nests in tall trees.	X		**There is potential for this species to nest in trees within Morro Creek and to forage in the Project site.**
Agelaius tricolor Tricolored blackbird	ST	Wetlands with cattails, bulrush, and willows, agricultural fields.			No suitable habitat is present, the nearest occurrence is greater than five miles from the Project site. This species is not likely to occur within the Project site.
Brachyramphus marmoratus Marbled murrelet	FT, SE	Nest in old growth forests in San Francisco area and Pacific Northwest. Forage in nearshore marine habitats on pelagic fish and invertebrates.			Potential transitory presence during late summer/fall migration in nearshore foraging habitat offshore Morro Bay. Nesting habitat is not present in the Project Site. This species is not likely to occur within the Project site.
Charadrius alexandrinus nivosus Western snowy plover	FT, SSC	Sandy beaches, salt pond levees and shores of large alkali lakes.	X	X	**No western snowy plovers were observed within the BSA during field surveys, and it is not likely that this species would occur based on past land use and current disturbance level of the habitat. In addition, suitable nesting habitat is not present on the Project site. Individuals may occur**

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
					transiently given the proximity of extant populations.
Coccyzis americanus *Yellow-billed cuckoo*	FT	Wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland and dense thickets along streams and marshes			No suitable habitat is present on the Project Site. This species is not likely to occur within the Project site.
Empidonax traillii extimus Southwestern willow flycatcher	FE, SE	Occurs along rivers and streams in the southwestern United States during May through September.			No suitable habitat is present on the Project site. This species is not likely to occur within the Project site.
Gymnogyps californianus California condor	FE, SE	Require large areas of remote country for foraging, roosting, and nesting. Roost in large trees or snags, or on isolated rocky outcrops and cliffs. Nests are located in shallow caves and rock crevices within cliffs.			No suitable habitat is present on the Project site. This species is not likely to occur within the Project site.
Laterallus jamaicensis coturniculus California black rail	ST, FP	Marshes, swamps, meadows.	-	-	No suitable habitat is present on the Project site. This species is not likely to occur within the Project site.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Phoebastria albatrus Short-tailed albatross	FE, CSC	Breeding colony occurs on Torishima Island off Japan. Non-breeding population utilized pelagic habitat along Pacific Rim to Gulf of Alaska. Primarily juveniles will use California coastal waters to feed on squid, crustaceans, and fish.			Breeding habitat does not occur on Project Site. Low potential for transitory juvenile birds to occur in offshore marine habitats during fall and early winter. This species is not likely to occur within the Project site.
Pterodroma sandwichensis Hawaiian petrel	FE	Breed on Hawaiian Islands. Documented offshore U.S. West Coast during non-breeding season (December through February).			Rare species offshore U.S. West Coast. Nesting habitat is not present in Project site. This species is not likely to occur within the Project site.
Rallus obsoletus obsoletus California Ridgeway's rail	FE, SE	Tidal and brackish marshes with unrestricted daily tidal flows, well-developed tidal channel networks, and suitable nesting and escape cover to provide habitat during extreme high tides			No suitable habitat is present on the Project site. Species' current distribution is restricted to the San Francisco Bay Estuary. This species is not likely to occur within the Project site.
Sterna antillarum browni California least tern	FE, SE	Breeds on sandy beaches with minimal vegetation close to estuaries and embayments.			Potential nearshore foraging habitat present during early spring migration. Nesting habitat is not present in the Project site. This species is not likely to occur within the Project site.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name **Common Name**	**Status**	**Habitat Description**	**Habitat Present**	**Occurrence <1 mile**	**Potential for Occurrence in Project Site**
Vireo bellii pusillus Least Bell's vireo	FE, SE	Riverine riparian habitats with dense cover, southern willow scrub, cottonwood forest, mulefat scrub			No suitable habitat is present on the Project site. This species is not likely to occur within the Project site.
Mammals					
Antrozous pallidus Pallid bat	SSC	Deserts, grasslands, shrublands, woodlands, and forests, open dry habitats with rocky outcrops for roosting.	X	X	**No bats were observed during the field surveys; however, there is potential for bats to occur within abandoned buildings, structures, and groves of trees within and adjacent to the Project site.**
Corynorhinus townsendii Townsend's big-eared bat	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	X	-	**No bats were observed during the field surveys; however, there is potential for bats to occur within abandoned buildings, structures, and groves of trees within and adjacent to the Project site.**
Dipodomys heermanni morroensis Morro Bay kangaroo rat	FE, SE, FP	Coastal sage scrub on south side of Morro Bay.	-	-	No suitable habitat is present, and the Project site is outside the species range. This species is not likely to occur within the Project site.

Table 4-5. Special-Status Wildlife Species within the Project Region

Scientific Name Common Name	Status	Habitat Description	Habitat Present	Occurrence <1 mile	Potential for Occurrence in Project Site
Dipodomys ingens Giant kangaroo rat	FE, SE	Annual grassland communities with few or no shrubs, well drained, sandy-loam soils in areas with about 6.3 inches or less of annual precipitation.			No suitable habitat is present on the Project site. This species is not likely to occur within the Project site.
Nyctinomops macrotis Big free-tailed bat	SSC	Crevices on cliff faces or mature forests.	X	-	**No bats were observed during the field surveys; however, there is potential for bats to occur within abandoned buildings, structures, and groves of trees within and adjacent to the Project site.**
Vulpes macrotis mutica San Joaquin kit fox	FE, ST	Grasslands; sparsely vegetated with gentle slopes.			No suitable habitat is present, the nearest occurrence is greater than five miles from the Project site. This species is not likely to occur within the Project site.

Status Codes:

SSC	Species of Special Concern (CDFW)	FP	Fully protected under Fish and Game Code (CDFW)
SA	Special Animal (CDFW)	WL	Watch List (CDFW)
SE	State Endangered (CDFW)	FT	Federal Threatened (USFWS)
ST	State Threatened (CDFW)	FE	Federal Endangered (USFWS)
PFE	proposed Federal Endangered		

No special-status wildlife species were observed during the field survey. However, the Project site may provide suitable habitat to support several special-status wildlife species that are documented to occur in the Project region. The following sections provide an overview of the general habitat requirements for these species and further detail on the potential for each of these species to occur in the Project site.

4.5.2.1 Special-status Invertebrates

Sandy beach tiger beetle, globose dune beetle, obscure bumble bee, monarch butterfly, and Morro Bay blue butterfly are considered Special Animals by CDFW and are found in coastal and dune habitats similar to the habitats within the BSA and Project site. Morro shoulderband snail is a federally Endangered species found only in the Morro Bay area. Species with a higher potential to occur within the Project site are discussed below.

Obscure bumblebee. The obscure bumblebee is considered a Special Animal by CDFW. Historically, this species' range extended from Northern Washington to Southern California along the Pacific Coast and inland to the Central Valley of California, but that range is decreasing. Like other species of bumblebees, it lives in annual colonies with only new queens overwintering to nest the following spring. Although, literature on this particular species is limited, many prefer loosely consolidated/disturbed soil or leaf litter for overwintering sites (Xerces et al., 2018). Food plant preference is largely a factor of tongue length for bumblebees, and for this medium long-tonged species, they often include genus' such as *Ceanothus, Lupinus, Rubus, and Cirsium* (Hatfield et al., 2020). This species was not observed during the December 2020, 2021, or 2022 field surveys; however, based on the presence of suitable habitat, as well as nearby occurrences and their transitory nature, this species has the potential to occur within the Project site.

Morro shoulderband snail. Morro shoulderband snail is a federally Endangered species, and USFWS-designated Critical Habitat exists within five miles of the BSA. The Morro shoulderband snail occurs in coastal dune and scrub communities. The snail is most closely associated with the dominant shrub, mock heather (*Ericameria ericoides*); however, several other shrub and succulent species are associated with the habitat of the Morro shoulderband snail, including non-native ice plant. These vegetation communities and suburban landscapes are known to provide shelter for this species. Current range for the snail is in western San Luis Obispo County in Morro Bay; specifically, areas south of Morro Bay, west of Los Osos Creek, and North of Hazard Canyon. This species was reported in Morro Strand State Beach within one mile of the BSA in 2001 (CDFW, 2022b) before the rediscovery of Chorro shoulderband snails. It is possible that the snail was misidentified, given the similarity of these two species and the presumed extirpation of Chorro shoulderband snails at the time of identification. Numerous protocol-level surveys and habitat assessments were completed within the Project site area between 1999 and 2016, and the most recent were completed in 2023, all of which contained negative findings for presence of Morro shoulderband snail (EAM, 2021; EAM, 2023). Based on the protocol-level survey report negative findings, the species is not likely to occur within the Project site.

Monarch butterfly. This species is not formally listed as an Endangered or Threatened species; however, over-wintering monarch butterflies are considered to be a "special animal" by the CDFW. Monarch butterfly wintering sites are classified as "demonstrably secure" worldwide but within California they are considered of "restricted range; rare." Monarch butterflies will begin to abandon autumnal roosts within northern United States and Canada in early November to

December to over-wintering sites in the warmer climates in southern California and Mexico. Monarch butterflies will fly north for breeding as the milkweed plants come into bloom in the spring.

Wintering aggregations of monarch butterflies in California can primarily be found on Monterey pines and in eucalyptus groves (Sakai and Calvert, 1991). Wintering habitat components frequently include sources of moisture such as streams, ponds or abundant morning dew. Other habitat preferences include little direct sunlight, minimal wind, and moist ambient conditions. Monarch butterflies are commonly observed throughout the region and are known to roost in eucalyptus planted within the southeast corner of the MBPP, although these are not considered wintering roosts, but rather fall aggregation sites (Padre, 2005a). As observed during the field survey, there were stands of eucalyptus, Monterey cypress, and Monterey pine (ornamental) trees within the Project site. Although no monarchs were observed, this species has the potential to occur transiently within the Project site during migration or movement throughout the region.

Morro Bay blue butterfly. This species occurs in coastal dune scrub areas within the region and is closely associated with its food host plant, silver bush lupine. Silver bush lupine scrub vegetation occurs scattered throughout the Project site. Focused surveys were not conducted for Morro Bay blue butterfly within the BSA and this species was not observed during the December 2020 field survey; however, due to its close association with silver bush lupine and nearby occurrences, this species has the potential to occur within the Project site.

4.5.2.2 Special-Status Amphibians

California red-legged frog. California red-legged frog is a federally Threatened species, and USFWS-designated Critical Habitat for this species occurs within one mile of the BSA. California red-legged frog use a variety of aquatic and terrestrial habitats, including streams, marshes, ponds, riparian woodlands, springs, lagoons, irrigation canals, wells, reservoirs, and even sewage treatment ponds, as well as upland habitats for dispersal/migration. California red-legged frog have been documented less than one-mile northeast of the BSA within wetland habitat in Morro Strand State Park. Protocol-level surveys were conducted for California red-legged frog in 2000 within a section of Morro Creek intersecting the MBPP (Holland and Villablanca, 2000), resulting in negative findings. Although no California red-legged frog were observed during previous or the recent December 2020 field surveys; due to nearby occurrences, as well as potentially suitable habitat within Morro Creek, California red-legged frog have the potential to occur transiently within the Project site during upland dispersal/migration.

4.5.2.3 Special-Status Reptiles

Sandy soils, areas of sparse vegetation, and occasionally ponded water provide suitable habitat for three special-status reptile species within the Project site.

Northern California legless lizard. The Northern California legless lizard is a State Species of Special Concern. This species lives mostly underground, burrowing in moist warm loose soil in sparsely vegetated areas of beach dunes, chaparral, sandy washes, and stream terraces with oaks. These lizards range from four to seven inches in snout to vent length and are often found under rocks, boards, driftwood, and logs. This species does not bask in direct sunlight and feeds primarily on larval insects, beetles, termites, and spiders. Legless lizards are sometimes active on the surface at dusk and at night, and remain below ground during the day (Stebbins, 2003).

No legless lizards were observed during the December 2020 field surveys; however, due to the presence of suitable habitat within the proposed impact area, as well as nearby occurrences, this species has the potential to occur within the Project site.

Coast horned lizard. Coast horned lizard has been documented in various places throughout San Luis Obispo County, including localities around Morro Bay and Los Osos, specifically at the Morro Bay sand spit (CDFW, 2020). Within its range it can be found in a variety of habitats; along the coast of California this lizard is often associated with shrublands and grasslands (Stebbins, 2003). In addition to being found in sandy washes, they are found in areas with a substrate of fine loose soil. Horned lizard's diet consists of ants and other insects (Stebbins, 2003). In some regions of California, it is thought that exotic ant species, that have displaced and reduced numbers of native ants, are unpalatable to horned lizards and have subsequently reduced the lizard's abundance. Focused surveys were not conducted for coast horned lizard within the BSA, and this species was not observed during the December 2020 field survey; however, due to the presence of suitable habitat, as well as nearby occurrences, this species has the potential to occur within the Project site.

4.5.2.4 Special-Status Birds

The Project site provides suitable nesting and/or foraging habitat for various common and special-status birds and raptors including those documented to occur in the Project region (CDFW, 2020): Western snowy plover, California black rail, California ridgeway rail, and Cooper's hawk. In addition to these special-status birds, a heron and egret rookery has been documented in the eucalyptus and Monterey cypress trees on the southern boundary of the MBPP property along Embarcadero Road (Rincon, 2018).

Western snowy plover. The Pacific coast population of western snowy plover is federally listed as Threatened, and USFWS-designated Critical Habitat for this species includes the beach and foredunes within the BSA. This species inhabits sandy beaches and shores of alkali lakes along the coast of Californian and feeds on small aquatic prey and requires sandy, gravelly, or friable soils for nesting (Sibley, 2014; USFWS, 2022a). Nests, which consist of a shallow scrape lined with bits of shell or stone, are easily disturbed by human activity. Western snowy plovers are also known to be heavily impacted by natural predators, such as raccoons, coyotes, and foxes. Western snowy plovers are known to breed along the Morro Bay Sand Spit and along the dune complex of Morro Strand State Beach. No western snowy plovers were observed within the BSA during the December 2020 field survey, and it is not likely that this species would occur based on past land use and current disturbance level of the potential suitable habitat within the Project site.

Cooper's Hawk and Other Raptors. Cooper's hawk and other raptors such as white-tailed kite and peregrine falcon are well-documented within the Project site region. These species may also utilize habitat within and adjacent to the Project site for nesting, which are often used year after year and are protected by State and Federal agencies, including CDFW and USFWS. No suitable nesting sites are located within the proposed impact area; however, due to the mobility of these species, as well as nearby occurrences, there is potential for birds of prey to occur transiently within the Project site during foraging and/or movement throughout the region.

American peregrine falcon is listed as a federally Endangered species during its nesting season. This bird of prey species frequently nests near water on ledges of rocky cliffs or buildings, and occasionally will use abandoned nests of other species. Peregrine falcons do not build nests but scrape a small depression in the surface of their nesting site and typically nest year after year in the same locations. American peregrine falcons are fairly uncommon throughout San Luis Obispo County and are generally found along coastal areas. Long-term nest use (over 15 years) has been recorded at the Morro Rock Natural Preserve, approximately less than one mile of the BSA. This is one of only a few sites within the County where nesting peregrines are consistently found, although migrants and winter transients augment wintering populations. Focused surveys were not conducted for American peregrine falcon within the BSA, and this species was not observed during the September 2015 or December 2020 field survey; however, its distribution throughout the region is well documented (Padre, 2015a). Due to the mobility of this species and nearby occurrences, American peregrine falcons have the potential to occur transiently within the Project site during foraging and/or movement throughout the region.

Nesting Birds. No active nesting bird activity was observed within the BSA during field surveys; however, several abandoned nests were observed in shrub habitat during the December 2020 survey. Vegetation and other substrates (e.g., man-made structures, areas of open ground, ornamental trees, etc.) present within the Project site provide suitable nesting habitat for a variety of bird species. Nesting birds and their nests/eggs are protected under the federal Migratory Bird Treaty Act of 1918 and California Fish and Game Code, and nesting bird season generally occurs between February 1 and August 31.

4.5.2.5 Special-Status Mammals

Pallid bat, Townsend's big-eared bat, and big free-tailed bat are all considered Species of Special Concern with the CDFW. These special-status bats occupy a wide-range of different habitats and utilize various types of roosts including but not limited to cliffsides, trees, and man-made structures/buildings. Suitable roosting (including maternity roosts)/foraging habitat for the special-status bats listed above are present throughout the Project site including trees, buildings, and water sources. No bats were observed during the 2020, 2021 or 2022 field surveys; however, there is potential for bats to occur within the existing abandoned Power Plan building and stacks, facility structures, and groves of trees within and adjacent to the Project site.

5.0 POTENTIAL IMPACTS AND APPLICANT PROPOSED MITIGATION MEASURES

The following provides a discussion of the potential impacts to biological resources that may occur as a result of the proposed Project and the applicant's proposed mitigation measures. Potential short-term impacts include ground disturbance from installing the infrastructure and increased construction related to vehicle traffic and noise. Potential long-term impacts are related to habitat loss and indirect impacts to adjacent habitats. Avoidance and minimization measures to reduce and avoid the potential short- and long-term negative impacts are discussed for each resource.

5.1 BOTANICAL RESOURCES

The Project site contains one special-status vegetation type (Silver bush lupine scrub), and two designated ESHAs (Back Dune/Dune scrub and Rookeries, and is in the vicinity of Willow Woodland and Scrub and a Monarch Overwintering Site ESHA. Project activities including vegetation removal, ground disturbance, and construction activities may directly and indirectly impact the existing vegetation, potentially occurring special-status plants, and habitat function.

Approximately 2.27 acres of Silver bush lupine scrub, which established on site after removal of the tank farm in 2014, will be removed within the Project site. The Silver bush lupine scrub has established on fill soils within Ruderal/Developed habitat that had previously been developed and was disturbed during operation and decommissioning of the MBPP. As such, Project impacts to this alliance should be evaluated within the context of the stands' limited and fragmented distribution throughout the former tank farm area. This alliance is considered a sensitive natural community by the CDFW (rarity ranking S3) and impacts should be mitigated with a Project Restoration Plan.

Botanical surveys completed in December 2020, March 2021, and October 2022 identified one special-status plant species (Blochman's leafy daisy) and two native trees (Monterey cypress and Monterey pine). These species will be impacted during vegetation removal, ground disturbances, construction, and habitat loss.

Monterey cypress and Monterey pine are special-status tree species that occur within the MBPP property; approximately 6 mature Monterey cypress and 17 Monterey pine trees will be removed as part of the proposed Project activities. In accordance with City of Morro Bay regulations a Coastal Development Permit is required prior to removal of a tree with a minimum of six-inch diameter at 54-inches above grade. The replacement ratio for tree removal will be specified by the Coastal Development Permit (City of Morro Bay, 2021).

The proposed multi-use path has the potential to impact additional trees and ESHA. According to the results of Padre's survey conducted in August 2023, approximately 7 trees will be removed (4 Monterey cypress and 3 eucalyptus), and 13 trees (3 Monterey cypress and 10 eucalyptus) will be impacted during path construction. Tree impacts from the proposed path construction activities include grading within the drip line and installation of an impermeable surface (concrete) over the root zone of 13 trees, with potentially substantial trimming of at least 6 of these trees.

Permanent impacts to ESHA include approximately 0.23 acre of impacts to Rookery ESHA and 0.08 acre of impacts to Back Dune/Dune Scrub ESHA. Rookery ESHA impacts consist of tree removal, tree impacts (trimming and root zone encroachment), and loss of wildlife habitat resulting from the proposed multi-use path. Back Dune/Dune Scrub ESHA will be permanently removed by construction of the multi-use path and has the potential to be indirectly impacted during use of the path through incidental trampling of vegetation, spread of non-native invasive plant species, and deposition of trash.

To mitigate impacts to botanical resources, the following mitigation measures are proposed by the applicant:

1. The former tank farm site proposed for redevelopment is adjacent to ESHA to the north and the west. Although redevelopment of the tank farm site would not directly affect ESHA, development adjacent to ESHA does have the potential for inadvertent impacts to ESHA. Therefore, prior to the start of Project construction, all ESHA boundaries that are not separated from work/staging areas or access routes by the existing permanent fencing shall be clearly delineated with orange construction fencing or other high-visibility materials.
2. The use of Best Management Practices (BMPs) during construction to reduce fugitive dust, erosion, runoff, and introduction of non-native invasive plant materials shall be implemented to ensure adjacent ESHA will not be affected;
3. Drainage plans shall be designed to prevent runoff into adjacent ESHA;
4. Landscaping will be maintained free of non-native invasive plant species that have the potential to invade adjacent ESHA and plantings will utilize appropriate native plant species;
5. The use of heavy equipment and vehicles shall be limited to the proposed Project limits, existing roadways, and defined staging areas/access points with the exception of construction activities in support of the multi-use path along the Embarcadero. No unauthorized personnel or equipment shall be allowed within delineated ESHA areas;
6. The use of heavy equipment to construct the pathway under the Rookery ESHA shall be minimized to the greatest extent feasible and shall be scheduled to avoid the nesting bird season, typically February 1 through August 31;
7. All development in and impacts to ESHAs shall be avoided to the maximum extent feasible;
8. If impacts to an ESHA are unavoidable the following measures shall be implemented:
    a. A Restoration/Mitigation Plan shall be prepared and submitted to the appropriate agencies for approval. At a minimum the Restoration/Mitigation Plan shall include: the size of the disturbance area, the proposed location of compensatory mitigation planting if necessary, a description of pre-disturbance conditions, location of reference site(s), revegetation and monitoring methods, success criteria, locations of permanent photo-points, and a list of recommended Best Management Practices (BMPs) for erosion control;
    b. The Project shall be modified, where possible, to minimize environmental damage to the greatest extent feasible;

c. Quantitative data shall be collected by a qualified botanist to determine pre-disturbance species composition;

d. Wherever possible native plant species will be salvaged and kept in a well-protected and shaded area until Project completion; and

e. The extent of disturbance shall be photographed from permanent photographic monitoring points (photo-points).

9. Compensatory replanting shall be conducted for the removal of all native trees that are 6 inches or greater at 54 inches above grade, irrespective of the need for a Restoration/Mitigation Plan as described above. The trees shall be irrigated for a period of three years, or until deemed self-sufficient by a qualified biological monitor;

10. If avoidance of Blochman's leafy daisy is not feasible, seed shall be collected from each individual Blochman's leafy daisy observed within the Project footprint. Seed collection shall be conducted prior to initial grading, when seed is ripe, typically at the end or after the typical blooming season (June through October). In addition, individual plants may be salvaged and transplanted to containers, if feasible. The seed and salvaged plants would be used for future habitat restoration as mitigation for removal of Blochman's leafy daisy.

11. A Project Restoration Plan shall be prepared to compensate for the removal of Mixed Dune, Silver bush lupine scrub, and Blochman's leafy daisy within the Project site. The Project Restoration Plan will include methodologies for enhancing the Mixed Dune habitat within the MBPP Property through removal of non-native invasive ice plant and establishment of Silver bush lupine scrub and Blochman's leafy daisy. The Project Restoration Plan will provide details on maintenance, monitoring and reporting for a period of three years, and performance criteria for completion.

5.2 AQUATIC FEATURES

The Project site does not contain natural aquatic features; however, the riparian corridor associated with Morro Creek and Willow Camp Creek is located near the Project site to the northwest and northeast. Loose soils generated during ground disturbance may erode and cause sedimentation of these adjacent streams. These aquatic features are considered ESHAs, as well as sensitive habitats by other Federal, State, and local agencies and provide suitable habitat for special-status aquatic and riparian plants and wildlife. Impacts to aquatic resources would be minimized by implementation of Mitigation Measure 2, listed in Section 5.1.

5.3 WILDLIFE

Impacts to wildlife include short-term and long-term impacts associated with construction activities, facilities, and loss of habitat. Potential impacts to wildlife resources, may be minimized by implementation of avoidance and minimization measures.

Short-term impacts are limited to the construction phase. Generally, construction equipment used during Project implementation will temporarily increase noise, increase the potential for vehicle strikes, and may disrupt wildlife behavior. Ground disturbance has the potential to result in injury or death of wildlife and/or destruction of bird nests. Steel piling driving may produce noise levels that would disturb or displace wildlife breeding or nesting in the Project vicinity. Construction activities have the potential to introduce non-native plant and wildlife species that may displace native wildlife. Food waste and other construction related trash has the potential to attract nuisance wildlife and increase presence of predators that may reduce fecundity of special-status wildlife. Wildlife may be temporarily displaced into adjacent habitats and may experience greater competition for food and nest sites.

Special-status wildlife species associated with Morro Creek may be indirectly impacted during construction activities if erosion causes sediment to enter the waterway. South-central California coast steelhead have been observed within Morro Creek as recently as July 2000, and during years of sufficient inundation, portions of Morro Creek may still support inland migrating and/or reproducing fish. Tidewater goby has the potential to occur within Morro Creek due to the periodic formation of a brackish lagoon at the mouth of Morro Creek and identification of individuals during pipeline decommissioning.

California red-legged frog is a semi-aquatic species that utilizes both upland and aquatic habitats for portions of their life cycle. There is the potential for California red-legged frog to be injured during upland migration/nesting. Project development has the potential to reduce the suitability of upland migration habitat.

Special-status bat species including pallid bat, Townsend's big-eared bat, and big free-tailed bat have the potential to be directly and/or indirectly impacted during the demolition component of the Project. No focused bat surveys were completed as part of the 2020, 2021, and 2022 field surveys, however, the stacks may provide suitable roosting habitat.

Long-term impacts include development of above ground facilities, associated lighting, and impervious surfaces which may degrade or reduce habitat. Special-status invertebrate and reptile species that have the potential to be impacted through loss of habitat include: obscure bumblebee, Morro Bay blue butterfly, Coast horned lizard, and silvery legless lizard. Migratory birds and raptors may be impacted by above ground facilities such as building and powerlines. Presence of energized power lines within the Project site create significant potential impacts to birds that utilize the site for foraging, perching, and nesting. The Project will reduce potential bird nesting habitat.

To mitigate impacts to wildlife resources, the following mitigation measures are proposed by the applicant in addition to those previously described:

12. Exterior lighting shall consist of motion sensor lighting that is shielded to prevent light pollution in adjacent ESHA and wildlife habitat;
13. Above-ground electrical transmission lines shall be designed using industry best practices to minimize bird electrocution hazards. These may include, but are not limited to, adequate phase-to-phase or phase-to-ground separation and/or appropriate insulation of components. Where insulation is not feasible near perching locations, bird deterrent materials may be used as an alternative;
14. Food waste and other construction related trash shall be contained in secured waste bins and regularly removed from the Project site;
15. A Project-specific Worker Environmental Awareness Training shall be prepared by a biologist familiar with the Project region and incorporated into site-specific training for all Project personnel. The purpose of the training will be to educate Project personnel on

local special-status wildlife species that may occur within the Project site and to provide an overview of the regulations and mitigation measures to be adhered to during the Project. In addition, personnel will be briefed on the reporting process in the event that an inadvertent injury should occur to a special-status species during construction. A record of attendees shall be maintained;

16. A qualified Biological Monitor shall be onsite as necessary during construction activities. The Biological Monitor shall be responsible for conducting pre-construction surveys for listed and non-listed species, ensuring Project compliance with biologically related measures and permit conditions, relocating wildlife species out of the impact area, and surveying and documenting wildlife species occurring onsite or in the immediate vicinity.
17. The Biological Monitor shall have authority to halt construction activities to avoid impacts to special-status wildlife. Wildlife will be allowed to leave the Project site prior to restarting construction activities. Special-status wildlife will not be handled without prior permission from regulatory agencies;
18. If feasible, vegetation removal, initial ground disturbance, and pile driving activities shall take place outside of the nesting bird season (i.e., February 1 through August 31). If ground disturbing or noise producing activities occur within nesting bird season, the following conditions shall be implemented to protect all bird species during Project activities:
    - Staging areas shall be located as far as possible from the heron rookery location along the southwest Project site boundary, as determined through coordination between the Project Foreman and Biological Monitor;
    - No more than one week prior to the start of the Project construction, the work area shall be surveyed by a qualified biologist to determine the presence or absence of active nests. If active nests are discovered, all areas within a 500-foot radius of the nesting site shall be clearly marked and avoided during construction. No disturbances shall occur within the protective area until all young birds have fledged, as confirmed by the biologist. Work may proceed within 500 feet of nests if biological monitoring determines that the activity has no effect on the nesting behavior;
    - If it is not possible to postpone Project activities, construction activities may only proceed with appropriate agency approval and nest monitoring by a qualified avian biologist. If the monitoring biologist observes signs of distress, then they shall stop construction work and coordinate with regulatory agencies to establish additional protection measures to ensure avoidance of nest abandonment prior to the re-start of Project activities.
19. If at any time during Project operations special-status bird species (including but not limited to western snowy plover, burrowing owl, and peregrine falcon) are observed within the work area, work shall be stopped or redirected to an area that would not pose a danger to the birds. Special-status birds will be monitored and kept out of harm's way during work activities.
20. An acoustic survey shall be conducted to identify bat species prior to the maternity roosting season (approximately mid-May to August) of the year that demolition of buildings and

stacks is scheduled. The survey shall occur over several nights to determine presence/absence of bats within the structures. The following measures shall be implemented based on the results of the survey:

- If bats are not detected, buildings and the stacks shall be sealed off to prevent entry of bats (exclusion materials may consist of wood, plastic, or other suitable exclusion devices); or
- If bats are detected, the buildings and the stacks shall be partially sealed off until bats leave the structures to forage during which time the remaining openings will be sealed off with one-way door systems installed to allow bats to leave the structures but to prevent re-entry. This procedure would only be done during the non-maternity roosting season.

5.4 ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Four ESHAs (Rookeries, Back Dune/Dune Scrub, Willow Woodland and Scrub, and Monarch Overwintering Site) are located within or in the vicinity of the Project site. The engineering plans have been designed to avoid direct impacts to ESHA to the greatest extent feasible, based on the available ESHA overlays from the City of Morro Bay. However, there will be direct impacts to Rookeries and Back Dune/Dune Scrub due to Project implementation. Padre's field survey delineated the boundaries of vegetation types, identifying Mixed Dune as correlated with the ESHA overlay for Back Dune/Dune Scrub and Ornamental as correlated with the ESHA overlay for Rookeries, along the multi-use path. Direct impacts will occur to Mixed Dune and Ornamental as a result of the multi-use path construction. Habitat restoration proposed as mitigation for removal of native vegetation, Mixed Dune, and Blochman's leafy daisy will directly impact the Mixed Dune habitat adjacent to the Project site.

Indirect impacts to adjacent ESHAs may occur during construction and operation of the Project. Indirect impacts to ESHA may include those listed in Section 5.3, that have the potential to degrade habitat, such as, lighting, stormwater runoff, and introduction of non-native plant and wildlife species. Mitigation measures listed in Section 5.1 will minimize indirect impacts to ESHA.

5.5 POTENTIAL IMPACTS SUMMARY

Effects on biological resources in the Project site area have the potential to be short-term (temporary) and long-term (permanent). Initial Project activities (staging, grading, demolition, and construction) will temporarily alter the natural movement and behavior of wildlife, and potentially occurring special-status species (if present), within the Project site area. Further, initial Project activities may cause mortalities to existing wildlife and special-status wildlife species (if present) due to equipment and vehicle strikes. Project activities also have the potential to cause temporary indirect impacts such as erosion and sedimentation to Morro Creek, thereby indirectly impacting potentially occurring special-status fish species (i.e.; tidy water goby and South-central California coast steelhead).

There is the potential for long-term loss of wildlife habitat and special-status botanical resources, ESHA, and potential mortalities to special-status wildlife species due to Project grading, demolition, and construction activities, and development of above ground facilities, infrastructure, and impervious surfaces. The permanent loss of habitat may reduce the available suitable habitat for special-status wildlife including obscure bumblebee, Morro Bay blue butterfly, coast horned lizard, silvery legless lizard, migratory birds and raptors, California red-legged frog, pallid bat, Townsend's big-eared bat, and big free-tailed bat. The Project development will permanently remove special-status botanical resources including Silver bush lupine scrub vegetation community, Blochman's leafy daisy, Monterey cypress and Monterey pine trees, and bird rookeries and Back Dune/Dune Scrub ESHAs.

Short and long-term impacts would be avoided or minimized to the extent feasible with implementation of applicant proposed mitigation measures provided above.

6.0 REFERENCES

Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protections on Powerlines: The State of the Art in 2006. Prepared for Edison Electric Institute, APLIC, and California Energy Commission. Washington, D.C. and Sacramento, CA.

Baldwin, Bruce G., Goldman, Douglas H., Keil, David J., Rosatti, Thomas J. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press. Berkeley, Ca.

California Department of Fish and Wildlife (CDFW). 2022a. California Natural Community List. Vegetation Classification and Mapping Program, California Department of Fish and Wildlife. Sacramento, CA. July 5, 2022.

------- 2022b. California Natural Diversity Database (CNDDB) Wildlife and Habitat Data Analysis Branch, Sacramento, CA. Online at: http://www.dfg.ca.gov/. Accessed on multiple dates in November 2022.

Calflora. 2022. Information on California plants for education, research and conservation. [web application]. 2020. Berkeley, California: The Calflora Database [a non-profit organization]. Available online: https://www.calflora.org/ (Accessed: November 2022).

California Native Plant Society (CNPS). 2022a. A Manual of California Vegetation, Online Edition. California Native Plant Society, Sacramento, CA. Online at www.cnps.org/cnps/vegetation; accessed on multiple dates in November 2022.

------- 2022b. Rare Plant Program. 2022b. Inventory of Rare and Endangered Plants of California (online edition, v8-030.39). California Native Plant Society, Sacramento, CA. Online at http://www.rareplants.cnps.org; accessed on multiple dates in November 2022.

City of Morro Bay. 2007. Implementation Measures for Major Vegetation Removal, Replacement and Protection Regarding Private Property Tree Removals. City of Morro Bay Public Services Department. July 9, 2007.

------- 2022. Plan Morro Bay, Prepared with the support of Californi Coastal Commission. Online at: Plan-Morro-Bay-GP-LCP-Final (morrobayca.gov). Accessed on multiple dates in November 2022.

Ecological Assets Management, LLC (EAM). 2016. Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant; prepared for Padre Associates, Inc., Morro Bay, CA.

------- 2022. Morro Shoulderband Snail Protocol Survey Report, Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California. April 21, 2022.

------- 2023. Morro Shoulderband Snail Protocol Survey Report, Multi-use Path Morro Bay, San Luis Obispo County, California. April 20, 2023.

Hatfield, R., Jepse, S., Thorp, R., Richardson, L. & Colla, S. 2014. *Bombus caliginosus. The IUCN Red List of Threatened Species 2014:* e.T44937726A69000748. Available online: https://dx.doi.org/10.2305/IUCN.UK.2014-3RLTS.T44937726A6900748.en

Holland, V.L. Ph.D. & Villablanca, Ph.D. 2000. Biological Survey Report for Duke Energy prepared for Duke Energy. San Luis Obispo, CA.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Unpublished Report. California Fish and Game, Natural Heritage Division. Sacramento, CA.

Jepson Flora Project (eFlora). 2022. Jepson eFlora, https://ucjeps.berkeley.edu/eflora/, accessed in multiple dates in November 2022.

Manolis, Timothy D. August 1977. California Black Rail Breeding Season Survey prepared for California Department of Fish and Game. Available online: file:///C:/Users/kwimer/Downloads/Manolis,%20Timothy_CA%20Black%20Rail_1977.pdf

Nafis, Gary. 2022. A guide to the Amphibians and Reptiles of California. Date of Publication: 2000-2022. Site url: http://www.californiaherps.com/.

Morro Bay National Estuary Program. 2021. Morro Bay Eelgrass Report 2020. December 2021.

Moyle, Peter B., Rebecca M. Quiñones, Jacob V. Katz, and Jeff Weaver. 2015. Fish Species of Special Concern in California. Available online: www.wildlife.ca.gov. California Department of Fish and Wildlife, Sacramento, CA.

Padre Associates, Inc. February 2015a. Dynegy Morro Bay, LLC Morro Bay Power Plant Marine Terminal Decommissioning Project Execution Plan, prepared for Dynegy Morro Bay, LLC., San Luis Obispo, CA.

------- 2015b. Chevron Estero Marine Terminal Source Removal Project Execution Plan, prepared for Chevron Environmental Management Corporation. San Luis Obispo, CA.

------- 2021. Follow-up Spring Botanical Survey for the Morro Bay Power Company, LLC - Battery Energy Storage System Project, prepared for EMC Planning Group. San Luis Obispo, CA.

------- 2023. Pedestrian Path Biological Resources Impact Evaluation for the Morro Bay Power Company, LLC - Battery Energy Storage System Project, prepared for EMC Planning Group. San Luis Obispo, CA.

Rincon Consultants, Inc. August 2018. City of Morro Bay Environmental Sensitive Habitat Area (ESHA) Analysis: 2050 Sea Level Rise Scenario Plan. Prepared for City of Morro Bay. San Luis Obispo, CA.

------- 2013. Morro Creek Multi-Use Trail and Bridge Project, Initial Study-Mitigated Negative Declaration. Prepared for City of Morro Bay. San Luis Obispo, CA.

Sakai, W.H. and W.C. Calvert. 1991. Statewide Monarch Butterfly Management Plan for the State of California Department of Parks and Recreation. Final Report. Prepared by Santa Monica College for California Department of Parks and Recreation under Interagency Agreement No. 88-11-050. Santa Monica, CA.

Sawyer, John O., Keeler-Wolf, Todd, Evans, Julie M. 2009. A Manual of California Vegetation Second Edition. California Native Plant Society. Berkeley, CA.

Shuford, W.D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distant populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Sibley, David Allen. 2014. The Sibley guide to birds. Second Edition. Alfred A. Knopf, New York.

State Lands Commission (SLC). 2018. Initial Study/Mitigated Negative Declaration. Dynegy Morro Bay, LLC Morro Bay Power Plant Decommissioning Project. Prepared for Dynegy Morro Bay, LLC. February 2018.

Stebbins, Robert C. 2003. A Field Guide to Western Reptiles and Amphibians. 3rd Edition. Houghton Mifflin Company.

Thomson, R.C., A.N. Wright and H.B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern by Thomson. Univ. of Calif. Press, Oakland, CA.

United States Fish and Wildlife Service (USFWS). 2022a. Critical Habitat Portal. Available online: http://criticalhabitat.fws.gov/crithab/

------ 2022b. National Wetland Inventory-Wetland Mapper. Website: http://www.fws.gov/wetlands/Data/Mapper.html.

------ 2022c. Information for Planning and Consultation (IPaC). Official Species List for MBPP BESS (Project Code: 2023-0006632). Ventura, CA. October 20, 2022.

University of California. 2022. The Jepson Online Interchange California Floristics. University of California, Berkeley, CA. Available online: http://ucjeps.berkeley.edu/interchange.html.

U.S. Climate Data. 2020. Climate – San Luis Obispo, California. Available online: https://www.usclimatedata.com/ (Accessed: December 2020).

Williams, D.F. 1986. California Department of Fish and Game. Mammal Species of Special Concern. Available online: http://www.dfg.ca.gov/wildlife/species/ssc/mammals.html. Non-game wildlife program, Sacramento, California.

APPENDIX A

SITE PHOTOGRAPHS

Photograph 1. Representative view of the Project Site conditions (aspect: southeast; December 16, 2020).

Photograph 2. Monterey pine and Monterey cypress adjacent to paved access roads and abandoned tank footprints (aspect: north; December 16, 2020).

Photograph 3. Monterey cypress and paved access road in northern portion of the Project site (aspect: northeast; December 16, 2020).

Photograph 4. Morro Creek with Arroyo willow thicket vegetation along the northern boundary of the Project site (aspect: northwest; December 16, 2020).

Photograph 5. Eucalyptus and Monterey cypress along Embarcadero Road and Project site boundary (aspect: northwest; December 16, 2020).

Photograph 6. Representative Ruderal vegetation and Developed areas within the Project site (aspect: southeast; December 16, 2020).

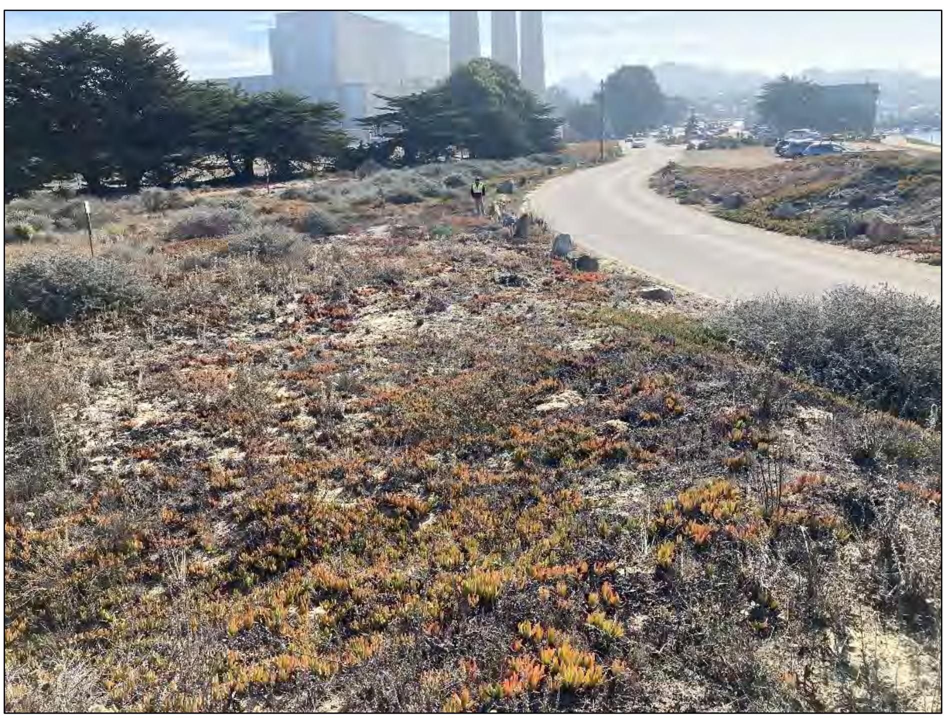
Photograph 7. Current MBPP infrastructure, ponded water visible (aspect: southeast; December 16, 2020).

Photograph 8. Ruderal vegetation within the Project site (foreground) with Mixed dune outside of an existing fence and outside of Project site (aspect: west; December 16, 2020).

Photograph 9. Representative view of Silver bush lupine scrub within the Project site (aspect: southwest; March 30, 2021).

Photograph 10. Representative view of spring conditions within the Project site (aspect: north; March 30, 2021).

Photograph 11. Proposed multi-use path corridor within the BSA
(aspect: northwest; October 18, 2022).



Photograph 12. Additional view of proposed multi-use path corridor,
Mixed dune vegetation (BackDune/Dune Scrub ESHA) visible
(aspect: south; October 18, 2022).

APPENDIX B

PLANT INVENTORY

Comprehensive List of Vascular Plant Species Observed within the Project Site
Battery Energy Storage System Project, Morro Bay, California

Scientific Name	Common Name	Habit	Indicator Status	Conservation Status	Family
Acacia sp.*	Wattle	T/S	-		Fabaceae
Acmispon glaber	Deerweed/California broon	PH	-		Fabaceae
Acmispon heermanii	Heerman's birdfoot trefoil	PH	-		Fabaceae
Ambrosia chamissonis	Beach bur	PH	-		Asteraceae
Asphodelus fistulosus	Onionweed	PH	-		Asphodelaceae
*Avena barbata**	Slender wild oats	AG	-		Poaceae
Baccharis pilularis	Coyote brush	S	-		Asteraceae
*Brassica nigra**	Black mustard	AH	-		Brassicaceae
*Bromus catharticus**	Rescue grass	AG	-		Poaceae
*Bromus diandrus**	Rip gut brome	AG	-		Poaceae
*Bromus madritensis**	Red brome	AG	-		Poaceae
Camissonioposis cheiranthifolia	Beach evening primrose	PH	-		Onagraceae
Camissoniopsis micrantha	Minature sun-cup	AH	-		Onagraceae
*Carpobrotus edulis**	Iceplant	PH	-		Aizoaceae
*Centaurea melitensis**	Tocalote	AH	-		Asteraceae
*Cirsium vulgare**	Bull thistle	AH	FACU		Asteraceae
Corethrogyne filaginifolia	Common sandaster	PH	-		Asteraceae
*Cortaderia jubata**	Pampas grass	PG	FACU		Poaceae
Croton californicus	California croton	PH	-		Euphorbiaceae
*Delairea odorata**	Cape ivy	PH	.		Asteraceae
*Delosperma litorale**	Seaside iceplant	S	FACU		Aizoaceae
Distichlis spicata	Salt grass	PG	FAC		Poaceae
*Ehrharta calycina**	Veldt grass	PG	-		Poaceae
Erigeron blochmaneae	Blochman's leafy daisy	PH	-	1B.2	Asteraceae
Erigeron canadensis	Horseweed	AH	-		Asteraceae
*Erodium cicutarium**	Redstem filaree	AH	-		Geraniaceae
Eschscholzia californica	California poppy	AH	-		Papaveraceae
*Eucalyptus globulus**	Blue gum	T	.		Papaveraceae
*Festuca myuros**	Foxtail fescue	AG	FACU		Poaceae
*Hirschfeldia incana**	Summer mustard	BH	-		Brassicaceae
Hesperocyparis macrocarpa	Monterey cypress	T	-	1B.2	Cupressaceae
Hesperocyparis sp.	Ornamental cypress	T	-		Cupressaceae
Heterotheca grandiflora	Telegraph weed	PH	-		Asteraceae
*Hordeum murinum**	Barley	AG	FACU		Poaceae
*Hypochaeris glabra**	Smooth cat's ear	AH	-		Asteraceae
*Lamarckia aurea**	Goldentop	AG	FACU		Poaceae
*Limoneum perezii**	Canarian sea lavender	AH	-		Plumbaginaceae
Lupinus arboreus	Yellow bush lupine	S	-		Fabaceae
Lupinus chamissonis	Dune lupine	S	-		Fabaceae
Lupinus succulentus	Succulent lupine	AH	-		Fabaceae
Salvia mellifera	Black sage	S	-		Lamiaceae
*Medicago polymorpha**	Bur clover	AH	FACU		Fabaceae
Myoporum sp.*	Myoporum	T/S	-		Scrophulariaceae
*Opuntia ficus-indica**	Mission Prickly Pear	S	-		Cactaceae
*Oxalis pres-caprae**	Bermuda buttercup	AH	-		Oxalidaceae
Pinus radiata	Monterey pine	T	-	1B.1	Pinaceae
*Piptatherum miliaceum**	Smilo grass	PG	-		Poaceae
*Plantago coronopus**	Cutleaf plantain	AH	FAC		Plantaginaceae
Prunus ilicifolia	Holly-leafed cherry	S	-		Rosaceae
Pseudognaphalium californicum	Green everlasting	A/PH	-		Asteraceae
*Pseudognaphalium luteoalbum**	Jersey cudweed	AH	FAC		Poaceae
Rubus ursinus	California blackberry	PV	FAC		Rosaceae
Salix lasiolepis	Arroyo willow	S	FACW		Salicaceae
*Salsola tragus**	Russian thistle	AH	-		Chenopodiaceae
*Silybum marianum**	Milk thistle	AH	-		Asteraceae

List of Vascular Plant Species Observed within the Project Site
Battery Energy Storage System Project, Morro Bay, California

Scientific Name	Common Name	Habit	Indicator Status	Conservation Status	Family
*Sisymbrium irio**	London rocket	AH	-		Brassicaceae
Sisyrinchium bellum	Blue eyed grass	PH	FACW		Iridaceae
*Sonchus oleraceus**	Common sow thistle	AH	-		Asteraceae
*Tetragonia tetragonioides**	New Zealand spinach	AH	-		Aizoaceae

Notes: Scientific nomenclature follows Baldwin (2012).
An "*" indicates non-native species which have become naturalized or persist without cultivation.
An "-" indicates that no indicator has been assigned due to lack of information to determine indicator status; or is not listed and assumed an upland species.

Habit definitions:
AG - Annual grass.
AH - Annual herb.
F - Fern
PG - Perennial grass.
PH - Perennial herb.
PV - Perennial vine.
S - Shrub
T - Tree

Wetland indicator status (Lichvar and Kartesz, 2016):
OBL (Obligate Wetland Plants) - Almost always occur in wetlands.
FACW (Facultative Wetland Plants) - Usually occur in wetland, but may occur in non-wetlands.
FAC (Facultative Wetland Plants) - Occur in wetlands and non-wetlands.
FACU (Facultative Upland Plants) - Usually occur in non-wetlands, but may occur in wetlands.
UPL (Upland Plants) - Almost always occur in non-wetlands.

APPENDIX C

WILDLIFE INVENTORY

Wildlife Species Observed within the BSA
MBPP BESS Project, Morro Bay, California

Common Name	Scientific Name	Residence Status	Protected Status	Habitat
Invertebrates				
European snail	*Helix aspersa*	R	--	M
Dentate stink beetle	*Eleodes dentipes*	R	--	M
Chorro shoulderband snail	*Helminthoglypta morroensis*	R	--	M
Amphibians				
Sierran treefrog	*Pseudacris sierra*	R	--	A, R, W, M
Reptiles				
Coast Range fence lizard	*Sceloporus occidentalis bocourtii*	R	--	G, D, P, S, M
Birds				
American crow	*Corvus brachyrhynchos*	R	M	M
Anna's hummingbird	*Calypte anna*	R	M	P
Bewick's wren	*Thryomanes bewickii*	R	M	P, S
Black phoebe	*Sayornis nigricans*	R	M	G, S, M
Black-crowned night heron	*Nycticorax nycticorax*	R	M	A, C, W, R
Blue-gray gnatcatcher	*Polioptila caerulea*	R	M	P, R, S
California thrasher	*Toxostoma redivivum*	R	M	P, S
Chestnut-backed chickadee	*Poecile rufescens*	R	M	P
Great blue heron	*Ardea herodias*	R	M	A, C, W, R
House finch	*Haemorhous mexicanus*	R	M	G, D, P, S, M
Hutton's vireo	*Vireo huttoni*	R	M	P, R
Mourning dove	*Zenaida macroura*	R	M	G, D, M
Red-tailed hawk	*Buteo jamaicensis*	R	M	G, P, M
Rock pigeon	*Columba livia*	R	M	D, M
Turkey vulture	*Cathartes aura*	R	M	R, G, P
Western gull	*Larus occidentalis*	R	M	A, C, M
White-crowned sparrow	*Zonotrichia leucophrys*	R	M	D, S
Wrentit	*Chamaea fasciata*	R	M	S, P, R
Yellow-rumped warbler	*Setophaga coronata*	W	M	R, W, S
Mammals				
Coyote	*Canis latrans*	R	--	M
Mule deer	*Odocoileus hemionus*	R	--	R, G
Racoon	*Procyon lotor*	R	--	M
Virginia possum	*Didelphis virginiana*	R	--	M

Notes:
Fauna observed by visualizations, indirect signs (tracks, scat, skeletal remains, burros, etc.), and/or auditory cues.

Residence Status
R - Permanent resident
W - Winter resident
B - Summer resident

Protected Status
FE - Federal
FT - Federal threatened species
FC - Federal candidate species
M - Migratory Bird Treaty Act
SE - State endangered species
ST - State threatened species
CS - Candidate species for CESA
CSC - California Species of Special Concern
CFP - California Fully Protected Species
BCC - Bird of Conservation Concern (USFWS)

Typical Habitat
A - Aquatic
D - Developed areas
G - Grassland
M - Multiple habitats
P - Woodland
R - Riparian
W - Wetland
C - Coastal lagoons, shores, oceans
O - Rock outcrops
S - Scrub

APPENDIX D

VRAP DATA SHEETS

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance No MCV2 alliance (Silver lupine stand) Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or **RA**

Database #: MBPP 001	Date: 12/16/20	Name of recorder: Christina Santala
		Other surveyors:
	UID:	Location Name: MBPP Power Plant

GPS name: Fiona Elf/collector — For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side

UTME ____ UTMN ____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT 35.375440 LONG -120.860222

GPS within stand? **Yes** / No — If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID MBPP 001 Projected UTMs: UTME ____ UTMN ____

Camera Name: CCS iphone Cardinal photos at ID point: N, E, S, W

Other photos: Overview aspect East

Stand Size (acres): **<1**, 1-5, >5 | Plot Area (m²): 100 / — | Plot Dimensions — x — m | RA Radius ____ m

Exposure, Actual °: — NE NW SE SW **Flat** Variable | Steepness, Actual °: — **0°** 1-5° > 5-25° > 25

Topography: Macro: top upper mid lower **bottom** | Micro: convex **flat** concave undulating

Geology code: SETV Soil Texture code: SAND | **Upland** or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H₂0: Ø BA Stems: 25 Litter: 10 Bedrock: Ø Boulder: Ø Stone: Ø Cobble: Ø Gravel: Ø Fines: 65 =100%

% Current year bioturbation 2 Past bioturbation present? Yes / **No** | % Hoof punch Ø

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
Abandoned power plant facilities, potentially tank/facility basins,

Disturbance code / Intensity (L,M,H): 01 / M ____/____ ____/____ ____/____ ____/____ "Other" ____/____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), **S3** mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: **H1** (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Silver lupine stand (Lupinus chamissonis)

Field-assessed Association name (optional):

Adjacent Alliances/direction: Ruderal, Developed / ____, ____ / ____

Confidence in Alliance identification: L M **H** Explain:

Phenology (E,P,L): Herb L Shrub P/L Tree Ø Other identification or mapping information: Found in clusters throughout BSA

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: MBPP 001

IV. VEGETATION DESCRIPTION

% NonVasc cover: Ø **Total % Vasc Veg cover:** 85

% Cover - **Conifer tree / Hardwood tree:** Ø / Ø **Regenerating Tree:** Ø **Shrub:** 80 **Herbaceous:** 5

Height Class - **Conifer tree / Hardwood tree:** Ø / Ø **Regenerating Tree:** Ø **Shrub:** 2, 3 **Herbaceous:** ____

Height classes: 1=<1/2m. 2=1/2-1m. 3=1-2m. 4=2-5m. 5=5-10m. 6=10-15m. 7=15-20m. 8=20-35m. 9=35-50m. 10=>50m

Stratum categories: T=Tree. A = SApling. E = SEedling. S = Shrub. H= Herb. N= Non-vascular

% Cover Intervals for reference: r = trace. + = <1%. 1-5%. >5-15%. >15-25%. >25-50%. >50-75%. >75%

Stratum	Species	% cover	C	Final species determination
S	Lupinus chamissonis	83		
H	Carpobrotus edulis	5		
H	Prominent annual grasses	2		
	(note other stands had scattered			
	occurrences/patches of			
	Lupinus sp.			

Unusual species: Lupinus

Project: 1902-1172 Biological Resources Assessment; MBPP BESS Project
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MBPP001**


North


East


South


West

Classification: Silver bush lupine scrub (MCV2)

Combined Vegetation Rapid Assessment and Relevé Field Form
(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Ornamental (Monterey cypress stands) Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION circle: Relevé or RA

Database #: MBPP 002	Date: 12/16/20	Name of recorder: C. Santulo
		Other surveyors:
	UID:	Location Name: Morro Bay Power Plant

GPS name: Fiona Ell/collector For Relevé only: Bearing°, left axis at ID point_____ of Long / Short side

UTME ___ UTMN ___ Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____

Decimal degrees: LAT 35.375848 LONG -120.859792

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID ________ Projected UTMs: UTME ________ UTMN ________

Camera Name: CCS Iphone Cardinal photos at ID point: N, E, S, W

Other photos: overview aspect NW

Stand Size (acres): <1, 1-5, >5 | Plot Area (m²): 100 / ______ | Plot Dimensions ____ x ____ m | RA Radius____ m

Exposure, Actual °: 320° NE NW SE SW Flat Variable | Steepness, Actual °: ______ 0° 1-5° >5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating

Geology code: SETU Soil Texture code: SAND | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H_2O: Ø BA Stems: 15 Litter: 80 Bedrock: Ø Boulder: Ø Stone: Ø Cobble: Ø Gravel: Ø Fines: 5 =100%

% Current year bioturbation Ø Past bioturbation present? Yes / No | % Hoof punch Ø

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Abandoned power plant, stand @ north end of property - appears to be planted as ornamental windrow/view shed separating adjacent property

Disturbance code / Intensity (L,M,H): 01 / L ___/___ ___/___ ___/___ ___/___ "Other" ______/___

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead) Healthy

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Monterey cypress stand (Hesperocyparis macrocarpa)

Field-assessed Association name (optional): ________

Adjacent Alliances/direction: Ruderal, Developed / ________ / ________

Confidence in Alliance identification: L M H Explain: ________

Phenology (E,P,L): Herb L Shrub Ø Tree P Other identification or mapping information: Planted

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: MBPP 602

IV. VEGETATION DESCRIPTION

% NonVasc cover: ϕ **Total % Vasc Veg cover:** 95

% Cover - **Conifer tree / Hardwood tree:** 93 **Regenerating Tree:** ϕ **Shrub:** ϕ **Herbaceous:** 2

Height Class - **Conifer tree / Hardwood tree:** 6 / ϕ **Regenerating Tree:** ϕ **Shrub:** ϕ **Herbaceous:** 1

Height classes: 1=<1/2m. 2=1/2-1m. 3=1-2m. 4=2-5m. 5=5-10m. 6=10-15m. 7=15-20m. 8=20-35m. 9=35-50m. 10=>50m

Stratum categories: T=Tree. A = SApling. E = SEedling. S = Shrub. H= Herb. N= Non-vascular

% Cover Intervals for reference: r = trace. + = <1%. 1-5%. >5-15%. >15-25%. >25-50%. >50-75%. >75%

Stratum	Species	% cover	C	Final species determination
T	Cupressus (cypress)	93		
H	Carpobrotus edulis	10		

Unusual species: ______

Project: 1902-1172 Biological Resources Assessment; MBPP BESS Project
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MBPP002**

North

East

South

West

Classification: Monterey cypress stand (Site-Specific; Ornamental)

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Arroyo willow thicket Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or **RA**

Database #:	Date: 12/16/20	Name of recorder: C. Santala
MBPP 003		Other surveyors:
	UID:	Location Name: Morro Bay

GPS name: Fiona Elf/Collector — For Relevé only: Bearing°, left axis at ID point____ of Long / Short side

UTME ___ ___ ___ ___ ___ ___ UTMN ___ ___ ___ ___ ___ ___ ___ Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT 35.376629 LONG -120.858166

GPS within stand? Yes / **No** If No, cite from GPS to stand: distance (m) 5m bearing ° S inclination ° ____

and record: Base point ID ____________ Projected UTMs: UTME ___ ___ ___ ___ ___ ___ UTMN ___ ___ ___ ___ ___ ___ ___

Camera Name: CLS iphone Cardinal photos at ID point: N, E, S, W

Other photos: Overview

Stand Size (acres): <1, **1-5**, >5 | Plot Area (m²): 100 / ______ | Plot Dimensions ____ x ____ m | RA Radius ____ m

Exposure, Actual °: ___ NE NW SE SW **Flat** Variable | Steepness, Actual °: ______ 0° 1-5° > 5-25° > 25

Topography: Macro: top upper mid lower **bottom** | Micro: convex flat **concave** undulating

Geology code: SETU Soil Texture code: SAND | Upland or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H_2O: 5 BA Stems: 50 Litter: 35 Bedrock: Ø Boulder: Ø Stone: Ø Cobble: 1 Gravel: 1 Fines: 8 =100%

% Current year bioturbation 3 Past bioturbation present? Yes / **No** | % Hoof punch Ø

Fire evidence: Yes / **No** (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Riverine feature, relatively undisturbed, culvert east end @ Hwy (likely), w/in Power plant property.

Disturbance code / Intensity (L,M,H): 01 / L ___/___ ___/___ ___/___ ___/___ "Other" ________/___

II. HABITAT DESCRIPTION

Tree DBH : **T1** (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: **H1** (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Arroyo willow thicket (Salix lasiolepis)

Field-assessed Association name (optional): ______________

Adjacent Alliances/direction: Developed, Ruderal, Monterey Cypress /

Confidence in Alliance identification: L M **H** Explain: ______________

Phenology (E,P,L): Herb L Shrub P Tree P Other identification or mapping information: Willow large enough to be considered trees

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: MBPP603

IV. VEGETATION DESCRIPTION

% NonVasc cover: ____ **Total % Vasc Veg cover:** 95

% Cover - **Conifer tree / Hardwood tree:** ϕ / 90 **Regenerating Tree:** ϕ **Shrub:** ____ **Herbaceous:** 5

Height Class - **Conifer tree / Hardwood tree:** ϕ / 5, 6 **Regenerating Tree:** ϕ **Shrub:** ____ **Herbaceous:** 3

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Salix lasiolepis	95		
V	Delairea odorata	15		
S	Rubus ursinus	5		
S	Toxicodendron diversilobum	5		
	Note: considered willows			
	as trees			

Unusual species: ____

Project: 1902-1172 Biological Resources Assessment; MBPP BESS Project
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MBPP003**

 North	 East
 South	 West

Classification: Arroyo willow thickets (MCV2)

Combined Vegetation Rapid Assessment and Relevé Field Form
(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Ornamental (Eucalyptus grove) Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION circle: Relevé or RA

Database #:	Date:	Name of recorder: C. Santala
MBPP-004	12/16/20	Other surveyors:
	UID:	Location Name: Morro Bay

GPS name: Fiona Elf/Collector For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side

UTME ____ UTMN ____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT 35.371495 LONG -120.857538

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____
and record: Base point ID ____ Projected UTMs: UTME ____ UTMN ____

Camera Name: CS iPhone Cardinal photos at ID point: N, E, S, W
Other photos: Overview aspect SE

Stand Size (acres): <1, 1-5, >5 | Plot Area (m²): 100 / ____ | Plot Dimensions ____ x ____ m | RA Radius ____ m
Exposure, Actual °: ____ NE NW SE SW Flat Variable | Steepness, Actual °: ____ 0° 1-5° > 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
Geology code: SETU Soil Texture code: silt & sand | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H₂0: Ø BA Stems: 10 Litter: 85 Bedrock: Boulder: Stone: Cobble: Gravel: Fines: 5 =100%

% Current year bioturbation 5 Past bioturbation present? Yes / No | % Hoof punch Ø
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
Windrow between street & Power plant perimeter wall

Disturbance code / Intensity (L,M,H): 1 / L ____/____ ____/____ ____/____ ____/____ "Other" ____/____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)
Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Eucalyptus grove (Eucalyptus globulus)
Field-assessed Association name (optional): ____
Adjacent Alliances/direction: Developed, ruderal, iceplant mat / ____
Confidence in Alliance identification: L M H Explain: ____
Phenology (E,P,L): Herb L Shrub — Tree P Other identification or mapping information:

Closest MCV2 is Eucalyptus-Tree of Heaven-black locust groves

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

Database #: MBPP004

SPECIES SHEET

IV. VEGETATION DESCRIPTION

% NonVasc cover: Ø **Total % Vasc Veg cover:** 75

% Cover - **Conifer tree / Hardwood tree:** Ø / 60 **Regenerating Tree:** ___ **Shrub:** Ø **Herbaceous:** 15

Height Class - **Conifer tree / Hardwood tree:** – / 7 **Regenerating Tree:** – **Shrub:** – **Herbaceous:** 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular
% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Eucalyptus globulus	60		
H	Salsola tragus	1		
H	Annual grasses (rem.)	20		

Unusual species: —

Project: 1902-1172 Biological Resources Assessment; MBPP BESS Project
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MBPP004**

North

East

South

West

Classification: Eucalyptus groves (Site-Specific; Ornamental)

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Ornamental (Monterey Pine) Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or **RA**

Database #: MBPP005	Date: 12/16/20	Name of recorder: C. Santala
		Other surveyors:
	UID:	Location Name: Morro Bay

GPS name: FionaELF/collector — For Relevé only: **Bearing°**, left axis at ID point____ **of Long / Short** side

UTME ___ **UTMN** ___ **Zone: 11 NAD83** GPS error: **ft./ m./ PDOP** ___

Decimal degrees: **LAT** 35.373492 **LONG** -120.859414

GPS within stand? **Yes** / No — If No, cite from GPS to stand: distance (m) ___ bearing ° ___ inclination ° ___
and record. **Base point ID** ___ **Projected UTMs: UTME** ___ **UTMN** ___

Camera Name: CS iphone **Cardinal photos at ID point:** N, E, S, W
Other photos: overview

Stand Size (acres): **<1** 1-5, >5 | **Plot Area (m²): 100 /** ___ | **Plot Dimensions** ___ x ___ m | **RA Radius** ___ m
Exposure, Actual °: 223 NE NW SE **SW** Flat Variable | **Steepness, Actual °:** ___ 0° 1-5° > 5-25° > 25

Topography: Macro: top upper mid lower bottom | **Micro:** convex flat concave undulating
Geology code: ___ **Soil Texture code:** ___ | **Upland** or **Wetland/Riparian** (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H_2O: Ø **BA Stems:** 25 **Litter:** 50 **Bedrock:** Ø **Boulder:** Ø **Stone:** Ø **Cobble:** Ø **Gravel:** Ø **Fines:** 25 **=100%**

% Current year bioturbation 5 **Past bioturbation present?** Yes / **No** | **% Hoof punch** Ø
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
Planted as windrow w/in Power plant property

5 **Disturbance code / Intensity (L,M,H):** ___/___ ___/___ ___/___ ___/___ ___/___ **"Other"** ___/___

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), **T2** (1-6" dbh), **T3** (6-11" dbh), **T4** (11-24" dbh), **T5** (>24" dbh), **T6** multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr. old), **S2** young (<1% dead), **S3** mature (1-25% dead), **S4** decadent (>25% dead)
Herbaceous: H1 (<12" plant ht.), **H2** (>12" ht.)
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), **2** (2-10ft. ht.), **3** (10-20ft. ht.), **4** (>20ft. ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), **2** (1.5-6" diam.), **3** (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Monterey Pine Stand
Field-assessed Association name (optional): ___
Adjacent Alliances/direction: Developed, Ruderal, Silver lupine stand / ___
Confidence in Alliance identification: L M **H** **Explain:** ___
Phenology (E,P,L): Herb L **Shrub** — **Tree** P **Other identification or mapping information:** Planted

Combined Vegetation Rapid Assessment and Relevé Field Form
(Revised March 27, 2018)
SPECIES SHEET

Database #: MBPP 005

IV. VEGETATION DESCRIPTION

% NonVasc cover: ∅ **Total % Vasc Veg cover:** 98

% Cover - **Conifer tree / Hardwood tree:** 96 / ∅ **Regenerating Tree:** ∅ **Shrub:** ∅ **Herbaceous:** 2

Height Class - **Conifer tree / Hardwood tree:** 5 / ∅ **Regenerating Tree:** ∅ **Shrub:** ∅ **Herbaceous:** 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular
% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Monterey cypress	95		
H	Carpobrotus edulis	5		
S	lupinus —	1		

Unusual species: —

Project: 1902-1172 Biological Resources Assessment; MBPP BESS Project
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MBPP005**

North

East

South

West

Classification: Monterey pine stand (Site-Specific; Ornamental)

Combined Vegetation Rapid Assessment and Relevé Field Form
(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Ice plant mat Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION circle: Relevé or RA

Database #:	Date:	Name of recorder: C. Santala
MBPP006		Other surveyors:
	UID:	Location Name: Morro Bay

GPS name: ______ For Relevé only: Bearing°, left axis at ID point____ of Long / Short side

UTME ___ ___ ___ UTMN ___ ___ ___ Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____

Decimal degrees: LAT 35.371746 LONG -120.855355

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID ________ Projected UTMs: UTME ______ UTMN ______

Camera Name: CIS iPhone Cardinal photos at ID point: N, E, S, W
Other photos: overview

Stand Size (acres): <1, 1-5, >5 | Plot Area (m²): 100 / ____ | Plot Dimensions ____ x ____ m | RA Radius ____ m
Exposure, Actual °: 153 N & 177° S NE NW SE SW Flat Variable | Steepness, Actual °: ______ 0° 1-5° > 5-25° > 25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating
Geology code: ________ Soil Texture code: ________ | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)
H₂O: Ø BA Stems: 85 Litter: 10 Bedrock: Ø Boulder: Ø Stone: Ø Cobble: Ø Gravel: Ø Fines: 5 =100%

% Current year bioturbation Ø Past bioturbation present? Yes / No | % Hoof punch Ø
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:
Unpaved hillside w/in power plant property - vegetated w/ iceplant

Disturbance code / Intensity (L,M,H): ___/___ ___/___ ___/___ ___/___ ___/___ "Other" ________/___

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)
Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)
Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Iceplant mat (Carpobrotus edulis)
Field-assessed Association name (optional): ________
Adjacent Alliances/direction: Arroyo willow thicket, Ruderal, Developed, Eucalyptus Grove, Monterey Pine stand
Confidence in Alliance identification: L M H Explain: ________
Phenology (E,P,L): Herb L Shrub L Tree — Other identification or mapping information:

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

SPECIES SHEET

Database #: MBPP 006

IV. VEGETATION DESCRIPTION

% NonVasc cover: 0 **Total % Vasc Veg cover:** 98

% Cover - **Conifer tree / Hardwood tree:** 0 / 0 **Regenerating Tree:** 0 **Shrub:** 0 **Herbaceous:** 98

Height Class - **Conifer tree / Hardwood tree:** ___/___ **Regenerating Tree:** ___ **Shrub:** 1 **Herbaceous:** 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
H	Carpobrotus edulis	99		
H	Heterotheca grandiflora	1		
S	Baccharis pilularis	1		
H	Annual grasses	5		

Unusual species: —

Project: 1902-1172 Biological Resources Assessment; MBPP BESS Project
Vegetation Rapid Assessment Attachment
Stand/Plot ID: **MBPP006**

North

East

South

West

Classification: Ice plant mats (MCV2)

APPENDIX E

CNDDB and IPaC, and NMFS Documentation

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Cayucos (3512048) OR Morro Bay North (3512047) OR Morro Bay South (3512037))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine OR Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes OR Fungi)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Agrostis hooveri Hoover's bent grass	PMPOA040M0	None	None	G2	S2	1B.2
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arctostaphylos luciana Santa Lucia manzanita	PDERI040N0	None	None	G2	S2	1B.2
Arctostaphylos morroensis Morro manzanita	PDERI040S0	Threatened	None	G1	S1	1B.1
Arctostaphylos osoensis Oso manzanita	PDERI042S0	None	None	G1	S1	1B.2
Arctostaphylos pechoensis Pecho manzanita	PDERI04140	None	None	G2	S2	1B.2
Arctostaphylos pilosula Santa Margarita manzanita	PDERI042Z0	None	None	G2?	S2?	1B.2
Arctostaphylos tomentosa ssp. daciticola dacite manzanita	PDERI041HD	None	None	G4T1	S1	1B.1
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Astragalus didymocarpus var. milesianus Miles' milk-vetch	PDFAB0F2X3	None	None	G5T2	S2	1B.2
Atractelmis wawona Wawona riffle beetle	IICOL58010	None	None	G3	S1S2	
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Batrachoseps minor lesser slender salamander	AAAAD02170	None	None	G1	S1	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Calochortus obispoensis San Luis mariposa-lily	PMLIL0D110	None	None	G2	S2	1B.2
Calystegia subacaulis ssp. episcopalis Cambria morning-glory	PDCON040J1	None	None	G3T2?	S2?	4.2
Camissoniopsis hardhamiae Hardham's evening-primrose	PDONA030N0	None	None	G2	S2	1B.2
Carex obispoensis San Luis Obispo sedge	PMCYP039J0	None	None	G3?	S3?	1B.2
Castilleja densiflora var. obispoensis San Luis Obispo owl's-clover	PDSCR0D453	None	None	G5T2	S2	1B.2
Ceanothus thyrsiflorus var. obispoensis San Luis Obispo ceanothus	PDRHA04461	None	None	G5T1	S1	1B.1
Central Dune Scrub Central Dune Scrub	CTT21320CA	None	None	G2	S2.2	
Central Maritime Chaparral Central Maritime Chaparral	CTT37C20CA	None	None	G2	S2.2	
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
Chenopodium littoreum coastal goosefoot	PDCHE091Z0	None	None	G1	S1	1B.2
Chlorogalum pomeridianum var. minus dwarf soaproot	PMLIL0G042	None	None	G5T3	S3	1B.2
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chorizanthe breweri Brewer's spineflower	PDPGN04050	None	None	G3	S3	1B.3
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Circus hudsonius northern harrier	ABNKC11011	None	None	G5	S3	SSC
Cirsium fontinale var. obispoense Chorro Creek bog thistle	PDAST2E162	Endangered	Endangered	G2T2	S2	1B.2
Cirsium occidentale var. compactum compact cobwebby thistle	PDAST2E1Z1	None	None	G3G4T2	S2	1B.2
Cirsium occidentale var. lucianum Cuesta Ridge thistle	PDAST2E1Z6	None	None	G3G4T2	S2	1B.2
Cladonia firma popcorn lichen	NLT0008460	None	None	G4	S1	2B.1
Clarkia speciosa ssp. immaculata Pismo clarkia	PDONA05111	Endangered	Rare	G4T1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2	S2	
Delphinium parryi ssp. blochmaniae dune larkspur	PDRAN0B1B1	None	None	G4T2	S2	1B.2
Delphinium parryi ssp. eastwoodiae Eastwood's larkspur	PDRAN0B1B2	None	None	G4T2	S2	1B.2
Delphinium umbraculorum umbrella larkspur	PDRAN0B1W0	None	None	G3	S3	1B.3
Dipodomys heermanni morroensis Morro Bay kangaroo rat	AMAFD03063	Endangered	Endangered	G4TH	SH	FP
Dithyrea maritima beach spectaclepod	PDBRA10020	None	Threatened	G1	S1	1B.1
Dudleya abramsii ssp. bettinae Betty's dudleya	PDCRA04011	None	None	G4T2	S2	1B.2
Dudleya abramsii ssp. murina mouse-gray dudleya	PDCRA04012	None	None	G4T2	S2	1B.3
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2	S2	1B.1
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erigeron blochmaniae Blochman's leafy daisy	PDAST3M5J0	None	None	G2	S2	1B.2
Eriodictyon altissimum Indian Knob mountainbalm	PDHYD04010	Endangered	Endangered	G1	S1	1B.1
Erythranthe serpentinicola Irish Hills monkeyflower	PDPHR01290	None	None	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Fritillaria ojaiensis Ojai fritillary	PMLIL0V0N0	None	None	G3	S3	1B.2
Helminthoglypta walkeriana Morro shoulderband	IMGASC2510	Threatened	None	G1	S1S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
Icaricia icarioides moroensis Morro Bay blue butterfly	IILEPG801B	None	None	G5T2	S2	
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S1	FP
Layia jonesii Jones' layia	PDAST5N090	None	None	G2	S2	1B.2
Malacothamnus palmeri var. palmeri Santa Lucia bush-mallow	PDMAL0Q0B5	None	None	G3T2Q	S2	1B.2
Monardella palmeri Palmer's monardella	PDLAM180H0	None	None	G2	S2	1B.2
Monardella sinuata ssp. sinuata southern curly-leaved monardella	PDLAM18161	None	None	G3T2	S2	1B.2
Nemacaulis denudata var. denudata coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	AFCHA0209J	Endangered	Candidate Endangered	G5T1Q	S1	
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Poa diaboli Diablo Canyon blue grass	PMPOA4Z390	None	None	G2	S2	1B.2
Polyphylla morroensis Morro Bay June beetle	IICOL68200	None	None	G1	S1	
Pyrgulopsis taylori San Luis Obispo pyrg	IMGASJ0A50	None	None	G1	S1	
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Suaeda californica California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
Sulcaria isidiifera splitting yarn lichen	NLTEST0020	None	None	G1	S1	1B.1
Sulcaria spiralifera twisted horsehair lichen	NLT0042560	None	None	G3G4	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	

Record Count: 89

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958
Email Address: FW8VenturaSection7@FWS.Gov

In Reply Refer To: October 20, 2022
Project Code: 2023-0006632
Project Name: MBPP BESS

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Project Code: 2023-0006632
Project Name: MBPP BESS
Project Type: Power Gen - Other
Project Description: Morro Bay, California
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.37344455,-120.85607177587319,14z

Counties: San Luis Obispo County, California

Endangered Species Act Species

There is a total of 25 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened
Foothill Yellow-legged Frog *Rana boylii* Population: South Coast Distinct Population Segment (South Coast DPS) No critical habitat has been designated for this species.	Proposed Endangered

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Snails

NAME	STATUS
Morro Shoulderband (=banded Dune) Snail *Helminthoglypta walkeriana* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2309	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
California Jewelflower *Caulanthus californicus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4599	Endangered
California Seablite *Suaeda californica* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6310	Endangered
Chorro Creek Bog Thistle *Cirsium fontinale var. obispoense* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5991	Endangered
Indian Knob Mountainbalm *Eriodictyon altissimum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1261	Endangered
Marsh Sandwort *Arenaria paludicola* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
Morro Manzanita *Arctostaphylos morroensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2934	Threatened
Salt Marsh Bird's-beak *Cordylanthus maritimus ssp. maritimus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6447	Endangered
Spreading Navarretia *Navarretia fossalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1334	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	Padre Associates, Inc.
Name:	christina Santala
Address:	369 Pacific Street
City:	San Luis Obispo
State:	CA
Zip:	93444
Email	csantala@padreinc.com
Phone:	8057862650

Morro Bay Power Plant Battery Storage Systems Project

Following is a preliminary list generated from the NMFS database (*Intersection of USGS 7.5" Topographic Quadrangles with NOAA Fisheries ESA Listed Species, Critical Habitat, Essential Fish Habitat, and MMPA Species Data within California*) to generate a list of species that may be present in the Morro Bay South, California Quadrangle. Query performed on October 28, 2022.

Quad Name **Morro Bay South**
Quad Number **35120-C7**

- **<u>ESA Anadromous Fish</u>**

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

- **<u>ESA Anadromous Fish Critical Habitat</u>**

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat - **X**
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat -

- **ESA Marine Invertebrates**

Range Black Abalone (E) - X
Range White Abalone (E) -

- **ESA Marine Invertebrates Critical Habitat**

Black Abalone Critical Habitat -

- **ESA Sea Turtles**

East Pacific Green Sea Turtle (T) - X
Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) - X

- **ESA Whales**

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

- **ESA Pinnipeds**

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

- **Essential Fish Habitat**

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH - X

Coastal Pelagics EFH - X

Highly Migratory Species EFH - X

- **MMPA Species (See list at left)**
- **ESA and MMPA Cetaceans/Pinnipeds**

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans - X

MMPA Pinnipeds - X

APPENDIX F

Spring Botanical Report

padre
associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

April 15, 2021

Project No. 1902-1172

Terri Wissler Adam
EMC Planning Group
301 Lighthouse Avenue, Suite C
Monterey, CA 93940

Subject: Follow-Up Spring Botanical Survey for the Morro Bay Power Company, LLC – Battery Energy Storage System Project, Morro Bay, California

Dear Ms. Adam:

Padre Associates, Inc. (Padre) has prepared the following Letter-Report (Report) to document the results of a follow-up spring botanical survey conducted in support of the proposed Morro Bay Power Company, LLC – Battery Energy Storage System (BESS) Project (Project) located in the City of Morro Bay, San Luis Obispo County, California. The BESS will be located northwest of the existing power plant building and west of the existing Pacific Gas and Electric (PG&E) switchyard fence (Project Site). Padre completed a follow-up spring botanical survey to supplement the initial botanical survey completed in December 2020 for the Project as discussed in the *Biological Resources Assessment Report for the Morro Bay Power Company, LLC Battery Energy Storage System, City of Morro Bay, California* (BRA), dated February 2021. This Report includes a summary of field survey methods and results, and a comprehensive list of plant species observed during the 2020 and 2021 botanical surveys.

FIELD SURVEY METHODS

On March 30, 2021, Padre Biologists, Alyssa Berry and Christina Santala, completed a field survey focused on the presence/absence of special-status plant species, as well as the suitability of habitat to support these species within the Project Site and proposed trail alignment along Embarcadero Road. Field survey methods consisted of walking transects through the Project Site. All plant species observed were documented and included in a comprehensive plant list (Attachments – Vascular Plant List). Plant specimens that were not positively identified in the field were further examined using appropriate botanical keys, including The Jepson Manual Vascular Plants of California (Baldwin et. al., 2012) and The Jepson Online Interchange for California Floristics (University of California, 2021). The timing of the survey captured the blooming period for most potentially occurring special-status plant species documented within the Project region.

BOTANICAL SURVEY RESULTS

The Project Site exhibited typical spring vegetation conditions such as emergent and early blooming annual grasses and forbs, new growth on perennial shrubs within the various vegetation types documented within the Project Site. Soils were dry and there were no areas containing standing water or pools.

Based on the 2020 BRA report there were three annual special-status plant species that were determined to have potential to occur based on suitable habitat but may not have been identifiable during the December 2020 survey including: Miles' milk vetch (*Astragalus didymocarpus* var. *milesianus*), southern curly-leaved monardella (*Monardella sinuata* ssp. *sinuata*), and chaparral ragwort (*Senecio aphanactis*). None of these species were observed during the 2021 survey; however, one additional special-status plant species, Blochman's leafy daisy (*Erigeron blochmaniae*), was identified and documented within the Project Site. Blochman's leafy daisy is a perennial herb in the Sunflower Family (Asteraceae) family that occurs in coastal dune and coastal scrub habitats, is endemic to San Luis Obispo County, and typically blooms between July and August. This species is a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1B.2 species, meaning that it is rare, threatened, or endangered in California and elsewhere; and is fairly threatened in California. Padre observed an individual Blochman's leafy daisy within ruderal habitat approximately 150 feet northwest of the southern Project Site limits at latitude 35.373617° N and longitude 120.858635° W. The plant was not in bloom however, the morphological characteristics of the leaves, and branches made positive identification feasible.

IMPACT DISCUSSION AND RECOMMENDED MITIGATION MEASURES

This report specifically addresses impacts to Blochman's leafy daisy; refer to the BRA for comprehensive details on the proposed Project impacts to biological resources and mitigation measures. Potential direct impacts to Blochman's leafy daisy include mortality due to ground disturbance during Project construction. Potential indirect impacts are related to habitat loss; however, it should be noted that the individual plant was observed growing on a berm associated with the former tank battery area. To mitigate impacts to Blochman's leafy daisy, the following mitigation measures shall be incorporated into the Project Restoration/Mitigation Plan:

- Collect seed from the individual plant when seed is ripe during the season prior to ground disturbance;
- Salvage and transplant the individual plant to a suitable habitat area designated on the Restoration/Mitigation Plan;
- Direct sow at the designated restoration area, plant seed in containers onsite, or contract with a local nursery that specializes in native plant propagation. Direct sow or plant seedlings in suitable habitat area designated on the Restoration/Mitigation Plan; and
- Blochman's leafy daisy will be replaced at a 3:1 ratio (replaced:removed).

CLOSING

If you have any questions or would like more information regarding the contents of this letter report, please contact Alyssa Berry at aberry@padreinc.com, or (805) 786-2650, ext. 127.

Sincerely,

Padre Associates, Inc.

Alyssa Berry
Senior Biologist

Attachments: Site Photographs
Vascular Plant List

REFERENCES

Baldwin, Bruce G., Goldman, Douglas H., Keil, David J., Rosatti, Thomas J. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press. Berkeley, California.

California Native Plant Society (CNPS), Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-030.39). Website http://www.rareplants.cnps.org (Accessed:30 March 2021).

Calflora: Information on California plants for education, research and conservation. [web application]. 2021. Berkeley, California: The Calflora Database (a non-profit organization). Website: https://www.calflora.org (Accessed: March 2021).

University of California. 2021. The Jepson Online Interchange for California Floristics. University of California, Berkeley, CA. Available online: http://ucjeps.berkeley.edu/interchange.html.

ATTACHMENTS

Site Photographs
Vascular Plant List

Photograph 1. Blochman's leafy daisy in disturbed/ruderal habitat within the Project Site (3/30/21).

Photograph 2. Representative view of disturbed/ruderal habitat within Project Site; aspect: northeast (3/30/21).

List of Vascular Plant Species Observed within the Project Site
Battery Energy Storage System Project, Morro Bay, California

Scientific Name	Common Name	Habit	Indicator Status	Conservation Status	Family
Acacia sp.*	Wattle	T/S	-		Fabaceae
Acmispon glaber	Deerweed/California broon	PH	-		Fabaceae
Acmispon heermanii	Heerman's birdfoot trefoil	PH	-		Fabaceae
Ambrosia chamissonis	Beach bur	PH	-		Asteraceae
Asphodelus fistulosus	Onionweed	PH	-		Asphodelaceae
*Avena barbata**	Slender wild oats	AG	-		Poaceae
Baccharis pilularis	Coyote brush	S	-		Asteraceae
*Brassica nigra**	Black mustard	AH	-		Brassicaceae
*Bromus catharticus**	Rescue grass	AG	-		Poaceae
*Bromus diandrus**	Rip gut brome	AG	-		Poaceae
*Bromus madritensis**	Red brome	AG	-		Poaceae
Camissonioposis cheiranthifolia	Beach evening primrose	PH	-		Onagraceae
Camissoniopsis micrantha	Minature sun-cup	AH	-		Onagraceae
*Carpobrotus edulis**	Iceplant	PH	-		Aizoaceae
*Centaurea melitensis**	Tocalote	AH	-		Asteraceae
*Cirsium vulgare**	Bull thistle	AH	FACU		Asteraceae
Corethrogyne filaginifolia	Common sandaster	PH	-		Asteraceae
*Cortaderia jubata**	Pampas grass	PG	FACU		Poaceae
Croton californicus	California croton	PH	-		Euphorbiaceae
*Delairea odorata**	Cape ivy	PH	.		Asteraceae
*Delosperma litorale**	Seaside iceplant	S	FACU		Aizoaceae
Distichlis spicata	Salt grass	PG	FAC		Poaceae
*Ehrharta calycina**	Veldt grass	PG	-		Poaceae
Erigeron blochmaneae	Blochman's leafy daisy	PH	-	1B.2	Asteraceae
Erigeron canadensis	Horseweed	AH	-		Asteraceae
*Erodium cicutarium**	Redstem filaree	AH	-		Geraniaceae
Eschscholzia californica	California poppy	AH	-		Papaveraceae
*Eucalyptus globulus**	Blue gum	T	.		Papaveraceae
*Festuca myuros**	Foxtail fescue	AG	FACU		Poaceae
*Hirschfeldia incana**	Summer mustard	BH	-		Brassicaceae
Hesperocyparis macrocarpa	Monterey cypress	T	-	1B.2	Cupressaceae
Hesperocyparis sp.	Ornamental cypress	T	-		Cupressaceae
Heterotheca grandiflora	Telegraph weed	PH	-		Asteraceae
*Hordeum murinum**	Barley	AG	FACU		Poaceae
*Hypochaeris glabra**	Smooth cat's ear	AH	-		Asteraceae
*Lamarckia aurea**	Goldentop	AG	FACU		Poaceae
*Limoneum perezii**	Canarian sea lavender	AH	-		Plumbaginaceae
Lupinus arboreus	Yellow bush lupine	S	-		Fabaceae
Lupinus chamissonis	Dune lupine	S	-		Fabaceae
Lupinus succulentus	Succulent lupine	AH	-		Fabaceae
Salvia mellifera	Black sage	S	-		Lamiaceae
*Medicago polymorpha**	Bur clover	AH	FACU		Fabaceae
Myoporum sp.*	Myoporum	T/S	-		Scrophulariaceae
*Opuntia ficus-indica**	Mission Prickly Pear	S	-		Cactaceae
*Oxalis pres-caprae**	Bermuda buttercup	AH	-		Oxalidaceae
Pinus radiata	Monterey pine	T	-	1B.1	Pinaceae
*Piptatherum miliaceum**	Smilo grass	PG	-		Poaceae
*Plantago coronopus**	Cutleaf plantain	AH	FAC		Plantaginaceae
Prunus ilicifolia	Holly-leafed cherry	S	-		Rosaceae
Pseudognaphalium californicum	Green everlasting	A/PH	-		Asteraceae
*Pseudognaphalium luteoalbum**	Jersey cudweed	AH	FAC		Poaceae
Rubus ursinus	California blackberry	PV	FAC		Rosaceae
Salix lasiolepis	Arroyo willow	S	FACW		Salicaceae
*Salsola tragus**	Russian thistle	AH	-		Chenopodiaceae
*Silybum marianum**	Milk thistle	AH	-		Asteraceae

List of Vascular Plant Species Observed within the Project Site
Battery Energy Storage System Project, Morro Bay, California

Scientific Name	Common Name	Habit	Indicator Status	Conservation Status	Family
*Sisymbrium irio**	London rocket	AH	-		Brassicaceae
Sisyrinchium bellum	Blue eyed grass	PH	FACW		Iridaceae
*Sonchus oleraceus**	Common sow thistle	AH	-		Asteraceae
*Tetragonia tetragonioides**	New Zealand spinach	AH	-		Aizoaceae

Notes: Scientific nomenclature follows Baldwin (2012).
An "*" indicates non-native species which have become naturalized or persist without cultivation.
An "-" indicates that no indicator has been assigned due to lack of information to determine indicator status; or is not listed and assumed an upland species.

Habit definitions:
AG - Annual grass.
AH - Annual herb.
F - Fern
PG - Perennial grass.
PH - Perennial herb.
PV - Perennial vine.
S - Shrub
T - Tree

Wetland indicator status (Lichvar and Kartesz, 2016):
OBL (Obligate Wetland Plants) - Almost always occur in wetlands.
FACW (Facultative Wetland Plants) - Usually occur in wetland, but may occur in non-wetlands.
FAC (Facultative Wetland Plants) - Occur in wetlands and non-wetlands.
FACU (Facultative Upland Plants) - Usually occur in non-wetlands, but may occur in wetlands.
UPL (Upland Plants) - Almost always occur in non-wetlands.

APPENDIX G

No-Take Concurrence Request and Morro Shoulderband Snail Protocol Survey Report (EAM, 2021)

U.S. Fish and Wildlife Service
Attn. Debora Kirkland
2493 Portola Road, Suite B
Ventura, CA 93003

EAM
Ecological Assets Management, LLC

April 8, 2021

Subject: *No-take Concurrence Request for the Proposed Battery Energy Storage System Project, (APN 066-331-040), Morro Bay, San Luis Obispo County, California*

Ms. Kirkland:

The attached Morro shoulderband snail protocol survey report has been prepared by Ecological Assets Management LLC for Padre Associates, Inc. on behalf of Vistra Energy at the Morro Bay Power Plant (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five protocol-level Morro shoulderband snail surveys and habitat assessment conducted from December 14, 2021, to March 11, 2021, on an approximate 45-acre Survey Area located in the central and western portion of the 90-acre Morro Bay Power Plant facility. This report provides a description of existing conditions within the Survey Area and adjacent areas, and, in combination with the protocol surveys results, determines whether Morro shoulderband snail and/or suitable habitat for Morro shoulderband snail is present.

In summary, the five protocol surveys conducted within the Survey Area observed no live or empty Morro shoulderband snail shells. During the protocol surveys numerous empty Big Sur shoulderband snail (*Helminthoglypta umbilicata*) shells were observed along with both live and empty shells from both Chorro shoulderband snail (*Helminthoglypta morroensis*) and brown garden snail (*Cornu aspera*). Restricted and small areas of suitable Morro shoulderband snail habitat (e.g., coastal dune scrub and sandy soils) were observed within the western portion of the Survey Area. Numerous previous surveys and monitoring efforts conducted by Ecological Assets Management LLC and other biologists from 1999 to 2016 within the Survey Area also found no live Morro shoulderband snail. One empty Morro shoulderband snail shell was observed in a debris pile during protocol surveys conducted in 2001. Based on the results of the five protocol surveys and habitat assessment presented in the 2020/2021 survey results report, observed conditions, and review of the previous Morro shoulderband snail survey and monitoring efforts, “take” of Morro shoulderband snail is not anticipated.

Thus, we are requesting a no-take concurrence determination for the proposed project.

If you have any questions or comments regarding this request please contact me at 805.440.6137 or e-mail at dwayne@ecologicalmgmt.com.

Sincerely,

Dwayne Oberhoff
Senior Project Biologist
Ecological Assets Management, LLC

Morro Shoulderband Snail Protocol Survey Report
Morro Bay Power Plant (APN 066-331-040)
Morro Bay, San Luis Obispo County, California

Prepared for:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, CA 93401

Prepared by:

EAM
Ecological Assets Management, LLC

April 8, 2021

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Dwayne Oberhoff

Dwayne Oberhoff

Recovery Permit Number: TE-180579-2

Introduction and Executive Summary

The following Morro shoulderband snail (*Helminthoglypta walkeriana*) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) and EMC Planning Group at the Morro Bay Power Plant (MBPP) (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five Morro shoulderband snail (MSS) surveys conducted during protocol conditions and a concurrent habitat assessment conducted from December 14, 2020, to March 11, 2021, on an approximate 45-acre area (Survey Area) of the 90-acre MBPP site. This report provides a description of observed existing conditions within the Survey Area and adjacent areas, and, in combination with the current protocol surveys results and review of previous survey efforts, determines whether MSS and/or suitable habitat for MSS is present.

In summary, the five protocol surveys conducted within the Survey Area observed no live or empty MSS shells. During the protocol surveys numerous empty Big Sur shoulderband snail (BSS) (*Helminthoglypta umbilicata*) shells were observed along with both live and empty shells from both Chorro shoulderband snail (CSS) (*Helminthoglypta morroensis*) and brown garden snail (BGS) (*Cornu aspera*). Restricted and small areas of suitable MSS habitat (e.g., coastal dune scrub and sandy soils) were observed within the western portion of the Survey Area. Numerous previous surveys and monitoring efforts conducted by EAM and other biologists from 1999 to 2016 within the Survey Area also found no live MSS. One empty MSS shell was observed in a debris pile during protocol surveys conducted in 2001. Based on the results of the five protocol surveys and habitat assessment presented in this report, observed conditions, and review of the previous MSS survey and monitoring efforts, "take" of MSS is not anticipated.

Protocol Survey and Habitat Assessment Methods

The 2003 United States Fish and Wildlife Service (USFWS) Protocol Survey Guidelines for MSS require that protocol surveys be performed during or immediately following a rain event to establish the presence or absence of MSS at a location. Protocol surveys must include a general habitat assessment that identifies key habitat features within and adjacent to the survey area. This report is based on five site visits to the approximate 45-acre Survey Area (refer to Appendix A) by permitted biologist Dwayne Oberhoff and Bob Sloan to conduct five surveys during protocol conditions and a habitat assessment of the habits present. Dwayne Oberhoff is permitted to conduct MSS protocol surveys under federal recovery permit TE-180579-2 and Bob Sloan under federal recovery permit TE-43937B-1. Padre Staff Biologists, Michaela Hoffman or Kenny Wimmer, were also present during these surveys and assisted in the survey efforts (as permitted under Mr. Oberhoff's and Mr. Sloan's recovery permit).

The five protocol-level surveys were conducted on December 14, 29, 2020; January 29, February 12, and March 11, 2021 (refer to Table 1). The five protocol-level surveys and concurrent habitat assessment were conducted on foot and covered all areas to determine the presence/absence of MSS and whether suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including areas of non-native habitat, ornamental plantings, anthropogenic debris, and edges of building foundations, fence lines, and other manmade structures that could provide habitat or shelter for MSS.

The protocol surveys and habitat assessment were conducted on foot and covered the entirety of the accessible areas of potential habitat within the 45-acre Survey Area. A large portion of the 45-acre Survey Area, approximately 14 acres, was covered in concrete/asphalt or had large structures that did not provide habitat for MSS or any snail species. The five protocol surveys focused on determining the presence/absence of MSS, but during the protocol surveys all other species of land snail were also noted. The habitat assessment conducted concurrent with the protocol surveys determined whether suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including non-native habitat, ornamental plantings, anthropogenic debris, and edges of building foundations, fence lines, and other manmade structures that could provide habitat or shelter.

<u>Description of Morro Shoulderband Snail</u>

MSS is found in western San Luis Obispo County within the vicinity of Morro Bay. Specifically, it is found south from the northern portion of the City of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon. Within this area, the primary habitat components for MSS are coastal dune and coastal scrub plant communities found on sandy soils with ≤10 percent (%) slopes. Key native plant species associated with MSS include mock heather (*Ericameria ericoides)*, coast buckwheat (*Eriogonum parvifolium*), dune bush lupine (*Lupinus chamissonis*), deerweed (*Acmispon glaber*), California croton (*Croton californicus*), seaside golden yarrow (*Eriophyllum staechadifolium*), black sage (*Salvia mellifera*), and California sagebrush (*Artemisia californica*). MSS are also commonly found in association with non-native plant species such as veldt grass (*Ehrharta calycina*), New Zealand spinach (*Tetragonia tetragonioides*), and anthropogenic structures or debris/garbage (i.e., plywood, cardboard, etc.).

Due to threats from habitat destruction, colonization of invasive plant species, aging habitat, and off-road vehicle use, MSS was listed as endangered by the USFWS on December 15, 1994. In 2006, following the five-year review conducted by the USFWS, the USFWS recommended MSS be downlisted from endangered to threatened. In 2020 the USFWS proposed to reclassify MSS from endangered to threatened, but the reclassification has not been completed as of this report date.

Site Location

The approximate 45-acre Survey Area on the subject parcel is located in western San Luis Obispo County, California; within the City of Morro Bay (refer to Figure 1). The subject parcel is located at 1290 Embarcadero, and the closest main cross street is Beach Street located approximately 0.35-mile to the north.

Proposed Project

The Morro Bay Power Company, LLC – Battery Energy Storage System (BESS) Project includes installation of a BESS within the former tank farm site, which will require tree and vegetation removal, and construction of three BESS buildings. Utility facilities will extend beyond the tank farm within the existing MBPP property boundary to connect to the Pacific Gas and Electric (PG&E) switchyard. At the request of the City of Morro Bay, an area has been identified on the site plan for a multi-use path within an existing easement for a meandering multi-use path along Embarcadero Road within the MBPP property boundary.

Observed Conditions

The 45-acre Survey Area for this report was located within the central and western portion of the 90-acre parcel (refer to Appendix A, Survey Area). The 45-acre Survey Area is generally flat and much of it has been previously disturbed and developed during the construction and operation of the MBPP. The Survey Area does contain numerous earthen berms that were previously constructed to form containment areas for the large petroleum storage tanks located within the western portion of the MBPP and within the tank farm area. The tanks within the tank farm were previously removed. The Survey Area also contains numerous anthropogenic features, such as: paved and improved dirt roads, paved parking areas, metal sheds, pad locations from the previously demolished storage tanks, sunken concrete valve boxes, various smaller metal storage tanks, numerous vertical pipes (e.g., test wells, anode access points, fire hydrants, etc.) with protective bollards, and concrete culverts located within the berms for facility pipe routing. Much of the 45-acre Survey Area was either completely unvegetated due to existing structures and infrastructure, previous tank farm location, improved asphalt and concrete roads and parking areas, or sparsely vegetated due to historical disturbances (refer to Photo Documentation).

Areas of vegetation were dominated by both ruderal and ornamental plant species. Coastal scrub species were rare within the Survey Area, but consisted of scattered areas comprised of coastal silver lupine (*Lupinus chamissonis*) and coyote brush (*Baccharis pilularis*). Dominant plant species observed within the Survey Area consisted of: Russian thistle (*Salsola* spp.) telegraph weed (*Heterotheca grandiflora*), unidentified pine (*Pinus* spp.), Monterey cypress (*Cupressus macrocarpa*), eucalyptus trees

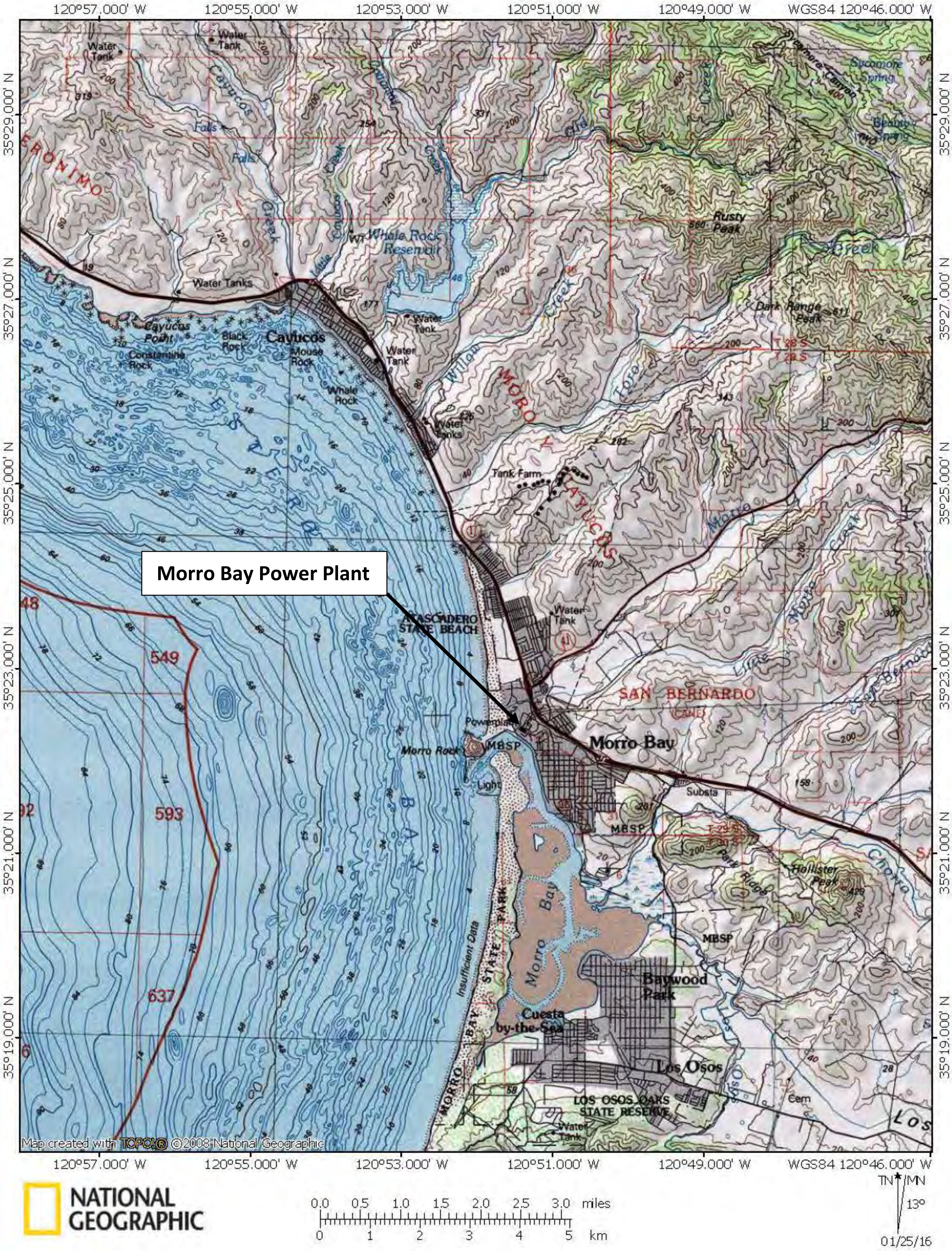


FIGURE 1. Location map of Morro Bay Power Plant located in the City of Morro Bay, CA.

(*Eucalyptus* spp.), myoporum (*Myoporum laetum*), coastal bush lupine (*Lupinus arboreus*), miscellaneous annual grasses, and ice plant (*Carpobrotus edulis*).

A primary habitat component for MSS is sand or sandy soils with a slope not greater than 10%. The University of California Davis, Soil Resource Laboratory online soil mapping website, "SoilWeb" (http://casoilresource.lawr.ucdavis.edu/gmap/), maps two soil units in the Survey Area: Psamments and Fluvents, occasionally flooded; and, dune land. In addition, the soil in many of the areas within the Survey Area, especially within the tank farm area and the eastern portion of the survey area, contained large amounts of gravel/rocks, which was likely imported during the construction phase of the MBPP.

The areas surrounding the Survey Area includes: undeveloped dune scrub to the west; the areas to the north consists of dense riparian habitats associated with Morro Creek, to the northeast and east are previously developed and disturbed areas of the MBPP and an adjacent Pacific Gas and Electric facility; and the area to the south and southeast the Embarcadero (paved road) and the Morro Bay water front (refer to Appendix A, Survey Area). The subject parcel is located outside of the boundaries of critical habitat units for MSS designated on February 7, 2001.

Results

MSS permitted biologists Dwayne Oberhoff and Bob Sloan conducted five focused, surveys for MSS during protocol conditions within the 45-acre Survey Area from December 14, 2020, to March 11, 2021. Additional survey assistance was provided on specific dates by Michaela Hoffman and Kenny Wimmer of Padre (refer to Table 1).

All accessible areas and areas located within the approximate 45-acre Survey Area were surveyed by walking, visual observation, and carefully sifting through soil and leaf litter under vegetation, around woody debris, anthropogenic features, and other areas where MSS could be present. A total of 34.0 person-hours were expended conducting the five protocol surveys. During these survey efforts no live MSS or empty MSS shells were observed. Many empty BSS and BGS shells were observed in various locations of the Survey Area, with the greatest concentration on the west and southwest facing berms sparsely vegetated with coastal silver lupine, bush lupine and/or ice plant (refer to Photo 9). These areas are extremely exposed and likely cannot support MSS or any snail species, as was evident by the large number of empty BSS and BGS shells observed in these locations during the surveys. The bulk of the empty BSS shells observed during the survey efforts were classified as class C shells. In addition, numerous live and empty CSS were observed in a few locations in the southern and eastern portion of the Survey Area. At one location numerous live CSS were observed associated with a pile of concrete rubble and a sheet of plywood on clay and gravelly soils with eucalyptus leaf litter (refer to Appendix B: Photo 10). All CSS observed within this general area of the Survey Area were all associated with anthropogenic features and not associated with sandy soils. No empty CSS shells were observed in the western portion of the Survey Area that contained sandy soils and/or coastal scrub species.

Table 1. Results of Five Protocol-level MSS Surveys at Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.

Survey #	Survey Date and Time	Surveyor	Weather Conditions	Results*
1	12/14/2020 1130 - 1500 hrs	D. Oberhoff B. Sloan M. Hoffman	56°F, 0.25" of precip evening prior to survey, clearing skies, 5-8 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
2	12/29/2020 0830-1100 hrs	D. Oberhoff B. Sloan	48°F, 1.10" prcip day/night prior to survey, clear skies, 2-10 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
3	1/29/2021 1200-1430 hrs	D. Oberhoff B. Sloan K. Wimmer	48°F, 6.80" precip over three days prior to survey, cloudy skies with scattered showers, 2-5 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
4	2/12/2021 0915-1145 hrs	D. Oberhoff B. Sloan	55°F, 0.15" precip morning of survey, of precip three days prior to survey, calm winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
5	3/11/2021 0800-1100 hrs	D. Oberhoff B. Sloan	50°F, 0.59" of precip, Cloudy and scattered showers during survey, 0-5 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.

*MSS - Morro shoulderband snail, BSS - Big Sur shoulderband snail, BGS - brown garden snail, CSS - Chorro shoulderband snail

Discussion

The survey results documented above provide a determination that the 45-acre Survey Area is dominated by previously developed and disturbed areas which do not provide suitable habitats for MSS. However, there are scattered areas that contain both MSS primary habitat components (e.g., coastal dune plant communities and sandy soils) present within the western portion of the Survey Area. However, no MSS (live or empty shells) were observed within these areas during the 2020/2021 surveys presented within this report. In addition, EAM conducted five focused MSS surveys (25.2 person-hours) during protocol conditions in 2015/2016 on a 9.45-acre survey area located within the western portion of the current 45-acre Survey Area, and no live MSS or empty MSS shells were observed during those survey efforts either. Refer to Appendix C for the survey results report prepared for the 2015/2016 survey efforts and Appendix D for the Section 7 Consultation Request Letter from the U.S. Army Corps of Engineers.

Table 2. Results of Previous MSS Survey and Monitoring Efforts at Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.*

Date	Title of Report	MSS Survey Efforts	Company	Survey Personnel	Results
March 9, 2016	Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California	Five MSS Protocol Surveys	Ecological Assets Managment, LLC	D. Oberhoff B. Sloan	No live or empty MSS observed
October 27, 2010	Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report	Construction Monitoring for MSS	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
July 1, 2010	Morro Bay Power Plant Modernization Project Anode Installation	Three MSS surveys and Construction Monitoring for MSS	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
April 30, 2003	Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation	Five MSS Protocol Surveys	Morro Group, Inc.	B. Sloan P. Waldburger D. Oberhoff	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Sensitive Species Construction Monitoring Completion Report	Construction Monitoring for MSS	Morro Group, Inc.	B. Sloan P. Waldburger J. Tupen J. Wiggins	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Morro Shoulderband Snail Protocol Survey Results	Five MSS Protocol Surveys	Morro Group, Inc.	J. Tupen B. Sloan	No live MSS observed during surveys. **One empty MSS shell and five empty "morroensis" form shells.
May/June 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Non-protocol	TRC Environmental Solutions	E. Reeves	No live or empty MSS observed
January/February 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Unknown	TRC Environmental Solutions	F. Villablanca V.L. Holland	No live or empty MSS observed

*List may not include all MSS surveys or MSS monitoring efforts conducted on MBPP.
**Protocol survey efforts by Morro Group Inc in 2001 identified six (6) empty Helminthoglypta shells within the northeastern portion of the 90-acre parcel. Five (5) of the empty Helminthoglypta shells were identified as Helminthoglypta walkeriana form "morroensis" while one (1) empty shell was identified as Helminthoglypta walkeriana (typical form).

From 1999 to 2010 numerous other protocol surveys and monitoring efforts for MSS were conducted on the MBPP and these efforts did not observe live MSS (refer to Table 2). Protocol survey efforts by Morro Group, Inc. in 2001 identified six empty *Helminthoglypta* shells within the northeastern portion of the 90-acre parcel. Five (5) of the empty

Helminthoglypta shells were identified as *Helminthoglypta walkeriana* form "*morroensis*" while one (1) empty shell was identified as *Helminthoglypta walkeriana* (typical form). Jeff Tupen (personal communication, March 30, 2021,) indicated this single empty MSS *Helminthoglypta walkeriana* (typical form) shell was the only MSS specimen found up to that date on the MBPP site. Mr. Tupen indicated this empty MSS shell was found in a disturbed area and within a "bone yard" of debris and was likely imported on to the MBPP site from an offsite area. Since the 2001 protocol surveys by Morro Group, Inc., no other survey or monitoring efforts have identified live MSS or empty MSS shells on the MBPP site.

The negative survey results presented above, along with the review of the previous focused survey efforts, and the tremendous overall total amount of MSS survey efforts conducted, indicate MSS is likely absent from the MPBB site. Based on these results, "Take" of MSS is not anticipated to occur from any project located on the MBPP site. In addition, based on the consistent negative survey results from the MBPP site, additional pre-construction surveys and monitoring efforts during project activities are not being recommended.

If a project can be shown to have no adverse impacts to MSS, USFWS may grant a "No-take Concurrence Determination", which would allow the proposed project to proceed. Since impacts to MSS are not likely to occur from the proposed project, a "No-take Concurrence Determination" request is being submitted to the USFWS along with this report.

References

Ecological Assets Management, LLC. 2016. Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Morro Shoulderband Snail Protocol Survey Results, Morro Bay, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Sensitive Species Construction Monitoring Completion Report, Morro Bay, California.

Morro Group, Inc. 2003. Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation, Morro Bay, California.

Roth, B. 1985. Status Survey of the Banded Dune Snail, (*Helminthoglypta walkeriana*). Prepared for the U.S. Fish and Wildlife Service. Sacramento, California.

Roth, B. and Tupen, J. 2004. Revision of the systematic status of *Helminthoglypta walkeriana morroensis* (Hemphill, 1911) (Gastropoda: Pulmonata). *Zootaxa*, 616: 1-213.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report (SWCA# 16988), Morro Bay, California.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Anode Installation (SWCA# 16675), Morro Bay, California.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2003. Protocol Survey Guidelines for the Morro Shoulderband Snail. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Morro Shoulderband Snail 5-Year Review. U.S. Fish and Wildlife Service. Ventura Fish and Wildlife Field Office, Ventura California.

Appendix A: Survey Area Figure


Appendix A
Survey Area Figure
Legend
Survey Area
Google Earth
©2021 Google
500 ft

Appendix B: Photo Pages

10 Photos

Photo 1: Image viewing southwest along the southeast perimeter fence of the Survey Area. December 29, 2020

Photo 2: Image of one of the six tank pads within the Tank Farm portion of the Survey Area. March 11, 2021

Photo 3: Image viewing southwest of one of the vegetated berms within the Tank Farm portion of the Survey Area. Note tank pad in right of photo. March 11, 2021

Photo 4: Image viewing south of disturbed areas with concrete and asphalt surfaces. Note invasive pampas grass growing. March 11, 2021

Photo 5: Image viewing west of one of the vegetated berms within the Tank Farm portion of the Survey Area. Note tank pad in right of photo. March 11, 2021

Photo 6: Image of previous tank location. Note absence of vegetation within this area, which is similar to all the other tank locations. March 11, 2021

Photo 7: Image viewing south showing previous tank location and vegetation along the margins. March 11, 2021

Photo 8: Image viewing west of one of the numerous asphalt paved roads atop an earthen berm within the Survey Area. March 11, 2021

Photo 9: Image viewing southwest along the western fence line and Survey Area perimeter. This portion of the Survey Area had the most suitable habitat observed during the surveys. March 11, 2021

Photo 10: Image of concrete rubble and plywood where numerous Chorro shoulderband snails (*Helminthoglypta morroensis*) were observed. December 14, 2020

Appendix C: March 9, 2016, Ecological Assets Management LLC., Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California,

EAM
Ecological Assets
Management, LLC

U.S. Fish and Wildlife Service
Attn. Julie Vanderwier
2493 Portola Road, Suite B
Ventura, CA 93003

March 9, 2016

Subject: *No-take Concurrence Request for the Proposed Decommissioning of Dynegy's Morro Bay Power Plant Marine Terminal, (APN 066-331-040), Morro Bay, San Luis Obispo County, California*

Ms. Julie Vanderweir:

The attached Morro shoulderband snail (MSS) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) on behalf of Dynegy Morro Bay, LLC (Dynegy) at the Morro Bay Power Plant (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five protocol-level Morro shoulderband snail (MSS) surveys and habitat assessment conducted from November 16, 2015, to January 19, 2016, on an approximate 9.45 acre area (Survey Area) located in the western portion of the 107 acre Morro Bay Power Plant (MBPP) facility. This report provides a description of existing conditions within the Survey Area and adjacent areas, and, in combination with the protocol surveys results, determines whether Morro shoulderband snail and/or suitable habitat for Morro shoulderband snail is present.

In summary, the five protocol surveys conducted within the 9.45 acre Survey Area observed no live or empty MSS shells. Restricted and small areas of suitable habitat (e.g. coastal dune scrub, ice plant and sandy soils) were observed within the Survey Area. During the protocol surveys numerous empty shells from both Big Sur shoulderband snail (*Helminthoglypta umbilicata*) and brown garden snail (*Helix aspera*) were observed. Numerous previous surveys and monitoring efforts conducted by other biologists from 1999 to 2010 within the Survey Area also found no MSS. Based on the results of the five protocol surveys and habitat assessment presented in this report, and the previous MSS survey and monitoring efforts, "take" of MSS will not occur from the proposed project within the Survey Area.

Thus, Padre, on behalf of Dynegy, is requesting a no-take concurrence determination for the proposed project.

If you have any questions or comments regarding this request please contact me at 805.440.6137 or e-mail at dwayne@ecologicalmgmt.com.

Sincerely,

Dwayne Oberhoff
Senior Project Biologist
Ecological Assets Management, LLC

Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California

Prepared for:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, CA 93401

Prepared by:

EAM Ecological Assets Management, LLC

March 9, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Introduction

The following Morro shoulderband snail (*Helminthoglypta walkeriana*) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) on behalf of Dynegy Morro Bay, LLC (Dynegy) at the Morro Bay Power Plant (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five protocol-level Morro shoulderband snail (MSS) surveys and habitat assessment conducted from November 16, 2015, to January 19, 2016, on an approximate 9.45 acre area (Survey Area) located in the western portion of the 107 acre Morro Bay Power Plant (MBPP) facility. This report provides a description of existing conditions within the Survey Area and adjacent areas, and, in combination with the protocol surveys results, determines whether Morro shoulderband snail and/or suitable habitat for Morro shoulderband snail is present.

In summary, the five protocol surveys conducted within the Survey Area observed no live or empty MSS shells. Restricted and small areas of suitable habitat (e.g. coastal dune scrub, ice plant and sandy soils) were observed within the Survey Area. During the protocol surveys numerous empty shells from both Big Sur shoulderband snail (*Helminthoglypta umbilicata*) and brown garden snail (*Helix aspera*) were observed. Numerous previous surveys and monitoring efforts conducted by other biologists from 1999 to 2010 within the Survey Area also found no MSS. Based on the results of the five protocol surveys and habitat assessment presented in this report, and the previous MSS survey and monitoring efforts, “take” of MSS will not occur from the proposed project within the Survey Area.

Protocol Survey and Habitat Assessment Methods

The 2003 United States Fish and Wildlife Service (USFWS) Protocol Survey Guidelines for MSS require that protocol surveys be performed during or immediately following a rain event (i.e. protocol conditions) to establish the presence or absence of MSS at a location. Protocol surveys must include a general habitat assessment that identifies key habitat features within and adjacent to the Survey Area.

This report is based on the results of five separate site visits to the approximate 9.45 acre Survey Area of the 107 acre subject parcel to conduct five protocol surveys and a concurrent MSS habitat assessment. The surveys were conducted on November 16, December 11, December 22, 2015; and, January 7, and January 19, 2016. The protocol surveys on November 16 and December 11 and 22, 2015, were conducted by permitted biologists Dwayne Oberhoff and Bob Sloan. The protocol surveys on January 7 and 19, 2016, were conducted by permitted biologist Dwayne Oberhoff. Dwayne Oberhoff is permitted to conduct MSS protocol surveys under federal recovery permit TE-180579-1. Bob Sloan is permitted to conduct MSS protocol surveys under federal recovery permit TE-43937B-0. Padre Staff Biologist, Ms. Michaela Hoffman or Kenny

Wimmer, were also present during these surveys and assisted in the survey efforts (as permitted under Mr. Oberhoff's and Mr. Sloan's recovery permit).

The protocol surveys and habitat assessment were conducted on foot and covered the entirety of the 9.45 acre Survey Area. The protocol surveys focused on determining the presence/absence of MSS, but during the protocol surveys all other species of land snail were also noted. The habitat assessment conducted concurrent with the protocol surveys determined whether suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including non-native habitat, ornamental plantings, anthropogenic debris, and edges of building foundations, fence lines, and other manmade structures that could provide habitat or shelter.

Description of Morro Shoulderband Snail

MSS is found in western San Luis Obispo County within the vicinity of Morro Bay. Specifically, it is found south from the northern portion of the City of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon. Within this area, the primary habitat components for MSS are coastal dune and coastal scrub plant communities found on sandy soils with ≤10 percent (%) slopes. Key native plant species associated with MSS include mock heather (*Ericameria ericoides)*, coast buckwheat (*Eriogonum parvifolium*), dune bush lupine (*Lupinus chamissonis*), deerweed (*Acmispon glaber*), California croton (*Croton californicus*), seaside golden yarrow (*Eriophyllum staechadifolium*), black sage (*Salvia mellifera*) and California sagebrush (*Artemisia californica*). MSS are also commonly found in association with non-native plant species such as veldt grass (*Ehrharta calycina*), ice plant (*Carpobrotus edulis*), and anthropogenic structures or debris/garbage (i.e. plywood, cardboard, etc).

Due to threats from habitat destruction, colonization of invasive plant species, aging habitat, and off-road vehicle use, MSS was listed as endangered by the USFWS on December 15, 1994. In 2006, following the five year review conducted by the USFWS, the USFWS recommended MSS be downlisted from endangered to threatened; however, the final rulemaking process for downlisting has not been completed.

Site Location

The 9.45 acre Survey Area on the subject parcel is located in western San Luis Obispo County, California; within the city of Morro Bay (refer to Figure 1). The subject parcel is located at 1290 Embarcadero, and the closest main cross street is Beach Street located approximately 0.35-mile to the north.

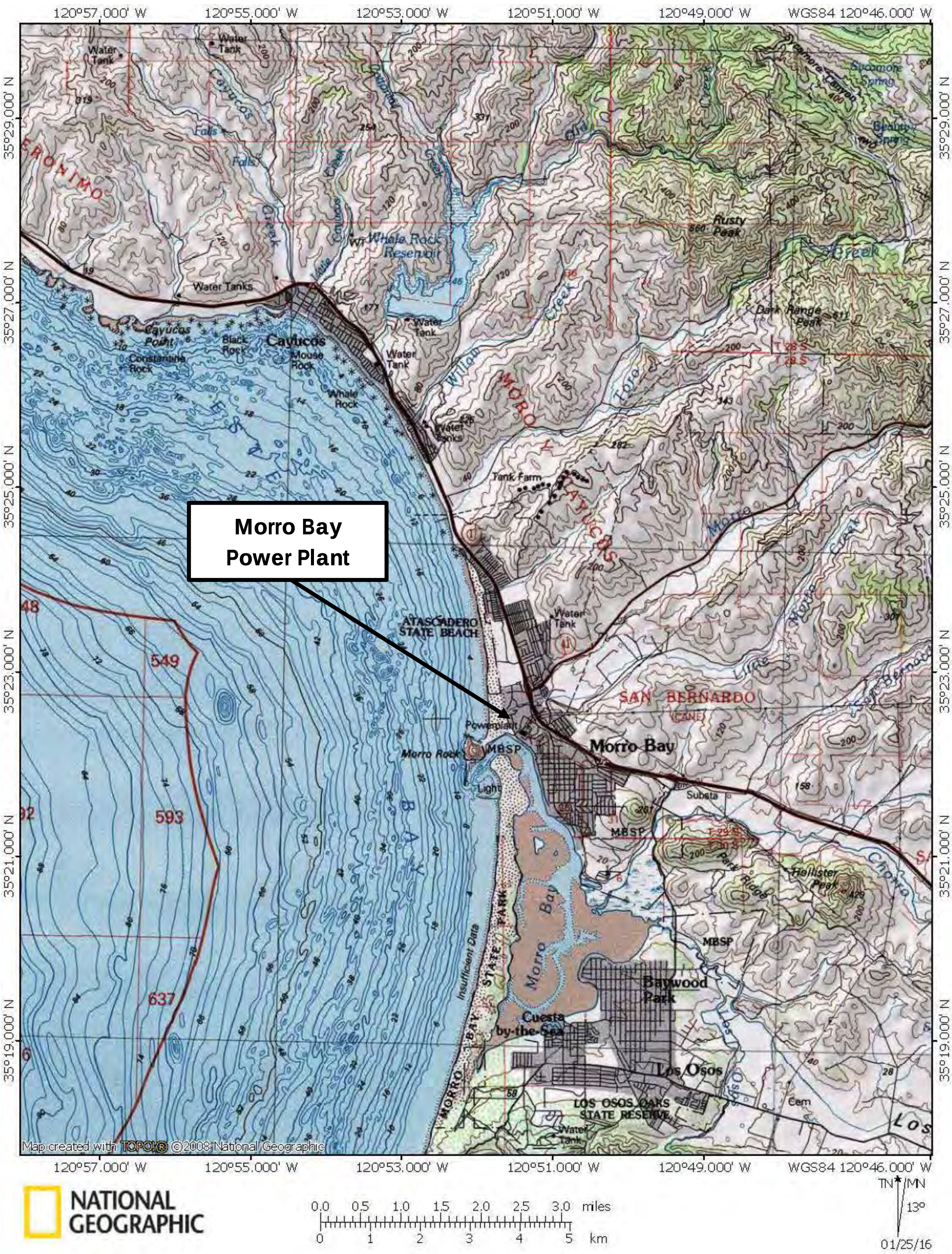


FIGURE 1. Location map of Morro Bay Power Plant located in the City of Morro Bay, CA.

Proposed Project

Dynegy plans to decommission the remaining components of the Dynegy MBPP Marine Terminal. These components consist of a 24-inch diameter submarine pipeline, a 16-inch diameter submarine pipeline, the cathodic protection system for these two pipelines, and ancillary submarine pipeline components. The MBPP marine terminal has been idle since 1990 and many of the marine terminal's components have been decommissioned in subsequent decommissioning phases. This project involves the final decommissioning of the remaining marine terminal components to comply with the abandonment requirements of the California State Lands Commission (CSLC).

Existing Conditions

The Survey Area for this report was located on the western side of the MBPP and north of the entry gate (refer to Appendix A, Existing Conditions and Survey Results). The approximate 9.45 acre triangular-shape Survey Area is generally flat, but does contain earthen berms that were previously constructed to form a containment area for the large petroleum storage tanks located within the tank farm area of MBPP. The Survey Area also contains numerous anthropogenic features, such as: paved and dirt roads, parking areas, office buildings, metal sheds, pads from the previously demolished storage tanks, sunken concrete valve boxes, various smaller metal storage tanks, numerous vertical pipes (e.g. test wells, anode access points, fire hydrants, etc.) with protective bollards, and concrete culverts located within the berms for facility pipe routing. Much of the 9.45 acre Survey Area was either completely unvegetated due to improved roads and parking areas, or very sparsely vegetated due to historical disturbances (refer to Photo Documentation).

Observed vegetation was dominated by both ruderal and ornamental plant species. Coastal scrub species were rare within the Survey Area, but several coastal silver lupine (*Lupinus chamissonis*) bushes were observed growing in a few locations. Dominant plant species observed within the Survey Area consisted of: Russian thistle (*Salsola* spp.) telegraph weed (*Heterotheca grandiflora*), unidentified pine (*Pinus* spp.), Monterey cypress (*Cupressus macrocarpa*), eucalyptus trees (*Eucalyptus* spp.), myoporum (*Myoporum laetum*), coastal bush lupine (*Lupinus arboreus*), miscellaneous annual grasses, and ice plant (*Carpobrotus edulis*).

A primary habitat component for MSS is sand or sandy soils with a slope not greater than 10 percent (%). The University of California Davis, Soil Resource Laboratory online soil mapping website, "SoilWeb" (http://casoilresource.lawr.ucdavis.edu/gmap/), maps two soil units in the Survey Area: Psamments and Fluvents, occasionally flooded; and, dune land.

The areas surrounding the Survey Area include: the west consists of undeveloped dune scrub, the areas to the north and east are previously developed and disturbed areas of the MBPP and the area to the south is the Embarcadero (paved road) and the Morro Bay water front (refer to Appendix A, Existing Conditions and Survey Results). The subject parcel is located outside of the boundaries of critical habitat units for MSS designated on February 7, 2001.

Results

MSS permitted biologists Dwayne Oberhoff and Bob Sloan conducted five focused, protocol-level surveys for MSS on the subject parcel from November 16, 2015, to January 19, 2016, with additional survey assistance provided on these dates by Michaela Hoffman or Kenny Wimmer of Padre Associates (refer to Table 1).

Table 1. Results of Five Protocol Surveys to Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.

Survey #	Survey Date and Time	Surveyor	Weather Conditions	Results*
1	11/16/2015 0815-1040 hrs	D. Oberhoff B. Sloan K. Wimmer	52°F, 0.31" of precip day prior to survey, 10-20 mph winds during survey	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
2	12/11/2015 0830-1030 hrs	D. Oberhoff B. Sloan M. Hoffman	54°F, 0.46" prior to and during survey, partly cloudy	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
3	12/22/2015 0900-1045 hrs	D. Oberhoff B. Sloan M. Hoffman	64°F, 0.70" prior to and during survey, 15-25 mph wind cloudy skies	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
4	1/7/2016 0855-1040 hrs	D. Oberhoff M. Hoffman	55°F, 2.14" of precip three days prior to survey	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
5	1/19/2016 0840-1015 hrs	D. Oberhoff K. Wimmer	57°F, 0.30" of precip prior to and during survey, cloudy skies during survey	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.

*MSS - Morro shoulderband snail, BSS - Big Sur shoulderband snail, Helix - brown garden snail

All areas and habitats located within the approximate 9.45 acre Survey Area were surveyed by walking transects, visual observation, and carefully sifting through soil and leaf litter under vegetation, around woody debris, and other areas where MSS could be present. A total of 25.2 person-hours (6.6 person-hours/hectare) were expended conducting the five protocol surveys. No MSS were observed during the five protocol-level surveys of the Survey Area. Many empty Big Sur shoulderband snail (BSS) shells were observed in various locations of the surveyed area, with the greatest concentration on a west facing berm sparsely vegetated with coastal silver lupine, bush lupine and/or ice plant (refer to Photo 3). The bulk of the empty BSS shells observed during the survey efforts were classified as class C shells.

The bulk of the 9.45 acre Survey Area does not contain habitats suitable for MSS, which includes previously disturbed areas sparsely vegetated with ruderal vegetation, improved paved/dirt roads, parking areas and the storage tank pads within the tank farm area. However, small areas of habitat suitable for MSS were observed within the Survey Area and were located near the western fence line of the Survey Area (refer to Appendix A, Existing Conditions and Survey Results). These areas contained a few coastal silver lupine and ice plant growing on or adjacent to the western face of an earthen berm that was adjacent to the western fence (refer to Appendix A, Existing Conditions and Survey Results and Appendix B, Photos 3 and 5). However, during the five protocol-level surveys no live MSS or empty MSS shells were observed in these locations. These areas are extremely exposed and likely cannot support MSS or any snail species, as was evident by the large number of empty BSS and *Helix* shells observed in these locations during the surveys. In addition, previous MSS surveys and monitoring efforts conducted at MBPP between 1999 and 2010 did not observe any live MSS or empty MSS shells within the 9.45 acre Survey Area (refer to Table 2). The MSS identified in the June 12, 2001, protocol survey report by Morro Group, Inc. were observed in the far southern portion of the 107 acre MBPP property, approximately 0.4-mile from the Survey Area. In this same report, it is also stated, "Interestingly, the dune area west of the MBPP represented the "best" MSS habitat, based on the literature, yet this area produced no MSS shells and the fewest number of BSS."

Table 2. Results of Previous MSS Survey and Monitoring Efforts at Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.*

Date	Title of Report	MSS Survey Efforts	Company	Survey Personnel	Results
October 27, 2010	Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report	Construction Monitoring for MSS	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
July 1, 2010	Morro Bay Power Plant Modernization Project Anode Installation	Three MSS surveys and Construction Monitoring for	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
April 30, 2003	Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation	Five MSS Protocol Surveys	Morro Group, Inc.	B. Sloan P. Waldburger D. Oberhoff	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Sensitive Species Construction Monitoring Completion Report	Construction Monitoring for MSS	Morro Group, Inc.	B. Sloan P. Waldburger J. Tupen J. Wiggins	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Morro Shoulderband Snail Protocol Survey Results	Five MSS Protocol Surveys	Morro Group, Inc.	J. Tupen B. Sloan	No live MSS observed during surveys. Six empty MSS shells observed in the southern portion of property.
May/June 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Non-protocol	TRC Environmental Solutions	E. Reeves	No live or empty MSS observed
January/February 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Unknown	TRC Environmental Solutions	F. Villablanca V.L. Holland	No live or empty MSS observed

*List may not include all MSS surveys or MSS monitoring efforts conducted on MBPP.

Discussion

The Survey Area is dominated by previously developed and disturbed areas that do not contain habitats suitable for MSS. However, small areas with both MSS primary habitat components (e.g. coastal dune plant communities and/or ice plant, and sandy soils) were present within the Survey Area. However, no MSS (live or empty shells) were observed within these areas. The numerous previous MSS protocol surveys and monitoring efforts conducted during the late 1990s to 2010 on MBPP did not observe live MSS and the empty MSS shells observed in 2001 were approximately 0.4-mile from the Survey Area. The current results presented here, combined with previous survey efforts, further confirm that MSS is unlikely present within the Survey Area.

Conditions within the Survey Area are highly disturbed and previous activities have created conditions that are now unsuitable for MSS. In addition, it appears that conditions are unfavorable for any land snail based on the absence of any live snails observed during the five surveys. Furthermore, the presence of ornamental vegetation and trees (e.g. pine, eucalyptus, cypress, etc.) create conditions that MSS do not favor, but will also deter or prevent movement of MSS from one area to another. The sparse vegetation observed throughout the Survey Area also limits micro-habitats that are critical for MSS summer aestivation. The sparse vegetation and limited aestivation habitat likely increases heat exposure during warm, cloudless days and may partially explain the great abundance of empty BSS and *Helix* shells observed within these areas of the Survey Area. During these times, BSS and *Helix* aestivating in sparsely vegetated habitats likely die due to desiccation.

Based on these results presented above, EAM's assessment is that "take" of MSS would not occur from the project as proposed within the Survey Area. Thus, it is EAM's opinion that additional protocol surveys for MSS are not necessary within the Survey Area. In addition, it is EAM's opinion that additional pre-construction surveys and monitoring efforts during project activities are not necessary based on these and previous results from the Survey Area. Based on these results, a concurrence determination request is being submitted to the USFWS along with this report.

References

Morro Group, Inc. 2001. Morro Bay Power Plant Morro Shoulderband Snail Protocol Survey Results, Morro Bay, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Sensitive Species Construction Monitoring Completion Report, Morro Bay, California.

Morro Group, Inc. 2003. Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation, Morro Bay, California.

Roth, B. 1985. Status Survey of the Banded Dune Snail, (*Helminthoglypta walkeriana*). Prepared for the U.S. Fish and Wildlife Service. Sacramento, California.

Roth, B. and Tupen, J. 2004. Revision of the systematic status of *Helminthoglypta walkeriana morroensis* (Hemphill, 1911) (Gastropoda: Pulmonata). *Zootaxa*, 616: 1-213.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report (SWCA# 16988), Morro Bay, California.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Anode Installation (SWCA# 16675), Morro Bay, California.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2003. Protocol Survey Guidelines for the Morro Shoulderband Snail. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Morro Shoulderband Snail 5-Year Review. U.S. Fish and Wildlife Service. Ventura Fish and Wildlife Field Office, Ventura California.

Appendix A: Existing Conditions and Survey Results


Appendix A
Existing Conditions and Survey Results
Legend
Ice Plant
Ice Plant/Silver Lupine
Numerous empty BSS
Ornamental Vegetation
Pine/Cypress/Eucalyptus/Myoporum/etc. Trees
Scattered Bush and/or Silver Lupine
Survey Area Perimeter
Embarcadero
N
Google earth
© 2016 Google
300 ft

Appendix B: Photo Pages

- **9 Photos**

Photo 1

Photo of ornamental plant species adjacent to the MBPP entry gate.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 2

Photo viewing north from northern side of MBPP entry gate. Note unimproved dirt roads and sparse ruderal vegetation.

February 12, 2016

Photo 3

Photo of berm near western fence line vegetated with pine tree (*Pinus* spp.) and iceplant.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 4

Photo viewing north along western fence line showing site related equipment. Not absence of vegetation along fence line.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 5

Photo viewing west from atop berm toward Morro Rock. Note western fence line in foreground.

February 12, 2016

Photo 6

Photo viewing east from atop of berm toward previously location of petroleum storage tank pad.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 7

Photo viewing north along top of berm. Note Monterey cypress on left and sparsely vegetated slope on right of berm.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 8

Photo viewing east along top of berm. Note sparse vegetation and office buildings in background.

February 12, 2016

Photo 9

Photo viewing south of sparely vegetated area adjacent to entry gate at MBPP.

February 12, 2016

Appendix D: May 31, 2018, Army Corps of Engineers, Section 7 Consultation Request Letter

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
VENTURA FIELD OFFICE
2151 ALESSANDRO DRIVE, SUITE 110
VENTURA, CALIFORNIA 93001

May 31, 2018

SUBJECT: Section 7 Consultation Request Letter

U.S. Fish and Wildlife Service
Steve Henry, Field Supervisor
Ventura Fish and Wildlife Service Office
2493 Portola Road, Suite B
Ventura, California 93003

Dear Mr. Henry:

Dynegy Morro Bay, LLC submitted an application (Corps File No. SPL-2018-00187-CLH) for Department of the Army authorization for excavation and pipeline removal from the Dynegy Morro Bay Power Plant (onshore) to the Pacific Ocean (offshore) for a total distance of approximately 5,700 feet. The proposed project extends from Morro Creek to the Pacific Ocean within San Luis Obispo County, California (Lat. 35.37361°N, Long. -120.8597777 °W).

I have determined the project may affect, but would not likely to adversely affect, the federally threatened Western snowy plover (*Charadrius alexandrinus nivosus*) and its critical habitat, known to utilize habitat in the vicinity of the proposed project. Therefore, pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the Los Angeles District hereby requests initiation of informal consultation for the proposed project. Pursuant to 50 CFR Part 402.14(c), I am enclosing or otherwise identifying the following information:

1. **Description of the action considered:** Dynegy Morro Bay, LLC (Dynegy) is proposing the Morro Bay Power Plant (MBPP) Marine Terminal Decommissioning Project. Dynegy proposes to remove the two pipelines in their entirety through the Beach Segment, Surf Zone Segment and the Offshore Segment.

   The two pipelines travel underneath the Beach Segment, and the mouth of Morro Creek (Figure 2 Enclosed). The Beach Segment is an active recreational area and is approximately 810 feet in width from the toe of the sand dune to the point where the pipelines cross the approximate low tide line in the intertidal zone. Removal from the beach segment would start at the toe of the Sand Dune Segment (where the Sand Dune Segment intersects the Beach Segment) where the pipelines would be excavated, exposed and cut.

   The two pipelines pass underneath the Surf Zone Segment from the low tide line to approximately 17-foot water depth (the approximate seaward boundary of the surf zone), a distance of about 1,300 feet (16-inch line) and 1,240 feet (24-inch line). Removal of the two pipelines from the Surf Zone segment would be accomplished using dynamic pipe ramming (DPR). DPR utilizes a pneumatically powered ram to drive or pull pipes through soil.

The two pipelines continue offshore, on a heading of about 303 degrees true north, approximately 2,400 feet (16-inch line) and 2,500 feet (24-inch line) from the seaward side of the Surf Zone Segment to the offshore marine terminal tanker berth in approximately 54 feet water depth. MBPP marine terminal facilities located in the Offshore Segment, in addition to the two submarine pipelines, consist of helical screw anchors that anchor the pipelines to the seafloor, possibly small concrete clump anchors left over from marker buoy placements, and possibly miscellaneous debris located on the seafloor. Dynegy proposes to excavate, expose, and remove the two offshore pipeline segments in their entirety. Removal would start at the offshore termination and work shoreward removing all pipe up to the starting point of the Surf Zone Segment. The offshore removal would take place prior to the Surf Zone Segment removal.

A Dewatering Plan has been prepared for the Project. Removal of the pipelines from the Beach Segment would involve excavating a trench along the pipeline alignments to expose the pipelines for cutting into sections for removal. The excavation would likely result in standing water, which would require dewatering. The National Pollutant Discharge Elimination System (NPDES) Stormwater Discharges from Construction Activities Order No. 2009-0009 (Construction General Permit) would cover the scope of work for dewatering the pipeline excavations at Morro Beach and discharging the water to the Pacific Ocean. The Dewatering Plan provides a detailed discussion of the methods that will be used for dewatering activities. In addition, a Stream Diversion Plan has been prepared for the Project and would be implemented if surface flows in Morro Creek transect the work area for removal of one or both of the two pipelines. Construction activities are not expected to occur within Morro Creek.

The Project is scheduled to commence in June and end in November 2018. The Beach Segment would be removed first, followed by the Offshore Segment, then the Surf Zone Segment.

2. **Description of the specific areas that may be affected by the action (scope of analysis):** The scope of analysis includes 4.86 acres of temporary impacts within navigable waters of the U.S., inclusive of a 10-foot buffer.

3. **Description of any listed species or critical habitat that may be affected by the action:** Western snowy plovers are known to breed along the Morro Bay Sand Spit across the harbor south of the project area, and along the dune complex of Morro Strand State Beach. The project area occurs within critical habitat of the species, specifically within the coastal dune habitat.

4. **Description of the manner in which the action may affect any listed species or critical habitat, and an analysis of any cumulative impacts:** The proposed project impacts would occur primarily within the Coastal Strand/Beach portion of the project area; however, depending on the locations selected for staging and/or access routes, additional temporary impacts may occur to vegetation stands south of Morro Creek. These impacts would include excavation and disturbance by the mobilization and/or operation of project-related equipment used to remove buried pipelines. Further, during periods when connectivity occurs between Morro Creek and the Pacific Ocean, the Creek may intersect the proposed impact area. Impacts to Morro Creek may occur if de-watering and diversion measures are required to facilitate project activities. Dewatering and diverting Morro Creek has the potential to impact aquatic wildlife. Impacts outside of the Creek resulting from the use of Project related equipment would be reduced by delineating the impact area, designating an equipment staging and fueling area, and providing biological monitoring for the duration of the Project. Potential impacts to vegetation within the project area would be offset through the implementation of the project's Preliminary Site Restoration Plan; therefore, impacts to vegetation stands would be minimal with the implementation of avoidance and minimization measures and the procedures identified in the Preliminary Site Restoration Plan. Heavy equipment operation and associated noise, dust generated by grading and excavation activities, and an increase in human presence have the potential to disrupt foraging and denning activities of some wildlife, including special-status species.

The western snowy plover could potentially nest in the coastal dune habitat and riparian habitat along Morro Creek within the Project site. Nest destruction from ground-clearing activities and/or tree removal outside of the current proposed impact area could destroy nests, nestlings, or hatchlings. With the implementation of avoidance and minimization measures including daily nest surveys during the nesting season, these impacts to nesting birds would be considered minimal.

5. Relevant reports, including any environmental impact statement, environmental assessment, biological assessment or other analyses prepared on the proposal:

Appendix F. Biological Resources Survey Report, prepared by Padre Associates, dated February 20, 2018.

Appendix G. Essential Fish Habitat Assessment, prepared by Padre Associates, dated February 20, 2018.

Dewatering Plan, prepared by Padre Associates, dated February 2018.

Appendix H. Stream Diversion Plan, prepared by Padre Associates, dated February 20, 2018.

No-take Concurrence Request for the Proposed Decommissioning of Dynegy's Morro Bay Power Plant Marine Terminal, (APN 066-331-040), Morro Bay, San Luis Obispo County, California, Ecological Assets Management, dated March 9, 2016.

6. **Any other relevant studies or other information available on the action, the affected listed species, or critical habitat:** The Corps has made a No effect determination to the Morro shoulderband snail (*Helminthoglypta walkeriana*, MSS*).* A protocol survey report has been prepared by Ecological Assets Management LLC (EAM) and sent to your office on March 9, 2016 requesting concurrence of a No Effect Determination by the applicant (letter enclosed). Five protocol surveys conducted within the 9.45 acre survey area observed no live or empty MSS shells. Restricted and small areas of suitable habitat (e.g. coastal dune scrub, ice plant and sandy soils) were observed within the survey area. During the protocol surveys numerous empty shells from both Big Sur shoulderband snail (*Helminthoglypta umbilicata*) and brown garden snail (*Helix aspera*) were observed. Numerous previous surveys and monitoring efforts conducted by other biologists from 1999 to 2010 within the Survey Area also found no MSS. Based on the results of the five protocol surveys and habitat assessment presented in the report, and the previous MSS survey and monitoring efforts, the Corps has made a final determination of no effect to MSS.

It is anticipated you will be able to provide your concurrence or non-concurrence with our effect determination within a reasonable period of time following your receipt of this letter. If you wish to receive additional data pursuant to 50 CFR Part 402.14(f), which you believe would provide a better information base from which to concur or not concur with our determination, please contact me at (213) 359-9662 or via e-mail at crystal.huerta@usace.army.mil as soon as possible. Please send correspondence to crystal.huerta@usace.army.mil.

Sincerely,

Crystal L.M. Huerta
Senior Project Manager
North Coast Branch
Regulatory Division

Enclosures

APPENDIX H

No-Take Concurrence Request and Morro Shoulderband Snail Protocol Survey Report (EAM, 2023)

U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, CA 93003

April 20, 2023

Subject: *No-take Concurrence Authorization Request and Submittal of Morro Shoulderband Snail Protocol Surveys Results Report Conducted for the Proposed Morro Bay Multi-use Path, Morro Bay, San Luis Obispo County, California*

Ms. Debora Kirkland:

Ecological Assets Management, LLC has recently completed a habitat assessment and five Morro shoulderband snail (MSS) surveys conducted during protocol conditions for the proposed multi-use path project located adjacent to the Morro Bay Power Plant in Morro Bay, San Luis Obispo County, California. The results report is attached to this letter for your review.

In summary, the five (5) protocol surveys conducted within the Survey Area observed no live or empty MSS shells. During the protocol surveys numerous empty shells and one (1) live Big Sur shoulderband snail (*Helminthoglypta umbilicata*) shells were observed along with both live and empty shells from the brown garden snail (*Cornu aspersum*). Areas of potentially suitable MSS habitat (e.g., dune scrub on stabilized dunes) was observed within the study area in the area northwest of the power plant entrance. The areas of the study area located southeast of the power plant entry gate is dominated by dense stands of non-native trees and lacks any potentially suitable habitat for MSS. In addition, numerous previous surveys and monitoring efforts conducted by EAM and other biologists from 1999 to 2021 on the adjacent power plant also found no live MSS. Based on the results of the five (5) protocol surveys and habitat assessment presented in this report, observed conditions, and review of the previous MSS survey and monitoring efforts at the adjacent power plant, MSS are likely absent from the proposed multi-use path alignment and “take” of MSS Is not expected to occur from the project and a “No-take Concurrence Determination” is being requested.

If you have any questions, comments, or suggestions regarding this request please contact me at 805.440.6137 or e-mail at dwayne@ecologicalmgmt.com.

Sincerely,

Dwayne Oberhoff

Dwayne Oberhoff
Senior Biologist
Ecological Assets Management, LLC

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Morro Shoulderband Snail Protocol Survey Report
Multi-use Path
Morro Bay, San Luis Obispo County, California

Prepared for:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, CA 93401

Prepared by:

EAM
Ecological Assets Management, LLC

April 20, 2023

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Dwayne Oberhoff

Dwayne Oberhoff

Recovery Permit Number: TE-180579-3

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Robert Sloan

Robert Sloan

Recovery Permit Number: TE-43937B-1

INTRODUCTION AND EXECUTIVE SUMMARY

The following Morro shoulderband snail (*Helminthoglypta walkeriana:* MSS) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) and EMC Planning Group for a proposed multi-use path located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five (5) MSS surveys conducted during protocol conditions and a concurrent habitat assessment that were conducted from December 28, 2022, to March 11, 2023, over an approximate 2.2-acre area (Survey Area) located adjacent to the Morro Bay Power Plant (power plant). This report provides a description of observed conditions within the Survey Area and adjacent areas, and, in combination with the current protocol surveys results and review of previous survey efforts on the adjacent power plant, determines whether MSS and/or potentially suitable habitat for MSS is present.

In summary, the five (5) protocol surveys conducted within the Survey Area observed no live or empty MSS shells. During the protocol surveys numerous empty shells and one (1) live Big Sur shoulderband snail (*Helminthoglypta umbilicata*; BSS) shells were observed along with both live and empty shells from the brown garden snail (*Cornu aspersum;* BGS). Areas of potentially suitable MSS habitat (e.g., dune scrub on stabilized dunes) was observed within the study area in the area northwest of the power plant entrance. The areas of the study area located southeast of the power plant entry gate is dominated by dense stands of non-native trees and lacks any potentially suitable habitat for MSS. In addition, numerous previous surveys and monitoring efforts conducted by EAM and other biologists from 1999 to 2021 on the adjacent power plant also found no live MSS. Based on the results of the five (5) protocol surveys and habitat assessment presented in this report, observed conditions, and review of the previous MSS survey and monitoring efforts at the adjacent power plant, MSS are likely absent from the proposed multi-use path alignment and "take" of MSS during project implementation is not anticipated.

PROTOCOL SURVEY AND HABITAT ASSESSMENT METHODS

The 2003 United States Fish and Wildlife Service (USFWS) Protocol Survey Guidelines for MSS require that five (5) protocol surveys be performed during or immediately following a rain event to establish the presence or absence of MSS at a location. Protocol surveys must include a general habitat assessment that identifies key habitat features within and adjacent to the survey area. This report is based on five (5) site visits to the approximate 2.2-acre Survey Area (refer to Appendix A) by permitted biologist Dwayne Oberhoff and Bob Sloan to conduct five surveys during protocol conditions and a habitat assessment of the habitats present. Dwayne Oberhoff is permitted to conduct MSS protocol surveys under federal recovery permit TE-180579-3 and Bob Sloan under federal recovery permit TE-43937B-1.

The five (5) protocol-level surveys were conducted on December 28, 2022, and January 6, January 17, February 5, and March 11, 2023. The five (5) protocol-level surveys and concurrent habitat assessment were conducted on foot and covered all areas of the 2.2-acre Survey Area to determine the presence/absence of MSS and whether potentially suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including areas of non-native habitat, ornamental plantings, anthropogenic debris, and edges of fence lines, and other manmade structures that could provide habitat or shelter for MSS. The five (5) protocol surveys focused on determining the presence/absence of MSS, but during the protocol surveys all other species of land snail were also noted. The habitat assessment conducted concurrent with the protocol surveys determined whether potentially suitable MSS habitat is located within the Survey Area.

DESCRIPTION OF MORRO SHOULDERBAND SNAIL

MSS is found in western San Luis Obispo County within the vicinity of Morro Bay. Specifically, it is found south from the northern portion of the city of Morro Bay, west of Los Osos Creek and north of Hazard Canyon. Within this area, the primary habitat components for MSS are coastal dune and coastal scrub plant communities found on sandy soils with ≤10 percent (%) slopes. Key native plant species associated with MSS include mock heather (*Ericameria ericoides)*, coast buckwheat (*Eriogonum parvifolium*), dune bush lupine (*Lupinus chamissonis*), deerweed (*Acmispon glaber*), California croton (*Croton californicus*), seaside golden yarrow (*Eriophyllum staechadifolium*), black sage (*Salvia mellifera*) and California sagebrush (*Artemisia californica*). MSS are also commonly found in association with non-native plant species such as veldt grass (*Ehrharta calycina*) and anthropogenic structures or debris/garbage (i.e., plywood, cardboard, etc.).

Due to threats from habitat destruction, colonization of invasive plant species, aging habitat, and off-road vehicle use, MSS was listed as endangered by the USFWS on December 15, 1994. In 2006, following the five-year review conducted by the USFWS, the USFWS recommended MSS be downlisted from endangered to threatened. In 2020 the USFWS proposed to reclassify MSS from endangered to threatened and was officially downlisted to threatened on February 3, 2022.

SITE LOCATION

The approximate 2.2-acre Survey Area is located in western San Luis Obispo County, California and within the City of Morro Bay (refer to Figure 1). The 2.2-acre (approx. 1,940 linear feet and 50-70 feet in width) Survey Area was located between the power plant perimeter fence and Embarcadero Road and extended approximately 1,940 feet in length from the Maritime Museum in the southeast to where Embarcadero Road turns to the north. The Survey Area varied in width along the alignment from 30 to 70 feet. The closest main cross street is Beach Street located approximately 0.13-mile to the

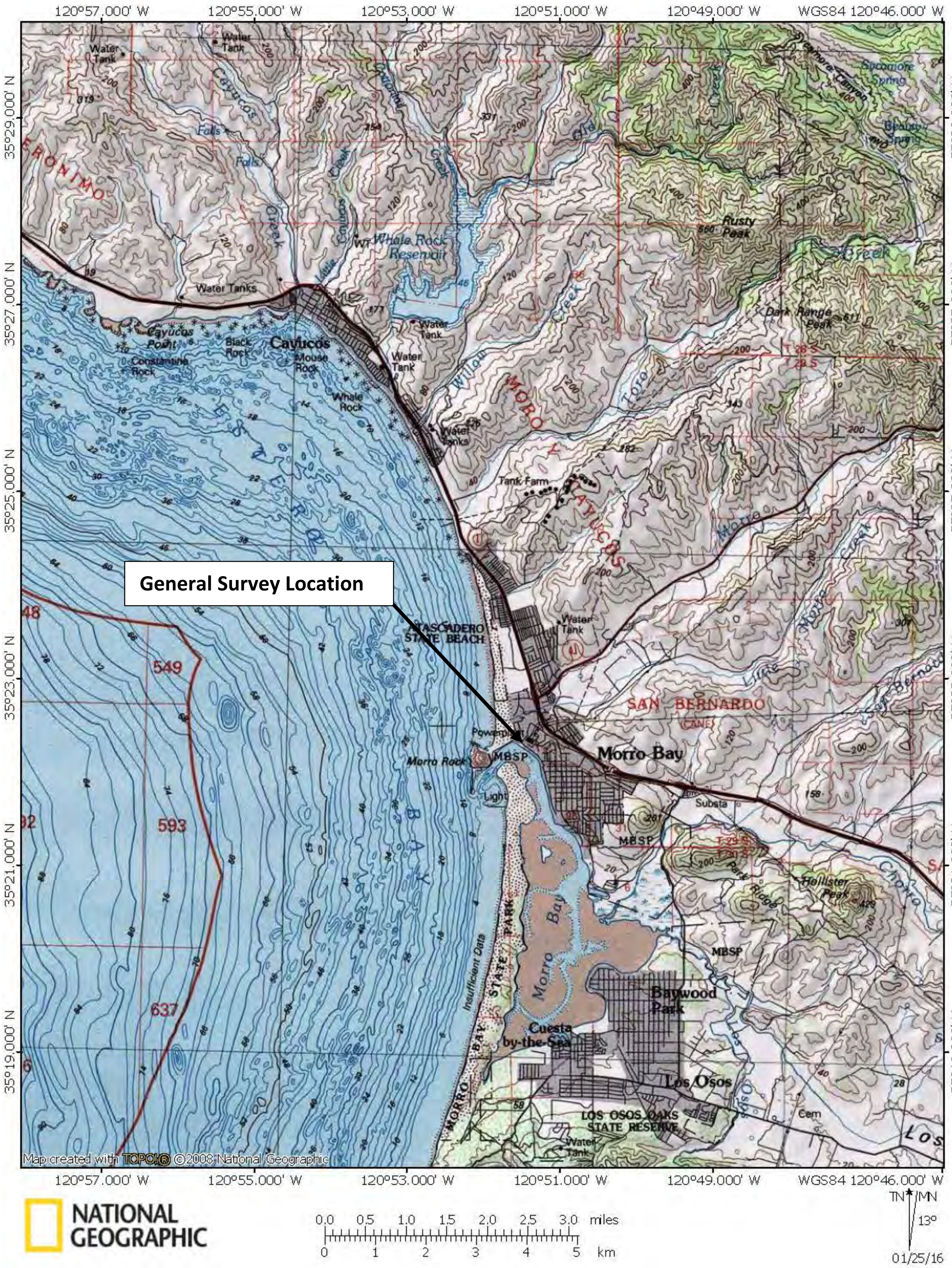


FIGURE 1. Location map of Morro Bay Power Plant located in the City of Morro Bay, CA.

southeast of the south portion of the Survey Area. The multi-use path and Survey Area is show in Appendix A.

PROPOSED PROJECT

The Multi-use Path Project is the construction of an approximate 1,940-foot pathway adjacent to, but outside of the existing power plant. The proposed path would be approximately 20 feet in width and improved with a surface suitable for pedestrian and bicycle use. Appendix A shows the alignment of the path.

RESULTS

Observed Conditions

Habitats observed along the proposed path alignment varied with ornamental plantings of non-native trees, asphalt pavement, and dune scrub on stabilized back-dunes. The portion of the survey area located southeast of the power plant entrance and extending for approximately 1,285 feet toward the maritime museum is highly disturbed from pedestrian activity and consists entirely of an overstory of non-native trees such as eucalyptus (*Eucalyptus* sp.), Monterey cypress (*Hesperocyparis macrocarpa*), and myoporum (*Myoporum laetum*) with a ground cover dominated by tree leaf/bark litter, bare soil and areas of sparse non-native grasses. The areas of bare soil and sparse grasses in this area are due to the leaves, bark, and sap from the eucalyptus and Monterey cypress trees that create an allelopathic condition that limits vegetation growth. Due to these conditions, no native habitats or other habitats potentially suitable for MSS were observed within this area. For photos of this area refer to Appendix B, Photos 1, 2, 3, and 4).

The area northwest of the power plant entrance is composed of dune scrub habitats on previously disturbed stabilized back dunes and other generally flat previously disturbed areas. This area was observed to contain areas of gravel and rock from the previous disturbances. Dominant plant species observed in this area include silver dune lupine (*Lupinus chamissonis*), coyote brush (*Baccharis pilularis*), and ice plant mats (refer to Appendix B, Photos 5, 6, 7, 8, and 9). In addition, along a shorth length of the eastern portion of the survey area, northwest of the power plant gate entrance, is a row of mature Monterey Cypress trees.

A primary habitat component for MSS is sand or sandy soils with a slope not greater than 10%. The University of California Davis, Soil Resource Laboratory online soil mapping website, "SoilWeb" (http://casoilresource.lawr.ucdavis.edu/gmap/), maps two soil units in the Survey Area: Psamments and Fluvents, occasionally flooded; and, dune land. The area composed of dune land soils is found in the area to the northwest of the power plant entry gate and extends beyond the limits of the survey area to the north and west. The observed soil conditions in the dune land soils exhibited areas with compacted sandy soils and areas with dispersed gravel and rock. The entire portion of the survey area south of the power plant entry gate is identified as Psamments and Fluvents.

The areas surrounding the Survey Area includes: paved and developed areas associated with Embarcadero Road and the power plant; and dune scrub on stabilized dunes to the northwest of the Survey Area (refer to Appendix A, Survey Area). The Survey Area is also located outside of the boundaries of critical habitat units for MSS designated on February 7, 2001.

MSS Survey Results

MSS permitted biologists Dwayne Oberhoff and Bob Sloan conducted five (5) focused surveys for MSS during protocol conditions along the proposed alignment of the multi-use path from December 28, 2022, to March 11, 2023 (refer to Table 1). These five (5) surveys included an associated buffer area outside of the proposed multi-use path, where feasible. During these five (5) focused surveys no live or empty MSS shells were observed. However, numerous (>20) empty class C and one (1) empty class A Big Sur shoulderband snail (*Helminthoglypta umbilicata; BSS*)shells were observed. In addition, numerous live and empty brown garden snail (*Cornu aspersum;* BGS) shells were also observed during the surveys. Most of the observed Big Sur shoulderband snail and garden snails were observed to the north of the power plant entrance within the dune scrub habitat and ice plant mats.

In addition, the nearest occurrence reported in the California Natural Diversity Database (CNDDB) is located approximately 0.46-mile to the north, and north of Morro Creek.

DISCUSSION

Based on the survey results and the habitat assessment discussed above, the proposed alignment of the multi-use path located southeast of the power plant entrance does not have any native or non-native habitats potentially suitable for MSS and the species is very unlikely to be present within this area. It is well documented that MSS do not use areas with a dense overstory of eucalyptus or Monterey cypress trees due to the conditions created by the trees at ground level (e.g., leaves, sap, and bark, and lack of suitable habitats).

Within the Survey Area northwest of the power plant entrance are areas of ice plant mats and dune scrub on stabilized dunes that could provide potentially suitable habitat for MSS. However, no MSS were observed within this area during the five (5) protocol surveys. It should also be noted that this area has a history of disturbance from the construction of the power plant from the 1950s to 1960s and the realignment of Embarcadero Road between 2007 – 2009 (review of Google Earth aerial imagery). Areas of gravel and rock are present within these areas and are likely attributable to these historic disturbances.

Table 1. Results of Five Protocol-level MSS Surveys Conducted Along the Proposed Multi-use Path in Morro Bay, San Luis Obispo County, California.

Survey #	Survey Date and Time	Surveyor	Weather Conditions	Results*
1	12/28/2022 0930 - 1115 hrs	D. Oberhoff	53°F, 0.63" of precip during prior 24 hrs, clearing skies, 5-10 mph winds	No live MSS or empty MSS shells observed. Numerous empty shells of BGS or BSS observed.
2	1/6/2023 1115 - 1230 hrs	B. Sloan	54°F, 2.38" precip prior to survey, clearing skies, 0-5 mph winds	No live MSS or empty MSS shells observed. Numerous empty shells of BGS or BSS observed.
3	1/17/2023 0815-0945 hrs	B. Sloan	54°F, 3.25" precip prior to survey, partly cloudy skies, 0-5 mph winds	No live MSS or empty MSS shells observed. One live BSS and numerous empty shells of BSS and BGS observed.
4	2/5/20223 0800-0930 hrs	B. Sloan	54°F, 0.93" precip prior to survey, cloudy skies, 0-5 mph winds	No live MSS or empty MSS shells observed. Numerous empty shells of BGS or BSS observed.
5	3/11/2021 0800-0930 hrs	B. Sloan	57°F, 2.3" precip, light rain and cloudy skies during survey, 0-5 mph winds	No live MSS or empty MSS shells observed. Numerous empty shells of BGS or BSS observed.

*MSS - Morro shoulderband snail, BSS - Big Sur shoulderband snail, BGS - brown garden snail

The survey results presented in this report align with the results from the numerous surveys conducted within the adjacent power plant facility. EAM conducted protocol surveys for MSS within the immediately adjacent power plant facility during the winter rainy seasons in 2015/2016 and again in 2020/2021. During these protocol surveys no MSS were observed, but many BSS and BGS were observed. In EAM's final results report from the 2020/2021 surveys, the following information was summarized on the MSS surveys and monitoring efforts within the power plant facility from 1999 to 2010 (refer to Appendix C).

> *From 1999 to 2010 numerous other protocol surveys and monitoring efforts for MSS were conducted on the MBPP and these efforts did not observe live MSS (refer to Table 2). Protocol survey efforts by Morro Group, Inc. in 2001 identified six empty Helminthoglypta shells within the northeastern portion of the 90-acre parcel. Five (5) of the empty Helminthoglypta shells were identified as Helminthoglypta walkeriana form "morroensis" while one (1) empty shell was identified as Helminthoglypta walkeriana (typical form). Jeff Tupen (personal communication, March 30, 2021,) indicated this single empty MSS Helminthoglypta walkeriana (typical form) shell was the only MSS specimen*

> *found up to that date on the MBPP site. Mr. Tupen indicated this empty MSS shell was found in a disturbed area and within a "bone yard" of debris and was likely imported on to the MBPP site from an offsite area. Since the 2001 protocol surveys by Morro Group, Inc., no other survey or monitoring efforts have identified live MSS or empty MSS shells on the MBPP site.*

The negative survey results presented above, along with EAM's previous survey efforts on the immediately adjacent power plant facility in 2015/2016 and 2020/2021, review of the previous focused survey efforts from 1999 to 2010, the overall tremendous total amount of MSS survey efforts conducted in the general area, and CNDDB occurrence data, indicate MSS is likely absent from the proposed multi-use path survey area and the immediate general area of the power plant. Based on these results, "Take" of MSS is not anticipated to occur from the proposed multi-use path project.

If a project can be shown to have no adverse impacts to MSS, USFWS may grant a "No-take Concurrence Determination", which would allow the proposed project to proceed. Since impacts to MSS are not likely to occur from the proposed project, a "No-take Concurrence Determination" request shall be submitted to the USFWS along with this report.

References

Ecological Assets Management, LLC. 2016. Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California.

Ecological Assets Management, LLC. 2021. Morro Shoulderband Snail Protocol Survey Report Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California

Morro Group, Inc. 2001. Morro Bay Power Plant Morro Shoulderband Snail Protocol Survey Results, Morro Bay, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Sensitive Species Construction Monitoring Completion Report, Morro Bay, California.

Morro Group, Inc. 2003. Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation, Morro Bay, California.

Roth, B. 1985. Status Survey of the Banded Dune Snail, (*Helminthoglypta walkeriana*). Prepared for the U.S. Fish and Wildlife Service. Sacramento, California.

Roth, B. and Tupen, J. 2004. Revision of the systematic status of *Helminthoglypta walkeriana morroensis* (Hemphill, 1911) (Gastropoda: Pulmonata). *Zootaxa*, 616: 1-213.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report (SWCA# 16988), Morro Bay, California.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Anode Installation (SWCA# 16675), Morro Bay, California.

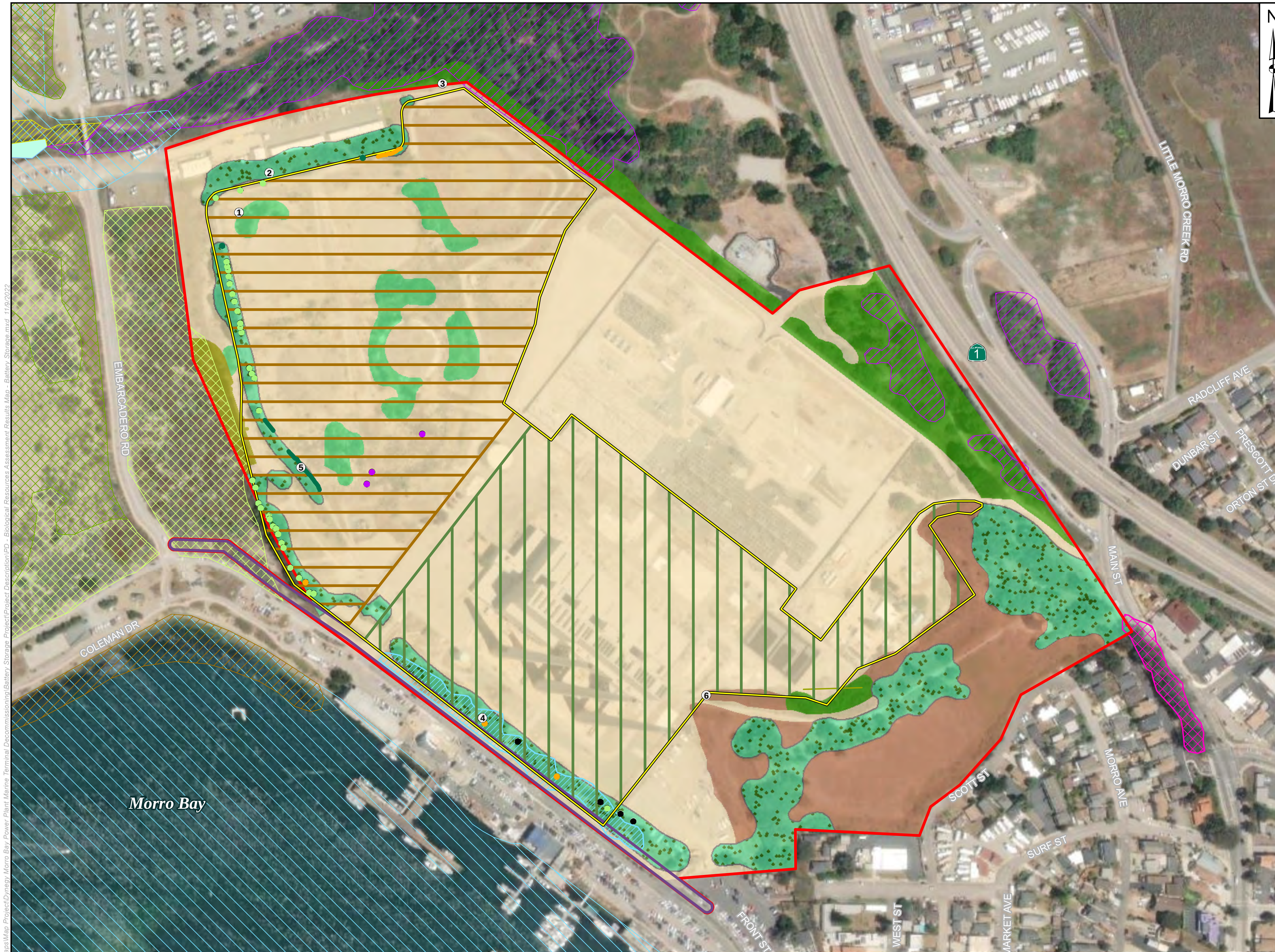
U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2003. Protocol Survey Guidelines for the Morro Shoulderband Snail. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Morro Shoulderband Snail 5-Year Review. U.S. Fish and Wildlife Service. Ventura Fish and Wildlife Field Office, Ventura California.

Appendix A: Survey Area Habitat Map

Z:\GIS Projects\GIS Maps\Map Project\Dynegy Morro Bay Power Plant Marine Terminal Decommissioning\Battery Storage Project\Project Description\PD - Biological Resources Assessment Results Map - Battery Storage.mxd 11/9/2022



LEGEND:

- Blochman's leafy daisy
- Eucalyptus
- Monterey Cypress
- Monterey Pine
- VRAP Location
- Potentially Active Roost/Nest Tree (2022)
- Eucalyptus Stand
- Monterey Pine Stand
- Project Boundary

Project Components

- BESS Area
- Multi-Use Path
- Demolition Area
- Biological Survey Area (BSA)

Environmentally Sensitive Habitat Areas (ESHA): City of Morro Bay

- Backdune / Dune Scrub
- Foredune
- Freshwater Emergent Wetland
- Monarch Overwintering Site
- Outer Limit of Sea Level Rise-Related Hazard Zones
- Rivers & Streams (Stream Mouth)
- Rookeries
- Shallow Bay / Mudflat / and Eelgrass Potential Habitat
- Willow Woodland and Scrubland

Vegetation Communities

- Arroyo Willow Thicket
- Ruderal/Developed
- Iceplant Mat
- Mixed Dune
- Ornamental
- Silver Bush Lupine Scrub

MAP EXTENT:

0 150 300
FEET

Source: Esri Online Imagery Basemap (2022), City of Morro Bay NOP Report (June 2022), County of San Luis Obispo (2022)
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: BATTERY STORAGE PROJECT MORRO BAY POWER PLANT SAN LUIS OBISPO COUNTY, CA		
PROJECT NUMBER: 1902-1173	DATE: November 2022	

BIOLOGICAL RESOURCES ASSESSMENT RESULTS MAP

FIGURE 4-1

Appendix B: Photo Pages

10 Photos

<u>Photo 1:</u> Image viewing northwest (parallel to the Embarcadero) from the southern portion of the Survey Area adjacent to the Morro Bay Maritime Museum. December 28, 2022

Photo 2: Image viewing northwest (parallel to the Embarcadero) from the southern portion of the Survey Area. December 28, 2022

Photo 3: Image viewing southeast along the power plant's perimeter wall. Note absence of herbaceous plants and presence of eucalyptus leaf and bark litter. December 28, 2022

Photo 4: Image viewing southeast along the power plant's perimeter wall. December 28, 2022

Photo 5: Image viewing northwest through paved parking area at entrance to power plant. December 28, 2022

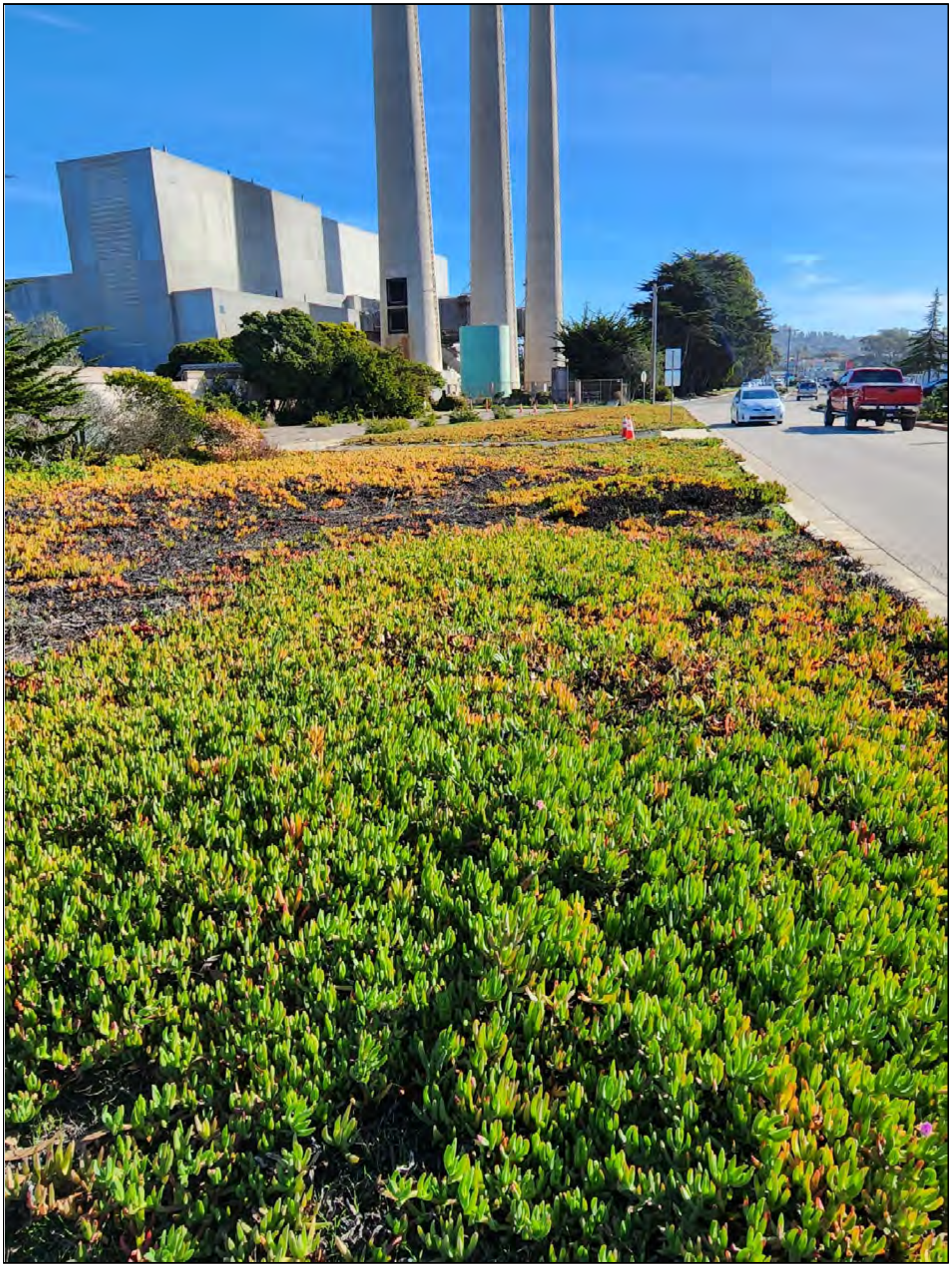


Photo 6: Image viewing southeast toward power plant entrance. Note dense mat of ice plant. December 28, 2022

Photo 7: Image viewing northwest along the Embarcadero. Note dense ice plant mats and dune lupine. December 28, 2022

Photo 8: Image viewing southeast along the Embarcadero. Note dense ice plant mats and large Monterey cypress and eucalyptus trees (left in photo). December 28, 2022

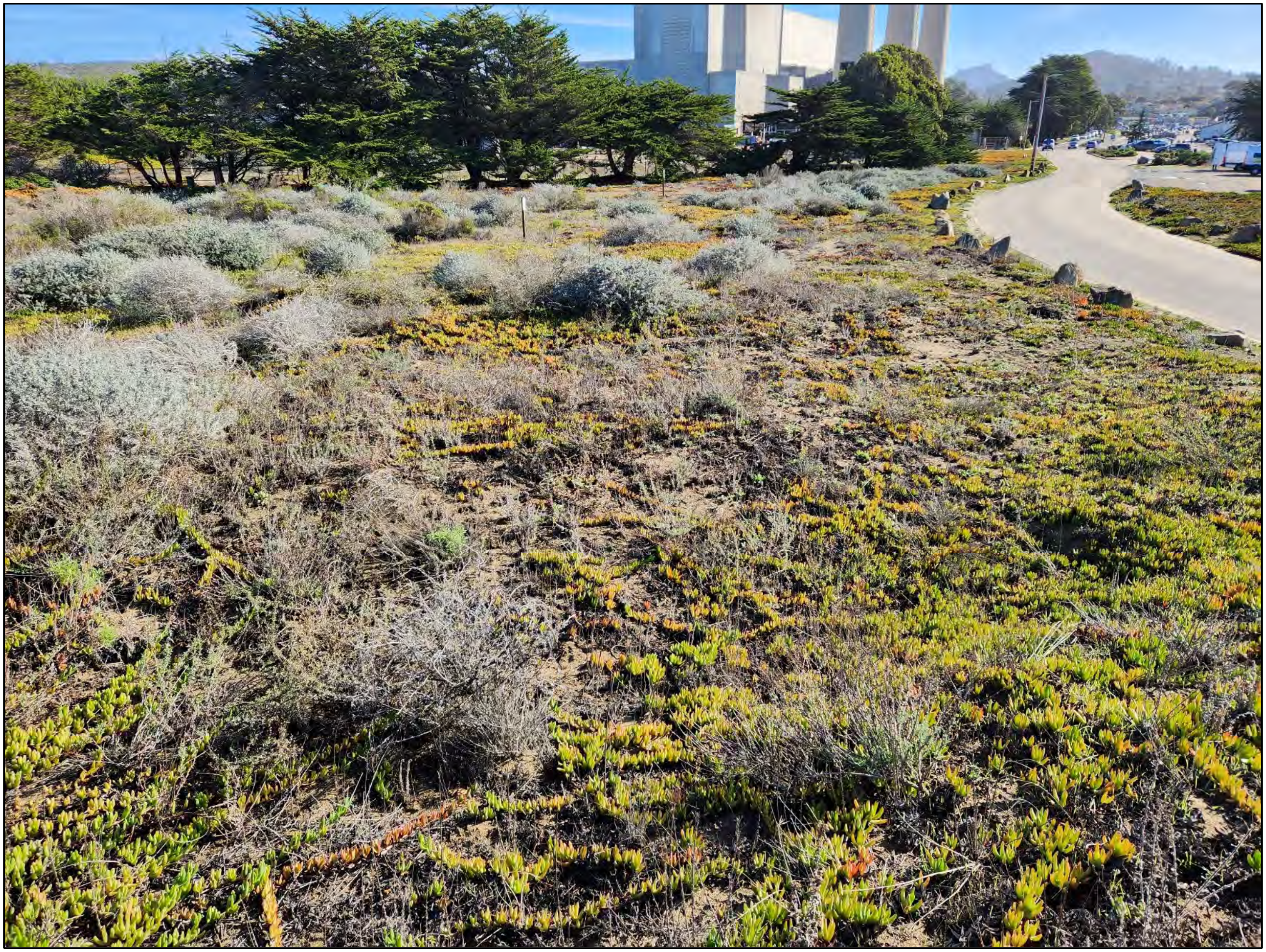


Photo 9: Image viewing southeast from the western most portion of the Survey Area and along the Embarcadero. December 28, 2022

Appendix C: April 8, 2021, Ecological Assets Management LLC., Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California

Morro Shoulderband Snail Protocol Survey Report
Morro Bay Power Plant (APN 066-331-040)
Morro Bay, San Luis Obispo County, California

Prepared for:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, CA 93401

Prepared by:

EAM
Ecological Assets Management, LLC

April 8, 2021

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Dwayne Oberhoff

Dwayne Oberhoff

Recovery Permit Number: TE-180579-2

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Robert Sloan

Robert Sloan

Recovery Permit Number: TE-43937B-1

Introduction and Executive Summary

The following Morro shoulderband snail (*Helminthoglypta walkeriana*) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) and EMC Planning Group at the Morro Bay Power Plant (MBPP) (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five Morro shoulderband snail (MSS) surveys conducted during protocol conditions and a concurrent habitat assessment conducted from December 14, 2020, to March 11, 2021, on an approximate 45-acre area (Survey Area) of the 90-acre MBPP site. This report provides a description of observed existing conditions within the Survey Area and adjacent areas, and, in combination with the current protocol surveys results and review of previous survey efforts, determines whether MSS and/or suitable habitat for MSS is present.

In summary, the five protocol surveys conducted within the Survey Area observed no live or empty MSS shells. During the protocol surveys numerous empty Big Sur shoulderband snail (BSS) (*Helminthoglypta umbilicata*) shells were observed along with both live and empty shells from both Chorro shoulderband snail (CSS) (*Helminthoglypta morroensis*) and brown garden snail (BGS) (*Cornu aspera*). Restricted and small areas of suitable MSS habitat (e.g., coastal dune scrub and sandy soils) were observed within the western portion of the Survey Area. Numerous previous surveys and monitoring efforts conducted by EAM and other biologists from 1999 to 2016 within the Survey Area also found no live MSS. One empty MSS shell was observed in a debris pile during protocol surveys conducted in 2001. Based on the results of the five protocol surveys and habitat assessment presented in this report, observed conditions, and review of the previous MSS survey and monitoring efforts, “take” of MSS is not anticipated.

Protocol Survey and Habitat Assessment Methods

The 2003 United States Fish and Wildlife Service (USFWS) Protocol Survey Guidelines for MSS require that protocol surveys be performed during or immediately following a rain event to establish the presence or absence of MSS at a location. Protocol surveys must include a general habitat assessment that identifies key habitat features within and adjacent to the survey area. This report is based on five site visits to the approximate 45-acre Survey Area (refer to Appendix A) by permitted biologist Dwayne Oberhoff and Bob Sloan to conduct five surveys during protocol conditions and a habitat assessment of the habits present. Dwayne Oberhoff is permitted to conduct MSS protocol surveys under federal recovery permit TE-180579-2 and Bob Sloan under federal recovery permit TE-43937B-1. Padre Staff Biologists, Michaela Hoffman or Kenny Wimmer, were also present during these surveys and assisted in the survey efforts (as permitted under Mr. Oberhoff’s and Mr. Sloan’s recovery permit).

The five protocol-level surveys were conducted on December 14, 29, 2020; January 29, February 12, and March 11, 2021 (refer to Table 1). The five protocol-level surveys and concurrent habitat assessment were conducted on foot and covered all areas to determine the presence/absence of MSS and whether suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including areas of non-native habitat, ornamental plantings, anthropogenic debris, and edges of building foundations, fence lines, and other manmade structures that could provide habitat or shelter for MSS.

The protocol surveys and habitat assessment were conducted on foot and covered the entirety of the accessible areas of potential habitat within the 45-acre Survey Area. A large portion of the 45-acre Survey Area, approximately 14 acres, was covered in concrete/asphalt or had large structures that did not provide habitat for MSS or any snail species. The five protocol surveys focused on determining the presence/absence of MSS, but during the protocol surveys all other species of land snail were also noted. The habitat assessment conducted concurrent with the protocol surveys determined whether suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including non-native habitat, ornamental plantings, anthropogenic debris, and edges of building foundations, fence lines, and other manmade structures that could provide habitat or shelter.

Description of Morro Shoulderband Snail

MSS is found in western San Luis Obispo County within the vicinity of Morro Bay. Specifically, it is found south from the northern portion of the City of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon. Within this area, the primary habitat components for MSS are coastal dune and coastal scrub plant communities found on sandy soils with ≤10 percent (%) slopes. Key native plant species associated with MSS include mock heather (*Ericameria ericoides)*, coast buckwheat (*Eriogonum parvifolium*), dune bush lupine (*Lupinus chamissonis*), deerweed (*Acmispon glaber*), California croton (*Croton californicus*), seaside golden yarrow (*Eriophyllum staechadifolium*), black sage (*Salvia mellifera*), and California sagebrush (*Artemisia californica*). MSS are also commonly found in association with non-native plant species such as veldt grass (*Ehrharta calycina*), New Zealand spinach (*Tetragonia tetragonioides*), and anthropogenic structures or debris/garbage (i.e., plywood, cardboard, etc.).

Due to threats from habitat destruction, colonization of invasive plant species, aging habitat, and off-road vehicle use, MSS was listed as endangered by the USFWS on December 15, 1994. In 2006, following the five-year review conducted by the USFWS, the USFWS recommended MSS be downlisted from endangered to threatened. In 2020 the USFWS proposed to reclassify MSS from endangered to threatened, but the reclassification has not been completed as of this report date.

Site Location

The approximate 45-acre Survey Area on the subject parcel is located in western San Luis Obispo County, California; within the City of Morro Bay (refer to Figure 1). The subject parcel is located at 1290 Embarcadero, and the closest main cross street is Beach Street located approximately 0.35-mile to the north.

Proposed Project

The Morro Bay Power Company, LLC – Battery Energy Storage System (BESS) Project includes installation of a BESS within the former tank farm site, which will require tree and vegetation removal, and construction of three BESS buildings. Utility facilities will extend beyond the tank farm within the existing MBPP property boundary to connect to the Pacific Gas and Electric (PG&E) switchyard. At the request of the City of Morro Bay, an area has been identified on the site plan for a multi-use path within an existing easement for a meandering multi-use path along Embarcadero Road within the MBPP property boundary.

Observed Conditions

The 45-acre Survey Area for this report was located within the central and western portion of the 90-acre parcel (refer to Appendix A, Survey Area). The 45-acre Survey Area is generally flat and much of it has been previously disturbed and developed during the construction and operation of the MBPP. The Survey Area does contain numerous earthen berms that were previously constructed to form containment areas for the large petroleum storage tanks located within the western portion of the MBPP and within the tank farm area. The tanks within the tank farm were previously removed. The Survey Area also contains numerous anthropogenic features, such as: paved and improved dirt roads, paved parking areas, metal sheds, pad locations from the previously demolished storage tanks, sunken concrete valve boxes, various smaller metal storage tanks, numerous vertical pipes (e.g., test wells, anode access points, fire hydrants, etc.) with protective bollards, and concrete culverts located within the berms for facility pipe routing. Much of the 45-acre Survey Area was either completely unvegetated due to existing structures and infrastructure, previous tank farm location, improved asphalt and concrete roads and parking areas, or sparsely vegetated due to historical disturbances (refer to Photo Documentation).

Areas of vegetation were dominated by both ruderal and ornamental plant species. Coastal scrub species were rare within the Survey Area, but consisted of scattered areas comprised of coastal silver lupine (*Lupinus chamissonis*) and coyote brush (*Baccharis pilularis*). Dominant plant species observed within the Survey Area consisted of: Russian thistle (*Salsola* spp.) telegraph weed (*Heterotheca grandiflora*), unidentified pine (*Pinus* spp.), Monterey cypress (*Cupressus macrocarpa*), eucalyptus trees

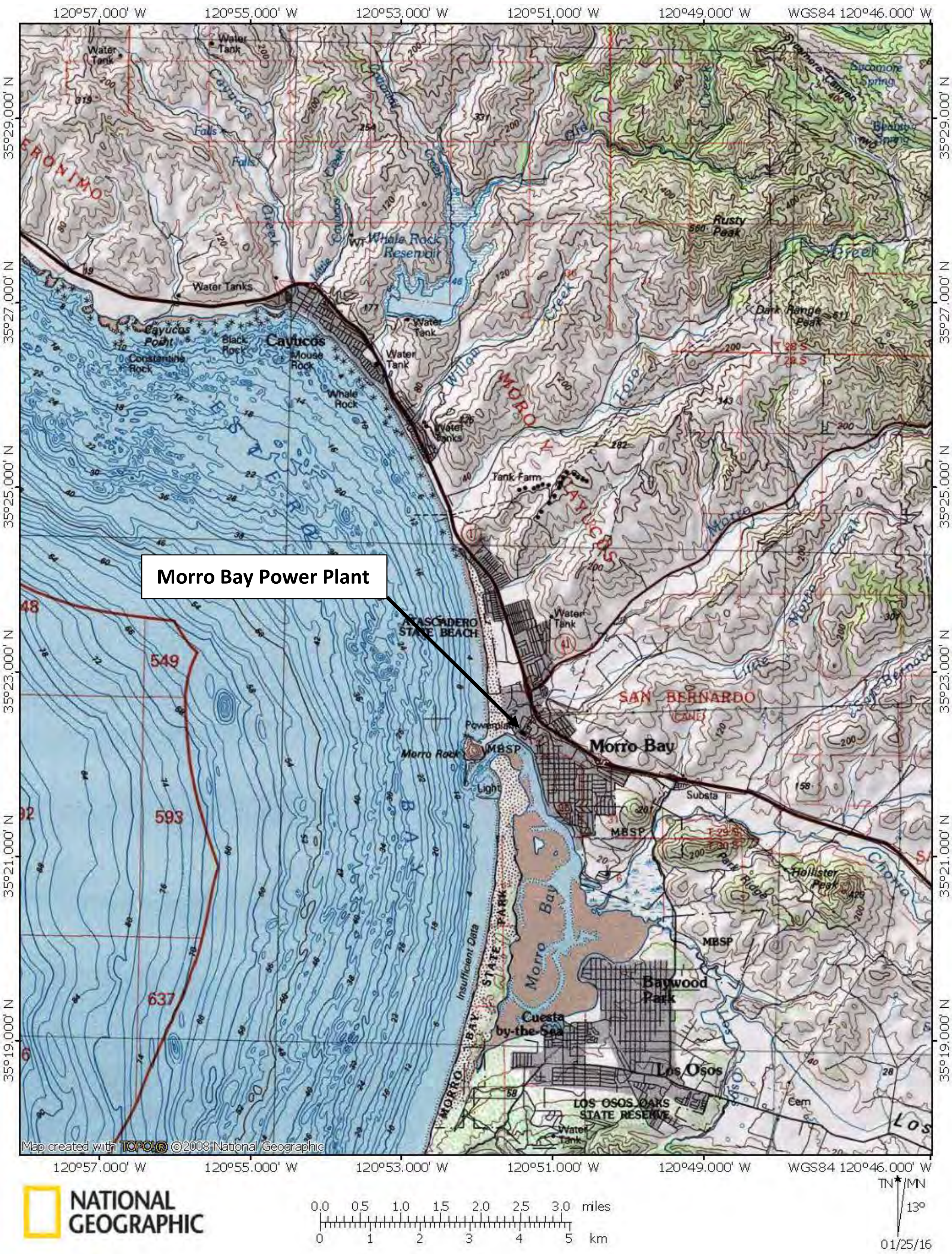


FIGURE 1. Location map of Morro Bay Power Plant located in the City of Morro Bay, CA.

(*Eucalyptus* spp.), myoporum (*Myoporum laetum*), coastal bush lupine (*Lupinus arboreus*), miscellaneous annual grasses, and ice plant (*Carpobrotus edulis*).

A primary habitat component for MSS is sand or sandy soils with a slope not greater than 10%. The University of California Davis, Soil Resource Laboratory online soil mapping website, "SoilWeb" (http://casoilresource.lawr.ucdavis.edu/gmap/), maps two soil units in the Survey Area: Psamments and Fluvents, occasionally flooded; and, dune land. In addition, the soil in many of the areas within the Survey Area, especially within the tank farm area and the eastern portion of the survey area, contained large amounts of gravel/rocks, which was likely imported during the construction phase of the MBPP.

The areas surrounding the Survey Area includes: undeveloped dune scrub to the west; the areas to the north consists of dense riparian habitats associated with Morro Creek, to the northeast and east are previously developed and disturbed areas of the MBPP and an adjacent Pacific Gas and Electric facility; and the area to the south and southeast the Embarcadero (paved road) and the Morro Bay water front (refer to Appendix A, Survey Area). The subject parcel is located outside of the boundaries of critical habitat units for MSS designated on February 7, 2001.

Results

MSS permitted biologists Dwayne Oberhoff and Bob Sloan conducted five focused, surveys for MSS during protocol conditions within the 45-acre Survey Area from December 14, 2020, to March 11, 2021. Additional survey assistance was provided on specific dates by Michaela Hoffman and Kenny Wimmer of Padre (refer to Table 1).

All accessible areas and areas located within the approximate 45-acre Survey Area were surveyed by walking, visual observation, and carefully sifting through soil and leaf litter under vegetation, around woody debris, anthropogenic features, and other areas where MSS could be present. A total of 34.0 person-hours were expended conducting the five protocol surveys. During these survey efforts no live MSS or empty MSS shells were observed. Many empty BSS and BGS shells were observed in various locations of the Survey Area, with the greatest concentration on the west and southwest facing berms sparsely vegetated with coastal silver lupine, bush lupine and/or ice plant (refer to Photo 9). These areas are extremely exposed and likely cannot support MSS or any snail species, as was evident by the large number of empty BSS and BGS shells observed in these locations during the surveys. The bulk of the empty BSS shells observed during the survey efforts were classified as class C shells. In addition, numerous live and empty CSS were observed in a few locations in the southern and eastern portion of the Survey Area. At one location numerous live CSS were observed associated with a pile of concrete rubble and a sheet of plywood on clay and gravelly soils with eucalyptus leaf litter (refer to Appendix B: Photo 10). All CSS observed within this general area of the Survey Area were all associated with anthropogenic features and not associated with sandy soils. No empty CSS shells were observed in the western portion of the Survey Area that contained sandy soils and/or coastal scrub species.

Table 1. Results of Five Protocol-level MSS Surveys at Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.

Survey #	Survey Date and Time	Surveyor	Weather Conditions	Results*
1	12/14/2020 1130 - 1500 hrs	D. Oberhoff B. Sloan M. Hoffman	56°F, 0.25" of precip evening prior to survey, clearing skies, 5-8 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
2	12/29/2020 0830-1100 hrs	D. Oberhoff B. Sloan	48°F, 1.10" prcip day/night prior to survey, clear skies, 2-10 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
3	1/29/2021 1200-1430 hrs	D. Oberhoff B. Sloan K. Wimmer	48°F, 6.80" precip over three days prior to survey, cloudy skies with scattered showers, 2-5 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
4	2/12/2021 0915-1145 hrs	D. Oberhoff B. Sloan	55°F, 0.15" precip morning of survey, of precip three days prior to survey, calm winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.
5	3/11/2021 0800-1100 hrs	D. Oberhoff B. Sloan	50°F, 0.59" of precip, Cloudy and scattered showers during survey, 0-5 mph winds	No live MSS or empty MSS shells observed. Numerous live and/or empty shells of BGS, BSS, CSS observed.

*MSS - Morro shoulderband snail, BSS - Big Sur shoulderband snail, BGS - brown garden snail, CSS - Chorro shoulderband snail

Discussion

The survey results documented above provide a determination that the 45-acre Survey Area is dominated by previously developed and disturbed areas which do not provide suitable habitats for MSS. However, there are scattered areas that contain both MSS primary habitat components (e.g., coastal dune plant communities and sandy soils) present within the western portion of the Survey Area. However, no MSS (live or empty shells) were observed within these areas during the 2020/2021 surveys presented within this report. In addition, EAM conducted five focused MSS surveys (25.2 person-hours) during protocol conditions in 2015/2016 on a 9.45-acre survey area located within the western portion of the current 45-acre Survey Area, and no live MSS or empty MSS shells were observed during those survey efforts either. Refer to Appendix C for the survey results report prepared for the 2015/2016 survey efforts and Appendix D for the Section 7 Consultation Request Letter from the U.S. Army Corps of Engineers.

Table 2. Results of Previous MSS Survey and Monitoring Efforts at Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.*

Date	Title of Report	MSS Survey Efforts	Company	Survey Personnel	Results
March 9, 2016	Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California	Five MSS Protocol Surveys	Ecological Assets Managment, LLC	D. Oberhoff B. Sloan	No live or empty MSS observed
October 27, 2010	Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report	Construction Monitoring for MSS	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
July 1, 2010	Morro Bay Power Plant Modernization Project Anode Installation	Three MSS surveys and Construction Monitoring for MSS	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
April 30, 2003	Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation	Five MSS Protocol Surveys	Morro Group, Inc.	B. Sloan P. Waldburger D. Oberhoff	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Sensitive Species Construction Monitoring Completion Report	Construction Monitoring for MSS	Morro Group, Inc.	B. Sloan P. Waldburger J. Tupen J. Wiggins	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Morro Shoulderband Snail Protocol Survey Results	Five MSS Protocol Surveys	Morro Group, Inc.	J. Tupen B. Sloan	No live MSS observed during surveys. **One empty MSS shell and five empty "morroensis" form shells.
May/June 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Non-protocol	TRC Environmental Solutions	E. Reeves	No live or empty MSS observed
January/February 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Unknown	TRC Environmental Solutions	F. Villablanca V.L. Holland	No live or empty MSS observed

*List may not include all MSS surveys or MSS monitoring efforts conducted on MBPP.
**Protocol survey efforts by Morro Group Inc in 2001 identified six (6) empty Helminthoglypta shells within the northeastern portion of the 90-acre parcel. Five (5) of the empty Helminthoglypta shells were identified as Helminthoglypta walkeriana form "morroensis" while one (1) empty shell was identified as Helminthoglypta walkeriana (typical form).

From 1999 to 2010 numerous other protocol surveys and monitoring efforts for MSS were conducted on the MBPP and these efforts did not observe live MSS (refer to Table 2). Protocol survey efforts by Morro Group, Inc. in 2001 identified six empty *Helminthoglypta* shells within the northeastern portion of the 90-acre parcel. Five (5) of the empty

Helminthoglypta shells were identified as *Helminthoglypta walkeriana* form "*morroensis"* while one (1) empty shell was identified as *Helminthoglypta walkeriana* (typical form). Jeff Tupen (personal communication, March 30, 2021,) indicated this single empty MSS *Helminthoglypta walkeriana* (typical form) shell was the only MSS specimen found up to that date on the MBPP site. Mr. Tupen indicated this empty MSS shell was found in a disturbed area and within a "bone yard" of debris and was likely imported on to the MBPP site from an offsite area. Since the 2001 protocol surveys by Morro Group, Inc., no other survey or monitoring efforts have identified live MSS or empty MSS shells on the MBPP site.

The negative survey results presented above, along with the review of the previous focused survey efforts, and the tremendous overall total amount of MSS survey efforts conducted, indicate MSS is likely absent from the MPBB site. Based on these results, "Take" of MSS is not anticipated to occur from any project located on the MBPP site. In addition, based on the consistent negative survey results from the MBPP site, additional pre-construction surveys and monitoring efforts during project activities are not being recommended.

If a project can be shown to have no adverse impacts to MSS, USFWS may grant a "No-take Concurrence Determination", which would allow the proposed project to proceed. Since impacts to MSS are not likely to occur from the proposed project, a "No-take Concurrence Determination" request is being submitted to the USFWS along with this report.

References

Ecological Assets Management, LLC. 2016. Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Morro Shoulderband Snail Protocol Survey Results, Morro Bay, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Sensitive Species Construction Monitoring Completion Report, Morro Bay, California.

Morro Group, Inc. 2003. Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation, Morro Bay, California.

Roth, B. 1985. Status Survey of the Banded Dune Snail, (*Helminthoglypta walkeriana*). Prepared for the U.S. Fish and Wildlife Service. Sacramento, California.

Roth, B. and Tupen, J. 2004. Revision of the systematic status of *Helminthoglypta walkeriana morroensis* (Hemphill, 1911) (Gastropoda: Pulmonata). *Zootaxa*, 616: 1-213.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report (SWCA# 16988), Morro Bay, California.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Anode Installation (SWCA# 16675), Morro Bay, California.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2003. Protocol Survey Guidelines for the Morro Shoulderband Snail. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Morro Shoulderband Snail 5-Year Review. U.S. Fish and Wildlife Service. Ventura Fish and Wildlife Field Office, Ventura California.

Appendix A: Survey Area Figure


Appendix A
Survey Area Figure
Legend
Survey Area
Google Earth
©2021 Google
500 ft

Appendix B: Photo Pages

10 Photos

<u>Photo 1:</u> Image viewing southwest along the southeast perimeter fence of the Survey Area. December 29, 2020

Photo 2: Image of one of the six tank pads within the Tank Farm portion of the Survey Area. March 11, 2021

Photo 3: Image viewing southwest of one of the vegetated berms within the Tank Farm portion of the Survey Area. Note tank pad in right of photo. March 11, 2021

Photo 4: Image viewing south of disturbed areas with concrete and asphalt surfaces. Note invasive pampas grass growing. March 11, 2021

Photo 5: Image viewing west of one of the vegetated berms within the Tank Farm portion of the Survey Area. Note tank pad in right of photo. March 11, 2021

Photo 6: Image of previous tank location. Note absence of vegetation within this area, which is similar to all the other tank locations. March 11, 2021

Photo 7: Image viewing south showing previous tank location and vegetation along the margins. March 11, 2021

Photo 8: Image viewing west of one of the numerous asphalt paved roads atop an earthen berm within the Survey Area. March 11, 2021

Photo 9: Image viewing southwest along the western fence line and Survey Area perimeter. This portion of the Survey Area had the most suitable habitat observed during the surveys. March 11, 2021

Photo 10: Image of concrete rubble and plywood where numerous Chorro shoulderband snails (*Helminthoglypta morroensis*) were observed. December 14, 2020

Appendix C: March 9, 2016, Ecological Assets Management LLC., Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California,

EAM
Ecological Assets Management, LLC

U.S. Fish and Wildlife Service
Attn. Julie Vanderwier
2493 Portola Road, Suite B
Ventura, CA 93003

March 9, 2016

Subject: *No-take Concurrence Request for the Proposed Decommissioning of Dynegy's Morro Bay Power Plant Marine Terminal, (APN 066-331-040), Morro Bay, San Luis Obispo County, California*

Ms. Julie Vanderweir:

The attached Morro shoulderband snail (MSS) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) on behalf of Dynegy Morro Bay, LLC (Dynegy) at the Morro Bay Power Plant (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five protocol-level Morro shoulderband snail (MSS) surveys and habitat assessment conducted from November 16, 2015, to January 19, 2016, on an approximate 9.45 acre area (Survey Area) located in the western portion of the 107 acre Morro Bay Power Plant (MBPP) facility. This report provides a description of existing conditions within the Survey Area and adjacent areas, and, in combination with the protocol surveys results, determines whether Morro shoulderband snail and/or suitable habitat for Morro shoulderband snail is present.

In summary, the five protocol surveys conducted within the 9.45 acre Survey Area observed no live or empty MSS shells. Restricted and small areas of suitable habitat (e.g. coastal dune scrub, ice plant and sandy soils) were observed within the Survey Area. During the protocol surveys numerous empty shells from both Big Sur shoulderband snail (*Helminthoglypta umbilicata*) and brown garden snail (*Helix aspera*) were observed. Numerous previous surveys and monitoring efforts conducted by other biologists from 1999 to 2010 within the Survey Area also found no MSS. Based on the results of the five protocol surveys and habitat assessment presented in this report, and the previous MSS survey and monitoring efforts, "take" of MSS will not occur from the proposed project within the Survey Area.

Thus, Padre, on behalf of Dynegy, is requesting a no-take concurrence determination for the proposed project.

If you have any questions or comments regarding this request please contact me at 805.440.6137 or e-mail at dwayne@ecologicalmgmt.com.

Sincerely,

Dwayne Oberhoff

Dwayne Oberhoff
Senior Project Biologist
Ecological Assets Management, LLC

Morro Shoulderband Snail Protocol Survey Report at Morro Bay Power Plant (APN 066-331-040), Morro Bay, San Luis Obispo County, California

Prepared for:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, CA 93401

Prepared by:

EAM
Ecological Assets Management, LLC

March 9, 2016

Introduction

The following Morro shoulderband snail (*Helminthoglypta walkeriana*) protocol survey report has been prepared by Ecological Assets Management LLC (EAM) for Padre Associates, Inc. (Padre) on behalf of Dynegy Morro Bay, LLC (Dynegy) at the Morro Bay Power Plant (APN 066-331-040) located in Morro Bay, San Luis Obispo County, California. This report presents the methods and results of five protocol-level Morro shoulderband snail (MSS) surveys and habitat assessment conducted from November 16, 2015, to January 19, 2016, on an approximate 9.45 acre area (Survey Area) located in the western portion of the 107 acre Morro Bay Power Plant (MBPP) facility. This report provides a description of existing conditions within the Survey Area and adjacent areas, and, in combination with the protocol surveys results, determines whether Morro shoulderband snail and/or suitable habitat for Morro shoulderband snail is present.

In summary, the five protocol surveys conducted within the Survey Area observed no live or empty MSS shells. Restricted and small areas of suitable habitat (e.g. coastal dune scrub, ice plant and sandy soils) were observed within the Survey Area. During the protocol surveys numerous empty shells from both Big Sur shoulderband snail (*Helminthoglypta umbilicata*) and brown garden snail (*Helix aspera*) were observed. Numerous previous surveys and monitoring efforts conducted by other biologists from 1999 to 2010 within the Survey Area also found no MSS. Based on the results of the five protocol surveys and habitat assessment presented in this report, and the previous MSS survey and monitoring efforts, "take" of MSS will not occur from the proposed project within the Survey Area.

Protocol Survey and Habitat Assessment Methods

The 2003 United States Fish and Wildlife Service (USFWS) Protocol Survey Guidelines for MSS require that protocol surveys be performed during or immediately following a rain event (i.e. protocol conditions) to establish the presence or absence of MSS at a location. Protocol surveys must include a general habitat assessment that identifies key habitat features within and adjacent to the Survey Area.

This report is based on the results of five separate site visits to the approximate 9.45 acre Survey Area of the 107 acre subject parcel to conduct five protocol surveys and a concurrent MSS habitat assessment. The surveys were conducted on November 16, December 11, December 22, 2015; and, January 7, and January 19, 2016. The protocol surveys on November 16 and December 11 and 22, 2015, were conducted by permitted biologists Dwayne Oberhoff and Bob Sloan. The protocol surveys on January 7 and 19, 2016, were conducted by permitted biologist Dwayne Oberhoff. Dwayne Oberhoff is permitted to conduct MSS protocol surveys under federal recovery permit TE-180579-1. Bob Sloan is permitted to conduct MSS protocol surveys under federal recovery permit TE-43937B-0. Padre Staff Biologist, Ms. Michaela Hoffman or Kenny

Wimmer, were also present during these surveys and assisted in the survey efforts (as permitted under Mr. Oberhoff's and Mr. Sloan's recovery permit).

The protocol surveys and habitat assessment were conducted on foot and covered the entirety of the 9.45 acre Survey Area. The protocol surveys focused on determining the presence/absence of MSS, but during the protocol surveys all other species of land snail were also noted. The habitat assessment conducted concurrent with the protocol surveys determined whether suitable MSS habitat is located within the Survey Area. Survey efforts focused on all areas, including non-native habitat, ornamental plantings, anthropogenic debris, and edges of building foundations, fence lines, and other manmade structures that could provide habitat or shelter.

Description of Morro Shoulderband Snail

MSS is found in western San Luis Obispo County within the vicinity of Morro Bay. Specifically, it is found south from the northern portion of the City of Morro Bay, west of Los Osos Creek, and north of Hazard Canyon. Within this area, the primary habitat components for MSS are coastal dune and coastal scrub plant communities found on sandy soils with ≤10 percent (%) slopes. Key native plant species associated with MSS include mock heather (*Ericameria ericoides)*, coast buckwheat (*Eriogonum parvifolium*), dune bush lupine (*Lupinus chamissonis*), deerweed (*Acmispon glaber*), California croton (*Croton californicus*), seaside golden yarrow (*Eriophyllum staechadifolium*), black sage (*Salvia mellifera*) and California sagebrush (*Artemisia californica*). MSS are also commonly found in association with non-native plant species such as veldt grass (*Ehrharta calycina*), ice plant (*Carpobrotus edulis*), and anthropogenic structures or debris/garbage (i.e. plywood, cardboard, etc).

Due to threats from habitat destruction, colonization of invasive plant species, aging habitat, and off-road vehicle use, MSS was listed as endangered by the USFWS on December 15, 1994. In 2006, following the five year review conducted by the USFWS, the USFWS recommended MSS be downlisted from endangered to threatened; however, the final rulemaking process for downlisting has not been completed.

Site Location

The 9.45 acre Survey Area on the subject parcel is located in western San Luis Obispo County, California; within the city of Morro Bay (refer to Figure 1). The subject parcel is located at 1290 Embarcadero, and the closest main cross street is Beach Street located approximately 0.35-mile to the north.

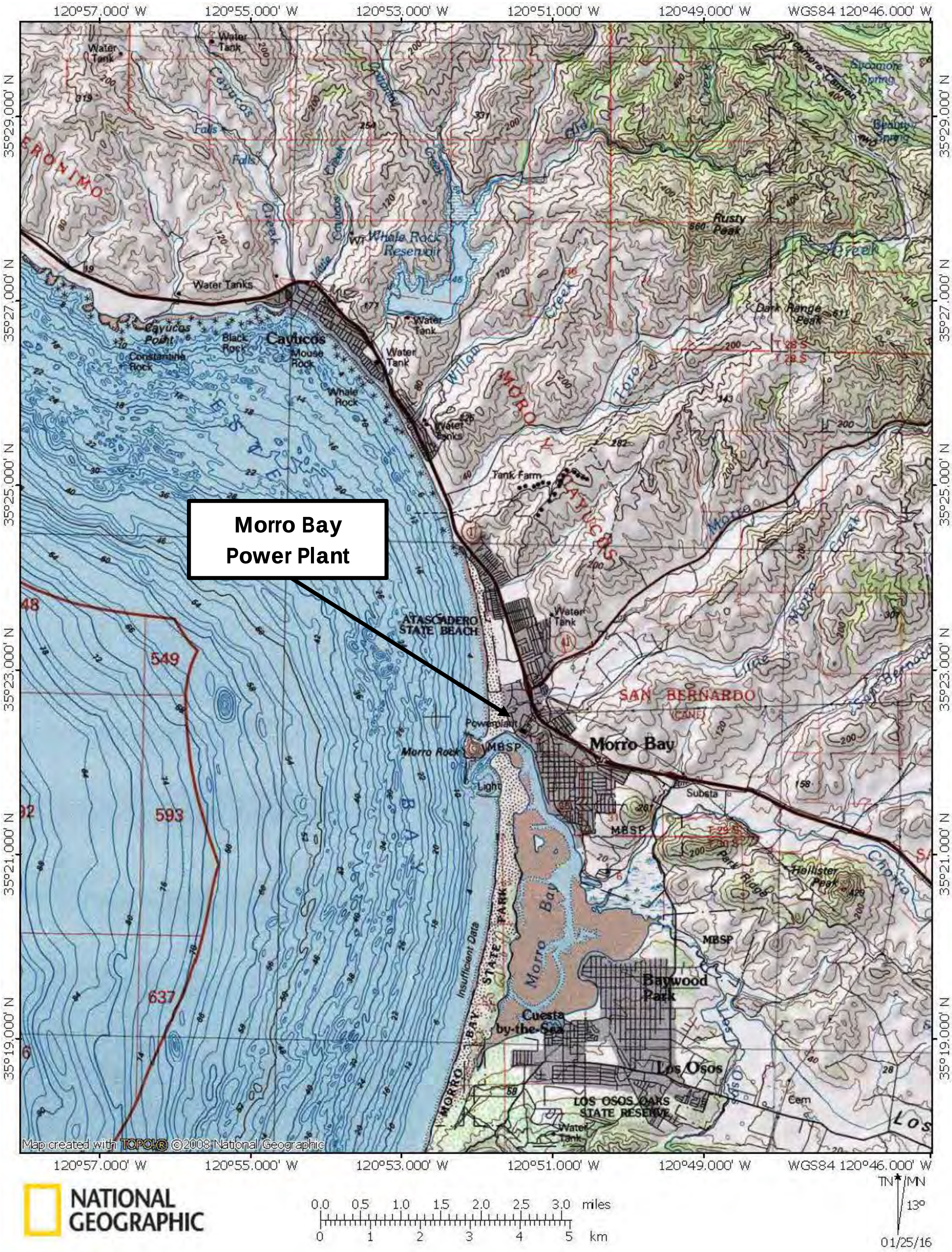


FIGURE 1. Location map of Morro Bay Power Plant located in the City of Morro Bay, CA.

Proposed Project

Dynegy plans to decommission the remaining components of the Dynegy MBPP Marine Terminal. These components consist of a 24-inch diameter submarine pipeline, a 16-inch diameter submarine pipeline, the cathodic protection system for these two pipelines, and ancillary submarine pipeline components. The MBPP marine terminal has been idle since 1990 and many of the marine terminal's components have been decommissioned in subsequent decommissioning phases. This project involves the final decommissioning of the remaining marine terminal components to comply with the abandonment requirements of the California State Lands Commission (CSLC).

Existing Conditions

The Survey Area for this report was located on the western side of the MBPP and north of the entry gate (refer to Appendix A, Existing Conditions and Survey Results). The approximate 9.45 acre triangular-shape Survey Area is generally flat, but does contain earthen berms that were previously constructed to form a containment area for the large petroleum storage tanks located within the tank farm area of MBPP. The Survey Area also contains numerous anthropogenic features, such as: paved and dirt roads, parking areas, office buildings, metal sheds, pads from the previously demolished storage tanks, sunken concrete valve boxes, various smaller metal storage tanks, numerous vertical pipes (e.g. test wells, anode access points, fire hydrants, etc.) with protective bollards, and concrete culverts located within the berms for facility pipe routing. Much of the 9.45 acre Survey Area was either completely unvegetated due to improved roads and parking areas, or very sparsely vegetated due to historical disturbances (refer to Photo Documentation).

Observed vegetation was dominated by both ruderal and ornamental plant species. Coastal scrub species were rare within the Survey Area, but several coastal silver lupine (*Lupinus chamissonis*) bushes were observed growing in a few locations. Dominant plant species observed within the Survey Area consisted of: Russian thistle (*Salsola* spp.) telegraph weed (*Heterotheca grandiflora*), unidentified pine (*Pinus* spp.), Monterey cypress (*Cupressus macrocarpa*), eucalyptus trees (*Eucalyptus* spp.), myoporum (*Myoporum laetum*), coastal bush lupine (*Lupinus arboreus*), miscellaneous annual grasses, and ice plant (*Carpobrotus edulis*).

A primary habitat component for MSS is sand or sandy soils with a slope not greater than 10 percent (%). The University of California Davis, Soil Resource Laboratory online soil mapping website, "SoilWeb" (http://casoilresource.lawr.ucdavis.edu/gmap/), maps two soil units in the Survey Area: Psamments and Fluvents, occasionally flooded; and, dune land.

The areas surrounding the Survey Area include: the west consists of undeveloped dune scrub, the areas to the north and east are previously developed and disturbed areas of the MBPP and the area to the south is the Embarcadero (paved road) and the Morro Bay water front (refer to Appendix A, Existing Conditions and Survey Results). The subject parcel is located outside of the boundaries of critical habitat units for MSS designated on February 7, 2001.

Results

MSS permitted biologists Dwayne Oberhoff and Bob Sloan conducted five focused, protocol-level surveys for MSS on the subject parcel from November 16, 2015, to January 19, 2016, with additional survey assistance provided on these dates by Michaela Hoffman or Kenny Wimmer of Padre Associates (refer to Table 1).

Table 1. Results of Five Protocol Surveys to Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.

Survey #	Survey Date and Time	Surveyor	Weather Conditions	Results*
1	11/16/2015 0815-1040 hrs	D. Oberhoff B. Sloan K. Wimmer	52°F, 0.31" of precip day prior to survey, 10-20 mph winds during survey	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
2	12/11/2015 0830-1030 hrs	D. Oberhoff B. Sloan M. Hoffman	54°F, 0.46" prior to and during survey, partly cloudy	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
3	12/22/2015 0900-1045 hrs	D. Oberhoff B. Sloan M. Hoffman	64°F, 0.70" prior to and during survey, 15-25 mph wind cloudy skies	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
4	1/7/2016 0855-1040 hrs	D. Oberhoff M. Hoffman	55°F, 2.14" of precip three days prior to survey	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.
5	1/19/2016 0840-1015 hrs	D. Oberhoff K. Wimmer	57°F, 0.30" of precip prior to and during survey, cloudy skies during survey	No live MSS or empty MSS shells observed. Numerous empty Helix and BSS shells observed.

*MSS - Morro shoulderband snail, BSS - Big Sur shoulderband snail, Helix - brown garden snail

All areas and habitats located within the approximate 9.45 acre Survey Area were surveyed by walking transects, visual observation, and carefully sifting through soil and leaf litter under vegetation, around woody debris, and other areas where MSS could be present. A total of 25.2 person-hours (6.6 person-hours/hectare) were expended conducting the five protocol surveys. No MSS were observed during the five protocol-level surveys of the Survey Area. Many empty Big Sur shoulderband snail (BSS) shells were observed in various locations of the surveyed area, with the greatest concentration on a west facing berm sparsely vegetated with coastal silver lupine, bush lupine and/or ice plant (refer to Photo 3). The bulk of the empty BSS shells observed during the survey efforts were classified as class C shells.

The bulk of the 9.45 acre Survey Area does not contain habitats suitable for MSS, which includes previously disturbed areas sparsely vegetated with ruderal vegetation, improved paved/dirt roads, parking areas and the storage tank pads within the tank farm area. However, small areas of habitat suitable for MSS were observed within the Survey Area and were located near the western fence line of the Survey Area (refer to Appendix A, Existing Conditions and Survey Results). These areas contained a few coastal silver lupine and ice plant growing on or adjacent to the western face of an earthen berm that was adjacent to the western fence (refer to Appendix A, Existing Conditions and Survey Results and Appendix B, Photos 3 and 5). However, during the five protocol-level surveys no live MSS or empty MSS shells were observed in these locations. These areas are extremely exposed and likely cannot support MSS or any snail species, as was evident by the large number of empty BSS and *Helix* shells observed in these locations during the surveys. In addition, previous MSS surveys and monitoring efforts conducted at MBPP between 1999 and 2010 did not observe any live MSS or empty MSS shells within the 9.45 acre Survey Area (refer to Table 2). The MSS identified in the June 12, 2001, protocol survey report by Morro Group, Inc. were observed in the far southern portion of the 107 acre MBPP property, approximately 0.4-mile from the Survey Area. In this same report, it is also stated, “Interestingly, the dune area west of the MBPP represented the “best” MSS habitat, based on the literature, yet this area produced no MSS shells and the fewest number of BSS.”

Table 2. Results of Previous MSS Survey and Monitoring Efforts at Morro Bay Power Plant, Morro Bay, San Luis Obispo County, California.*

Date	Title of Report	MSS Survey Efforts	Company	Survey Personnel	Results
October 27, 2010	Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report	Construction Monitoring for MSS	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
July 1, 2010	Morro Bay Power Plant Modernization Project Anode Installation	Three MSS surveys and Construction Monitoring for	SWCA Environmental Consultants	SWCA biologists	No live or empty MSS observed
April 30, 2003	Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation	Five MSS Protocol Surveys	Morro Group, Inc.	B. Sloan P. Waldburger D. Oberhoff	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Sensitive Species Construction Monitoring Completion Report	Construction Monitoring for MSS	Morro Group, Inc.	B. Sloan P. Waldburger J. Tupen J. Wiggins	No live or empty MSS observed
June 12, 2001	Morro Bay Power Plant - Morro Shoulderband Snail Protocol Survey Results	Five MSS Protocol Surveys	Morro Group, Inc.	J. Tupen B. Sloan	No live MSS observed during surveys. Six empty MSS shells observed in the southern portion of property.
May/June 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Non-protocol	TRC Environmental Solutions	E. Reeves	No live or empty MSS observed
January/February 1999	Biological Survey, Morro Bay Power Plant, Morro Bay, California	Unknown	TRC Environmental Solutions	F. Villablanca V.L. Holland	No live or empty MSS observed

*List may not include all MSS surveys or MSS monitoring efforts conducted on MBPP.

Discussion

The Survey Area is dominated by previously developed and disturbed areas that do not contain habitats suitable for MSS. However, small areas with both MSS primary habitat components (e.g. coastal dune plant communities and/or ice plant, and sandy soils) were present within the Survey Area. However, no MSS (live or empty shells) were observed within these areas. The numerous previous MSS protocol surveys and monitoring efforts conducted during the late 1990s to 2010 on MBPP did not observe live MSS and the empty MSS shells observed in 2001 were approximately 0.4-mile from the Survey Area. The current results presented here, combined with previous survey efforts, further confirm that MSS is unlikely present within the Survey Area.

Conditions within the Survey Area are highly disturbed and previous activities have created conditions that are now unsuitable for MSS. In addition, it appears that conditions are unfavorable for any land snail based on the absence of any live snails observed during the five surveys. Furthermore, the presence of ornamental vegetation and trees (e.g. pine, eucalyptus, cypress, etc.) create conditions that MSS do not favor, but will also deter or prevent movement of MSS from one area to another. The sparse vegetation observed throughout the Survey Area also limits micro-habitats that are critical for MSS summer aestivation. The sparse vegetation and limited aestivation habitat likely increases heat exposure during warm, cloudless days and may partially explain the great abundance of empty BSS and *Helix* shells observed within these areas of the Survey Area. During these times, BSS and *Helix* aestivating in sparsely vegetated habitats likely die due to desiccation.

Based on these results presented above, EAM's assessment is that "take" of MSS would not occur from the project as proposed within the Survey Area. Thus, it is EAM's opinion that additional protocol surveys for MSS are not necessary within the Survey Area. In addition, it is EAM's opinion that additional pre-construction surveys and monitoring efforts during project activities are not necessary based on these and previous results from the Survey Area. Based on these results, a concurrence determination request is being submitted to the USFWS along with this report.

References

Morro Group, Inc. 2001. Morro Bay Power Plant Morro Shoulderband Snail Protocol Survey Results, Morro Bay, California.

Morro Group, Inc. 2001. Morro Bay Power Plant Sensitive Species Construction Monitoring Completion Report, Morro Bay, California.

Morro Group, Inc. 2003. Morro Shoulderband Snail Survey Report - Morro Bay Power Plant PG&E Substation, Morro Bay, California.

Roth, B. 1985. Status Survey of the Banded Dune Snail, (*Helminthoglypta walkeriana*). Prepared for the U.S. Fish and Wildlife Service. Sacramento, California.

Roth, B. and Tupen, J. 2004. Revision of the systematic status of *Helminthoglypta walkeriana morroensis* (Hemphill, 1911) (Gastropoda: Pulmonata). *Zootaxa*, 616: 1-213.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Entrance Renovation MSS Monitoring Report (SWCA# 16988), Morro Bay, California.

SWCA Environmental Consultants. 2010. Morro Bay Power Plant Modernization Project Anode Installation (SWCA# 16675), Morro Bay, California.

U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2003. Protocol Survey Guidelines for the Morro Shoulderband Snail. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service. 2006. Morro Shoulderband Snail 5-Year Review. U.S. Fish and Wildlife Service. Ventura Fish and Wildlife Field Office, Ventura California.

Appendix A: Existing Conditions and Survey Results


Appendix A
Existing Conditions and Survey Results
Legend
Ice Plant
Ice Plant/Silver Lupine
Numerous empty BSS
Ornamental Vegetation
Pine/Cypress/Eucalyptus/Myoporum/etc. Trees
Scattered Bush and/or Silver Lupine
Survey Area Perimeter
Embarcadero
N
Google earth
© 2016 Google
300 ft

Appendix B: Photo Pages

- **9 Photos**

Photo 1

Photo of ornamental plant species adjacent to the MBPP entry gate.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 2

Photo viewing north from northern side of MBPP entry gate. Note unimproved dirt roads and sparse ruderal vegetation.

February 12, 2016

Photo 3

Photo of berm near western fence line vegetated with pine tree (*Pinus* spp.) and iceplant.

February 12, 2016

Photo 4

Photo viewing north along western fence line showing site related equipment. Not absence of vegetation along fence line.

February 12, 2016

Photo 5

Photo viewing west from atop berm toward Morro Rock. Note western fence line in foreground.

February 12, 2016

Photo 6

Photo viewing east from atop of berm toward previously location of petroleum storage tank pad.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 7

Photo viewing north along top of berm. Note Monterey cypress on left and sparsely vegetated slope on right of berm.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Photo 8

Photo viewing east along top of berm. Note sparse vegetation and office buildings in background.

February 12, 2016

Photo 9

Photo viewing south of sparely vegetated area adjacent to entry gate at MBPP.

February 12, 2016

PO Box 6840, Los Osos, CA 93412 | 805.440.6137
http://www.ecologicalmgmt.com | dwayne@ecologicalmgmt.com

Appendix D: May 31, 2018, Army Corps of Engineers, Section 7 Consultation Request Letter

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS
VENTURA FIELD OFFICE
2151 ALESSANDRO DRIVE, SUITE 110
VENTURA, CALIFORNIA 93001

May 31, 2018

SUBJECT: Section 7 Consultation Request Letter

U.S. Fish and Wildlife Service
Steve Henry, Field Supervisor
Ventura Fish and Wildlife Service Office
2493 Portola Road, Suite B
Ventura, California 93003

Dear Mr. Henry:

Dynegy Morro Bay, LLC submitted an application (Corps File No. SPL-2018-00187-CLH) for Department of the Army authorization for excavation and pipeline removal from the Dynegy Morro Bay Power Plant (onshore) to the Pacific Ocean (offshore) for a total distance of approximately 5,700 feet. The proposed project extends from Morro Creek to the Pacific Ocean within San Luis Obispo County, California (Lat. 35.37361°N, Long. -120.8597777 °W).

I have determined the project may affect, but would not likely to adversely affect, the federally threatened Western snowy plover (*Charadrius alexandrinus nivosus*) and its critical habitat, known to utilize habitat in the vicinity of the proposed project. Therefore, pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the Los Angeles District hereby requests initiation of informal consultation for the proposed project. Pursuant to 50 CFR Part 402.14(c), I am enclosing or otherwise identifying the following information:

1. **Description of the action considered:** Dynegy Morro Bay, LLC (Dynegy) is proposing the Morro Bay Power Plant (MBPP) Marine Terminal Decommissioning Project. Dynegy proposes to remove the two pipelines in their entirety through the Beach Segment, Surf Zone Segment and the Offshore Segment.

   The two pipelines travel underneath the Beach Segment, and the mouth of Morro Creek (Figure 2 Enclosed). The Beach Segment is an active recreational area and is approximately 810 feet in width from the toe of the sand dune to the point where the pipelines cross the approximate low tide line in the intertidal zone. Removal from the beach segment would start at the toe of the Sand Dune Segment (where the Sand Dune Segment intersects the Beach Segment) where the pipelines would be excavated, exposed and cut.

   The two pipelines pass underneath the Surf Zone Segment from the low tide line to approximately 17-foot water depth (the approximate seaward boundary of the surf zone), a distance of about 1,300 feet (16-inch line) and 1,240 feet (24-inch line). Removal of the two pipelines from the Surf Zone segment would be accomplished using dynamic pipe ramming (DPR). DPR utilizes a pneumatically powered ram to drive or pull pipes through soil.

The two pipelines continue offshore, on a heading of about 303 degrees true north, approximately 2,400 feet (16-inch line) and 2,500 feet (24-inch line) from the seaward side of the Surf Zone Segment to the offshore marine terminal tanker berth in approximately 54 feet water depth. MBPP marine terminal facilities located in the Offshore Segment, in addition to the two submarine pipelines, consist of helical screw anchors that anchor the pipelines to the seafloor, possibly small concrete clump anchors left over from marker buoy placements, and possibly miscellaneous debris located on the seafloor. Dynegy proposes to excavate, expose, and remove the two offshore pipeline segments in their entirety. Removal would start at the offshore termination and work shoreward removing all pipe up to the starting point of the Surf Zone Segment. The offshore removal would take place prior to the Surf Zone Segment removal.

A Dewatering Plan has been prepared for the Project. Removal of the pipelines from the Beach Segment would involve excavating a trench along the pipeline alignments to expose the pipelines for cutting into sections for removal. The excavation would likely result in standing water, which would require dewatering. The National Pollutant Discharge Elimination System (NPDES) Stormwater Discharges from Construction Activities Order No. 2009-0009 (Construction General Permit) would cover the scope of work for dewatering the pipeline excavations at Morro Beach and discharging the water to the Pacific Ocean. The Dewatering Plan provides a detailed discussion of the methods that will be used for dewatering activities. In addition, a Stream Diversion Plan has been prepared for the Project and would be implemented if surface flows in Morro Creek transect the work area for removal of one or both of the two pipelines. Construction activities are not expected to occur within Morro Creek.

The Project is scheduled to commence in June and end in November 2018. The Beach Segment would be removed first, followed by the Offshore Segment, then the Surf Zone Segment.

2. **Description of the specific areas that may be affected by the action (scope of analysis):** The scope of analysis includes 4.86 acres of temporary impacts within navigable waters of the U.S., inclusive of a 10-foot buffer.

3. **Description of any listed species or critical habitat that may be affected by the action:** Western snowy plovers are known to breed along the Morro Bay Sand Spit across the harbor south of the project area, and along the dune complex of Morro Strand State Beach. The project area occurs within critical habitat of the species, specifically within the coastal dune habitat.

4. **Description of the manner in which the action may affect any listed species or critical habitat, and an analysis of any cumulative impacts:** The proposed project impacts would occur primarily within the Coastal Strand/Beach portion of the project area; however, depending on the locations selected for staging and/or access routes, additional temporary impacts may occur to vegetation stands south of Morro Creek. These impacts would include excavation and disturbance by the mobilization and/or operation of project-related equipment used to remove buried pipelines. Further, during periods when connectivity occurs between Morro Creek and the Pacific Ocean, the Creek may intersect the proposed impact area. Impacts to Morro Creek may occur if de-watering and diversion measures are required to facilitate project activities. Dewatering and diverting Morro Creek has the potential to impact aquatic wildlife. Impacts outside of the Creek resulting from the use of Project related equipment would be reduced by delineating the impact area, designating an equipment staging and fueling area, and providing biological monitoring for the duration of the Project. Potential impacts to vegetation within the project area would be offset through the implementation of the project's Preliminary Site Restoration Plan; therefore, impacts to vegetation stands would be minimal with the implementation of avoidance and minimization measures and the procedures identified in the Preliminary Site Restoration Plan. Heavy equipment operation and associated noise, dust generated by grading and excavation activities, and an increase in human presence have the potential to disrupt foraging and denning activities of some wildlife, including special-status species.

The western snowy plover could potentially nest in the coastal dune habitat and riparian habitat along Morro Creek within the Project site. Nest destruction from ground-clearing activities and/or tree removal outside of the current proposed impact area could destroy nests, nestlings, or hatchlings. With the implementation of avoidance and minimization measures including daily nest surveys during the nesting season, these impacts to nesting birds would be considered minimal.

5. Relevant reports, including any environmental impact statement, environmental assessment, biological assessment or other analyses prepared on the proposal:

Appendix F. Biological Resources Survey Report, prepared by Padre Associates, dated February 20, 2018.

Appendix G. Essential Fish Habitat Assessment, prepared by Padre Associates, dated February 20, 2018.

Dewatering Plan, prepared by Padre Associates, dated February 2018.

Appendix H. Stream Diversion Plan, prepared by Padre Associates, dated February 20, 2018.

No-take Concurrence Request for the Proposed Decommissioning of Dynegy's Morro Bay Power Plant Marine Terminal, (APN 066-331-040), Morro Bay, San Luis Obispo County, California, Ecological Assets Management, dated March 9, 2016.

6. **Any other relevant studies or other information available on the action, the affected listed species, or critical habitat:** The Corps has made a No effect determination to the Morro shoulderband snail (*Helminthoglypta walkeriana*, MSS*).* A protocol survey report has been prepared by Ecological Assets Management LLC (EAM) and sent to your office on March 9, 2016 requesting concurrence of a No Effect Determination by the applicant (letter enclosed). Five protocol surveys conducted within the 9.45 acre survey area observed no live or empty MSS shells. Restricted and small areas of suitable habitat (e.g. coastal dune scrub, ice plant and sandy soils) were observed within the survey area. During the protocol surveys numerous empty shells from both Big Sur shoulderband snail (*Helminthoglypta umbilicata*) and brown garden snail (*Helix aspera*) were observed. Numerous previous surveys and monitoring efforts conducted by other biologists from 1999 to 2010 within the Survey Area also found no MSS. Based on the results of the five protocol surveys and habitat assessment presented in the report, and the previous MSS survey and monitoring efforts, the Corps has made a final determination of no effect to MSS.

It is anticipated you will be able to provide your concurrence or non-concurrence with our effect determination within a reasonable period of time following your receipt of this letter. If you wish to receive additional data pursuant to 50 CFR Part 402.14(f), which you believe would provide a better information base from which to concur or not concur with our determination, please contact me at (213) 359-9662 or via e-mail at crystal.huerta@usace.army.mil as soon as possible. Please send correspondence to crystal.huerta@usace.army.mil.

Sincerely,

Crystal L.M. Huerta
Senior Project Manager
North Coast Branch
Regulatory Division

Enclosures

APPENDIX I

Pedestrian Path Biological Resources Impact Evaluation for the Morro Bay Power Company, LLC. Battery Storage System

September 7, 2023

Project No. 1902-1173

EMC Planning Group
301 Lighthouse Avenue, Suite C
Monterey, CA 93490

Subject: Pedestrian Path Biological Resources Impact Evaluation for the Morro Bay Power Company, LLC. Battery Energy Storage System, City of Morro Bay, California

Dear EMC:

Padre Associates, Inc. (Padre) has prepared this Report to provide a summary of potential impacts to biological resources resulting from installation of a pedestrian path as a component of the Morro Bay Power Company, LLC - Battery Energy Storage System Project (Project), located in the City of Morro Bay, California. This Report serves as an addendum to the Biological Resources Assessment (BRA) Report for the Morro Bay Power Company, LLC - Battery Energy Storage System (Padre, 2023). This Report includes a summary of field survey methods and findings, discussion of potential impacts to biological resources, recommendations to minimize impacts, and a figure depicting the proposed path alignment, sensitive habitats and select tree locations.

FIELD SURVEY METHODS

Padre Biologist, Christina Santala completed a field survey focused on the sensitive habitats and trees within and surrounding the proposed path alignment on August 17, 2023. The biological survey area (BSA) encompassed the vegetated open space area paralleling Embarcadero between the Morro Bay Maritime Museum and the intersection of Coleman Drive and Embarcadero, on the west perimeter of the Morro Bay Power Plant facility property. Field survey methods consisted of walking the proposed path alignment (provided by Artistic Engineering) using a hand-held Global Position System (GPS) unit and ArcGIS Collector map for navigation and data collection. Artistic Engineering prepared photographic simulations (Artistic Engineering, 2023) of the proposed path depicting several views of the existing conditions and simulations of a 12-foot wide and approximately 1,800 linear feet (0.34 mile) concrete path transecting the vegetated open space. Data and notes were collected on select tree species and location, potential trimming needs, potential setback distances, and potential alternative path alignments. See attached Figure 1 – Pedestrian Path Biological Impacts.

FINDINGS

Based on the August 2023 field survey and review of the Project BRA, the proposed path alignment intersected two types of City of Morro Bay Environmentally Sensitive Habitat Areas (ESHAs) including Rookeries ESHA primarily comprised of blue gum (*Eucalyptus globulus*) and Monterey cypress (*Hesperocyparis macrocarpa*) (mapped as Ornamental vegetation in the BRA), and Backdune/Dune Scrub ESHA comprised of ice plant (*Carpobrotus edulis*), beach bur (*Ambrosia chamissonis*), coyote brush (*Baccharis pilularis*), and remnant annual grasses (mapped as Mixed Dune vegetation in the BRA). Other plant species observed include non-native ornamental species, showy honey-myrtle (*Melaleuca nesophila*), and blackwood (*Acacia melanoxylon*). The proposed path alignment generally ran parallel to Embarcadero and meandered through shrub habitat, paved surfaces, and the stand of mature blue gum and Monterey cypress trees.

IMPACT DISCUSSION

There will be permanent impacts to Rookeries and Backdune/Dune Scrub ESHAs due to the proposed path construction. Direct and indirect impacts to special status wildlife and plants may result from construction activities and path use. Based on the proposed dimensions of the path there will be a total of 0.31 acre of permanent impacts to the approximately 7.82 acres of these ESHAs mapped to occur within the Project BSA (Padre, 2023). There will be additional area needed for equipment access and staging associated with path construction and as such, the actual disturbance acreage will be greater and is yet to be determined. Construction noise, pedestrian and vehicular traffic along the path, and degradation of habitat associated with increased human activity may result in abandonment of the rookery (Simpson and Kelsall 1979). In addition, human health concerns may arise from exposure to rookery conditions, including feces, prey remains, and feathers.

Based on the proposed path alignment and minimum disturbance acreage (0.31 acre) there will be approximately 0.23 acre (10,080 square feet) of permanent impacts to Rookery ESHA consisting of tree removal, tree impacts (trimming and root zone encroachment), and loss of wildlife habitat. There will be 7 trees removed and 13 trees impacted. Tree impacts are considered those activities that could potentially cause tree mortality including ground disturbance in the root zone/drip line of a tree, and trimming of more than approximately 25 percent of a tree's canopy. Proposed path construction activities include grading within the drip line and installation of an impermeable surface (concrete) over the root zone of 13 trees, with potentially substantial trimming of at least 6 trees. Further, tree removal and trimming must comply with the Morro Bay, California – Code of Ordinances Title12 – Streets and Side Streets, Chapter 12.08 - City Tree Regulations. There will be approximately 0.08 acre (3,600 square feet) of permanent impacts to Backdune/Dune Scrub ESHA consisting of permanent removal of the Mixed Dune shrub vegetation that provides suitable wildlife habitat.

SUMMARY AND RECOMMENDATIONS

There will be permanent loss of at least approximately 0.31 acres of Rookeries and Backdune/Dune Scrub ESHAs, consisting of removal of 7 trees, impacts to 13 trees, and removal of Mixed Dune shrub habitat due to proposed pedestrian path construction. Implementation of avoidance and minimization measures is recommended as mitigation for permanent loss of ESHAs comprised of shrubs and tree vegetation that provide suitable habitat for special-status plant and wildlife species.

Avoidance measures may include path design changes, re-alignment in the current location, or path relocation to reduce the need for tree removal and substantial tree trimming (as shown on Figure 1). Design changes could include path width reduction, permeable surface installation (as opposed to impervious concrete), and minor path re-alignment to reduce the need for tree removal and substantial tree trimming (as shown on Figure 1). Potential path relocation sites that would avoid impacts to ESHA vegetation include the following:

- On Morro Bay Power Plant property just east of the currently existing concrete wall parallel to Embarcadero. The path could connect to the existing sidewalk/path at the current Morro Bay Power Plant Entrance via an improved crosswalk on Embarcadero; and
- The west side of Embarcadero. The path/sidewalk could be incorporated into a re-design of the parking areas to improve walkability of the waterfront businesses. The northern extent of the newly constructed path/sidewalk would seamlessly connect to the existing path and boardwalk along Coleman Drive.

Mitigation measures may include creating and/or enhancing Mixed Dune habitat, replacement planting of Monterey cypress trees and eucalyptus elsewhere within the Morro Bay Power Plant property to provide rookery habitat, off-site habitat creation and/or enhancement, and/or payment of in-lieu fees. Final mitigation measures would be determined during the Project permitting process.

CLOSING

If you have any questions or would like more information regarding the contents of this Report please contact Christina Santala at csantala@padreinc.com, or (805) 786-2650; ext. 113.

Sincerely,

Padre Associates, Inc.

Christina Santala
Project Biologist

Attachments: Figure 1 - Pedestrian Path Biological Impacts.

REFERENCES

Artistic Engineering. 2023. Vistra and Morro Bay BESS & Substation simulation views package. Artistic Engineering. August 14, 2023.

Calflora: Information on California plants for education, research and conservation. [web application]. 2020. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: September 2023).

Padre Associates, Inc. 2023. Biological Resources Assessment Report for the Morro Bay Power Company, LLC. Battery Storage System City of Morro Bay, California. March 2023.

Simpson, K. and J.P. Kelsall. 1979. Capture and banding of adult great blue herons at Pender Harbour, British Columbia. Proc. 1978 Conf. Colonial Waterbird Group 2:71-78.

ATTACHMENT 1

Figure 1 - Pedestrian Path Biological Impacts

Source: Esri Online Imagery Basemap, City of Morro Bay, County of San Luis Obispo
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME:	BATTERY STORAGE PROJECT MORRO BAY POWER PLANT SAN LUIS OBISPO COUNTY, CA
PROJECT NUMBER: 1902-1173	DATE: September 2023

PEDESTRIAN PATH
BIOLOGICAL IMPACTS

FIGURE
1

Appendix D.1 - CONFIDENTIAL

This report contains confidential information and can be provided upon request to qualified cultural resource specialists and Native American tribal representatives

Appendix D.2 - CONFIDENTIAL

This report contains confidential information and can be provided upon request to qualified cultural resource specialists and Native American tribal representatives

Appendix E

Historical Resource Evaluation Report

600-MW Morro Bay Battery Energy Storage System Project

Historical Resource Evaluation

prepared for

City of Morro Bay
Department of Community Development
595 Harbor Street
Morro Bay, California 93442

prepared by

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

December 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Please cite this report as follows:

Williams, James, JulieAnn Murphy, Steven Treffers, and Shannon Carmack

2022, *Morro Bay, San Luis Obispo County, California*. Rincon Consultants Project No. 19-08915. Report on file at the Central Coast Information Center, Santa Barbara, California

Table of Contents

Figures

Tables

Appendices

Executive Summary

The City of Morro Bay (City) retained Rincon Consultants Inc. (Rincon) to conduct a Historical Resources Evaluation (HRE) for the 600-MW Morro Bay Battery Energy Storage System Project in Morro Bay, San Luis Obispo County, California. Totaling approximately 95 acres, the Power Plant property encompasses two Assessor's Parcel Numbers (APNs) on the north and south of side of Embarcadero Road (APN 066-331-046 and 066-461-016). The project involves three components: (1) construction and operation of a 600 megawatt (MW) Battery Energy Storage System (BESS) on a 24-acre portion of the Project Site, (2) demolition and removal of the existing power plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial. The project is subject to the California Environmental Quality Act (CEQA). The City of Morro Bay is the lead agency under CEQA.

This assessment included a pedestrian survey of the Power Plant property, background and archival research, and the preparation of this report to summarize the results of these activities. The built environment survey identified one built environment resource on the Power Plant property that is more than 45 years old– the Morro Bay Power Plant. The Morro Bay Power Plant proper is located entirely within the Project Site. The Power Plant property includes the cooling water intake screenhouse across Embarcadero. Additionally, there is an associated electrical switchyard located on the parcel immediately adjacent to the east (APN 066-331-036) and a cooling water discharge structure on unparcelled land owned by the City of Morro Bay on Morro Bay Beach that were included in the survey for their historic association with the Power Plant, though both features are outside the Power Plant property. The Power Plant property, switchyard, and cooling water discharge structure are referred to collectively as the "Study Area" in this report.

The Morro Bay Power Plant was recorded and evaluated for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). It was recommended eligible for the NRHP and CRHR and local designation and is a historical resource pursuant to CEQA. Therefore, the demolition of the power plant building and stacks would result in a substantial adverse change to a historical resource. As a result, the following mitigation measures have been recommended: Building Recordation and Interpretive Display. No other feasible mitigation measures are available to further reduce the impact. Though the proposed mitigation measures described above would reduce the impacts of the proposed demolition of the Morro Bay Power Plant building and boiler stacks to the extent feasible, the impact would remain significant and unavoidable.

1 Introduction

This Historical Resources Evaluation (HRE) documents the results of the study and tasks conducted by Rincon, which included background and archival research as well as a field survey of the Study Area and associated properties and structures. This study does not address the potential for the project to impact archaeological resources, which has been reviewed in a separate study prepared by Padre Associates, Inc. in July 2021. This study has been completed pursuant to the requirements of the California Environmental Quality Act (CEQA) related to the evaluation of historical resources. The City is the lead agency under CEQA.

1.1 Project Site

The 43-acre Project Site is located on a portion of the 95-acre Morro Bay Power Plant property (Power Plant property) (Assessor's Parcel Numbers [APNs] 066-331-046 and 066-461-016) at 1290 Embarcadero south of State Route 1 (SR 1)/Cabrillo Highway and north of Embarcadero in the City of Morro Bay (Figure 1). Specifically, the project encompasses portions of Section(s) 25 of Township 29 South, Range 10 East on the *Morro Bay South*, *California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 2).

The Morro Bay Power Plant began operating in 1955, but has been idle since its retirement in 2014. The Power Plant property currently contains the idled power plant building and smokestacks (stacks), Lila Keiser Park, and facilities operated by Pacific Wildlife Care and Marine Mammal Center. The Power Plant property is surrounded by Pacific Gas and Electric (PG&E) property (switchyards) and State Route 1 (SR 1) to the northeast; the Embarcadero, commercial uses and a marina to the southwest; Morro Creek, a recreational vehicle (RV) park, and temporary lodging facilities (hotel and motel) to the north; and Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west.

The site of the proposed project (Project Site) covers approximately 43 acres of the 95-acre Power Plant property.[1] The Project Site includes approximately 24 acres located immediately north of the inactive power plant building in the northwestern portion of the property. This area is currently vacant but was previously developed with above-ground fuel oil storage tanks. In addition, the Project Site includes approximately 19 acres in the southwestern area of the site that includes the inactive power plant building and three (3) inactive stacks immediately southwest of the power plant building. The Project Site also includes the approximately 2.75-acre driveway that connects the power plant building to Quintana Road.

[1] Following are definitions for several key terms used in this Project Description:
Power Plant Property refers to the approximately 95-acre Morro Bay Power Plant property. Refer to Figure 2.
Project Site refers to the portions of the Power Plant property that would be used for the proposed project. The Project Site covers approximately 43 acres of the 95-acre Power Plant property. Refer to Figure 2.
BESS Site refers to the portions of the Project Site used for construction and operation of the Battery Energy Storage System (BESS) and supporting facilities such as Gen-tie lines and access roads. The BESS Site includes approximately 24 acres of the 43-acre Project Site. Refer to Figure 3.
Demolition Site refers to the portions of the Project Site used for remediation and demolition of the idled power plant building and stacks. The Demolition Site includes the remaining 19 acres of the 43-acre Project Site. Refer to Figure 4.

Figure 1 Regional Location

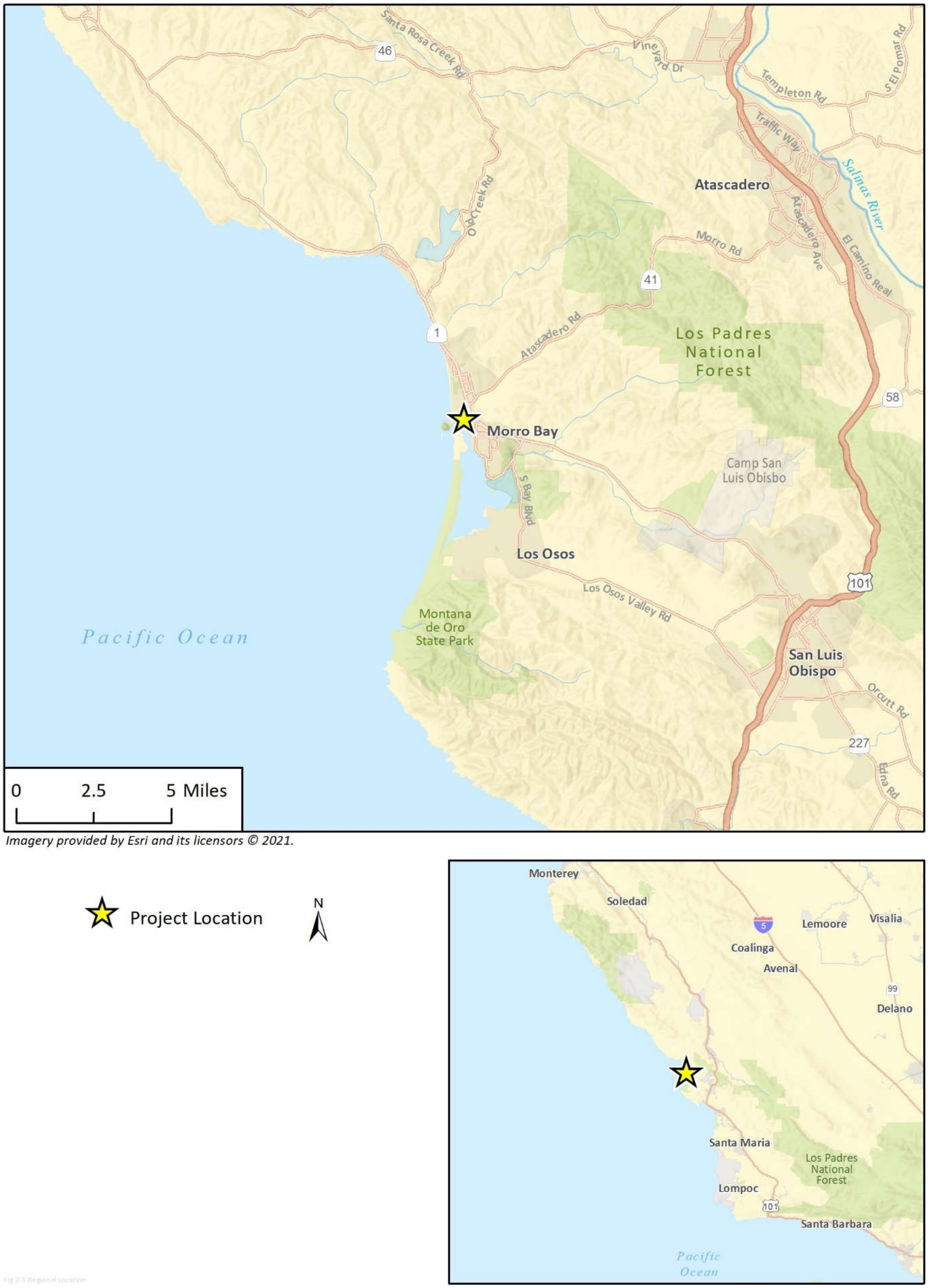


Figure 2 Parcel and Project Site Location

Imagery provided by Microsoft Bing and its licensors © 2022.
Additional data provided by Vistra, 2022.

1.2 Project Description

The following project description has been adapted from information provided by the City of Morro Bay. The proposed project has three components: (1) construction and operation of a 600-MW Battery Energy Storage System (BESS), (2) demolition and removal of the existing power plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial.

1.2.1 Construction and Operation of the BESS

Of the 43 acres included in the Project Site, approximately 24 acres (BESS Site) would be used for construction and operation of the BESS. The BESS would provide power to utility customers by interconnecting to the existing PG&E switchyard located east of the Power Plant property and Project Site. The BESS would operate year-round to store and discharge electricity to support demand on the power grid and improve grid reliability.

The proposed BESS includes three enclosed buildings with fire protection systems to house the batteries. Each building would contain approximately 2,400 battery racks and be surrounded by approximately 60 Power Conversion Systems (PCSs) composed of inverters and transformers to convert the direct current to alternating current. The PCSs would be located on concrete pads outside the buildings. The BESS would also include three substations with transformers, a transmission line (Gen-tie) connecting to the existing deadend structures on the southwestern side of the existing PG&E switchyard (the final structures before the connection with the substation), water supply system improvements, and internal access roads. The battery energy storage, PCSs, and substation components are each further described below. Figure 3 presents the proposed locations of these facilities on the approximately 24-acre BESS Site.

Battery Energy Storage

The BESS would be installed in three (3) two-story buildings. Each building would be approximately 350 feet by 260 feet, for a total building area of 91,000 square feet (sf). The buildings would be 30 feet in height. Additional equipment installed on the roof of the buildings may extend up to an additional 2-6 feet in height; this equipment would be screened from views using either mesh or slatted screens. The building exteriors would be steel frame with pre-cast concrete sides. Heating, ventilation, and air conditioning (HVAC) units would be either side- or roof-mounted.

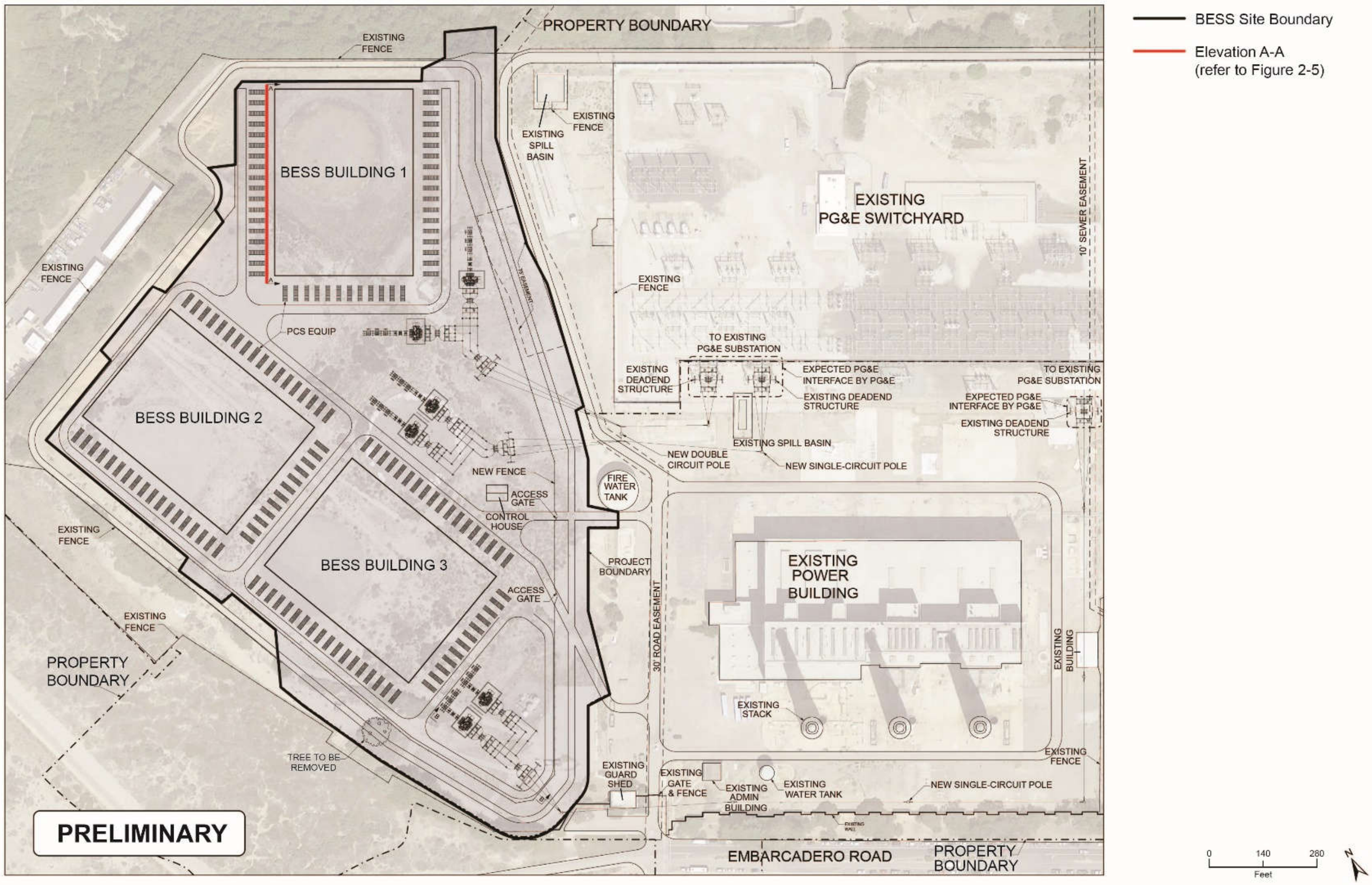
Power Conversion Systems

The PCSs would be located adjacent to each building and installed on the pavement or gravel pads. Underground conduits buried three to five feet in depth would connect the PCSs to the batteries in the buildings. Each building would be surrounded by approximately 60 PCS units. Each PCS would be approximately 10 feet by 30 feet, with a height of approximately 15 feet.

Substations

The BESS would include three substations located outside the buildings. Each BESS substation would have a transmission Gen-tie line to connect to the existing PG&E substation. The dimensions of each substation would be approximately 218 feet by 228 feet and approximately 30 feet tall. Drilled pilings to a maximum depth of 75 feet would be used to support the concrete pad for the

Figure 3 Proposed BESS Location



Source:Sargent & Lundy, 2020.

transformers. One control house would be required for the three substations. The control house would be 30 feet by 40 feet in area for a total area of 1,200 square feet, and 15 feet in height.

Connection to the PG&E Switchyard

The three proposed substations would connect to the existing, adjacent PG&E switchyard. Approximately nine new transmission line poles (one 230-kilovolt [kV] double circuit transmission line pole and eight 230-kV single circuit transmission line poles) with a maximum height of 105 feet would be required for connection to PG&E existing 95-foot dead-end structures (the final structures before the connection with the substation).

Operation and Maintenance Building

The existing administration building located south of the southernmost battery storage building and just inside the Morro Bay Power Plant property front gate along Embarcadero would be retained and renovated and upgraded to serve as the BESS's operation and maintenance (O&M) building. No exterior modifications are planned for this building.

Fencing and Landscaping

The Project will install new fencing, alter existing landscaping, and construct new internal paths and roads. An approximately six-foot-high fence (topped with one-foot of three-strand barbed wire) would surround the area containing the buildings, PCSs, and substations, including the substation control house. Security cameras would be located at key locations. Six Monterey Cypress trees would be removed for access west of proposed southernmost building and associated substation. The trees would be replaced per the City's code. The replaced trees, in addition to trees located outside of the BESS Site but on the Power Plant property, would provide visual screening. The open areas surrounding the buildings would include access roads and paths. All other surfaces would be rock.

Off-Site Frontage and Infrastructure Improvements

As part of the proposed project, frontage improvements would include a 10-foot sidewalk or 12-foot multi-use path, storm drainage, and street trees along the Project Site frontage with Embarcadero pursuant to the Morro Bay Public Works Department requirements. Any work within the City right-of-way (ROW) would comply with the requirements of the City's encroachment permit.

1.2.2 Demolition and Remediation of Existing Power Plant Building and Stacks

Prior to the demolition of the existing power plant building and stacks, environmental remediation would occur. Significant environmental remediation was completed at the time the Power Plant closed in February 2014. This included the removal of all oils and flammable materials. The equipment housed inside the Morro Bay Power Plant structure still contains some regulated materials such as mercury switches, lighting devices, and asbestos. Prior to commencement of structural demolition, all remaining regulated materials would be removed and disposed of off-site in compliance with California and federal regulations.

Following construction of the BESS, the existing power plant building and stacks would be remediated and demolished. Remediation and demolition would commence within six months of completion of the BESS. Of the 43 acres included in the Project Site, approximately 19 acres (Demolition Site) would be used for remediation and demolition of the power plant building and stacks. Figure 4 shows the approximate limits of the demolition activities. Environmental remediation and demolition would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and recycling of remaining equipment, waste management transport and disposal and backfill of below grade voids. Remediation and demolition are anticipated to take up to two years to complete.

Most of the outbuildings and transformers at the Power Plant property were removed in 2014. Several transformers and circuit breakers remain on the Power Plant property and are planned to be removed under a separate minor amendment application filed by the property owner. A detached garage and water tank near the main plant entrance would also be demolished. This work would be accomplished using cranes, torches, and shearing machines. All materials would be hauled to a qualified recycler or disposal facility.

1.2.3 Master Plan for Redevelopment of the Power Plant Property

The proposed project also includes a Master Plan that would amend the General Plan and Local Coastal Program Land Use Plan land use designation on the BESS Site from Visitor Serving Commercial to General (Light) Industrial. The proposed Master Plan would not modify the existing land use designation on the remainder of the Power Plant property, retaining the Visitor Serving Commercial designation and Mixed-Use Residential Overlay recently implemented through Plan Morro Bay.

1.3 Personnel

Architectural Historian JulieAnn Murphy, MSHP, performed day-to-day project management and co-authored this report. Architectural Historian James Williams, MA, conducted archival and background research, conducted the built environment field survey, and served as primary author of this report. Rincon Senior Architectural Historian Steven Treffers, MHP, provided management oversight for this historical resource evaluation. Geographic Information Systems Analyst Allysen Valencia prepared the figures found in this report. Principal Shannon Carmack reviewed this report for quality control. Mr. Treffers, Ms. Murphy, Mr. Williams, and Ms. Carmack meet the Secretary of the Interior’s Professional Qualifications Standards for history and architectural history (36 CFR Part 61).

Figure 4   Proposed Demolition Area

Imagery provided by Microsoft Bing and its licensors © 2022.

19-08915 MB, MB BESS EIR
Fig 2-8 Demolition Area

2 Regulatory Setting

This section includes a discussion of the applicable state and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during implementation of the project.

2.1 California Environmental Quality Act

California Public Resources Code (PRC) Section 21804.1 requires lead agencies determine if a project could have a significant impact on historical or unique archaeological resources. As defined in PRC Section 21084.1, a historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources or identified in a historical resources survey pursuant to PRC Section 5024.1(g), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant. PRC Section 21084.1 also states resources meeting the above criteria are presumed to be historically or cultural significant unless the preponderance of evidence demonstrates otherwise. Resources listed in the National Register of Historic Places (NRHP) are automatically listed in the CRHR and are, therefore, historical resources under CEQA. Historical resources may include eligible built environment resources and archaeological resources of the precontact or historic periods.

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: 1) it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, 2) has a special and particular quality such as being the oldest of its type or the best available example of its type, or 3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological resource does not qualify as a historical or unique archaeological resource, the impacts of a project on those resources will be less than significant and need not be considered further (CEQA Guidelines Section 15064.5[c][4]). CEQA Guidelines Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during the implementation of a project.

According to CEQA, an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (CEQA Guidelines Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (CEQA Guidelines Section 15064.5[b][2][A]).

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a][b]).

Section 15126.4 of the CEQA Guidelines stipulates an EIR shall describe feasible measures to minimize significant adverse impacts. In addition to being fully enforceable, mitigation measures must be completed within a defined time period and be roughly proportional to the impacts of the project. Generally, a project which is found to comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (the Standards) is considered to be mitigated below a level of significance (CEQA Guidelines Section 15126.4 [b][1]). For historical resources of an archaeological nature, lead agencies should also seek to avoid damaging effects where feasible. Preservation in place is the preferred manner to mitigate impacts to archaeological sites; however, data recovery through excavation may be the only option in certain instances (CEQA Guidelines Section 15126.4[b][3]).

2.1.1 National Register of Historic Places

Although the project does not have a federal nexus, properties which are listed in or have been formally determined eligible for listing in the NRHP are automatically listed in the CRHR. The following is therefore presented to provide applicable regulatory context. The NRHP was authorized by Section 101 of the National Historic Preservation Act and is the nation's official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects. Per 36 CFR Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Is associated with the lives of persons significant in our past

Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, defined as follows:

Location: The place where the historic property was constructed or the place where the historic event occurred

Design: The combination of elements that create the form, plan, space, structure, and style of a property

Setting: The physical environment of a historic property

Materials: The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property

Workmanship: The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory

Feeling: A property's expression of the aesthetic or historic sense of a particular period of time

Association: The direct link between an important historic event or person and a historic property

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The National Park Service states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to evaluate significance (National Park Service 1997:41). Properties which are less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

2.1.2 California Register of Historical Resources

The CRHR was established in 1992 and codified by PRC Sections 5024.1 and 4852. The CRHR is an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (Public Resources Code, 5024.1(a)). The criteria for eligibility for the CRHR are consistent with the NRHP criteria but have been modified for state use in order to include a range of historical resources that better reflect the history of California (Public Resources Code, 5024.1(b)). Unlike the NRHP however, the CRHR does not have a defined age threshold for eligibility; rather, a resource may be eligible for the CRHR if it can be demonstrated sufficient time has passed to understand its historical or architectural significance (California Office of Historic Preservation 2006). Furthermore, resources may still be eligible for listing in the CRHR even if they do not retain sufficient integrity for NRHP eligibility (California Office of Historic Preservation 2006). Generally, the California Office of Historic Preservation recommends resources over 45 years of age be recorded and evaluated for historical resources eligibility (California Office of Historic Preservation 1995:2).

A property is eligible for listing in the CRHR if it meets one of more of the following criteria:

Criterion 1: Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

Criterion 2: Is associated with the lives of persons important to our past

Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history

2.2 Local Regulations

2.2.1 City of Morro Bay General Plan

Although the City of Morro does not have a historic preservation ordinance with criteria for local designation, the General Plan/Local Coastal Program Coastal Land Use Plan, which was adopted in 2021, includes goals, polices, and implanting actions relating to cultural resources (City of Morro Bay 2021). These include:

Goals

Goal C-2 – Cultural and historic resources are identified for protection and showcased as a vital part of Morro Bay history.

Policies

C-2.1 Historic and Cultural Resources Strategy. Develop a plan to address historic and cultural resource issues in Morro Bay, which may include conducting and updating inventories, exploring certification options, and developing context statements. POLICY

C-2.2 Interagency Cooperation. Work with the Historical Society of Morro Bay and other local groups on historic preservation objectives.

C-2.3 Protection of Cultural Resources. Ensure the protection of historic, cultural, and archaeological resources during development, construction, and other similar activities. Development shall avoid, to the maximum extent feasible, adversely impacting historic, cultural, and/or archaeological resources, and shall include adequate BMPs to address any such resources that may be identified during construction, including avoidance, minimization, and mitigation measures sufficient to allow documentation, preservation, and other forms of mitigation. If the resource(s) in question are of Native American origin, develop avoidance or minimization measures in consultation with appropriate Native American tribe(s).

C-2.4 Cultural Resources Overlay. Develop a cultural resources overlay to protect cultural, archaeological, and paleontological resources in Morro Bay.

Implementing Actions

C-1 Become a Certified Local Government (CLG) by developing a historic preservation ordinance, establishing a historic preservation committee, and maintaining a system to regularly update cultural resources.

C-2 Conduct inventories of historic and cultural resources in Morro Bay. Update these inventories as needed to ensure up-to-date information.

C-3 Establish a local register that mimics requirements of the California Register of Historic Resources and the National Register of Historic Places, but focuses on locally important historic themes, such as Morro Bay’s legacy as a fishing village.

C-4 Identify historical themes and develop a historic context statement that is used to identify significant historical themes within a community that are often represented in the built environment, such as houses and infrastructure.

C-5 Require all discretionary proposals within the cultural resources overlay to consider the potential to disturb cultural resources. If preliminary reconnaissance suggests that cultural resources may exist, a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's Professional Qualification Standard for archaeology and/or architectural history, as appropriate. A Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether subsurface prehistoric or historic remains may be present. Archival research should include a records search at the Central Coast Information Center and a Sacred Lands File search with the Native American Heritage Commission. Where identified or potential resources are of Native American origin, the appropriate Native American tribe(s) will participate with the qualified professional. The technical report documenting the study shall include recommendations to avoid or, if avoidance is not feasible, reduce impacts to cultural resources.

3 Cultural Setting

This section provides background information pertaining to the cultural context of the project site. Specifically, it provides an overview of regional post-contact history. This background information describes the distribution and type of cultural resources documented within the vicinity of the project site to inform the cultural resources assessment and the context within which resources have been evaluated.

3.1 Historic Setting

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

3.1.1 Spanish Period (1769-1822)

Spanish explorers made sailing expeditions along the coast of California between the mid-1500s and mid-1700s. Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what was known by the Spanish as Alta (upper) California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003). The Spanish crown laid claim to Alta California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885; Gumprecht 1999). Cabrillo sighted Morro Rock during his expedition, and the feature remained a landmark used by navigators for centuries to come (Hoover et al. 2002).

By the 18th century, Spain developed a three-pronged approach to secure its hold on the territory and counter against other foreign explorers. The Spanish established military forts known as presidios, as well as missions and pueblos (towns) throughout Alta California. The 1769 overland expedition by Captain Gaspár de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá established the Presidio of San Diego as the first Spanish settlement in Alta California in 1769. His expedition passed through what is now Morro Bay, naming both Morro Rock and nearby Canada de los Osos (Graffy 2010; Hoover et al. 2002). Franciscan Father Junípero Serra also founded Mission San Diego de Alcalá that same year in 1769, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Graffy 2010). In 1772, Serra established Mission San Luis Obispo de Tolosa in present-day San Luis Obispo, approximately 12 miles southeast of Morro Bay.

The mission and presidio relied on Chumash labor; eventually, the majority of the native population lived at the mission complex (Cole 1999). Construction of missions and associated presidios was a major emphasis during the Spanish Period in California to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns; just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles).

Spain began making land grants in 1784, typically to retiring soldiers, although the grantees were only permitted to inhabit and work the land. The land titles technically remained property of the Spanish king (Livingston 1914).

3.1.2 Mexican Period (1822-1848)

Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Gutierrez and Orsi 1998).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. Commonly, former soldiers and well-connected Mexican families were the recipients of these land grants, which now included the title to the land (Graffy 2010). In 1840, the Mexican government granted to settler Vincent Cané (alternatively, Canet) Rancho San Bernardo, a large tract between San Bernardo and Morro creeks, encompassing much of what is now the city of Morro of Bay (Hoover et al. 2002).

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

3.1.3 American Period (1848- Present)

The United States went to war with Mexico in 1846. During the first year of the war, John C. Fremont traveled from Monterey to Los Angeles with reinforcements for Commodore Stockton, and evaded Californian soldiers in Santa Barbara's Gaviota Pass by taking the route over the San Marcos grade instead (Kyle 2002). The war ended in 1848 with the Treaty of Guadalupe Hidalgo, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as US territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through 1850s. The discovery of gold in the northern part of the state led to the Gold Rush beginning in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the

1850s cattle boom, rancho vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom.

A severe drought in the 1860s decimated cattle herds and drastically affected rancheros' source of income. In addition, property boundaries that were loosely established during the Mexican era led to disputes with new incoming settlers, problems with squatters, and lawsuits. Rancheros often were encumbered by debt and the cost of legal fees to defend their property. As a result, much of the rancho lands were sold or otherwise acquired by Americans. Most of these ranchos were subdivided into agricultural parcels or towns (Dumke 1944).

3.1.4 Local History

Early American-period development of what is now Morro Bay was principally agricultural. The San Luis Obispo County Board of Supervisors established Morro Township in 1870. That same year, Franklin Riley constructed the settlement's embarcadero along the shore of Morro Bay. Riley's dock primarily served dairy farmers shipping their produce to market (Historical Society of Morro Bay [HSMB] 2022; Rossell and Peterson 2001). Alongside shipping and agriculture, fishing emerged as an important facet of the local economy. A post office was soon established, with Ezra Stocking appointed as its first postmaster. Stocking and his brother, J.C. Stocking, soon founded the community's first general store. Morro Bay's population grew to around 250 by 1874, and the following year developer C.H. Phillips subdivided the nearby Rancho Morro y Cayucos for residential uses. By the early 1880s, there were three schools serving the community. In 1889, growth was such that the town of El Moro was platted along the bay (HSMB 2022).

In the early twentieth century, tourism and recreation made up a growing segment of the local economy. Construction of the state highway through the region began in 1920, improving access to the region. Five years later, the E.G. Lewis Company built the Morro Beach Inn, a no-longer-extant hotel also known as the Cloisters. In 1928, the first nine holes of what is now Morro Bay Golf Course were completed. In 1934, the state acquired land adjacent to the golf course for development of Morro Bay State Park and Campground, and in 1936, the golf course was redesigned as a project of the Works Project Administration (HSMB 2022).

Other public works of the Great Depression and World War II were more prosaic. In 1933, the WPA filled the north channel of the bay and constructed a causeway between the waterfront and Morro Rock using materials excavated from the east face of the rock. Improvements to the causeway completed in the 1940s, resulted in the existing pedestrian and vehicle access route. In the early years of World War II, the United States Navy Twelfth District developed lands along the bayfront, including the site of Morro Bay Power Plant, as an Inshore Patrol Base for training related to amphibious operations. While the installation is no longer present, existing improvements to the bay, including the T-Pier and a portion of the north breakwater, remain as testament to the scale of the Navy's short-lived involvement in Morro Bay (HSMB 2022; Rossell and Peterson 2001).

In the years following World War II, Morro Bay grew significantly, supported by an expanding tourist economy. As recorded in the 1950 census, 200 of the 800 residences south of Morro Bay Boulevard were vacation homes with no permanent residents. In spite of this, the community grew quickly in the 1950s, fueled by land sales in new subdivisions, such as Serrano Heights. Between 1950 and 1960, Morro Bay's population more than doubled from 1,700 to 3,700. In a sign of the importance of tourism to the town, local leaders stopped a proposal to develop a six-acre lumber yard on the embarcadero. Instead, locals preferred the area to be reserved for tourism-related uses. Morro Bay voters approved incorporation in 1964 (HSMB 2022).

Morro Bay's growth slowed after the 1960s but reached a population of about 10,000 in 2000. Tourism and commercial fishing remain anchors of the local economy.

3.1.5 Thermoelectric Generation in California

In the 1920s, technical breakthroughs related to the production of wet gas allowed for the development of California's first thermoelectric, or steam power, electric generating plants. In the early twentieth century, wet gas, a byproduct of oil production, was first recognized as a fuel and was used in Southern California electricity generation. In 1927, Southern California Edison opened the state's first high-pressure, high-temperature turbine plant in Long Beach. Additional new plants were soon completed, included two Pacific Gas & Electric (PG&E) constructed in San Francisco in 1930. In all, between 1924 and 1930, the steam power output of California plants increased by 145 percent from 407,000 kW to more than 1 million kW. Before the end of the 1930s, PG&E had constructed three additional steam plants in the San Francisco Bay Area.

Despite this rapid expansion in thermoelectric capacity, California's use of steam power remained low relative to much of the rest of the United States until the period immediately following World War II. Through the war's end, as much as 90 percent of electricity consumed in the state was generated by hydroelectric plants. California's relatively high reliance on hydroelectric production was due primarily to constraints on access to suitable fuels for steam generation; specifically, shipping coal to the state was too expensive, and the local oil industry was not sufficiently established to support widespread use of steam plants. By the 1940s, however, multiple factors converged to convince utilities of the growing practicality and profitability of steam power. A major issue favoring steam power was that the reliability of hydroelectric power was undermined by a series of pronounced droughts which reduced hydroelectric capacity. This compounded the more general inherent complications of hydroelectric generation, namely, the cost of design and construction, difficulty of navigating legal issues pertaining to land and water rights, and the considerable expense of operating and maintaining the plants. Further, just as the limitations and obstacles associated with hydroelectric power were becoming more evident, the state faced increased power needs associated with the production World War II-era war material. These factors and the fact that steam plants could be built near population centers ultimately tipped the balance in favor of steam power just as the state reached an era of pronounced expansion and unprecedented prosperity.

Following World War II, new steam plant development increased dramatically to meet the needs of the booming postwar economy. By 1945, 50 percent of all power generated in the United States was reliant on steam turbines. For the next 25 years, the construction of steam plants accelerated, especially in the western United States. By the early 1960s, steam power, whether fired by oil or gas, accounted for 73 percent of all electricity produced in the California, up from 15 percent in 1945. The output of individual plants also increased. Whereas a typical large plant at the turn of the century might have a capacity of 55 MW, the larger plants of the mid-1960s peaked at a capacity around 1,000 MW. In addition to gains due to scale, technological advancements introduced between 1950 and 1970, including developments in the design of boilers, boiler feed pumps, turbines, generators, condensers, automatic controls, fuel handling systems, and features regulating operating temperatures and pressures, led to new efficiencies in electrical generation.

The rate of improvement to steam power generation peaked around the 1970s. Gains slowed, in part, because "fundamental thresholds for further efficiency could not be crossed" with available technologies and materials. However, social and political factors also contributed. Just as the energy industry found itself unable to continue to deliver electricity at the low prices to which ratepayers had grown accustomed, factors such as the 1970s oil embargo, fluctuations in financial markets, high rates of inflation, and increasingly restrictive environmental and market regulations added a new set of hurdles to utilities (Rossell and Peterson 2001).

4 Methods

This section presents the methods for each task completed during the preparation of this study.

4.1 Background and Archival Research

Rincon completed background and archival research in support of this study throughout May through July 2022. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were utilized to develop an understanding of the project site and its context:

- San Luis Obispo County Assessor's Office
- Historical aerial photographs accessed via NETR Online
- Historical aerial photographs accessed via University of California, Santa Barbara Library FrameFinder
- Historical U.S. Geological Survey topographic maps
- *Morro Bay Power Plant Project Historic Property Evaluation* (Rossell and Peterson 2001)
- Historical newspaper clippings obtained from Newspapers.com, ProQuest Historical Newspapers.com, and the California Digital Newspaper Collection
- Other sources as cited in Section 7 *References*

4.2 Field Survey

Architectural Historian James Williams conducted a built environment survey of the Power Plant property, comprised of the 95-acre Morro Bay Power Plant property, on June 9, 2022. In addition to the Power Plant property, field work also included visual observation of an electrical switchyard located on the parcel immediately adjacent to the east (APN 066-331-036) and a cooling water discharge structure on unparcelled land on Morro Bay Beach, both of which are outside the boundary of the Power Plant property and the proposed Project Site, but which were historically associated with the development and operation of the Morro Bay Power Plant, all of which make up the ”Study Area” described in this report. The built environment resources within the Study Area, including component buildings, structures, and landscape elements, were visually inspected. Pursuant to California Office of Historic Preservation (OHP) Guidelines (California OHP 1995:2), because the property is over 45 years of age, it was evaluated for inclusion in the NRHP and CRHR and recorded on California Department of Parks (DPR) 523 series forms. Overall condition and integrity of the resource was documented and assessed. Site characteristics and conditions were documented using notes and digital photographs which are maintained at the Rincon San Luis Obispo office.

5 Findings

5.1 Previous Historical Documentation

The Morro Bay Power Plant was recorded as part of the Historic American Engineering Record (HAER). The HAER includes architectural and engineering plans, but did not include an evaluation of the Morro Bay Power Plant for its potential eligibility for listing as a historical resource (CalPoly Kennedy Library HAER CA-358).

In June 2001, a Historic Property Evaluation was completed by E.G. Rossell and Kirk Peterson for Duke Energy North America, who owned and operated the site at that time. That evaluation found that the Power Plant was eligible for listing in the NRHP and the CRHR under Criterion C/3 for its innovative engineering design and architecture. That evaluation also found that it was eligible for listing under NRHP Criterion G and CRHR's special consideration for historic resources achieving significance within the past 50 years, since the property had not reached the 50-year threshold at the time of evaluation.

In March 2022, Archaeological Research prepared an addendum to a 1999 Cultural Resources Evaluation. That addendum concluded that no structures existed within the Morro Bay Power Plant area prior to the construction of the existing plant, but did not include a detailed description or evaluation of the Power Plant for its potential eligibility for listing as a historical resource.

5.2 Aerial Imagery and Historical Topographic Maps Review

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the project site. Historical topographic maps from 1897 to 1930 depict the project site as undeveloped near what was, by 1930, the northwest edge of development in Morro Bay (NETR Online 2022; USGS 2022). The 1937 and 1943 edition of *Cayucos, California* USGS map shows the Project Site was undeveloped, but at least one building and a dirt road on the northern part of the Power Plant property. The oldest available aerial photograph, taken in 1943, shows the Power Plant property occupied by buildings and other development presumed to have been associated with the U.S. Navy Inshore Patrol Base. Buildings are grouped in two small clusters along a simple internal road system, while what appears to be an above-ground tank is located west of the present site of the existing power plant building (UCSB 1949). By the time the next available photograph was taken in 1956, the west portions of the Power Plant and switchyard, in addition to a no-longer extant tank farm, were constructed on the former sites of several buildings depicted in the 1949 photograph. Four buildings depicted in the 1949 photograph remain on the east side of the property. By 1963, the power plant and switchyard were expanded to the east and no buildings evident in the 1949 photograph remained on the property (NETR Online 2022). Around this time construction had begun on a fifth tank east of the original tank farm. The fifth tank was complete by 1972, when the next available photograph was taken. That same photograph shows some development in what is now Lila Keiser Park, at the north end of the Power Plant property (UCSB 1972). However, a comparison of photographs shows the park was not completed until sometime between 1972 and 1982. Aside from the addition of minor structures and outbuildings, development on the Power Plant property remained essentially unchanged until sometime between

2010 and 2012, when the tanks making up the tank farm were demolished. Imagery from 2018 depicts the Project Site in its current condition (UCSB 1972; NETR Online 2022).

5.3 Survey Results

5.3.1 Built Environment Resources

The following section summarizes the results of all background research and fieldwork as they pertain to built environment resources that may qualify as historical resources. The field work and background research resulted in the identification of one historic-age property on the Power Plant property, Morro Bay Power Plant at 1290 Embarcadero (APN 066-331-046). The Power Plant property is located entirely within the Project Site; however, the functionally-related cooling water intake screenhouse is on a parcel directly south across Embarcadero (APN 066-461-016). Both the Power Plant and cooling water intake screenhouse are on the Power Plant property. Additionally, there is an associated electrical switchyard located on the parcel immediately adjacent to the east (APN 066-331-036) and a cooling water discharge structure on unparcelled land on Morro Bay Beach that were included in the survey due to their historic association with the Morro Bay Power Plant, though both features are outside the Power Plant property and under separate ownership, they are included as part of the Study Area. There are also three facilities unrelated to the Power Plant that are on the Power Plant property: Lila Keiser Park and a Morro Bay Harbor facility at the northern end and a wildlife care center just east of the generating plant. Two features of the Power Plant, the marine fueling facility with associated subterranean and remnant underwater pipelines and an off-site tank farm, were not observed or recorded as part of this study. The Study Area, which is comprised of the Power Plant property, the electrical switchyard, and a cooling water discharge, was recorded and evaluated for historical resources eligibility on DPR series forms, which are included in Appendix A and summarized below.

Morro Bay Power Plant

Physical Description

The Study Area, which is comprised of the Power Plant property, the electrical switchyard, and a cooling water discharge, measure over 100 acres altogether. The Power Plant property (APNs 066-331-046 and 066-461-016) and substation parcel (APN 066-331-036) are adjacent to one another and by far make up the majority of the Study Area. This section of the Study Area is bounded on the south and west by Embarcadero and Scott Street, on the east by Quintana Road and State Route 1, and on the north by Atascadero Road and private property fronting the same street. The intake parcel is discontinuous from the other parcels and is directly across Embarcadero to the south of the Power Plant main gate and fronts Morro Bay Harbor to the south. As noted above, the cooling water discharge structure is located on unparcelled land on Morro Rock Beach. Buildings and structures used historically for the generation and distribution of electricity are clustered in the south and central portions of the Study Area. Areas to the north and southeast, while included within the power plant property, are either undeveloped or developed for public and private institutional uses, including a City of Morro Bay Harbor Department facility, Lila Keiser Park, and the Pacific Wildlife Care Rehabilitation Center.

Three sections of the Power Plant property are undeveloped. Notably, Morro Creek runs in the area roughly between the former tank farm and Lila Keiser Park. In addition, an area on the west side of the Power Plant property is occupied by sandy terrain, while the area southeast of the generating plant and substation is a lightly wooded hillside.

The existing Power Plant is comprised of several major, intact, character-defining elements including the generating plant building, the office/warehouse/machine shop, the boiler stacks, and the No. 1 firehouse, described in detail below (Figure 5).

PRIMARY FEATURES OF MORRO BAY POWER PLANT WITHIN PROJECT SITE BOUNDARY

1. Generating Plant Building

The generating plant building is a multi-volume steel-framed structure with a flat, stepped roof, rectangular plan, and is clad with large expanses of aluminum siding (Figure 6). The building is organized in three sections from east to west. Organized by function, the bay on the north housed the turbines; the middle bay was the firing bay; and the southern bay housed the boilers.

The building's tallest portion, comprising the south elevation, reaches the equivalent of nine stories and fronts the Embarcadero and Morro Bay. The elevation is largely obscured by the three stacks and is largely devoid of ornamentation or openings with the exception of few vent openings. Ducts project from the elevation to the stacks and there are service bays at-grade between the stacks, providing access within.

The north elevation's first floor has a precast concrete exterior and includes two loading entries and two recessed areas with footings where transformers, since removed, once sat, and extended beyond the building. Similar to the south elevation, the floors above, clad in aluminum siding, are generally devoid of openings and include some small louvered vents at the west end. At the east end and west ends, transformer coils hang from anchors above the area where the transformers once extended. The elevation includes former vent pipes that connect to tanks on concrete footings below. This portion of the building's roofline terminates well below the south elevation and is topped with four penthouse structures that enclosed the boilers within. The two western penthouses are narrow, while the eastern penthouses are wider. The structures have flat roofs and are clad in the same aluminum siding described on other elevations, with decorative seams at each of the building.

The building's east and west elevations are largely identical and comprise the short side of the building. The elevations are clad in the same aluminum siding described above and generally devoid of any openings or ornamentation. The east elevation includes one delivery entry with a roll-up door and one man-door entry. The tallest portion of the elevation, made up of the end of the south elevation, includes a central panel with horizontal aluminum seam details that begin above the first floor level and continue to the roofline. The west elevation is similar except that a portion of the elevation is obscured by the adjacent Office/Warehouse/Machine Shop, described in more detail below.

Figure 5 Morro Bay Power Plant Property Map

Imagery provided by Microsoft Bing and its licensors © 2022.

Figure 6 Overview of Generating Plant, North and West Elevation, Facing Southeast

2. Office/Warehouse/Machine Shop

The building containing the office, warehouse, and machine shop adjoins the west side of the generating plant but is structurally independent (Figure 7). It is comparatively low in profile, ranging from one to three stories, with a generally horizontal emphasis. In addition to its smaller scale, its Industrial Modernist-style with International design elements differentiates it from the power generating building. The building is organized as three distinct spaces, with the office, warehouse, and machine shop differing somewhat in scale and design. The building has a steel-frame structure, with elements of its structural system visible in the form of vertical I-beams exposed at the base of the office. Facing materials here include corrugated metal panels, terrazzo veneer, and enamel-coated metal panels. Located on the west elevation, the main entrance is on the office's ground level and features recessed, automatically sliding, glazed metal double door (Figure 8). The doorway is flanked by sidelights and topped with a full-width transom light, all fixed metal-sash. The entrance opens to a simple concrete and brick plaza that is lined with low concrete planters and a broad brick platform with a metal flagpole (Figure 9). Additional entrances, accessing the warehouse and office, include solid and glazed metal single and double doors and two warehouse bays with metal roll-up doors. North- and south-facing windows punctuate all three floors and include broad ribbons consisting of large fixed and smaller awning-type sashes. In some locations, the sashes are evidently replacements. A large focal window faces the south, directly above the main entrance.

Figure 7 Overview of Office/Warehouse/Machine Shop, South and West Elevations, Facing Northeast

Figure 8 Main Entrance to Office, West Elevation, Facing East

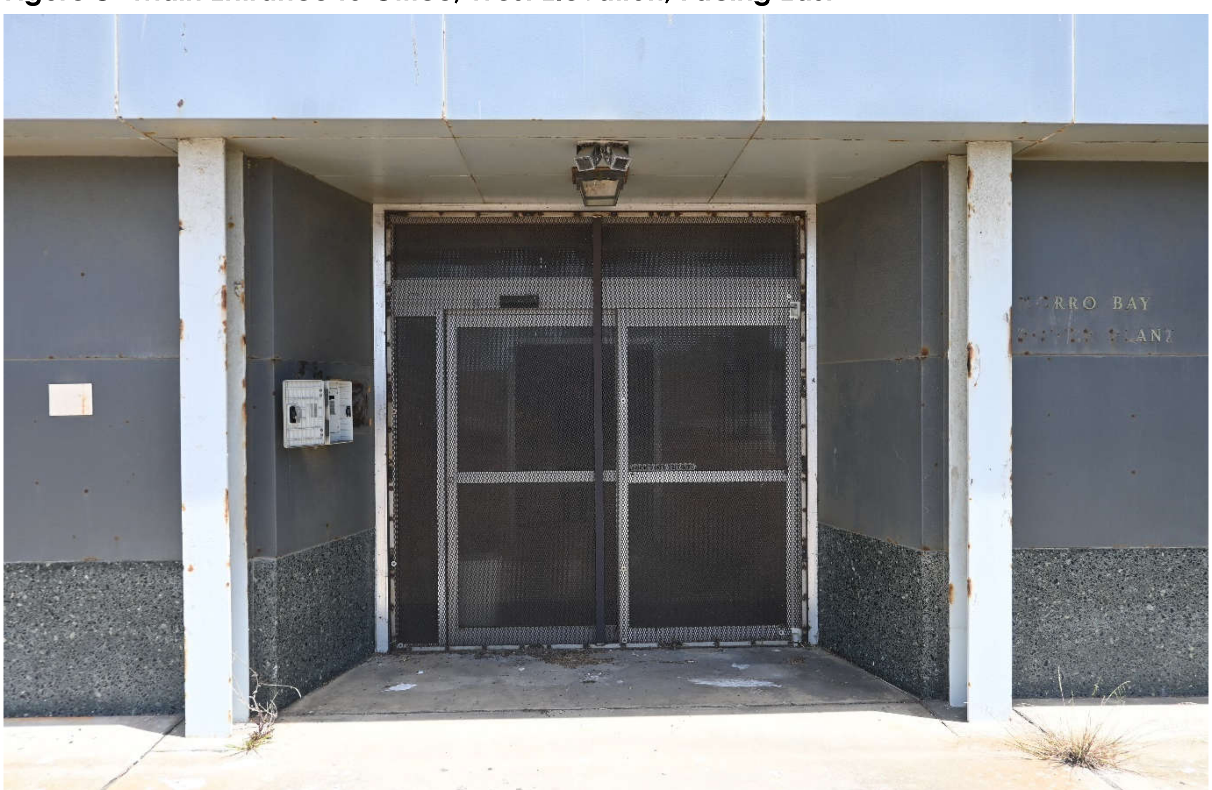


Figure 9 Office Plaza, Facing Northeast

3. Boiler Stacks

Three reinforced-concrete boiler stacks are placed at even intervals in front (south) of the power plant building (Figure 10). When the Power Plant was in operation, the stacks expelled flue gas produced by the burning of fuel. The westernmost stack dates the Power Plant's original construction and historically served Units 1 and 2. With an overall height of 450 feet, the stack is 42 feet 8 inches in diameter at the base, and tapers to a diameter of 17 feet, six inches at the top. Its interior is brick-lined. The stacks for Units 3 and 4 are of equal height, but measure at 45 feet, 5 ½ inches across the base, and taper to 15 feet, 2 inches at the top (Figure 11). They are steel- and fiberglass-lined. Large steel-framed apertures allow for the connection of steel gas ducts from the south side of the generating plant (Figure 12). The stack for Units 1 and 2 differs from its counterparts in that the duct connections are on the east and west sides, rather than the north, and have had the ducts removed. Steel ladders ascend the stacks' exteriors.

Figure 10 Boiler Stacks, Facing North from Morro Bay Harbor

Figure 11 Boiler Stacks, Facing West from East Side of Generating Plant

Figure 12 Gas Duct Adjoining Unit 4 Boiler Stack, Facing West

4. No. 1 Firehouse

The No. 1 Firehouse is a one-story utilitarian building located southwest of the generating plant, near the main Embarcadero gate (Figure 13). It is rectangular in plan with a concrete foundation, flat roof, and standing-seam metal cladding. Fronting an internal roadway, the entrances are on the north elevation and include two central vehicle bays with roll-up metal doors flanked by standard entries with glazed metal doors. Above each standard doorway is a metal louvered vent. Windows are visible on the east elevation where there is a ribbon of one-over-four windows, which may each contain an awning-type pane, but are otherwise fixed. Windows on the opposing elevation are covered with non-original metal paneling.

Figure 13 No. 1 Firehouse, North and East Elevations, Facing West

SECONDARY FEATURES OF MORRO BAY POWER PLANT WITHIN PROJECT SITE BOUNDARY

In addition to the major components, the Morro Bay Power Plant also includes several associated secondary utilitarian features including some that were added to the site after its initial construction and expansion from 1955 to 1963 or those that have since been removed and now only include remnants. They include the former tank farm, the displacement oil tank, the sump water tanks, standpipe, retaining basin, and a number of other additional minor features.

5a. Gatehouse

Located immediately west of the main gate off Embarcadero and integrated into the adjacent security wall, the gatehouse, constructed in 1975, is a one-story office building exhibiting no discernible architectural style (Figure 14). The building is rectangular in plan, sits on a concrete foundation, and is topped with flat roof with rolled composition cladding a hipped visor. Its structural system is sheathed in stucco. The publicly accessible south-facing entrance fronts Embarcadero and consists of a commercial-type glazed metal door flanked by large, vertically oriented lights. Entrances on the north and west elevations face the interior of the property.

5b. Former Tank Farm

Located at the northwest corner of the power plant complex, the former tank farm, constructed in 1953-1955 and expanded in about 1975, consists of the foundations of five demolished above-ground oil storage tanks protected by an earthen and concrete levee. Site constraints prevented the observation of the interior of the area and much of the levee (Figure 15). As a result, the following description is based on a combination of on-site visual observation and a review of satellite imagery.

The earthen levee encloses all or most of the tank farm area, which has a rough L plan. Although the tanks were demolished in 2011 following the Power Plant's conversion to all natural gas fueling in the 1990s, impressions of the circular, approximately 180-foot-diameter footprints of individual tanks remain. Based on visual observation, the levee is trapezoidal and stands an estimated ten feet. Concrete-framed portals open on the east side of the structure, where pipelines formerly connected the tank farm to facilities outside the levee.

5c. Displacement Oil Tank

Situated immediately east of the former tank farm, with which it was historically associated, the displacement oil tank, constructed in about 1975, is a cylindrical, welded-metal tank. It sits on a slightly raised foundation and measures an estimated 75 feet in diameter and 30 feet in height. A full-height metal ladder and various appurtenances are visible on the south side of the structure (Figure 16).

5d. Sump Water Tanks

West of the generating plant and adjacent to the east side of the former tank farm, three above-ground storage tanks are clustered with associated appurtenances. "Sump Water Tank" is painted on the exterior of two of the tanks (Figure 17). Although the tanks share similar designs, two are slightly larger than the third. Each is cylindrical with an ellipsoid top. The exterior of each is concrete or a similar material, though it is unclear whether that reflects their structure, or they are only coated in the material. Heavy steel piping emerges from the sides of the tanks and is routed to an area at the rear (west) of the tanks. Features on the west side of the tanks were not visible during the field survey due to site constraints.

5e. Retaining Basin

The retaining basin, added to the Power Plant property in about 1975, is located immediately east of the generating plant building and south of the substation. It is a rectangular-plan, below-grade artificial basin measuring 200 feet long, 125 feet wide, and approximately six feet deep (Figure 18). The basin's walls are sloped and its floor roughly flat. It is segmented into three parts and lined in plastic. Steel pipelines connect the basin and generating plant, part of which are routed through a trench under the adjacent internal roadway and concealed by concrete coated metal panels.

Additional Minor Features

The power plant also includes several additional minor features located in areas immediately adjacent to the generating plant building. Generally, these include external mechanical equipment, tanks, tank and building foundations, trenches, and basins. One concentration occurs south of the generating plant building, immediately north of the wall that fronts Embarcadero. Included in this area are a large cylindrical above-ground storage tank, apparent circuit boxes, and apparent manual valve control features. East and north of the generating plant there are concrete building and storage tank foundations and trenches of unknown functions. A number of concrete pads are located in the area between the generating plant and switchyard.

Figure 14 Gatehouse, South Elevation, Facing North

Figure 15 Southeast Side of Tank Farm Levee, Facing Northwest

Figure 16 Displacement Oil Tank, Facing North

Figure 17 Sump Water Tanks, Facing West

Figure 18 Retaining Basin, Facing East

FEATURES OF MORRO BAY POWER PLANT OUTSIDE PROJECT SITE BOUNDARY

As described above, the Morro Bay Power Plant includes several associated features that relate to the Power Plant's historic operation that are outside the Project Site, but are on the Power Plant property. They include the cooling intake screenhouse and the standpipe, as described in more detail below.

6a. Cooling Water Intake Screenhouse

The cooling water intake screenhouse is situated off the main Power Plant location, perched partially over Morro Bay Harbor (Figure 19). Constructed in two phases between 1954 and circa 1963, it is a two-story building constructed in the Industrial Modernist style with elements of International style architecture. The building is rectangular in plan and supported by a concrete foundation. Concealed by a straight parapet, its roof is flat and clad in rolled composition material. Wall cladding is generally characterized by standing-seam metal on the upper portions and concrete veneer in square panels below. On the street-facing north elevation, a section of the concrete-cladding extends upward to the parapet. Entrances are located on all sides of the building and include standard-size entry doors and loading bays with metal roll-up doors. A second-story entrance accesses a metal-rail balcony. All but the east elevation is windowless; it is penetrated by a ribbon of metal-sash awning-type windows. Additional features include a concrete supporting structure with a central channel fronting the harbor, concrete deck, and above the deck, a metal-beam feature suggestive of a wall-mounted gantry crane.

6b. Standpipe

Located approximately 950 feet east of the generating plant, the standpipe is a cylindrical, sheet-metal-clad water tank. A review of aerial imagery suggests the structure has an octagonal concrete foundation and is in an area enclosed with a chain-link fence (Figure 20). The standpipe's location is near the east corner of the property at the top of the ridge overlooking the power plant and substation.

Figure 19 Cooling Water Intake Screenhouse, South and East Elevations, Facing Northwest

Figure 20 Standpipe Viewed from Scott Street, Facing Northwest

FEATURES OF MORRO BAY POWER PLANT OUTSIDE THE POWER PLANT PROPERTY

As described above, there are features of the Morro Bay Power Plant that are associated with its historic development and operation that are now outside the Power Plant property. They include the switchyard (APN 066-331-036) and the cooling water discharge outlet on an unparcelled piece of land on the Morro Bay beach, described in more detail below.

7a. Switchyard

The open-air switchyard, first constructed in 1953, occupies a separate 27-acre parcel immediately north of the generating plant building. Although it is no longer run in conjunction with Morro Bay Power Plant, PG&E operates the facility as an electrical substation. The Power Plant consists of three ranks of transformers aligned east to west, a control building, and other electrical equipment that step down voltage electricity coming in on the transmission lines, to a much lower voltage suitable to distribute (Figure 21).

7b. Cooling Water Discharge Outlet

The cooling water discharge outlet, constructed in 1953, is located offsite, immediately northeast of the base of Morro Rock. Connected to Morro Bay Power Plant by two 3,000-foot-long tunnels, the outlet conveys water used in power plant operations into the Pacific Ocean. The exposed outlet feature is constructed of reinforced concrete with two portals separated by wingwall. Water flows from the outlet through a 225-foot-long, riprap-lined channel. The outlet and channel area is delineated by a chain-link fence, separating the feature from the adjacent public parking lot (Figure 22).

Figure 21 Overview of Switchyard, Facing Northwest

Figure 22 Overview of Cooling Water Discharge Outlet and Channel, Facing South

FEATURES NOT ASSOCIATED WITH MORRO BAY POWER PLANT OPERATION

The Power Plant property, in addition to being the site of the Morro Bay Power Plant, has a number of buildings and features not associated or functionally related with the historical development or operation of the power plant. They include the Lila Keiser Park, the Pacific Wildlife Care Rehabilitation Center, and the Harbor Department Boat House Facility, described in more detail below.

8a. Lila Keiser Park

Lila Keiser Park, dedicated in 1971, is a public park operated by the City of Morro Bay, located at the far northern end of the Power Plant property (Figure 23). The park centers on a pair of baseball diamonds, playground, and picnic area. There are two permanent buildings on the property, a combination restroom-snack bar and an announcers both. Both buildings are of simple, concrete-block construction and lack the hallmarks of any architectural style. The park occupies generally level terrain, with most areas outside the ball fields, playground, and picnic area occupied by a paved parking lot. Morro Creek forms a natural boundary between the park and power plant; the distinction between the properties is enhanced with fencing and landscaping along the south boundary, in addition to a separate park entrance from Atascadero Road.

8b. Pacific Wildlife Care Rehabilitation Center

Pacific Wildlife Care Rehabilitation Center is a private animal care facility located on the east side of the Power Plant property (Figure 24). Added in 2005, the facility is accessible only from within the power plant property, but is delineated by a chain-gate and fencing on all sides. The facility consists of two portable buildings and several open-frame structures. The portable buildings are both one story in height, culminate in low-pitched gabled or sed roofs, and are clad in T1-11 siding. Windows are one-over-one metal sashes. Outside the footprints of buildings and structures, the facility is mostly unpaved.

Figure 23 Baseball Diamond and Announcers Booth at Lila Keiser Park, Facing West

Figure 24 Overview of Pacific Wildlife Care Rehabilitation Center, Facing Northeast

8c. Harbor Department Boat House Facility

The Harbor Department Boat House, constructed in about 1985, is a public institutional property located at the northwest corner of the Power Plant property (Figure 25). Added to the Power Plant property by 1994, it consists of four metal-clad buildings situated in a narrow, rectangular area fenced off from the power plant and a neighboring property. At the far west end is a prefabricated building with the appearance of a Butler building. As such, it has a gabled roof, standing-seam metal roof and wall cladding, and a gable-end vehicle bay accessed via a metal roll-up door. Further east are a relatively small shed and two long, narrow storage buildings with multiple vehicle bays. Due to limited access, further details were observed.

Figure 25 Butler-Type Building at Harbor Department Boat House Facility, North and West Elevations, Facing East

Property History

The Study Area containing Morro Bay Power Plant remained vacant until 1941. By November of that year, the United States Navy acquired the land to establish a base. In the weeks just prior to the December 7, 1941, attack on Pearl Harbor, Navy crews began construction of what would become the Morro Bay Naval Station. Construction work on the Power Plant included the clearing of trees from the site and construction of several buildings. Off-site development focused primarily on harbor improvements, such as the deepening of the channel, construction of a jetty and piers, improvements to the Embarcadero, but also included construction of a new waterworks for the community of Morro Bay. On February 4, 1944, the installation was reorganized as the U.S. Naval Amphibious Training Base. Over 45,000 soldiers passed through the facility, receiving training in amphibious landings, troop and equipment transport, and conventional warfare. The base was decommissioned October 31, 1945, and 175 landing craft and a number of personnel were transferred to other military facilities. The property was soon transferred to the State of California in

1945 and to the County of San Luis Obispo that same year (Anonymous n.d.; Old Morro Bay 2022; Rossell and Peterson 2001).

Historical aerial photographs of the property show that, as late as 1949, there were two clusters of buildings located at the south end of the property, near the Embarcadero. While one building cluster was removed prior to the completion of the power plant, the other cluster remained until the early 1960s (UCSB 1949, 1959; NETROnline 1963). Research for this study found no evidence that any building or structure associated with the naval installation remains on the Study Area.

PG&E began planning for the construction of the Morro Bay Power Plant by the 1950s. It was intended to help satisfy the growing demand for electricity amid California's post-World War II-era development boom and coincided with a dramatic expansion of steam generating plants throughout the United States. The most pressing need the Morro Bay Power Plant would fill was accelerating demand for power to operate the San Joaquin Valley's growing number of agricultural irrigation pumps. Morro Bay was chosen as the Power Plant site due to its location at the mid-point of California's coastline. This situation was beneficial due to the affordable fuel costs in the area, its proximity to the target region (chosen to minimize transmission loss), and the availability of cooling water from the bay. Although the Power Plant was conceived as a facility containing as many as eight steam-turbine generating units, only Units No. 1 and No. 2 were planned for the Power Plant's first iteration. PG&E hired the San Francisco-based Bechtel Corporation to design the engineered elements of the Power Plant and architect William Gladstone Merchant, also of San Francisco, for architectural elements (Rossell and Peterson 2001; HCSLOC 2020).

Bechtel began construction of Units No. 1 and No. 2 in 1953 (Figure 26). At the time, it was the largest construction project in the county since the erection of Hearst Castle (Middlecamp 2021). As many as 700 workers took part in the effort, which required the displacement of thousands of cubic yards of soil and the importation of large quantities of steel and mechanical components. The heaviest imported component was as the 244-ton generator stator, which crews carefully trucked to the site along SR-1 from the nearest rail connection at Camp San Luis Obispo, ten miles to the north.

Bechtel, the firm responsible for building the subject plant had a significant role in the expansion of steam generating plants in the United States. The firm was responsible for the construction of several plants in California and other western and midwestern states in the 1950s: Contra Costa, Pittsburgh, El Segundo, Long Beach, Eureka, as well as Salt Lake City and Price, Utah, Phoenix, Arizona, and Joppa, Illinois. This push was instrumental in the growth of the firm and its prominent international standing.

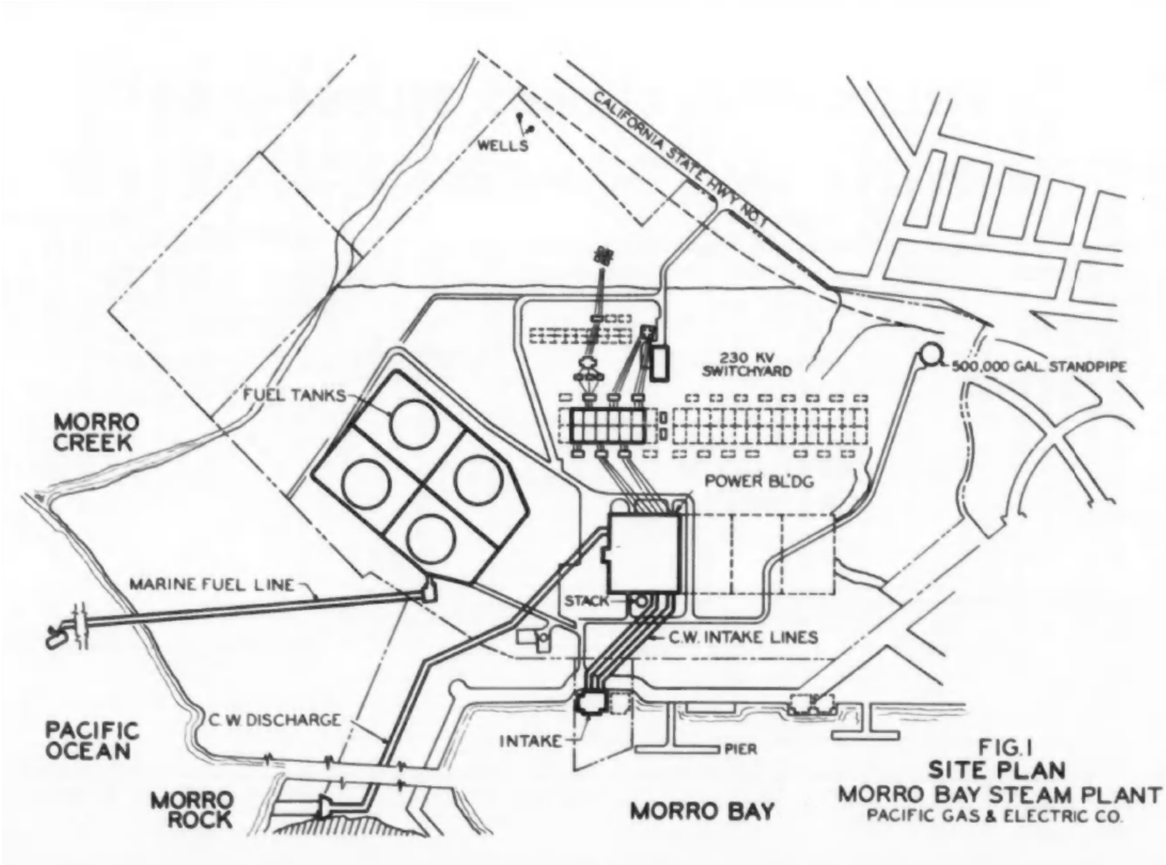
Figure 26 Morro Bay Power **Plant Under Construction, 1954**

Source: San Luis Obispo Tribune, 2021

As the Power Plant neared completion, authors J. George Thon and Gordon L. Coltrin profiled the facility in a 1955 issue of the *Society of American Engineers Proceedings*. As summarized below, the issue highlighted several innovative features of the Power Plant, including its marine refueling system, fuel oil tank farm (no longer extant), saltwater evaporators, cooling water intake and discharge systems, original boiler stack, and turbine foundations (Figure 27).

Construction of the offshore fueling system proved a technical and logistical feat. The system consisted of a "marine anchorage," offshore pipeline (about 4,500 feet), onshore pipeline (about 1,250 feet), and a tank farm consisting of 168,000 barrel tanks. The system's design allowed an input of 8,000 barrels per hour. The anchorage included five 10-ton permanent anchors, each attached to a mooring buoy. There was a hose to connect to the oil tanker and pump fuel into the system. As described by Thon and Coltrin, "[t]he installation of the marine fuel line was quite spectacular from the standpoint of coordination between land and sea construction forces." Segments of pipeline were assembled on the beach pulled into the surf by a winch operated from a barge offshore. As coordinated by land and sea crews by a combination of radio and hand signals, after a segment of pipeline was pulled into the water to a certain length, a new segment was welded onto the onshore end, and the process repeated to assemble the entire length of the marine pipeline. Overall, the installation was accomplished in 15 hours and 30 minutes (Thon and Coltrin 1955).

Figure 27 Diagram Depicting **First Stage of Development, Published 1955**



Source: Thon and Coltrin, 1955

Prior to construction of the tank farm, the site was occupied by sand dune reaching 30 feet in elevation above the generating plant site, conditions susceptible to erosion. To erect the protective dikes, the area was cleared of sand, and then rebuilt in compacted layers. Ice plant was planted along the embankments to prevent erosion and misters installed along the tops of dikes to disperse sufficient water to ensure the soil would cohere (Thon and Coltrin 1955).

Thon and Coltrin also highlighted the Power Plant's innovative use of seawater evaporators to provide the boilers and other elements with distilled fresh water. Engineers determined each of the Power Plant's generating units would require 80 gallons per minute of fresh water, the largest quantities of which would go to boiler makeup and pump lubrication. Although several direct sources of fresh water were studied, engineers ultimately settled on sea water evaporators to purify water pulled from Morro Bay Harbor. Although use of seawater evaporators was common on seagoing ships, it was believed that installation of evaporators at Morro Bay Power Plant, as adapted by PG&E supervising mechanical engineer Albert W. Bruce, would be the first use of such technology in a terrestrial industrial setting (Thon and Coltrin 1955). The triple-effect evaporators installed at the Power Plant were designed to purify 50 gallons of water per minute to provide boiler makeup and "utility water," by subjecting water from the bay to three cycles of evaporation, which separated (and collecting) relatively pure water condensate from the brine, which was discharged into the ocean (Thon and Coltrin 1955).

Incorporation of seawater evaporator technology into Morro Bay Power Plant's design set a precedent for modern power plants. By 1974, the inclusion of such evaporators was *de rigueur* for

American steam generating facilities. Among the technology's main benefits, it circumvented the traditional reliance of fresh water sources, allowing planners greater discretion in the siting of plants (Rossell and Peterson 2001; *Electrical West* 1968).

As reported by Thon and Coltrin, project geologists determined the land on which the Power Plant was built, including the layer of soils introduced as fill by Navy engineers in the 1940s, was highly subject to subsidence, or the gradual sinking or settling of land. To minimize the compression of the land on which the generating units were built, a concrete mat foundation (rather than piles) was selected as a means of distributing the Power Plant's weight and thereby reducing the anticipated compression of soils. There were other advantages to the mat foundation, including that it would allow for construction of a basement, in which condensers and other equipment could be stationed; reduce construction time relative to that of a pile-based superstructure; and added further to the time savings by allowing the installation of some mechanical services in the basement concurrent with the construction effort (Thon and Coltrin 1955).

In addition to the subsidence issues, the size and speed of modern turbine generators, such as those installed for Units 1 and 2, required careful design of the concrete pedestal foundations on which the machinery was to be installed in order to withstand the dynamic loads produced by the generators (Thon and Coltrin 1955).

The stack was constructed to discharge flue gas generated by burning fuel oil. The 14-foot nine-inch interior diameter of the upper opening was designed to allow for a pressurized, "jet-like" effect that would discharge of gases "an appreciable distance above the stack, adding to its effective height." The stack and its pile foundation were engineered to satisfy the most up-to-date seismic standards for structures of its type (Thon and Coltrin 1955).

In addition to Morro Bay Power Plant's many technical highlights, a key architectural feature of its design was the aluminum sheathing that enveloped the generating facility, cladding that was unusual in steam plant design and applied primarily for aesthetic reasons. As Rossell and Peterson explain, however, the design was emblematic of reigning Modernist architectural approaches:

> Aluminum was a signature material reflecting the modern age and being particularly appropriate for an industrial building due to its being an industrial material and its clear lines reflecting machine precision. The 1950 Johnsonville, Tennessee TVA steam-electric plant was featured as one of twelve industrial buildings sheathed in the material for Reynolds Aluminum two volume set of 1956 entitled Aluminum in Architecture. But numerous signature buildings of the age were similarly designed and decorated such as Equitable Savings and Loan, Pietro Belluschi, Portland, Oregon, 1948; the Illinois Institute of Technology, Mies van der Rohe, Chicago, 1940; Lake Shore Apartments, Mies van der Rohe, Chicago, 1952; General Motors Technical Center, Eero Saarinen, Detroit, MI, 1951-5; and the Alcoa Building, Harrison and Abramovitz, Pittsburgh, PA, 1953. Phillip Johnson commented that there was "nothing [that] can equal aluminum for extrusion" and that "there is a sharpness and a definition which, added to the lightness of the natural material, makes it perfectly natural for the outside of buildings."

Aside from its aesthetic implications, the Power Plant's aluminum shell bore many practical benefits. Aluminum is a relatively lightweight material, and its use in construction may have reduced shipping and labor costs, in addition to reducing the load on the building's structural system. The material is also relatively resistant to corrosion, a particularly important consideration, given Morro Bay's coastal location. That the material is heat-reflective may have been a factor in light of California's relatively warm and sunny climate. Additionally, aluminum does not produce sparks when struck, an important characteristic in a setting where high volumes of gas are being used (Rossell and Peterson 2001).

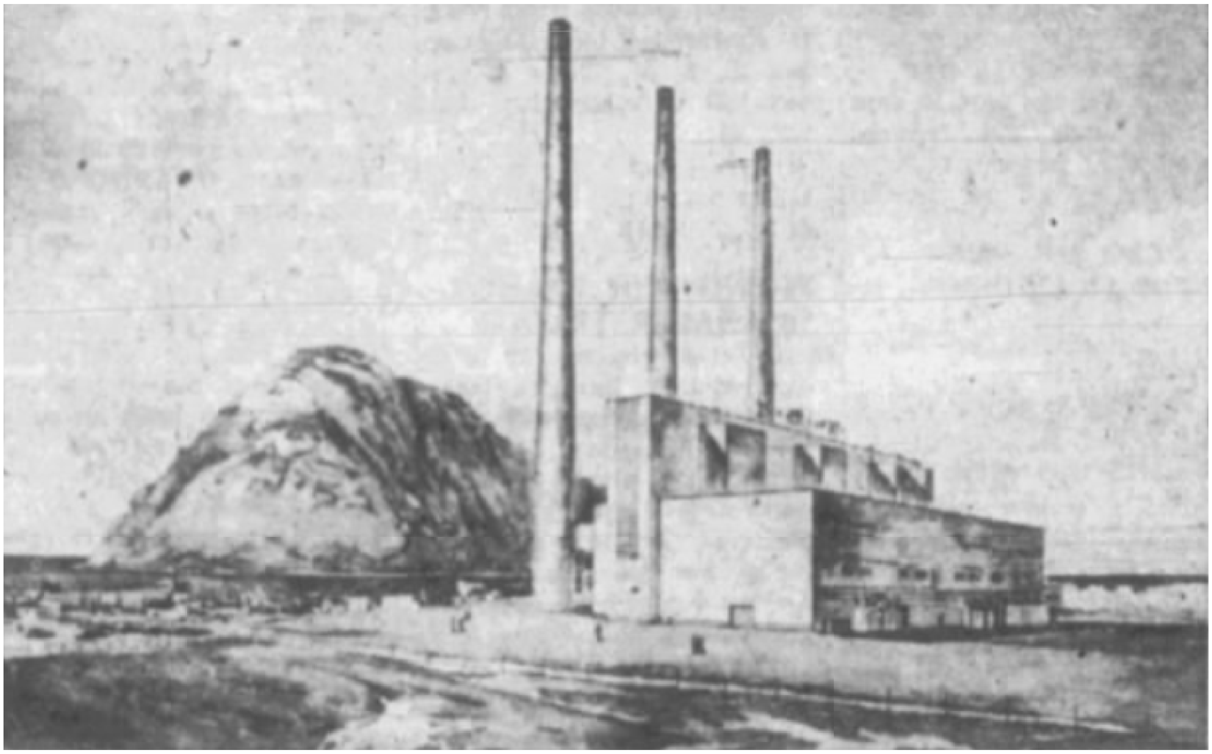
Morro Bay Power Plant was completed in July 1955 as the sixteenth steam plant in PG&E's system. A symbol of the Power Plant's regional importance, the *San Luis Obispo Telegram-Tribune* published an eight-page special section on the facility's opening on July 7, 1955. The section's glowing coverage mostly detailed the construction effort and the workings of various mechanical components of the Power Plant (*San Luis Obispo Telegram-Tribune* 7/7/1955). At the time of its completion, the $44 million plant centered on the two original generating units, one of the existing boiler stacks, the International Style combined office/warehouse/machine shop, the cooling water intake facility (though it was then about half its current size), a four-tank fuel oil tank farm, cooling water discharge outlet adjacent to Morro Rock, offshore fueling connection and pipeline, the western portion of the existing switchyard, and other minor features (Figure 27). In its early years, there was a large neon sign reading "PG&E" on the Power Plant's roof (no longer extant), and the stack was illuminated at night with flood lights (Rossell and Peterson 2001; Thon and Coltrin 1955).

The Power Plant's importance locally was soon realized. For one, it was instantly identified as an important man-made landmark and counterpoint to nearby Morro Rock (Rossell and Peterson 2001). However, the Power Plant's significance extended beyond aesthetics. At least one report has observed that "tax dollars from the Power Plant gave stability to the San Luis Coastal School District and provided a base for Morro Bay to become a city" (Kmetz 2014).

In 1960, PG&E president N.R. Sutherland announced plans to double the Power Plant's size (Figure 28). Although early news media coverage reported the utility's plans for only one additional 330,000-kW generating unit, it was eventually revealed PG&E intended to build two units of the same capacity. As part of the expansion, PG&E would also add to the on-site switchyard and construct a new 220-kV transmission line between the switchyard and the San Joaquin Valley. Costs were estimated at $40 million per unit, with labor needs projected as high as 400 individuals (*The Californian* 4/20/1960; *Fresno Bee* 4/20/1960; *San Luis Obispo Tribune* 12/24/1960). Once completed, Units 3 and 4 would triple the Power Plant's original capacity, bringing its generating power to 990,000 kW, or as one report put it "enough electricity to supply two cities the size of San Francisco" (*Santa Maria Times* 1/27/1961). At this capacity, the Power Plant would be the second most powerful in PG&E's system, ranking behind only the company's Pittsburg facility in Contra Costa County. Initially, PG&E was identified as the designer and builder, but it was revealed in December 1960 that PG&E hired Oakland-based construction firm Johnson Drake and Piper, Inc. to handle excavation and foundation construction for the power plant expansion. Under the construction contract, excavation would be 17 feet deep to accommodate an "underground water conduit, piling, basement work, and pedestals for two cross-compound turbine generators" (San Luis Obispo Tribune 12/24/1960).

Units 3 and 4 were completed in 1962 and 1963, respectively. The additions included new turbines, two additional concrete boiler stacks, and the expansion of the generating plant building to its current footprint (Rossell and Peterson 2001). A review of historical aerial photographs shows the switchyard was expanded by 1963. It is presumed the expansion of the cooling water intake screenhouse circa the 1960s was undertaken as a part of this expansion (NETROnline 1956, 1963). Based on a review of historical aerial and site photographs, additions to the generating plant and cooling water intake screenhouse were compatible in style and materials with the original buildings.

Figure 28 Rendering of Morro Bay Power Plant with Planned Units 3 and 4, 1961



Source: Santa Maria Times, 1961

By the 1970s, PG&E began leasing or selling areas on the perimeter of the property to the City for use as a public park, RV camping facility, storage for fishing gear. Increasingly, sensibilities and regulations concerning environmental impacts made it infeasible for PG&E to develop these areas for plant expansions. Opposition on environmental grounds may have caused the utility to abandoned plans for the development of two new above-ground storage tanks, one proposed immediately north of Morro Creek (MBPP Ad Hoc Committee 2007; PG&E 1973). As part of the civic development of the Power Plant property, Lila Keiser Park was developed at the north end of the Power Plant property and dedicated in June 1971 (MBPP Ad Hoc Committee 2007; *San Luis Obispo Tribune* 6/19/1971). Other non-utility developments included a recreational vehicle campground and storage for fishing gear (MBPP Ad Hoc Committee 2007).

Over the Morro Bay Power Plant’s first 40 years of operation, it used oil and natural gas alternately as fuel. In 1996, PG&E abandoned oil fueling at the property and transitioned the Power Plant to solely natural gas fueling. The above-ground storage tanks at the on-site oil-fuel tank farm were apparently made obsolete by this decision and were eventually demolished (Rossell and Peterson 2001; NETROnline 2010-2012).

In November 1997, following the deregulation of the State’s utilities, PG&E sold the majority of the property to Duke Energy as part of California’s state requirement to break up monopoly power generation (Middlecamp 6/19/2021). In 2006 Duke Energy sold the plant to LS Power. In 2007 LS Power merged its assets with Dynegy Inc. Between 2010 and 2012, the above-ground storage tanks of the tank farm were razed, leaving the protective embankments in place. The Power Plant closed in February 2014. Dynegy cited environmental regulations that would have required updating the filtering technology for its ocean water cooling system as the deciding factor in closing the Power Plant, whose operation was significantly scaled back in the years preceding (Wilson 7/29/2014).

Vistra Corporation merged with Dynegy in 2018 and continues to own the Power Plant today. An overview of the Power Plant's development history is outlined below in Table 1.

Table 1 Morro Bay Power Plant Construction History

Date	Description of Work	Architect/ Contractor	Property Owner	Notes
1953-1955	First phase of plant construction	William Gladstone Merchant (architect); Bechtel Corporation (builder)	PG&E	This initial phase of construction included generating Units 1 and 2, the west boiler stack, office/warehouse/machine shop, tank farm, marine fueling system, west end of the cooling water intake screenhouse, cooling water discharge tunnel and outlet, and west side of the switchyard, among other minor features.
1961-1963	Plant expansion	PG&E (engineer and builder); Johnson Drake and Piper, Inc. (builder)	PG&E	Plant expansion included construction of generating Units 3 and 4, including related changes to the generating plant building; expansion of the switchyard; and, likely, the east addition to the cooling water intake screenhouse.
1971	Construction of Lila Keiser Park	Unknown	PG&E	N/A
Ca. 1975	Construction of displacement oil tank; expansion of tank farm; expansion of switchyard; construction of gate house	Unknown	PG&E	N/A
Ca. 1985	Construction of Harbor Boat House Facility	Unknown	PG&E	N/A
2005	Construction of Pacific Wildlife Care and Marine Mammal Center	Unknown	Various	N/A
Ca. 2012	Demolition of tank farm tanks	Unknown	Dynegy	N/A

Sources: Rossell and Peterson 2001; NETROnline 2022; *San Luis Obispo Tribune* 1971

Industrial Modernist/International Style Architecture

In 1932, historian Henry Russell Hitchcock and architect Philip Johnson prepared an exhibit and companion book at the Museum of Modern Art in New York, chronicling contemporary European architecture, like the works of Walter Gropius at the Bauhaus School in Germany. Other early influences of the style included Mies van der Rohe in Germany, Le Corbusier in France, JJP Oud in the Netherlands, and Marcel Breuer in Hungary. The "International Style" exhibit coined the style name and introduced the radical buildings to an American audience. They laid out three key design principles of the style: thin planes that create the building form (as opposed to a solid mass), regularity in the façade (as opposed to building symmetry), and no applied ornament (Chicago Architecture Center).

The International Style was characterized by austere aesthetic and unornamented surfaces indicative of the Machine Age. Architects working in the style embraced modular design, expressed structural systems and material palettes, and methods of prefabrication as they developed an idiom that shunned past traditions and championed functionality, rationality, and economy (Survey LA). Beginning in the years before World War II, the International Style took on a life of its own in the post-World War II period. As a result of the war, conventional methods of industrial production were augmented with new techniques aimed at producing products cheaply and en masse. Relatively new products like plastics and aluminum were incorporated into production whenever possible. At the same time, the Corporate/Industrial International Style came of age, using materials like aluminum to reflect a strong visual connotation with modernity, technology, and progress. Phillip Johnson commented that there was “nothing [that] can equal aluminum for extrusion” further explaining “there is a sharpness and a definition which, added to the lightness of the natural material, makes it perfectly natural for the outside of buildings”. Flush with cash, corporations in postwar America invested heavily in the construction of new headquarters and operational facilities. Many of these buildings assumed a distinctive architectural vocabulary that “showcased their forward-looking attitudes and futuristic products by virtue of cutting edge innovations in modern architecture (Survey LA).

William Gladstone Merchant

William Gladstone Merchant (1889-1962) was born in California in 1889 and was educated at the Wilmerding School of Industrial Arts in San Francisco. He graduated in 1909 and supplemented his education with private classes in engineering in 1912. Merchant worked briefly for John Galen Howard in 1909. Between 1909 and 1911, Merchant worked in the offices of Charles Wittlesay and William Woollett. From 1911 to 1914, Merchant worked for Bernard Maybeck, famed architect of the Arts and Crafts Movement, on the Palace of Fine Arts for the Panama Pacific International Exposition in San Francisco in 1915. Merchant was also the designer in charge of exhibits at the Palace of Fine Arts. Merchant obtained his architectural license in 1918 and worked in the office of George W. Kelham until 1928. Merchant then spent a year traveling in Europe in 1929 and returned to San Francisco to open his own practice in 1930 (Online Archive of California 2003; Healdsburg Tribune 03/01/1962).

Between 1932 and 1939, Merchant was the consulting architect for the San Francisco Recreation Commission. In this position, he worked as architect for the development and reconstruction of 28 San Francisco playgrounds. During this time (1935-1937) Merchant also worked on a number of residences with the firm Maybeck and White. From 1935-1939, Merchant served on the Architectural Commission for the Golden Gate International Exposition. For the Exposition, Merchant designed the Pacific House, the Temples of the East, the California Recreation Building, the Redwood Empire Building in association with Bernard Maybeck, as well as several other small buildings (Online Archive of California 2003; Healdsburg Tribune 03/01/1962).

Beginning in 1943, Merchant served as the architect for the World Trade Center in San Francisco. Due to lack of funds, Merchant's 1951 plan for a complex of buildings at the foot of Market Street was abandoned. Instead, the World Trade Center was incorporated into the North Wing of the existing Ferry Building. In 1946, Merchant expanded his practice as William G. Merchant & Associates. This firm completed projects for, among others, the Sailors Union of the Pacific, Pacific Gas & Electric, San Francisco State College and continued work for the San Francisco Recreation and

Parks Dept. He designed the Morro Bay Power Plant in 1953. In 1960 the firm was granted the commission to rehabilitate the crumbling Palace of Fine Arts Building, but Merchant passed away just two years into the project in 1962 (Online Archive of California 2003, Healdsburg Tribune 03/01/1962).

Historical Evaluation

Morro Bay Power Plant, inclusive of those elements associated with the development and operation of the Power Plant from 1955 to 1963, is recommended eligible for listing in the NRHP and CRHR, under Criterion C/3. It lacks significance under Criteria A/1 and B/2 and was not assessed for significance under Criterion D/4, which typically does not apply to built environment resources.

Morro Bay Power Plant was constructed as a steam-turbine power generating plant between 1953 and 1955 and expanded with two new generating units between 1961 and 1963. PG&E completed the Power Plant as the sixteenth generating plant in its system and, at the time, the most expensive construction project in San Luis Obispo County history. The Power Plant proved to be a valuable source of jobs, and local tax revenues it generated underwrote the consolidation of a regional school district and incorporation of the City of Morro Bay. Changes in state regulations on utilities led PG&E to sell the Power Plant in the 1990s, after which time the Power Plant's new owners came to regard the facility as obsolete. Following fruitless efforts to construct a new generating facility on the site, Morro Bay Power Plant was permanently shuttered in 2014. Research for this study found no evidence Morro Bay Power Plant was significant in the history of PG&E. It was neither first nor largest of the utility's steam plants and does not singularly represent any event related to the firm. Nor was the Power Plant significant in the wider history of electrical utilities or steam generation of electricity. By all accounts, it was one among many plants constructed during a boom period in steam generating plant construction between the end of World War II and 1970. Although completion of the Power Plant was a financial boon to Morro Bay and San Luis Obispo County, the local events to which the property is most closely linked, the reorganization of the region's schools and incorporation of Morro Bay, reflect the types of events that mark the maturation of communities everywhere and do not meet the significance thresholds for Criteria A/1. No available evidence indicates the Power Plant is significant in the context of any other event important to the history of the city, region, state, or nation (Criterion A/1).

Eligibility criteria for listing in the NRHP and CRHR under Criterion B/2, require a property be associated with the lives of persons significant in our past. Archival research failed to indicate that any individual had a documented association with the Study Area (Criterion B/2).

The Morro Bay Power Plant appears eligible for listing in the NRHP and CRHR under Criterion C/3 for its engineering and architectural merit. The system, designed by engineering firm Bechtel in association with PG&E, was an innovative engineering design. The system design, including the process for converting sea water to freshwater, the impressive steel and brick-lined concrete stacks with an innovative seismic design, the dynamic turbine generator foundations, and the submarine pipeline for the delivery of fuel from ocean tankers represent a significant engineering achievement. Furthermore, the power plant's architectural design, by prominent architect William Gladstone Merchant (1889-1962), is an excellent example of Industrial Modernist architecture with elements of International Style design, most clearly expressed in the generating plant's aluminum cladding. The design is further reflected in the exposed I-beams and aluminum band windows of the office. It is the work of a master and a distinctive example of his work. Under Criterion C/3, Morro Bay Power Plant's period of significance begins in 1955 with the completion of the first iteration of the facility, which included Units 1 and 2 of the generating plant, the office/warehouse/machine shop, westernmost boiler stack, tank farm, west half of the cooling water intake screenhouse, and west portion of the switchyard, among other features. The period of significance concludes in 1963, when the second phase of construction was completed, including Units 3 and 4 of the generating plant and the center and east boiler stack. The expansions of the cooling water intake screenhouse and switchyard were also executed at this time.

The elements of the Power Plant that are most essential to convey Morro Bay Power Plant's historical significance include components on the Power Plant property and within the Project Site that reflect the excellent expression of the Industrial Modernist architecture inclusive of elements of the International style and/or components integral to the plant's operation in the period between 1955 and 1963. These include the entirety of the generating plant, the office/warehouse/machine shop, all three boiler stacks, and the No. 1 Firehouse. Contributing features outside the Project Site include the cooling water intake screenhouse and the Standpipe. Other elements that appear to be integral to the Morro Bay Power Plant's historical significance but are not on the Power Plant property include the switchyard and cooling water discharge outlet. They were observed and recorded from the right-of-way for this study but may require additional evaluation to confirm eligibility and integrity.

As outlined above, the gatehouse, tank farm, displacement oil tank, sump water tank, retaining basin, and several other minor features, were either developed after 1963 or do not retain sufficient integrity to convey their historic association with the Morro Bay Power Plant, especially evident in the tank farm which was demolished in recent years.

All other elements are not directly associated with the Power Plant or were constructed or substantially altered after the period of significance. Those include the Lila Kaiser Park, the Pacific Wildlife Care Rehabilitation Center, and the City of Morro Bay Harbor Department facility.

The Power Plant has remained largely the same since its 2001 evaluation and possesses sufficient integrity to the period of significance of 1955-1963 to convey its significant historical associations. The Power Plant is in its original location at the edge of the Morro Bay Harbor and adjacent to Morro Rock and retains integrity of location and setting. It retains integrity of design, materials, and workmanship through the retention of its original design as a steam powered power plant, despite the loss of some elements of the Power Plant design, including the removal of fuel tanks in 2011. Its materials and workmanship are further reflected in its intact stacks and aluminum panel building exterior. These elements, when considered together, demonstrate the site's feeling and association as an innovative steam powered power plant exhibiting hallmarks of the International Style architecture. The Morro Bay Power Plant appears eligible for listing the NRHP/CRHR Criterion C/3.

This evaluation did not include an archaeological evaluation, and the property was not assessed for eligibility under Criterion D/4.

6 Impacts Analysis and Conclusions

6.1 Significance Thresholds

The impact analysis included here is organized based on the cultural resources thresholds included in CEQA Guidelines Appendix G: Environmental Checklist Form:

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?
b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historical resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are generally considered under Threshold B. However, because the potential for project impacts to archaeological resources are addressed in a separate study, archaeological impacts are not discussed in the present study.

Compliance with the Standards

According to Section 15064.5(b) of the CEQA Guidelines, projects which may cause a substantial adverse change in the significance of a historical resource would result in a significant effect on the environment. These impacts could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (CEQA Guidelines §15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register (CEQA Guidelines §15064.5[b][2][A]).

For the purposes of CEQA, impacts to a historical resource are considered mitigated below a level of significance when the project conforms to the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (the Standards) (CEQA Guidelines §15126.4 [b][1]). The goal of the Standards serves to preserve the historic materials and distinctive character of a historical resource. Character-defining features are the tangible, visual elements of a building—including its setting, shape, materials, construction, interior spaces, and details—that collectively creates its historic identity and conveys its historic significance.

The Standards establish professional standards and provide advice on the preservation and protection of historic properties and make broad-brush recommendations for maintaining, repairing, replacing historic materials, and designing new additions or making alterations. They cannot be used, in and of themselves, to make essential decisions about which features of a historic property should be saved and which might be changed. Rather, once an appropriate treatment is selected, the Standards provide philosophical consistency to the work. There are Standards for four distinct but interrelated approaches to the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction.

According to the Standards, rehabilitation is deemed appropriate "when repair and replacement of deteriorated features are necessary, when alterations or additions to the property are planned for a new or continued use, and when its depiction at a particular period of time is not appropriate, rehabilitation may be considered as a treatment." The following lists the Standards for Rehabilitation:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

6.2 Historical Built Environment Resources

The field survey and background research identified one built environment historical resource in the Project Site, Morro Bay Power Plant. As detailed above in *Section 5.1 Previous Historical Documentation*, the resource was previously recommended eligible for the NRHP in 2001. The current study concurs with the 2001 recommendation and further recommends the resource eligible for the CRHR. Therefore, the Power Plant property qualifies as a historical resource as defined by CEQA. The project would result in the demolition of buildings and structures that contribute to Morro Bay Power Plant's eligibility for the NRHP and CRHR. As such, the project would cause the material impairment of the subject resource, meaning it would alter in an adverse manner those physical characteristics that convey its historical significance and that justify its inclusion in the NRHP and CRHR. As a result, the project would result in a substantial adverse change to the significance of a historical resource and result in a ***significant impact to historical resources*** pursuant to CEQA.

6.2.1 Recommended Mitigation

Building Recordation

Impacts resulting from the proposed demolition of the Morro Bay Power Plant's building and boiler stacks shall be minimized through archival documentation of as-built and as-found condition. Prior to issuance of demolition permits, the lead agency shall ensure that the existing Historic American Engineering Record (HAER) be updated and shall document the buildings and structures proposed for demolition. The Level-III documentation shall be completed to National Park Service (NPS) Heritage Documentation Program-like standards and include high resolution digital photographic recordation, an outline format historic report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards for History and/or Architectural History. The documentation shall be offered as donated material by the lead agency to repositories, such as the Historical Society of Morro Bay and the San Luis Obispo County Historical Society, that will make it available for current and future generations. Receiving repositories may specify preferred format, including digital copies, to accommodate their capacity and/or needs. Original archival quality copies of the documentation also shall be submitted to the City of Morro Bay and the Morro Bay Public Library, where it would be available to local researchers. Completion of this mitigation measure shall be monitored and enforced by the City of Morro Bay or designee.

Interpretative Display

Impacts resulting from the partial demolition of the Morro Bay Power Plant shall be minimized through the installation of a high-quality, on-site interpretive display in a publicly-accessible location within the Power Plant property at the applicant's expense to be installed within one year of the removal of the structures proposed for demolition as part of the project. The display shall focus on the Power Plant's history, particularly its engineering features. The content for the interpretive display shall be prepared by a historian, and the interpretive display shall be designed by a professional exhibit designer. Historic information contained in this HRE can serve as the basis for the interpretive display. The goal of the interpretive display will be to educate the public about the Power Plant's historic themes and associations within broader cultural contexts. The content of the display shall be approved by the City of Morro Bay or designee.

6.2.2 Significance After Mitigation

Though the proposed mitigation measures described above would reduce the impacts of the partial demolition of the Morro Bay Power Plant to the extent feasible, the impact would remain significant and unavoidable. No other feasible mitigation measures are available to further reduce the identified impact. Because the impact cannot be reduced below a level of significance, a statement of overriding considerations would be required.

7 References

Anonymous

n.d. "The Morro Bay Amphibious Training Base, 1941-1947," Historical Morro Bay web site. http://historicalmorrobay.org/wp-content/uploads/2019/06/Amphibious-Training-Base-Story-only.pdf (accessed May 26, 2022).

Bancroft, Hubert How

1885 History of California, Volume III: 1825-1840. San Francisco, California: A.L. Bancroft & Co.

California Office of Historic Preservation

n.d. "California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register)," *California Office of Historic Preservation Technical Assistance Series #6*. Department of Parks and Recreation, Sacramento, California.

1995 *Instructions for Recording Historical Resources*. Department of Parks and Recreation, Sacramento, California.

Californian, The

1960 "Bigger Power Plant," April 20. www.newspapers.com (accessed July 7, 2022).

Chicago Architecture Center

n.d. "International Style," https://www.architecture.org/learn/resources/architecture-dictionary/entry/international-style/ (accessed December 5, 2022).

City of San Luis Obispo

2013 Historic Preservation Ordinance. Electronic Document, http://www.slocity.org/home/showdocument?id=4142, accessed November 2, 2015

Cole, Alexandra

1999 Santa Barbara Waterfront Historic Context. Prepared by Preservation Planning Associates. Prepared for the City of Santa Barbara Community Development Department, Planning Division.

Dumke, Glenn S.

1994 The Boom of the 1880s in Southern California. Southern California Quarterly 76(1):99-114.

Electrical West

"Western Personalities in the News." vol. 135 issue 10 (1968), 36.

Fresno Bee

1960 "PG&E Plans to Double Size of Morro Bay Plant," April 20. www.newspapers.com (accessed July 7, 2022).

Gumprecht, Blake

1999 The Los Angeles River: Its Life, Death, and Possible Rebirth. Baltimore, Maryland: Johns Hopkins University Press.

Gutiérrez, Ramón and Richard J. Orsi

1998 Contested Eden: California Before the Gold Rush. Berkeley, CA: University of California Press.

Healdsburg Tribune

1962 “William Merchant, Native, Succumbs at 69 Years.” March 1. https://cdnc.ucr.edu/ (accessed May 27, 2022).

Historical Society of Morro Bay (HSMB)

2022 “Timeline,” HSMB web site. http://historicalmorrobay.org/a-timeline/. Accessed May 2022.

History Center San Luis Obispo County (HCSLOC)

2020 Morro Bay Power Plant. https://www.historycenterslo.org/uploads/1/2/5/3/125313011/october_2_2020.pdf (accessed June 23, 2022).

Kmetz, Ben

2014 “Morro Bay: Iconic Central Coast Power Plant, Once Owned by PG&E, Shutting Down,” Currents: News and Perspectives From Pacific Gas and Electric Company [web site]. February 18, 2014. https://www.pgecurrents.com/2014/02/18/morro-bay-iconic-central-coast-power-plant-once-owned-by-pge-shutting-down/ (accessed July 7, 2022).

Kyle, Douglas E.

2002 Historic Spots in California. Stanford, California: Stanford University Press.

Livingston, M.M.

1914 The Earliest Spanish Land Grants in California. Annual Publication of the Historical Society of Southern California 9(3):195-199.

Middlecamp, David

2021 “Morro Bay Power Plant Has Been a Landmark Since 1950s. Here’s the Story Behind the Stacks,” *The Tribune* (San Luis Obispo). June 19. https://www.sanluisobispo.com/news/local/news-columns-blogs/photos-from-the-vault/article252188613.html (Accessed March 1, 2022).

Morro Bay, City of

2021 *Plan Morro Bay*. May 2021.

Morro Bay Power Plant Ad Hoc Committee

2007 Report to the Morro Bay City Council, Phase I – Community Outreach, Future Options & Recommendations. July 2007.

Nationwide Environmental Title Research Online (NETROnline)

Var. “Historic Aerials,” [historical aerial photograph and topographic map database]. Historical aerial photographs of the Morro Bay Power Plant and vicinity. www.historicaerials.com (accessed May 2022).

Old Morro Bay

2022 “Harbor Development During World War Two, Page One, This Information The Sun and Personal Memory, December 5, 1941—June 4, 1943.” https://www.oldmorrobay.com/harbor.html (accessed May 26, 2022).

Online Archive of California

2003 William G. Merchant/Hans U. Gerson Collection, 1897-1993. Environmental Design Archives, Environmental Design Archives, College of Environmental Design, University of California, Berkeley. https://oac.cdlib.org/findaid/ark:/13030/kt4f59n92m/entire_text/ (accessed May 27, 2022).

Rossell, E.G. Daves and Kirk Peterson

2001 Morro Bay Power Plant Project Historic Property Evaluation. Prepared for Duke Energy North America and TRC. June 2001.

San Luis Obispo Tribune

1955 86th Year, No. 270, July 7. www. Newspapers.com (accessed July 7, 2022).

1960 “Oakland Firm Gets PG&E Job at Morro,” December 24. www.newspapers.com (accessed July 7, 2022).

1971 “Lila H. Keiser Park Dedication July 4 in Morro,” June 19. www.newspapers.com (accessed July 6, 2021).

Santa Maria Times

1961 “PG&E’s New Morro Bay Power Plant,” January 27. www.newspapers.com (accessed July 7, 2022).

Thon, J. George and Gordon L. Coltrin

1955 Morro Bay Steam Electric Plant. *American Society of Civil Engineers Proceedings* vol. 1 paper no. 737 (July 1955).

University of California Santa Barbara Map and Imagery Laboratory (UCSB)

1949 “FrameFinder” [historical aerial photograph database]. Flight AXH_1949, Frame 5F-88. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/. Accessed May 2022.

1959 “FrameFinder” [historical aerial photograph database]. Flight HA_GI, Frame 48. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/. Accessed May 2022.

1972 “FrameFinder” [historical aerial photograph database]. Flight HB_TN, Frame 4. https://mil.library.ucsb.edu/ap_indexes/FrameFinder/. Accessed May 2022.

Waugh, John C.

2003 On the Brink of Civil War: The Compromise of 1850 and How it Changed the Course of American History. Wilmington, Delaware: Scholarly Resources Inc.

Wilson, Nick

2014 "Morro Bay Power Plant's Story Told in History Center Exhibit," *The Tribune* (San Luis Obispo). July 29. https://www.sanluisobispo.com/news/local/article39477510.html (Accessed March 1, 2022).

This page intentionally left blank.

Appendix A

California Department of Parks (DPR) 523 Series Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 3S; 3CS

Other Listings
Review Code **Reviewer** **Date**

 *__Resource Name or #:__ Morro Bay Power Plant

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☑**Unrestricted** ***a. County:** San Luis Obispo
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad: Morro Bay South and North Date: 1965 T 29S ; R 10E ; Sec 25 ; M.D. B.M.
c. Address: 1290 Embarcadero City: Morro Bay Zip: 93442
d. UTM: Zone: ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) APN 066-331-046 and 066-331-036

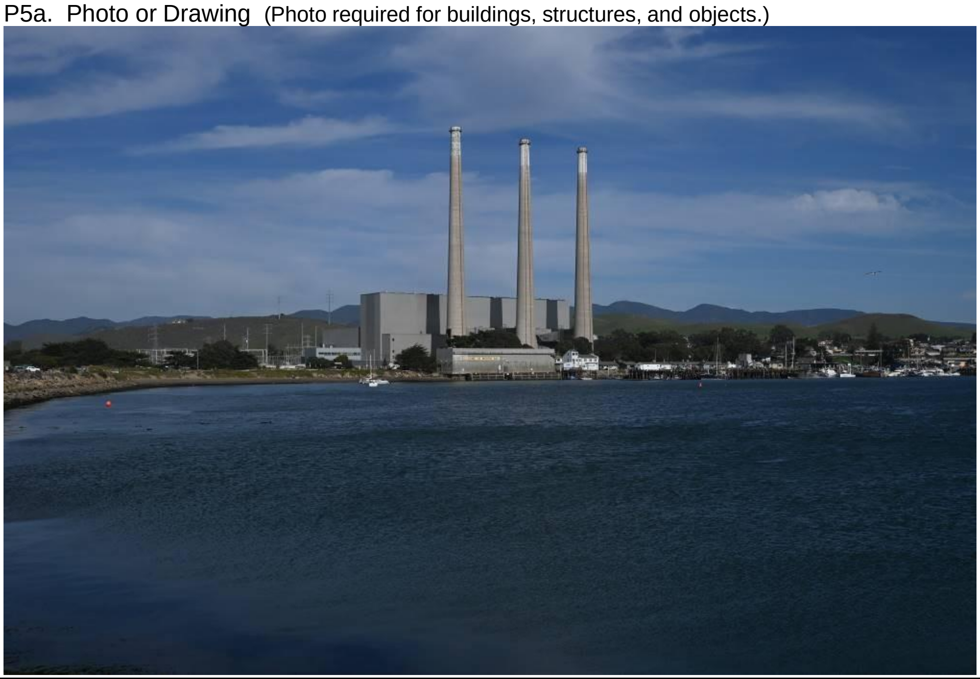
***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The three parcels making up the study area measure over 100 acres altogether. The Power Plant property (APNs 066-331-046 and 066-461-016) and substation parcel (APN o66-331-036) are adjacent to one another and by far make up the majority of the study area. This section of the study area is bounded on the south and west by Embarcadero and Scott Street, on the east by Quintana Road and State Route 1, and on the north by Atascadero Road and private property fronting the same street. The intake parcel is discontinuous from the other parcels and is directly across Embarcadero to the south of the Power Plant main gate and fronts Morro Bay Harbor to the south. As noted above, the cooling water discharge structure is located on unparcelled land on Morro Rock Beach. Buildings and structures used historically for the generation and distribution of electricity are clustered in the south and central portions of the study area. Areas to the north and southeast, while included within the power plant property, are either undeveloped or developed for public and private institutional uses, including a City of Morro Bay Harbor Department facility, Lila Keiser Park, and the Pacific Wildlife Care Rehabilitation Center.

Three sections of the Power Plant property are undeveloped. Notably, Morro Creek runs in the area roughly between the former tank farm and Lila Keiser Park. In addition, an area on the west side of the Power Plant property is occupied by sandy terrain, while the area southeast of the generating plant and substation is a lightly wooded hillside.

The existing Power Plant is comprised of several major, intact, character-defining elements including the generating plant building, the office/warehouse/machine shop, the boiler stacks, and the No. 1 firehouse, described in detail below. (Continued on Page 4).

***P3b. Resource Attributes:** (List attributes and codes) HP 9 – Public Utility Building; HP-11 – Engineering Structure
***P4. Resources Present:** ☑Building ☑Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing (Photo required for buildings, structures, and objects.)



P5b. Description of Photo: (View, date, accession #)
View of Morro Bay Power Plant, View South

***P6. Date Constructed/Age and Sources:** ☑Historic ☐Prehistoric ☐Both
1953; 1963, San Luis Obispo County Assessor

***P7. Owner and Address:**
Dynergy Morro Bay LLC
6555 Sierra Dr.
Irving, TX 75039

PG&E (switchyard)
PO Box 7054
San Francisco, CA 94120

***P8. Recorded by:** (Name, affiliation, and address)
JulieAnn Murphy
Rincon Consultants, Inc.
1530 Monterey Street, Ste. D
San Luis Obispo, CA 93401

***P9. Date Recorded:** March 2022
***P10. Survey Type:** (Describe)
Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Williams, James, Treffers, Steven and Shannon Carmack. 2022 *1290 Embarcadero Road Battery Energy Storage System Project Historical Resource Evaluation, Morro Bay, San Luis Obispo County, California*. Rincon Consultants Project No. 19-08915. Report on file at the Central Coast Information Center, Santa Barbara, California

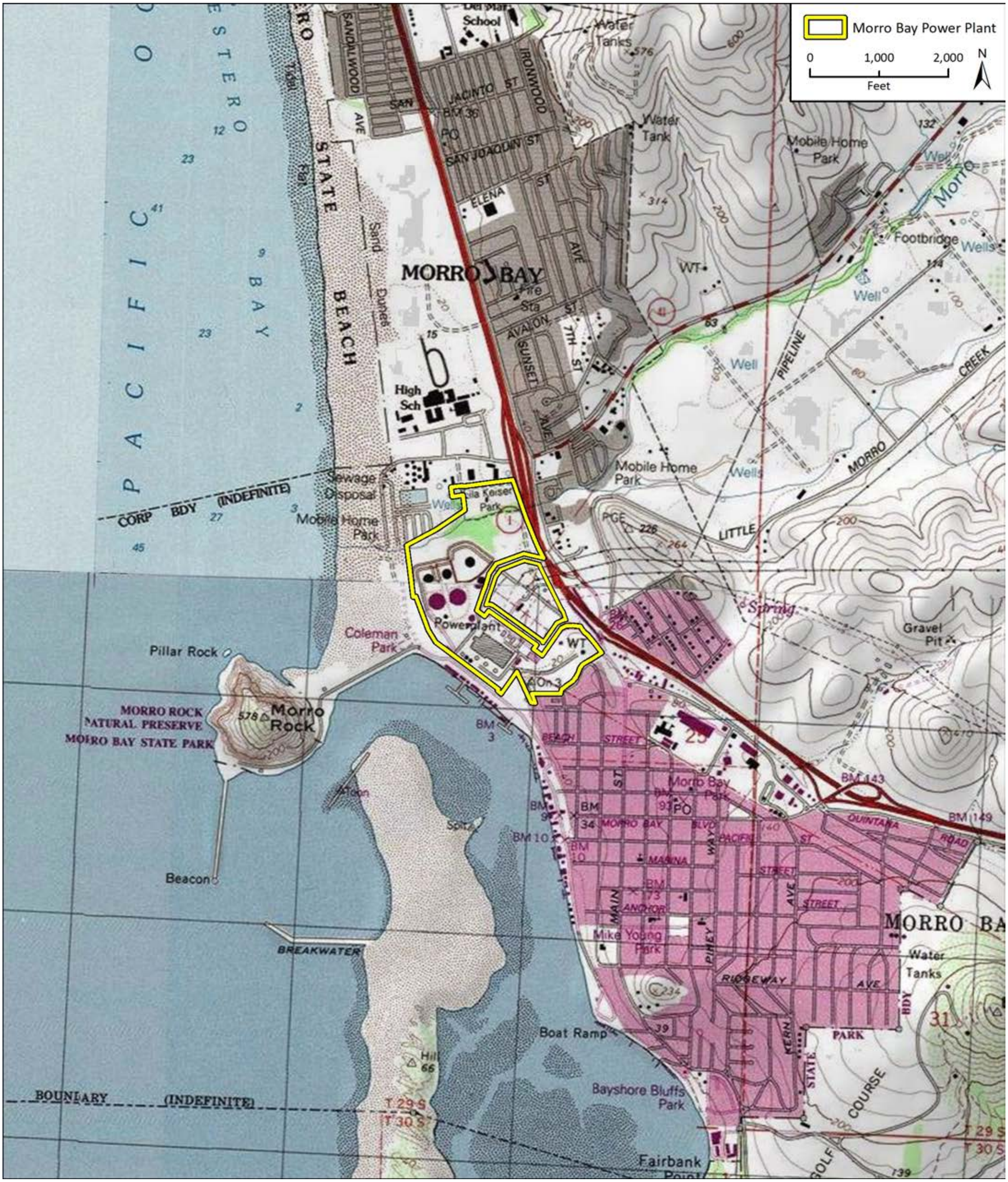
***Attachments:** ☐NONE ☑Location Map ☑Sketch Map ☑Continuation Sheet ☑Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

Primary #
HRI#
Trinomial

LOCATION MAP

***Resource Name or #:** Morro Bay Power Plant

***Map Name:** Morro Bay South and North ***Scale:** 1:26,000 ***Date of Map:** 1965



Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 3S; 3CS

***Resource Name or #** (Assigned by recorder) Morro Bay Power Plant

B1. Historic Name: Morro Bay Power Plant
B2. Common Name: Morro Bay Power Plant
B3. Original Use: Power Plant
B4. Present Use: Vacant
***B5. Architectural Style:** Mid-Century Modern
***B6. Construction History:** (Construction date, alterations, and date of alterations)

First phase of plant construction, 1953-1955; plant expansion 1961-1963; construction of Lila Keiser Park, 1971; construction of displacement oil tank, expansion of tank farm, expansion of switchyard, construction of gate house, circa 1975; construction of Harbor Boat House Facility, 1985; construction of Pacific Wildlife Care and Marine Mammal Center, 2005; demolition of tank farm tanks, circa 2012.

***B7. Moved?** ☑**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: William G. Merchant
b. Builder: Bechtel Corporation
***B10. Significance:** Engineering **Theme:** Industrial Development **Area:** Morro Bay
Period of Significance: 1955-1963 **Property Type:** **Applicable Criteria:** C/3
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Site History

The property containing Morro Bay Power Plant remained vacant until 1941. By November of that year, the United States Navy acquired the land to establish a base. In the weeks just prior to the December 7, 1941, attack on Pearl Harbor, Navy crews began construction of what would become the Morro Bay Naval Station. Construction work on the study area included the clearing of trees from the site and construction of several buildings. Off-site development focused primarily on harbor improvements, such as the deepening of the channel, construction of a jetty and piers, improvements to the embarcadero, but also included construction of a new waterworks for the community of Morro Bay. On February 4, 1944, the installation was reorganized as the U.S. Naval Amphibious Training Base. Over 45,000 soldiers passed through the facility, receiving training in amphibious landings, troop and equipment transport, and conventional warfare. The base was decommissioned October 31, 1945, and 175 landing craft and a number of personnel were transferred to other military facilities. The property was soon transferred to the State of California in 1945 and to the County of San Luis Obispo that same year (Anonymous n.d.; Old Morro Bay 2022; Rossell and Peterson 2001).
(Continued on Page 20).

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**
See Page 25-26

B13. Remarks:

***B14. Evaluator:** Rincon Consultants, Inc.

***Date of Evaluation:** March 2022

(This space reserved for official comments.)

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

***P3a. Description: (Continued from Page 1)**

Primary Features of Morro Bay Power Plant Within Project Site Boundary

Generating Plant Building

The generating plant building is a multi-volume steel-framed structure with a flat, stepped roof, rectangular plan, and is clad large expanses of aluminum siding. The building is organized in three sections from east to west. Organized by function, the bay on the north housed the turbines; the middle bay was the firing bay; and the southern bay housed the boilers.

The building's tallest portion, comprising the south elevation, reaches the equivalent of nine stories and fronts the Embarcadero and Morro Bay. The elevation is largely obscured by the three stacks and is largely devoid of ornamentation or openings with the exception of vent openings. Ducts project from the elevation to the stacks and there are service bays at-grade between the stacks, providing access within.

The north elevation's first floor has a precast concrete exterior and includes two loading entries and two recessed areas with footings where transformers, since removed, once sat, and extended beyond the building. Similar to the south elevation, the floors above, clad in aluminum siding, are generally devoid of openings and include some small louvered vents at the west end. At the east end and west ends, transformer coils hang from anchors above the area where the transformers once extended. The elevation includes former vent pipes that connect to tanks on concrete footings below. This portion of the building's roofline terminates well below the south elevation and is topped with four penthouse structures that enclosed the boilers within. The two western penthouses are narrow, while the eastern penthouses are wider. The structures have flat roofs and are clad in the same aluminum siding described on other elevations, with decorative seams at each of the building.

The building's east and west elevations are largely identical and comprise the short side of the building. The elevations are clad in the same aluminum siding described above and generally devoid of any openings or ornamentation. The east elevation includes one delivery entry with a roll-up door and one man-door entry. The tallest portion of the elevation, made up of the end of the south elevation, includes a central panel with horizontal aluminum seam details that begin above the first floor level and continue to the roofline. The west elevation is similar except that a portion of the elevation is obscured by the adjacent Office/Warehouse/Machine Shop, described in more detail below.

Overview of Generating Plant, North and West Elevation, Facing Southeast

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Project Site Map and Legend

Imagery provided by Microsoft Bing and its licensors © 2022.

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Office/Warehouse/Machine Shop

The building containing the office, warehouse, and machine shop adjoins the west side of the generating plant but is structurally independent. It is comparatively low in profile, ranging from one to three stories, with a generally horizontal emphasis. In addition to its smaller scale, its Industrial Modernist-style with International design elements differentiates it from the power generating building. The building is organized as three distinct spaces, with the office, warehouse, and machine shop differing somewhat in scale and design. The building has a steel-frame structure, with elements of its structural system visible in the form of vertical I-beams exposed at the base of the office. Facing materials here include corrugated metal panels, terrazzo veneer, and enamel-coated metal panels. Located on the west elevation, the main entrance is on the office's ground level and features recessed, automatically sliding, glazed metal double door. The doorway is flanked by sidelights and topped with a full-width transom light, all fixed metal-sash. The entrance opens to a simple concrete and brick plaza that lined with low concrete planters and a broad brick platform with a metal flagpole. Additional entrances, accessing the warehouse and office, include solid and glazed metal single and double doors and two warehouse bays with metal roll-up doors. North- and south-facing windows punctuate all three floors and include broad ribbons consisting of large fixed and smaller awning-type sashes. In some locations, the sashes are evidently replacements. A large focal window faces the south, directly above the main entrance.

Overview of Office/Warehouse/Machine Shop, South and West Elevations, Facing Northeast

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Boiler Stacks

Three reinforced-concrete boiler stacks are placed at even intervals in front (south) of the power plant building. When the Power Plant was in operation, the stacks expelled flue gas produced by the burning of fuel. The westernmost stack dates the Power Plant's original construction and historically served Units 1 and 2. With an overall height of 450 feet, the stack is 42 feet 8 inches in diameter at the base, and tapers to a diameter of 17 feet, six inches at the top. Its interior is brick-lined. The stacks for Units 3 and 4 are of equal height, but are measure at 45 feet, 5 ½ inches across the base, and taper to 15 feet, 2 inches at the top. They are steel- and fiberglass-lined. Large steel-framed apertures allow for the connection of steel gas ducts from the south side of the generating plant. The stack for Units 1 and 2 differs from its counterparts in that the duct connections are on the east and west sides, rather than the north, and have had the ducts removed. Steel ladders ascend the stacks' exteriors.

Boiler Stacks, Facing North from Morro Bay Harbor

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

No. 1 Firehouse

The No. 1 Firehouse is a one-story utilitarian building located southwest of the generating plant, near the main Embarcadero gate. It is rectangular in plan with a concrete foundation, flat roof, and standing-seam metal cladding. Fronting an internal roadway, the entrances are on the north elevation and include two central vehicle bays with roll-up metal doors flanked by standard entries with glazed metal doors. Above each standard doorway is a metal louvered vent. Windows are visible on the east elevation where there is a ribbon of one-over-four windows, which may each contain an awning-type pane, but are otherwise fixed. Windows on the opposing elevation are covered with non-original metal paneling.

No. 1 Firehouse, North and East Elevations, Facing West

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

***P3a. Description: (Continued from Page 1)**

Secondary Features of Morro Bay Power Plant Within Project Site Boundary

Gatehouse

Located immediately west of the main gate off Embarcadero and integrated into the adjacent security wall, the gatehouse, constructed in 1975, is a one-story office building exhibiting no discernible architectural style. The building is rectangular in plan, sits on a concrete foundation, and is topped with flat roof with rolled composition cladding a hipped visor. Its structural system is sheathed in stucco. The publicly accessible south-facing entrance fronts Embarcadero and consists of a commercial-type glazed metal door flanked by large, vertically oriented lights. Entrances on the north and west elevations face the interior of the property.

Gatehouse, South Elevation, Facing North

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Forner Tank Farm

Located at the northwest corner of the power plant complex, the former tank farm, constructed in 1953-1955 and expanded in about 1975, consists of the foundations of five demolished above-ground oil storage tanks protected by an earthen and concrete levee. Site constraints prevented the observation of the interior of the area and much of the levee. As a result, the following description is based on a combination of on-site visual observation and a review of satellite imagery. The earthen levee encloses all or most of the tank farm area, which has a rough L plan. Although the tanks were demolished in 2011 following the Power Plant's conversion to all natural gas fueling in the 1990s, impressions of the circular, approximately 180-foot-diameter footprints of individual tanks remain. Based on visual observation, the levee is trapezoidal and stands an estimated ten feet. Concrete-framed portals open on the east side of the structure, where pipelines formerly connected the tank farm to facilities outside the levee.

Southeast Side of Tank Farm Levee, Facing Northwest

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Displacement Oil Tank

Situated immediately east of the former tank farm, with which it was historically associated, the displacement oil tank, constructed in about 1975, is a cylindrical, welded-metal tank. It sits on a slightly raised foundation and measures an estimated 75 feet in diameter and 30 feet in height. A full-height metal ladder and various appurtenances are visible on the south side of the structure.

Southeast Side of Tank Farm Levee, Facing Northwest

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Sump Water Tanks

West of the generating plant and adjacent to the east side of the former tank farm, three above-ground storage tanks are clustered with associated appurtenances. "Sump Water Tank" is painted on the exterior of two of the tanks. Although the tanks share similar designs, two are slightly larger than the third. Each is cylindrical with an ellipsoid top. The exterior of each is concrete or a similar material, though it is unclear whether that reflects their structure, or they are only coated in the material. Heavy steel piping emerges from the sides of the tanks and is routed to an area at the rear (west) of the tanks. Features on the west side of the tanks were not visible during the field survey due to site constraints.

Sump Water Tanks, Facing West

Retaining Basin

The retaining basin, added to the Power Plant property in about 1975, is located immediately west of the generating plant building and south of the substation. It is a rectangular-plan, below-grade artificial basin measuring 200 feet long, 125 feet wide, and approximately six feet deep. The basin's walls are sloped and its floor roughly flat. It is segmented into three parts and lined in plastic. Steel pipelines connect the basin and generating plant, part of which are routed through a trench under the adjacent internal roadway and concealed by concrete coated metal panels.

Retaining Basin, Facing East

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Additional Minor Features

The power plant also includes several additional minor features are located in areas immediately adjacent to the generating plant building. Generally, these include external mechanical equipment, tanks, tank and building foundations, trenches, and basins. One concentration occurs south of the generating plant building, immediately north of the wall that fronts Embarcadero. Included in this area are a large cylindrical above-ground storage tank, apparent circuit boxes, and apparent manual valve control features East and north of the generating plant there concrete building and storage tank foundations and trenches of unknown functions. A number of concrete pads are located in the area between the generating plant and switchyard.

Features of Morro Bay Power Plant Outside Project Site Boundary

The Morro Bay Power Plant includes several associated features that relate to the Power Plant's historic operation that are outside the Project Site, but are on the Power Plant property. They include the cooling intake screenhouse and the standpipe, as decribed in the more detail below.

Cooling Water Intake Screenhouse

The cooling water intake screenhouse is situated off the main site, perched partially over Morro Bay Harbor. Constructed in two phases between 1954 and circa 1963, it is a two-story building constructed in the Industrial Modernist style with elements of International style architecture. The building is rectangular in plan and supported by a concrete foundation. Concealed by a straight parapet, its roof is flat and clad in rolled composition material. Wall cladding is generally characterized by standing-seam metal on the upper portions and concrete veneer in square panels below. On the street-facing north elevation, a section of the concrete-cladding extends upward to the parapet. Entrances are located on all sides of the building and include standard-size entry doors and loading bays with metal roll-up doors. A second-story entrance accesses a metal-rail balcony. All but the east elevation is windowless; it is penetrated by a ribbon of metal-sash awning-type windows. Additional features include a concrete supporting structure with a central channel fronting the harbor, concrete deck, and above the deck, a metal-beam feature suggestive of a wall-mounted gantry crane.

Cooling Water Intake Screenhouse, South and East Elevations, Facing Northwest

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Standpipe

Located approximately 950 feet east of the generating plant, the standpipe is a cylindrical, sheet-metal-clad water tank. A review of aerial imagery suggests the structure has an octagonal concrete foundation and is in an area enclosed with a chain-link fence. The standpipe's location is near the east corner of the property at the top of the ridge overlooking the power plant and substation.

Standpipe Viewed from Scott Street, Facing Northwest

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Features of Morro Bay Power Plant Outside Power Plant Property Boundary

As described above, there are features of the Morro Bay Power Plant that are associated with its historic development and operation that are now outside the Power Plant property. They include the switchyard (APN 066-331-036) and the cooling water discharge outlet on an unparcelled piece of land on the Morro Bay beach, described in more detail below.

<u>Switchyard</u>

The open-air switchyard, first constructed in 1953, occupies a separate 27-acre parcel immediately north of the generating plant building. Although it is no longer run in conjunction with Morro Bay Power Plant, PG&E operates the facility as an electrical substation. The Power Plant consists of three ranks of transformers aligned east to west, a control building, and other electrical equipment that step down voltage electricity coming in on the transmission lines, to a much lower voltage suitable to distribute.

Overview of Switchyard, Facing Northwest

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Cooling Water Discharge Outlet

The cooling water discharge outlet, constructed in 1953, is located offsite, immediately northeast of the base of Morro Rock. Connected to Morro Bay Power Plant by two 3,000-foot-long tunnels, the outlet convey water used in power plant operations into the Pacific Ocean. The exposed outlet feature is constructed of reinforced concrete with two portals separated by wingwall. Water flows from the outlet through a 225-foot-long, riprap-lined channel. The outlet and channel area is delineated by a chain-link fence, separating the feature from the adjacent public parking lot.

Overview of Cooling Water Discharge Outlet and Channel, Facing South

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Features Not Associated with Morro Bay Power Plant Operation

The Power Plant property, in addition to being the site of the Morro Bay Power Plant, has a number of buildings and features not associated or functionally related with the historical development or operation of the power plant. They include the Lila Keiser Park, the Pacific Wildlife Care Rehabilitation Center, and the Harbor Department Boat House Facility, described in more detail below.

<u>Lila Keiser Park</u>

Lila Keiser Park, dedicated in 1971, is a public park operated by the City of Morro Bay, located at the far northern end of the Power Plant property. The park centers on a pair of baseball diamonds, playground, and picnic area. There are two permanent buildings on the property, a combination restroom-snack bar and an announcers both. Both buildings are of simple, concrete-block construction and lack the hallmarks of any architectural style. The park occupies generally level terrain, with most areas outside the ball fields, playground, and picnic area occupied by a paved parking lot. Morro Creek forms a natural boundary between the park and power plant; the distinction between the properties is enhanced with fencing and landscaping along the south boundary, in addition to a separate park entrance from Atascadero Road.

Baseball Diamond and Announcers Booth at Lila Keiser Park, Facing West

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Pacific Wildlife Care Rehabilitation Center

Pacific Wildlife Care Rehabilitation Center is a private animal care facility located on the east side of the Power Plant property. Added in 2005, the facility is accessible only from within the power plant property, but is delineated by a chain-gate and fencing on all sides. The facility consists of two portable buildings and several open-frame structures. The portable buildings are both one story in height, culminate in low-pitched gabled or sed roofs, and are clad in T1-11 siding. Windows are one-over-one metal sashes. Outside the footprints of buildings and structures, the facility is mostly unpaved.

Overview of Pacific Wildlife Care Rehabilitation Center, Facing Northeast

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Harbor Department Boat House Facility

The Harbor Department Boat House, constructed in about 1985, is a public institutional property located at the northwest corner of the Power Plant property. Added to the Power Plant property by 1994, it consists of four metal-clad buildings situated in a narrow, rectangular area fenced off from the power plant and a neighboring property. At the far west end is a prefabricated building with the appearance of a Butler building. As such, it has a gabled roof, standing-seam metal roof and wall cladding, and a gable-end vehicle bay accessed via a metal roll-up door. Further east are a relatively small shed and two long, narrow storage buildings with multiple vehicle bays. Due to limited access, further details were observed.

Butler-Type Building at Harbor Department Boat House Facility, North and West Elevations, Facing East

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

***P3a. Site History: (Continued from Page 3)**

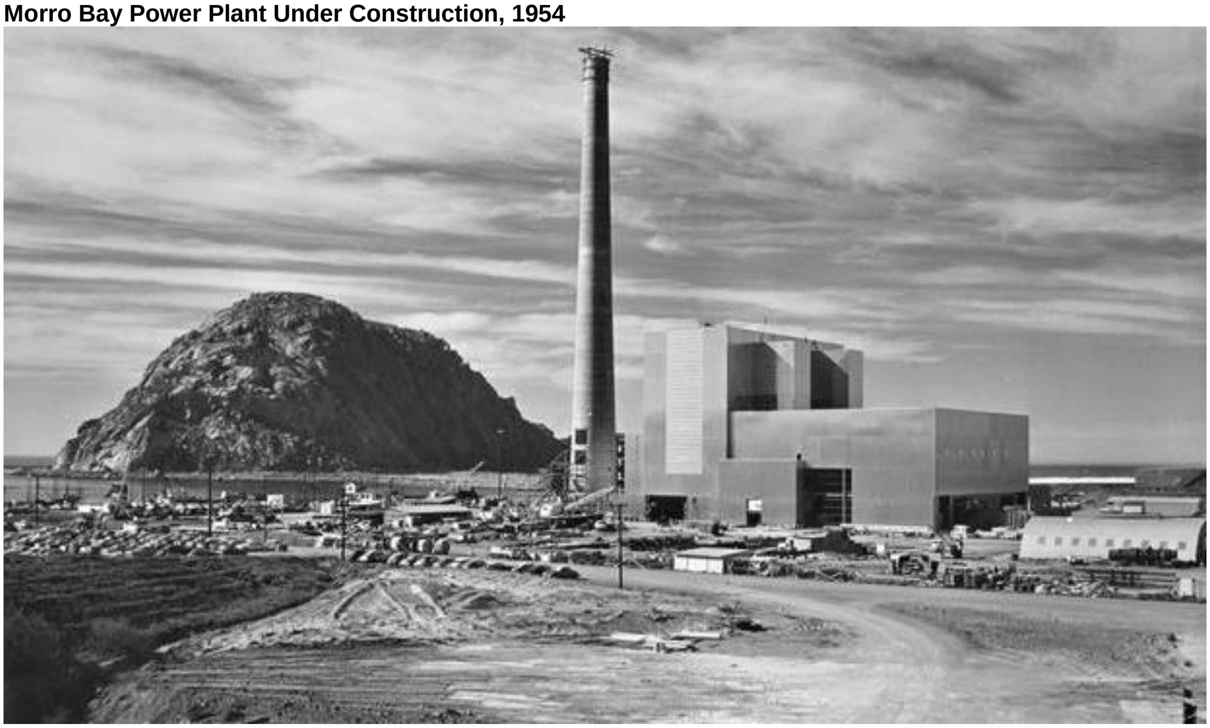
Historical aerial photographs of the property show that, as late as 1949, there were two clusters of buildings located at the south end of the property, near the Embarcadero. While one building cluster was removed prior to the completion of the power plant, the other cluster remained until the early 1960s (UCSB 1949, 1959; NETROnline 1963). Research for this study found no evidence that any building or structure associated with the naval installation remains on the study area.

PG&E began planning for the construction of the Morro Bay Power Plant by the 1950s. It was intended to help satisfy the growing demand for electricity amid California's post-World War II-era development boom and coincided with a dramatic expansion of steam generating plants throughout the United States. The most pressing need the Morro Bay Power Plant would fill was accelerating demand for power to operate the San Joaquin Valley's growing number of agricultural irrigation pumps. Morro Bay was chosen as the Power Plant site due to its location at the mid-point of California's coastline. This situation was beneficial due to the affordable fuel costs in the area, its proximity to the target region (chosen to minimize transmission loss), and the availability of cooling water from the bay. Although the Power Plant was conceived as a facility containing as many as eight steam-turbine generating units, only Units No. 1 and No. 2 were planned for the Power Plant's first iteration. PG&E hired the San Francisco-based Bechtel Corporation to design the engineered elements of the Power Plant and architect William Gladstone Merchant, also of San Francisco, for architectural elements (Rossell and Peterson 2001; HCSLOC 2020).

Bechtel began construction of Units No. 1 and No. 2 in 1953. At the time, it was the largest construction project in the county since the erection of Hearst Castle (Middlecamp 2021). As many as 700 workers took part in the effort, which required the displacement of thousands of cubic yards of soil and the importation large quantities of steel and mechanical components. The heaviest imported component was as the 244-ton generator stator, which crews carefully trucked to the site along SR-1 from the nearest rail connection at Camp San Luis Obispo, ten miles to the north.

Bechtel, the firm responsible for building the subject plant had a significant role in the expansion of steam generating plants in the United States. The firm was responsible for the construction of several plants in California and other western and midwestern states in the 1950s: Contra Costa, Pittsburgh, El Segundo, Long Beach, Eureka, as well as Salt Lake City and Price, Utah, Phoenix, Arizona, and Joppa, Illinois. This push was instrumental in the growth of the firm and its prominent international standing.

Morro Bay Power Plant Under Construction, 1954



***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

As the Power Plant neared completion, authors J. George Thon and Gordon L. Coltrin profiled the facility in a 1955 issue of the Society of American Engineers Proceedings. As summarized below, the issue highlighted several innovative features of the Power Plant, including its marine refueling system, fuel oil tank farm (no longer extant), saltwater evaporators, cooling water intake and discharge systems, original boiler stack, and turbine foundations.

Construction of the offshore fueling system proved a technical and logistical feat. The system consisted of a "marine anchorage," offshore pipeline (about 4,500 feet), onshore pipeline (about 1,250 feet), and a tank farm consisting of 168,000 barrel tanks. The system's design allowed an input of 8,000 barrels per hour. The anchorage included five 10-ton permanent anchors, each attached to a mooring buoy. There was a hose to connect to the oil tanker and pump fuel into the system. As described by Thon and Coltrin, "[t]he installation of the marine fuel line was quite spectacular from the standpoint of coordination between land and sea construction forces." Segments of pipeline were assembled on the beach pulled into the surf by a winch operated from a barge offshore. As coordinated by land and sea crews by a combination of radio and hand signals, after a segment of pipeline was pulled into the water to a certain length, a new segment was welded onto the onshore end, and the process repeated to assemble the entire length of the marine pipeline. Overall, the installation was accomplished in 15 hours and 30 minutes (Thon and Coltrin 1955).

Prior to construction, the site was occupied by sand dune reaching 30 feet in elevation above the generating plant site, conditions susceptible to erosion. To erect the protective dikes, the area was cleared of sand, and then rebuilt in compacted layers. Ice plant was planted along the embankments to prevent erosion and misters installed along the tops of dikes to disperse sufficient water to ensure the soil would cohere (Thon and Coltrin 1955).

Thon and Coltrin also highlighted the Power Plant's innovative use of seawater evaporators to provide the boilers and other elements with distilled fresh water. Engineers determined each of the Power Plant's generating units would require 80 gallons per minute of fresh water, the largest quantities of which would go to boiler makeup and pump lubrication. Although several direct sources of fresh water were studied, engineers ultimately settled on sea water evaporators to purify water pulled from Morro Bay Harbor. Although use of seawater evaporators was common on seagoing ships, it was believed that installation of evaporators at Morro Bay Power Plant, as adapted by PG&E supervising mechanical engineer Albert W. Bruce, would be the first use of such technology in a terrestrial industrial setting (Thon and Coltrin 1955). The triple-effect evaporators installed at the Power Plant were designed to purify 50 gallons of water per minute to provide boiler makeup and "utility water," by subjecting water from the bay to three cycles of evaporation, which separated (and collecting) relatively pure water condensate from the brine, which was discharged into the ocean (Thon and Coltrin 1955).

Incorporation of seawater evaporator technology into Morro Bay Power Plant's design set a precedent for modern power plants. By 1974, the inclusion of such evaporators was *de rigueur* for American steam generating facilities. Among the technology's main benefits, it circumvented the traditional reliance of fresh water sources, allowing planners greater discretion in the siting of plants (Rossell and Peterson 2001; *Electrical West* 1968).

As reported by Thon and Coltrin, project geologists determined the land on which the Power Plant was built, including the layer of soils introduced as fill by Navy engineers in the 1940s, was highly subject to subsidence, or the gradual sinking or settling of land. To minimize the compression of the land on which the generating units were built, a concrete mat foundation (rather than piles) was selected as a means of distributing the Power Plant's weight and thereby reducing the anticipated compression of soils. There were other advantages to the mat foundation, including that it would allow for construction of a basement, in which condensers and other equipment could be stationed; reduce construction time relative to that of a pile-based superstructure; and added further to the time savings by allowing the installation of some mechanical services in the basement concurrent with the construction effort (Thon and Coltrin 1955).

In addition to the subsidence issues, the size and speed of modern turbine generators, such as those installed for Units 1 and 2, required careful design of the concrete pedestal foundations on which the machinery was to be installed in order to withstand the dynamic loads produced by the generators (Thon and Coltrin 1955).

The stack was constructed to discharge flue gas generated by burning fuel oil. The 14-foot nine-inch interior diameter of the upper opening was designed to allow for a pressurized, "jet-like" effect that would discharge of gases "an appreciable distance above the stack, adding to its effective height." The stack and its pile foundation were engineered to satisfy the most up-to-date seismic standards for structures of its type (Thon and Coltrin 1955).

In addition, Morro Bay Power Plant's many technical highlights, a key architectural feature of its design was the aluminum sheathing that enveloped the generating facility, cladding that was unusual in steam plant design and applied primarily for aesthetic reasons. As Rossell and Peterson explain, however, the design was emblematic of reigning Modernist architectural approaches.

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

"Aluminum was a signature material reflecting the modern age and being particularly appropriate for an industrial building due to its being an industrial material and its clear lines reflecting machine precision. The 1950 Johnsonville, Tennessee TVA steam-electric plant was featured as one of twelve industrial buildings sheathed in the material for Reynolds Aluminum two volume set of 1956 entitled Aluminum in Architecture. But numerous signature building of the age were similarly designed and decorated such as Equitable Savings and Loan, Pietro Belluschi, Portland, Oregon, 1948; the Illinois Institute of Technology, Mies van der Rohe, Chicago, 1940; Lake Shore Apartments, Mies van der Rohe, Chicago, 1952; General Motors Technical Center, Eero Saarinen, Detroit, MI, 1951-5; and the Alcoa Building, Harrison and Abramovitz, Pittsburgh, PA, 1953. Phillip Johnson commented that there was "nothing [that] can equal aluminum for extrusion" and that "there is a sharpness and a definition which, added to the lightness of the natural material, makes it perfectly natural for the outside of buildings""

Aside from its aesthetic implications, the Power Plant's aluminum shell bore many practical benefits. Aluminum is a relatively lightweight material, and its use in construction may have reduced shipping and labor costs, in addition to reducing the load on the building's structural system. The material is also relatively resistant to corrosion, an important consideration, given Morro Bay's coastal location. That the material is heat-reflective may have been a factor in light of California's relatively warm and sunny climate. Additionally, aluminum does not produce sparks when struck, an important characteristic in a setting where high volumes of gas are being used (Rossell and Peterson 2001).

Morro Bay Power Plant was completed in July 1955 as the sixteenth steam plant in PG&E's system. A symbol of the Power Plant's regional importance, the San Luis Obispo Telegram-Tribune published an eight-page special section on the facility's opening on July 7, 1955. The section's glowing coverage mostly detailed the construction effort and the workings of various mechanical components of the Power Plant (San Luis Obispo Telegram-Tribune 7/7/1955). At the time of its completion, the $44 million plant centered on the two original generating units, one of the existing boiler stacks, the International Style combined office/warehouse/machine shop, the cooling water intake facility (though it was then about half its current size), a four-tank fuel oil tank farm, colling water discharge outlet adjacent to Morro Rock, offshore fueling connection and pipeline, the western portion of the existing switchyard, and other minor feature. In its early years, there was a large neon sign reading "PG&E" on the Power Plant's roof (no longer extant), and the stack was illuminated at night with flood lights (Rossell and Peterson 2001; Thon and Coltrin 1955).

The Power Plant's importance locally was soon realized. For one, it was instantly identified as an important man-made landmark and counterpoint to nearby Morro Rock (Rossell and Peterson 2001). However, the Power Plant's significance extended beyond aesthetics. At least one report has observed that "tax dollars from the Power Plant gave stability to the San Luis Coastal School District and provided a base for Morro Bay to become a city" (Kmetz 2014).

In 1960, PG&E president N.R. Sutherland announced plans to double the Power Plant's size. Although early news media coverage reported the utility's plans for only one additional 330,000-kW generating unit, it was eventually revealed PG&E intended to build two units of the same capacity. As part of the expansion, PG&E would also add to the on-site switchyard and construct a new 220-kV transmission line between the switchyard and the San Joaquin Valley. Costs were estimated at $40 million per unit, with labor needs projected as high as 400 individuals (*The Californian* 4/20/1960; *Fresno Bee* 4/20/1960; *San Luis Obispo Tribune* 12/24/1960). Once completed, Units 3 and 4 would triple the Power Plant's original capacity, bringing its generating power to 990,000 kW, or as one report put it "enough electricity to supply two cities the size of San Francisco" (*Santa Maria Times* 1/27/1961). At this capacity, the Power Plant would be the second most powerful in PG&E's system, ranking behind only the company's Pittsburg facility in Contra costa County. Initially, PG&E was identified as the designer and builder, but it was revealed in December 1960 that PG&E hired Oakland-based construction firm Johnson Drake and Piper, Inc. to handle excavation and foundation construction for the power plant expansion. Under the construction contract, excavation would be 17 feet deep to accommodate an "underground water conduit, piling, basement work, and pedestals for two cross-compound turbine generators" (San Luis Obispo Tribune 12/24/1960).

Units 3 and 4 were completed in 1962 and 1963, respectively. The additions included new turbines, two additional concrete boiler stacks, and the expansion of the generating plant building to its current footprint (Rossell and Peterson 2001). A review of historical aerial photographs shows the switchyard was expanded by 1963. It is presumed the expansion of the cooling water intake screenhouse circa the 1960s was undertaken as a part of this expansion (NETROnline 1956, 1963). Based on a review of historical aerial and site photographs, additions to the generating plant and colling water intake screenhouse were compatible in style and materials with the original buildings.

By the 1970s, PG&E began leasing or selling areas on the perimeter of the property to the City for use as a public park, RV camping facility, storage for fishing gear. Increasingly, sensibilities and regulations concerning environmental impacts made it infeasible for PG&E to develop these areas for plant expansions. Opposition on environmental grounds may have caused the utility to abandoned plans for the development of two new above-ground storage tanks, one proposed immediately north of Morro Creek (MBPP Ad Hoc Committee 2007; PG&E 1973). As part of the civic development of the plant property, Lila Keiser Park was developed at the north end of the Power Plant property and dedicated in June 1971 (MBPP Ad Hoc Committee 2007; San Luis Obispo Tribune 6/19/1971). Other non-utility developments included a recreational vehicle campground and storage for fishing gear (MBPP Ad Hoc Committee 2007).

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Over the Morro Bay Power Plant's first 40 years of operation, it used oil and natural gas alternately as fuel. In 1996, PG&E abandoned oil fueling at the property and transitioned the Power Plant to solely natural gas fueling. The above-ground storage tanks at the on-site oil-fuel tank farm were apparently made obsolete by this decision and were eventually demolished (Rossell and Peterson 2001; NETROnline 2010-2012).

In November 1997, following the deregulation of the State's utilities, PG&E sold the majority of the property to Duke Energy as part of California's state requirement to break up monopoly power generation (Middlecamp 6/19/2021). In 2006 Duke Energy sold the plan to LS Power. In 2007 LS Power merged its assets with Dynegy Inc. Between 2010 and 2012, the above-ground storage tanks of the tank farm were razed, leaving the protective embankments in place. The Power Plant closed in February 2014 because of environmental regulations that would have required updating the filtering technology for its ocean water cooling system (Wilson 7/29/2014). Vistra Corporation merged with Dynergy in 2018 and continues to own the Power Plant today.

William Gladstone Merchant

William Gladstone Merchant (1889-1962) was born in California in 1889 and was educated at the Wilmerding School of Industrial Arts in San Francisco. He graduated in 1909 and supplemented his education with private classes in engineering in 1912. Merchant worked briefly for John Galen Howard in 1909. Between 1909 and 1911, Merchant worked in the offices of Charles Wittlesay and William Woollett. From 1911 to 1914, Merchant worked for Bernard Maybeck, famed architect of the Arts and Crafts Movement, on the Palace of Fine Arts for the Panama Pacific International Exposition in San Francisco in 1915. Merchant was also the designer in charge of exhibits at the Palace of Fine Arts. Merchant obtained his architectural license in 1918 and worked in the office of George W. Kelham until 1928. Merchant then spent a year traveling in Europe in 1929 and returned to San Francisco to open his own practice in 1930 (Online Archive of California 2003; Healdsburg Tribune 03/01/1962).

Between 1932 and 1939, Merchant was the consulting architect for the San Francisco Recreation Commission. In this position, he worked as architect for the development and reconstruction of 28 San Francisco playgrounds. During this time (1935-1937) Merchant also worked on a number of residences with the firm Maybeck and White. From 1935-1939, Merchant served on the Architectural Commission for the Golden Gate International Exposition. For the Exposition, Merchant designed the Pacific House, the Temples of the East, the California Recreation Building, the Redwood Empire Building in association with Bernard Maybeck, as well as several other small buildings (Online Archive of California 2003; Healdsburg Tribune 03/01/1962).

Beginning in 1943, Merchant served as the architect for the World Trade Center in San Francisco. Due to lack of funds, Merchant's 1951 plan for a complex of buildings at the foot of Market Street was abandoned. Instead, the World Trade Center was incorporated into the North Wing of the existing Ferry Building. In 1946, Merchant expanded his practice as William G. Merchant & Associates. This firm completed projects for, among others, the Sailors Union of the Pacific, Pacific Gas & Electric, San Francisco State College and continued work for the San Francisco Recreation and Parks Dept. He designed the Morro Bay Power Plant in 1953. In 1960 the firm was granted the commission to rehabilitate the crumbling Palace of Fine Arts Building, but Merchant passed away just two years into the project in 1962 (Online Archive of California 2003, Healdsburg Tribune 03/01/1962).

Historical Evaluation:

Morro Bay Power Plant, inclusive of those elements associated with the development and operation of the Power Plant from 1955 to 1963, is recommended eligible for listing in the NRHP and CRHR, under Criterion C/3. It lacks significance under Criteria A/1 and B/2 and was not assessed for significance under Criterion D/4, which typically does not apply to built environment resources.

Morro Bay Power Plant was constructed as a steam-turbine power generating plant between 1953 and 1955 and expanded with two new generating units between 1961 and 1963. PG&E completed the Power Plant as the sixteenth generating plant in its system and, at the time, the most expensive construction project in San Luis Obispo County history. The Power Plant proved to be a valuable source of jobs, and local tax revenues it generated underwrote the consolidation of a regional school district and incorporation of the City of Morro Bay. Changes in state regulations on utilities led PG&E to sell the Power Plant in the 1990s, after which time the Power Plant's new owners came to regard the facility as obsolete. Following fruitless efforts to construct a new generating facility on the site, Morro Bay Power Plant was permanently shuttered in 2014. Research for this study found no evidence Morro Bay Power Plant was significant in the history of PG&E. It was neither first nor largest of the utility's steam plants and does not singularly represent any event related to the firm. Nor was the Power Plant significant in the wider history of electrical utilities or steam generation of electricity. By all accounts, it was one among many plants constructed during a boom period in steam generating plant construction between the end of World War II and 1970. Although completion of the Power Plant was a financial boon to Morro Bay and San Luis Obispo County, the local events to which the property is most closely linked, the reorganization of the region's schools and incorporation of Morro Bay, reflect the types of events that mark the maturation of communities everywhere and do not meet the significance thresholds for Criteria A/1. No available evidence indicates the Power Plant is significant in the context of any other event important to the history of the City, region, State, or nation (Criterion A/1).

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

Eligibility criteria for listing in the NRHP and CRHR under Criterion B/2, require a property be associated with the lives of persons significant in our past. Archival research failed to indicate that any individual had a documented association with the study area (Criterion B/2).

The Morro Bay Power Plant appears eligible for listing in the NRHP and CRHR under Criterion C/3 for its engineering and architectural merit. The system, designed by engineering firm Bechtel in association with PG&E, was an innovative engineering design. The system design, including the process for converting sea water to freshwater, the impressive steel and brick-lined concrete stacks with an innovative seismic design, the dynamic turbine generator foundations, and the submarine pipeline for the delivery of fuel from ocean tankers represent a significant engineering achievement. Furthermore, the power plant's architectural design, by prominent architect William Gladstone Merchant (1889-1962), is an excellent example of Industrial Modernist architecture with elements of International Style design, most clearly expressed in the generating plant's aluminum cladding. The design is further reflected in the exposed I-beams and aluminum band windows of the office. It is the work of a master and a distinctive example of his work. Under Criterion C/3, Morro Bay Power Plant's period of significance begins in 1955 with the completion of the first iteration of the facility, which included Units 1 and 2 of the generating plant, the office/warehouse/machine shop, westernmost boiler stack, tank farm, west half of the cooling water intake screenhouse, and west portion of the switchyard, among other features. The period of significance concludes in 1963, when the second phase of construction was completed, including Units 3 and 4 of the generating plant and the center and east boiler stack. The expansions of the cooling water intake screenhouse and switchyard were also executed at this time.

The elements of the Power Plant that are most essential to convey Morro Bay Power Plant's historical significance include components on the Power Plant property and within the Project Site that reflect the excellent expression of the Industrial Modernist architecture inclusive of elements of the International style and/or components integral to th plant's operation in the period between 1955 and 1963. These include the entirety of the generating plant, the office/warehouse/machine shop, all three boiler stacks, and the No. 1 Firehouse. Contributing features outside the Project Site include the cooling water intake screenhouse Screenhouse and the Standpipe. Other elements that appear to be integral the Morro Bay Power Plant's historical significance, but are not on the Power Plant property include the switchyard and cooling water discharge outlet. They were observed and recorded from the right-of-way for this study, but may require additional evaluation to confirm eligibility and integrity.

As outlined above, the gatehouse, tank farm, displacement oil tank, sump water tank, retaining basin, and several other minor features, were either developed after 1963 or do not retain sufficient integrity to convey their historic association with the Morro Bay Power Plant, especially evident in the tank farm which was demolished in recent years.

All other elements are not directly associated with the power plant, or were constructed or substantially altered after the period of significance. Those include the Lila Kaiser Park, the Pacific Wildlife Care Rehabilitation Center, and the City of Morro Bay Harbor Department facility.

The Power Plant has remained largely the same since its 2001 evaluation and possesses sufficient integrity to the period of significance of 1955-1963 to convey its significant historical associations. The Power Plant is in its original location at the edge of the Morro Bay Harbor and adjacent to Morro Rock and retains integrity of location and setting. It retains integrity of design, materials, and workmanship through the retention of its original design as a steam powered power plant, despite the loss of some elements of the Power Plant design, including the removal of fuel tanks in 2011. Its materials and workmanship are further reflected in its intact stacks and aluminum panel building exterior. These elements, when considered together, demonstrate the site's feeling and association as an innovative steam powered power plant exhibiting hallmarks of the International Style architecture. The Morro Bay Power Plant appears eligible for listing the NRHP/CRHR Criterion C/3.

This evaluation did not include an archaeological evaluation, the property was not assessed for eligibility under Criterion D/4.

***B12. References (continued):**

The Californian. 1960. "Bigger Power Plant." April 20. www.newspapers.com (accessed July 7, 2022).
Electrical West. "Western Personalities in the News." Vol. 135 Issue 10. (1968), 35.
Fresno Bee. 1960. "PG&E Plans to Double Size of Morro Bay Plant." April 20. www.newspapers.com (accessed July 7, 20222).
History Center San Luis Obispo County (HCSLOC). 2020. Morro Bay Power Plant. https://www.historycenterslo.org/uploads/1/2/5/3/125313011/october_2_2020.pdf (accessed June 23, 2022).
Kmetz, Ben. 2014. "Morro Bay: Iconic Central Coast Power Plant, Once Owned by PG&E, Shutting Down," Currents: News and Perspectives From Pacific Gas and Electric Company [web site]. February 18, 2014. https://www.pgecurrents.com/2014/02/18/morro-bay-iconic-central-coast-power-plant-once-owned-by-pge-shutting-down/ (accessed July 7, 2022).
Middlecamp, David. 2021. "Morro Bay Power Plant Has Been a Landmark Since 1950s. Here's the Story Behind the Stacks," *The Tribune* (San Luis Obispo). June 19. https://www.sanluisobispo.com/news/local/news-columns-blogs/photos-from-the-vault/article252188613.html (Accessed March 1, 2022).

***Resource Name OR #:** Morro Bay Power Plant

***Recorded by:** JulieAnn Murphy ***Date:** March 2022 ■ Continuation ☐Update

***B12. References (continued):**

Nationwide Environmental Title Research Online (NETROnline). Various dates. “Historic Aerials,” [historical aerial photograph and topographic map database]. Historical aerial photographs of the Morro Bay Power Plant and vicinity. www.historicaerials.com (accessed May 2022).

Rossell, E.G. Daves and Kirk Peterson. 2003. William G. Merchant/Hans U. Gerson Collection, 1897-1993. Environmental Design Archives, Environmental Design Archives, College of Environmental Design, University of California, Berkeley. https://oac.cdlib.org/findaid/ark:/13030/kt4f59n92m/entire_text/ (accessed May 27, 2022).

San Luis Obispo Tribue. Multiple dates, 1955-1971. www.newspapers.com accessed July 2022.

Thon, J. George and Gordon L. Coltrin. 1955. Morro Bay Steam Electric Plant. *American Society of Civil Engineers Proceedings* vol. 1 paper no. 737 (July 1955).

Santa Maria Times. 1961. “PG&E’s New Morro Bay Power Plant.” January 27. www.newspapers.com (accessed July 7, 2022).

Morro Bay Power Plant Ad Hoc Committee. 2007. Report to the Morro Bay City Council, Phase I – Community Outreach, Future Options & Recommendations. July 2007.

Wilson, Nick. 2014. “Morro Bay Power Plant’s Story Told in History Center Exhibit,” *The Tribune* (San Luis Obispo). July 29. https://www.sanluisobispo.com/news/local/article39477510.html (Accessed March 1, 2022).

Appendix F

Geologic and Soils Hazards Evaluation Report

600-MW Morro Bay Battery Energy Storage System Project

Geologic and Soils Hazards Evaluation Report

prepared for

City of Morro Bay
Community Development Department
955 Shasta Avenue
Morro Bay, California 93442

prepared by

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

April 2023

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

805 547 0900

info@rinconconsultants.com
www.rinconconsultants.com

April 13, 2023
Project No. 19-08915

Cindy Jacinth, Senior Planner
City of Morro Bay
Community Development Department
955 Shasta Avenue
Morro Bay, California 93442
Via email: cjacinth@morrobayca.gov

Subject: Geologic and Soils Hazards Evaluation Report
Morro Bay Battery Energy Storage System Project
Morro Bay, California

Dear Ms. Jacinth:

This report presents the findings of a Geologic and Soils Hazards Evaluation completed by Rincon Consultants, Inc. (Rincon) for the Morro Bay Battery Energy Storage System Project in Morro Bay, California. The Geologic and Soils Hazards Evaluation was performed in accordance with Amendment No. 1 (April 4, 2022) and Amendment No. 2 (May 1, 2022) to our contract scope of services for the Morro Bay Battery Energy Storage System EIR dated March 19, 2021.

Thank you for selecting Rincon for this project. If you have any questions, or if we can be of any future assistance, please contact us.

Sincerely,
Rincon Consultants, Inc.

PROFESSIONAL GEOLOGIST
ALEX CRUZ
No. 9601
STATE OF CALIFORNIA

This document has been digitally signed and sealed by Alex Cruz, PG, on 4/13/2023.

Alex Cruz, PG
Senior Environmental Geologist

PROFESSIONAL GEOLOGIST
TORIN R. SNYDER
No. 8663
CHG
Exp. 12/31/23
STATE OF CALIFORNIA

This document has been digitally signed and sealed by Torin Snyder, PG, CHG on 4/13/2023.

Torin Snyder, PG, CHG
Principal

Table of Contents

Figures

Tables

Appendices

1 Introduction and Background

Rincon Consultants Inc. (Rincon) has prepared this Geologic and Soils Hazards Evaluation Report (Report) for the Morro Bay Battery Energy Storage System (BESS) Project in the City of Morro Bay (the City), California (Figure 1). The BESS Project is planned for construction at the location of the Morro Bay Power Plant (Power Plant), which has been idle since 2014.

The purpose of this Report is to identify potential environmental impacts related to geologic and soil hazards that may result from the development of the Project, and to provide a qualitative assessment of the risks the hazards may pose to the Project. The geologic hazards considered in this Report include:

- Seismic hazards, including ground surface fault ruptures, ground shaking, and liquefaction
- Soil hazards, such as expansive soils, subsidence and collapse, erosion, and slope stability
- Hydrogeologic hazards, such as tsunamis and flooding

These geologic hazards were evaluated specifically with respect to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. This Report is intended to support the Environmental Impact Report (EIR) that is being prepared for the Project in accordance with CEQA Guidelines.

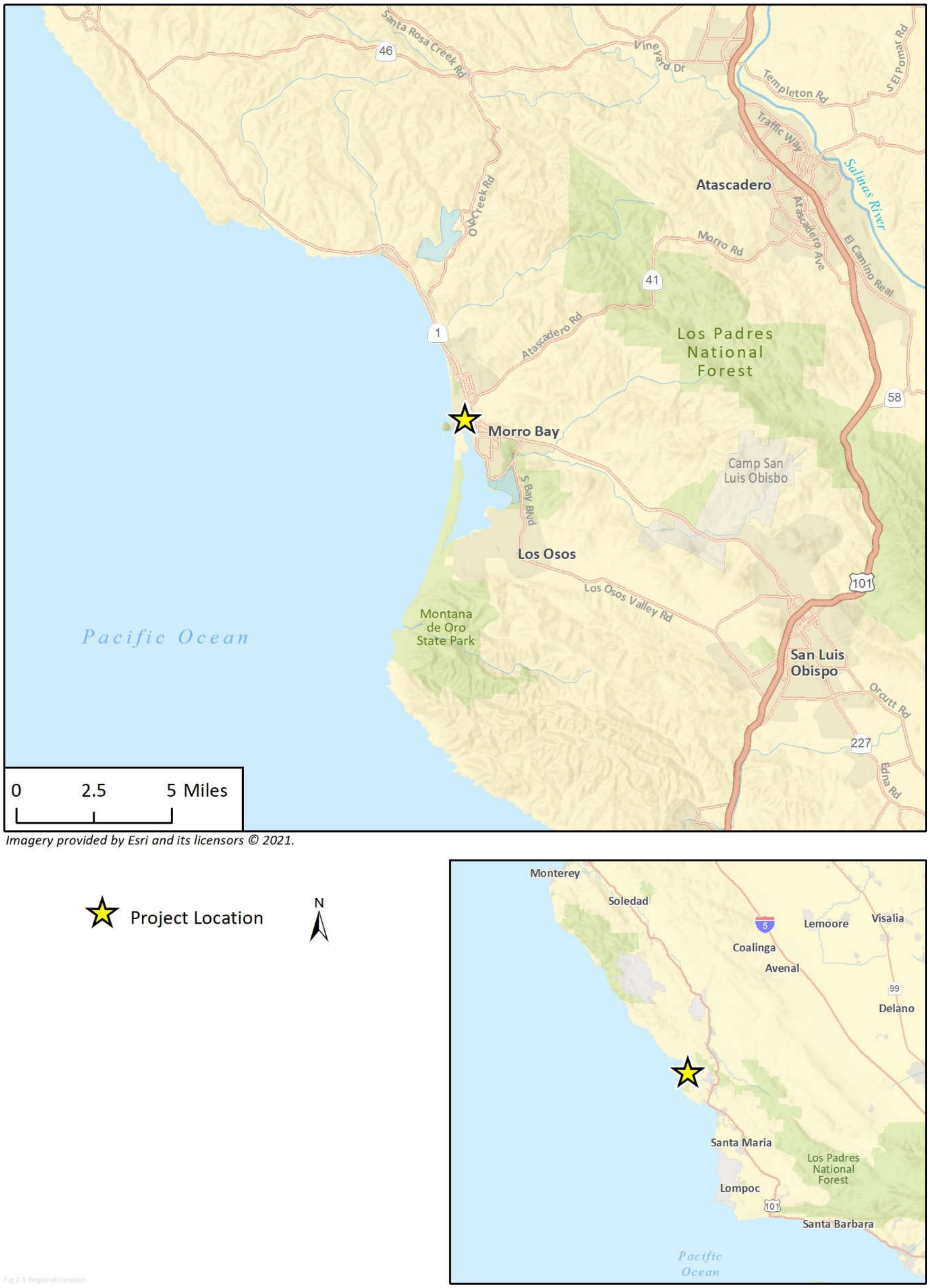
Although not specifically evaluated within Appendix G of the CEQA Guidelines, the County of San Luis Obispo's Guidelines for Engineering and Geology Reports requires the review of the potential for radon gas.

1.1 Methodology

To identify and assess geologic hazards, Rincon's geologists reviewed previous investigative studies, as well as publicly available information, including maps, online databases, articles, reports, and published research papers. Information sources used in this Report include, but are not limited to, the following:

- U.S. Geological Survey (USGS) topographic maps
- USGS and California Geological Survey (CGS) geologic maps
- Seismic hazard zone maps
- Landslide and tsunami hazard maps
- USGS and CGS active fault maps and ground shaking maps
- Alquist-Priolo Special Studies Zones Earthquake Fault maps
- Natural Resources Conservation Services soils maps
- Federal Emergency Management Agency (FEMA) flood maps
- Safety Elements of the General Plans for the County of San Luis Obispo and the City of Morro Bay
- County of San Luis Obispo's Department of Planning and Building Land Use View interactive map application

Figure 1 Regional Location



All sources are documented in Section 8, with internet links included where available. The sources were interpreted and reviewed by a Professional Geologist; professional stamps and signatures are included in Section 7.

1.2 Project Site

The 43-acre Project Site is located on a portion of the 95-acre Morro Bay Power Plant property (Power Plant property) (Assessor's Parcel Numbers [APNs] 066-331-046 and 066-461-016) at 1290 Embarcadero south of State Route 1 (SR 1)/Cabrillo Highway and north of Embarcadero in the City of Morro Bay (Figure 1). Specifically, the project encompasses portions of Section(s) 25 of Township 29 South, Range 10 East on the Morro Bay South, California United States Geological Survey (USGS) 7.5-minute topographic quadrangle.

The Morro Bay Power Plant began operating in 1955 but has been idle since its retirement in 2014. The Power Plant property currently contains the idled power plant building and stacks, Lila Keiser Park, and facilities operated by Pacific Wildlife Care and Marine Mammal Center. The Power Plant property is surrounded by Pacific Gas and Electric (PG&E) property (switchyards) and SR 1 to the northeast; the Embarcadero, commercial uses, and a marina to the southwest; Morro Creek, a recreational vehicle (RV) park, and temporary lodging facilities (hotel and motel) to the north; and Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west.

The site of the proposed project (Project Site) covers approximately 43 acres of the 95-acre Power Plant property.[1] The Project Site includes approximately 24 acres located immediately north of the inactive power plant building in the northwestern portion of the property. This area is currently vacant but was previously developed with above-ground fuel oil storage tanks. In addition, the Project Site includes approximately 19 acres in the southwestern area of the site that includes the inactive power plant building and three (3) inactive stacks immediately southwest of the power plant building. The Project Site also includes the approximately 2.75-acre driveway that connects the power plant building to Quintana Road (Figure 2).

Current Land Use Designation and Zoning

The Project Site includes approximately 24 acres that are currently vacant but were previously developed with five above-ground fuel oil storage tanks (ASTs) associated with the inactive Morro Bay Power Plant. All five ASTs were removed in 2011. The remaining area of the Project Site includes the inactive power plant building and three (3) inactive stacks immediately southwest of the power plant building.

Under Plan Morro Bay, which was adopted by the City of Morro Bay in May 2021 and serves as the City's General Plan and Local Coastal Program (LCP) Coastal Land Use Plan, the Project Site has a land use designation of Visitor Serving Commercial with a Mixed-Use Residential Overlay.

---

[1] Following are definitions for several key terms used in this report:
Power Plant Property refers to the approximately 95-acre Morro Bay Power Plant property. Refer to Figure 2.
Project Site refers to the portions of the Power Plant property that would be used for the BESS project. The Project Site covers approximately 43 acres of the 95-acre Power Plant property. Refer to Figure 2.
BESS Site refers to the portions of the Project Site used for construction and operation of the BESS and supporting facilities such as Gen-tie lines and access roads. The BESS Site includes approximately 24 acres of the 43-acre Project Site. Refer to Figure 2.

Figure 2 Project Location and Existing Features

Imagery provided by Microsoft Bing and its licensors © 2022.

The Project Site is currently zoned M-2/PD/I with a Planned Development overlay and Interim Use overlay designation under the City's current Zoning Code. The Project Site is subject to two land use restrictions, as described below.

PG&E Deed Restriction

PG&E purchased the Morro Bay Power Plant site in 1951 and constructed the power plant in the early 1950s. In connection with the subsequent sale of the property to Duke Energy in 1997, PG&E imposed a deed restriction across much of the approximately 95-acre Power Plant property, including the entire Project Site. That deed restriction prohibits developing portions of the power plant site (including the Project Site) for permanent or temporary lodging, hospitals or other health-care facilities, schools, daycare centers for children, parks, playgrounds, or other recreational uses. This deed restriction remains in place today. Figure 3 shows the location of these restrictions on the Power Plant property.

Proposed DTSC Land Use Restriction

In 2006, PG&E entered into a Corrective Action Consent Agreement with DTSC to address areas of the Power Plant property that were contaminated as a result of past operations at the Morro Bay Power Plant. In October 2021, DTSC released a Revised Statement of Basis for the Morro Bay Power Plant site. This report, prepared by the DTSC for five "Areas of Concern" (AOCs) at the Power Plant, indicates the public-reviewed Statement of Basis recommended that a land use covenant (LUC) be recorded to address total petroleum hydrocarbons (TPH) and arsenic in soil and groundwater at the Power Plant, which would restrict land and groundwater uses and would require a soil management plan (SMP) and annual inspections. In the Revised Statement of Basis, DTSC recommends that this proposed remedy be revised to require a LUC and SMP only for soil at AOC 1, and that "the other AOCs at the [Power Plant] will be appropriate for Corrective Action Complete without Controls determinations for soil" (DTSC 2020b). The proposed land use restriction would restrict future land uses in this area to commercial/industrial uses and prohibit future development of the property for permanent or temporary lodging, school, day care centers, recreation, or hospital uses. Figure 3 shows the location of these restrictions on the Power Plant property.

Surrounding Land Uses

The Project Site is surrounded by Morro Creek, an RV park, and temporary lodging facilities (a hotel and motel) to the north; Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west; the Embarcadero, commercial uses, and a marina to the southwest; commercial and residential development to the south; and the PG&E switchyard to the east.

1.3 Project Description

The following project description has been adapted from information provided by the Project Applicant and the City of Morro Bay. The proposed project has three components: (1) construction and operation of a 600-MW Battery Energy Storage System (BESS), (2) demolition and removal of the existing power plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial.

Construction and Operation of the BESS

Of the 43 acres included in the Project Site, approximately 24 acres (BESS Site) would be used for construction and operation of the BESS. The BESS would provide power to utility customers by interconnecting to the existing PG&E switchyard located east of the Power Plant property and Project Site. The BESS would operate year-round to store and discharge electricity to support demand on the power grid and improve grid reliability.

The proposed BESS includes three enclosed buildings with fire protection systems to house the batteries. Each building would contain approximately 2,400 battery racks and be surrounded by approximately 60 Power Conversion Systems (PCSs) composed of inverters and transformers to convert the direct current to alternating current. The PCSs would be located on concrete pads outside the buildings. The BESS would also include three substations with transformers, a transmission line (Gen-tie) connecting to the existing deadend structures on the southwestern side of the existing PG&E switchyard (the final structures before the connection with the substation), water supply system improvements, and internal access roads. Figure 4 presents the proposed locations of these facilities on the approximately 24-acre BESS Site. Figure 5 shows typical battery energy storage system components. Table 1 summarizes the characteristics of the BESS component of the proposed project.

Table 1 Project Characteristics

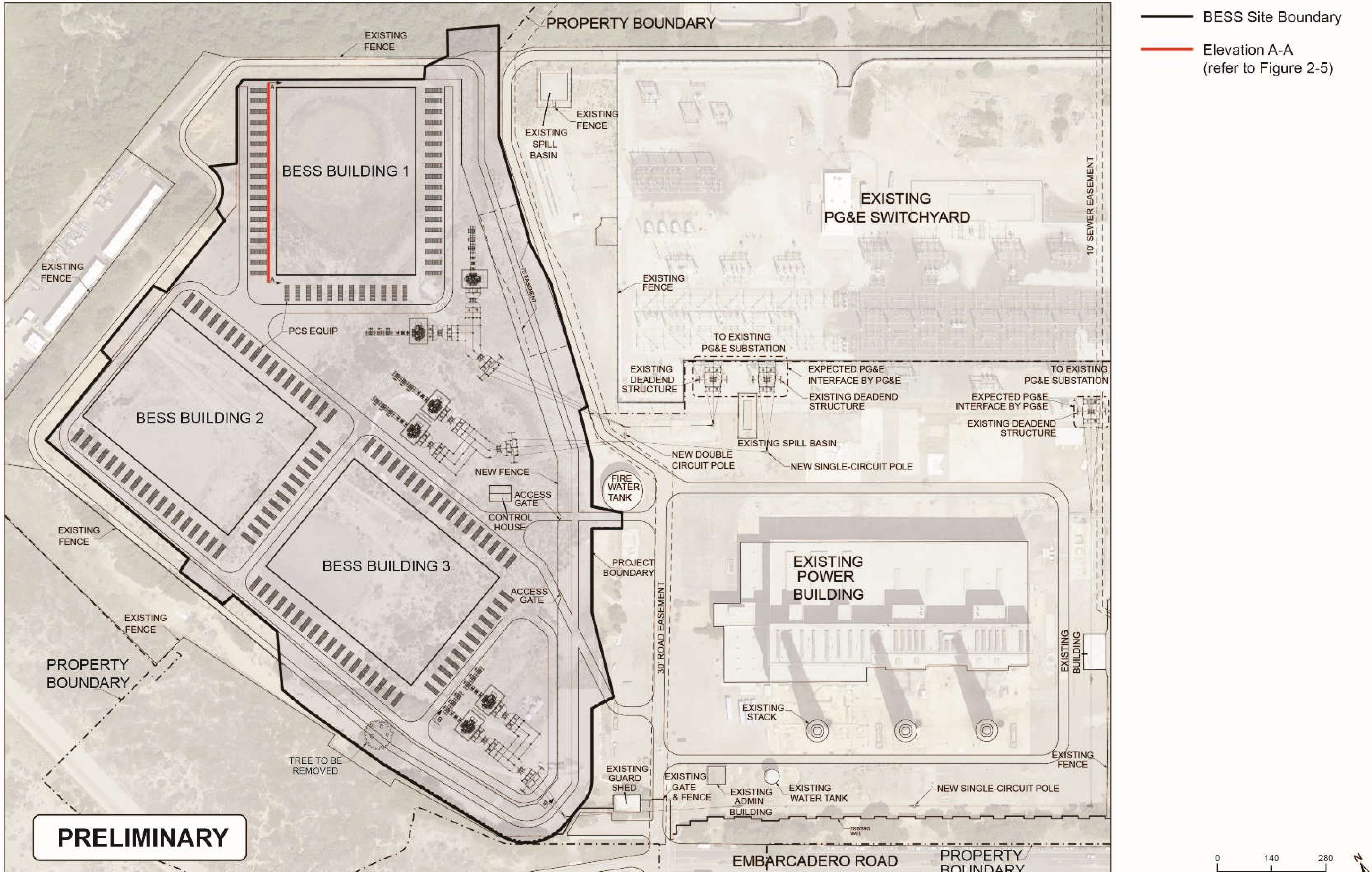
Address	1290 Embarcadero, Morro Bay, California 93442
APN	066-331-046
Parcel Acreage	95 acres
BESS Site Acreage	24 acres
Demolition Site Acreage	19 acres
Battery Storage Buildings (3)	91,000 sf, 30 feet tall (2 stories)
Power Conversion Systems (approx. 180)	300 sf
Substations (3)	49,704 sf, 30 feet tall
Control House (1)	1,200 sf, 15 feet tall

sf = square feet

Figure 3 Former Tank Farm and Areas of Concern 1 through 8

Source: Terraphase Engineering, 2022.

Figure 4 Proposed BESS Location



Source:Sargent & Lundy, 2020.

Figure 5 Example BESS Components

Source: Vistra, 2018 and 2021.

Battery Energy Storage

The BESS would be installed in three (3) two-story buildings. Each building would be approximately 350 feet by 260 feet, for a total building area of 91,000 square feet (sf) (refer to Figure 4). Each building would require approximately 1,000 to 1,500 pilings to a pile depth of approximately 75 to 100 feet (the depth of each pile will be determined during the final design-level geotechnical work based on loads and other location-specific analysis). The building exteriors would be steel frame with pre-cast concrete sides. Heating, ventilation, and air conditioning (HVAC) units would be either side- or roof-mounted.

Each building would house approximately 2,400 racks containing lithium-ion batteries with storage capacity of 200 MW for a total storage capacity of 600 MW. The battery modules (approximately 60,000 per building) would be housed in racks that are approximately 9 to 24 feet tall, depending on the use of stacked racking systems. The contract with the battery supplier would include provisions that provide for the recycling of batteries through the life of the BESS project. The racks would be grouped into blocks with their own access, fire protection, and safety systems. A typical rack is presented in Figure 5.

Power Conversion Systems

The PCSs would be located adjacent to each building and installed on the pavement or gravel pads. Underground conduits buried three to five feet in depth would connect the PCSs to the batteries in the buildings. Each PCS contains an inverter and transformer, which convert the power between direct current (DC) and alternating current (AC) and the voltage from 1,500V to 34.5kV. This is necessary because the electrical power grid operates in AC while the batteries store energy in DC. The transformer changes the voltage, as required, during battery charging and discharging. Each building would be surrounded by approximately 60 PCS units. Each PCS would be approximately 10 feet by 30 feet, with a height of approximately 15 feet. The location of the power conversion systems is identified in Figure 4. A typical PCS unit is shown in Figure 5.

Substations

The BESS would include three substations located outside the buildings. The substations would include transformers to increase the voltage to the required level for interconnection to the electrical grid, as well as associated switches, breakers, and control systems. Each BESS substation would have a transmission Gen-tie line to connect to the existing PG&E substation. The dimensions of each substation would be approximately 218 feet by 228 feet and approximately 30 feet tall. Drilled pilings to a maximum depth of approximately 75 to 100 feet would be used to support the concrete pad for the transformers. A typical substation is shown in Figure 5.

The substation areas would be graded and compacted to level the ground. Concrete pads would be constructed on site as foundations for substation equipment, and the remaining area would be graveled to a maximum depth of approximately six inches. Pilings drilled to a maximum depth of approximately 75 to 100 feet would be used to support the concrete pad for the transformers. Because each of the substation transformers would contain oil as an insulating fluid, the substations would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting.

One control house would be required for the three substations (refer to Figure 4). The control house would be 30 feet by 40 feet in area for a total area of 1,200 square feet, and 15 feet in height.

Connection to the PG&E Switchyard

The three proposed substations would connect to the existing, adjacent PG&E switchyard. Approximately nine new transmission line poles (one 230-kilovolt [kV] double circuit transmission line pole and eight 230-kV single circuit transmission line poles) with a maximum height of 105 feet would be required for connection to PG&E existing 95-foot deadend structures (the final structures before the connection with the substation). The locations of the proposed transmission poles and lines, and the existing deadend structures are shown on Figure 4.

Operation and Maintenance Building

The existing administration building located south of the southernmost battery storage building and just inside the Morro Bay Power Plant property front gate along Embarcadero (refer to Figure 4) would be renovated and upgraded to serve as the BESS's operation and maintenance (O&M) building. This building would include restrooms to accommodate permanent staff. No exterior modifications are planned for this building.

BESS Construction

Construction of the BESS is anticipated to take 36 to 48 months. Construction would generally occur in three phases, which would overlap. For example, Phase 2 would begin towards the end of Phase 1. Phasing is anticipated to occur as follows:

- Phase 1, Site Preparation, would extend for a duration of 12-18 months;
- Phase 2, Installation, would extend for a duration of 18-36 months; and
- Phase 3, Commissioning (Start-up and Testing), would extend for a duration of 12-18 months.

Access during construction would be provided via two routes from SR 1:

- From Main Street to Quintana Road and then along the northern boundary of the existing PG&E substation; and
- From Main Street to Beach Street to the Morro Bay Power Plant property front gate along Embarcadero.

EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION

The project would be subject to the City's adopted Low Impact Development (LID) and Post Construction requirements pursuant to Morro Bay Municipal Code Section 14.48.140. Construction activity would require coverage under the Stormwater Construction General Permit for the National Pollutant Discharge Elimination System (NPDES) program, which requires the applicant/developer to prepare a single or multiple Stormwater Pollution Prevention Plans (SWPPPs) which would be based on the final engineering design and include all project components. The SWPPP would be designed to reduce potential erosion and surface water quality impacts during construction activities and throughout the life of the project. The SWPPP would include project information and best management practices (BMPs) for water quality.

HAZARDOUS MATERIALS AND CONSTRUCTION WASTE

Construction of the project would involve the use of hazardous materials, such as fuels and greases, to fuel and service construction equipment. A Hazardous Materials Business Plan (HMBP) that describes the allowable uses and storage of fuels and greases would be developed prior to construction. The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, State, and county regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the Code of Federal Regulations [CFR]) are anticipated to be produced, used, stored, transported, or disposed of as a result of project construction. Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel and emergency services. Trucks and construction vehicles would be serviced at off-site facilities, except that routine fueling may be completed in designated areas within the Power Plant property outside of the BESS footprint.

Construction waste would be sorted on-site throughout construction and transported to a facility licensed to accept construction waste. The nearest landfills are the Chicago Grade Landfill, located about 20 miles to the northeast via SR 41, and Cold Canyon Landfill, located about 33 miles to the southeast via SR 1 and U.S. 101. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Hazardous waste and electrical waste would be transported to a hazardous waste handling facility.

PILE INSTALLATION, BUILDING ASSEMBLY, AND RACKING

The structures supporting the building foundation would consist of steel piles which would be driven into the soil. The piles typically would be spaced eight feet apart. Between 1,000 and 1,500 pilings would be installed up to a maximum depth of approximately 75 to 100 feet. Once the piles are in place, a concrete foundation of 36 inches thick would be poured. The buildings would be erected using a steel frame and pre-cast concrete side panels. HVAC units would be installed on the roof or at the side of the building. After building erection is complete, the batteries would be installed in the buildings along with the associated wiring and control and fire protection systems.

POWER CONVERSION SYSTEMS AND SUBSTATIONS

Underground cables to connect the batteries to the PCSs would be installed using trenching techniques. Wire depths would be in accordance with local, State, and federal requirements, and would likely be buried two to three feet below grade, by excavating a trench approximately three to six feet wide to accommodate the conduits or direct buried cables. After excavation, cables rated for direct burial or cables installed inside a polyvinyl chloride (PVC) conduit would be installed in the trench and the excavated soil would typically be used to backfill the trench.

The substation areas would be excavated for the transformer equipment and control building foundations and oil containment area. The site area for the substations would be graded and compacted to an approximately level grade. Concrete pads would be constructed as foundations for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought on-site via truck.

BESS Operation and Maintenance

The operational phase of the project would begin with commissioning (start-up and testing). The project would operate continuously. The BESS would store and dispatch power during both daylight and non-daylight hours as required by grid operators year-round.

MAINTENANCE AND STAFFING

Once operational, the project would require only minimal long-term maintenance. Periodically, it may be necessary to test and/or replace individual battery modules. The BESS would be continually monitored to determine if and when such maintenance is required. To maintain consistent operation and fulfill contractual requirements, it is anticipated that routine module replacement would occur over the life of the project, starting at approximately year five after beginning operation. Batteries would be recycled at the appropriate facilities. The batteries are anticipated to have a 20-year life. At the end of this period the batteries would be replaced.

Operation and maintenance activities would produce negligible volumes of solid and liquid wastes. The transformers proposed to be located at the PCSs and substations would use oil as an insulating fluid. As required for routine maintenance of the transformers, the oil would be replaced and disposed of in accordance with applicable regulations.

SAFETY SYSTEMS

Although the proposed new structures would not be occupied, personnel would be required to access the batteries for maintenance. Therefore, the project would incorporate a multi-tiered safety system based on industrial best practices in consultation with the Morro Bay Fire Department (MBFD). Safety systems would incorporate passive design considerations and include monitoring, automatic and manual protection elements, and explosion prevention protection, further described below.

- Passive Design Considerations. Compartmentalization is a passive method of fire protection that would be used to confine batteries into zones or areas. Each zone would be separated by rated fire barriers in accordance with the California Fire Code. The project would not locate any new structures in Federal Emergency Management Agency (FEMA) Flood Zone AE or any other FEMA-designated Special Flood Hazard Area, and has been sited to mitigate sea-level rise and tsunami risk. The former fuel oil tank farm area, including the west, north, and northeast sides of the BESS Site facing the ocean, is protected by existing berms that are approximately 33 feet in height. These external berms will remain intact and only the berms inside the former fuel oil tank farm area would be modified.
- Monitoring. The system would be continually monitored for electrical, gas/smoke, and thermal variations.
- Automatic Protection. The project would incorporate fire suppression for the various areas within the building based on the type of hazard. The design would incorporate an automatic sprinkler system. There would be one system dedicated to suppression at the battery/rack level and, if required, another system to protect the buildings.
- Manual Protection. The project would include on-site fire hydrants, automatic wet standpipes, Class III hose stations, and hand-held portable fire extinguishers.
- Explosion Prevention Protection. The lithium-ion batteries selected for the BESS would incorporate explosion prevention protection pursuant to the National Fire Protection Association (NFPA) 855 or International Fire Code Chapter 12.

In addition, any additional conditions required by the MBFD, including fire department site access, fire apparatus access roads, site warning signage, and building safety systems, would be incorporated into the final BESS project design.

Demolition and Remediation of Existing Power Plant Building and Stacks

Prior to the demolition of the existing power plant building and stacks, environmental remediation would occur. Significant environmental remediation was completed at the time the Power Plant closed in February 2014. This included the removal or all oils and flammable materials. The equipment housed inside the Morro Bay Power Plant structure still contains some regulated materials such as mercury switches, lighting devices, and asbestos. Prior to commencement of structural demolition, all remaining regulated materials would be removed and disposed of off-site in compliance with California and federal regulations.

Following construction of the BESS, the existing power plant building and stacks would be remediated and demolished. Remediation and demolition would commence within six months of completion of the BESS. Of the 43 acres included in the Project Site, approximately 19 acres (Demolition Site) would be used for remediation and demolition of the power plant building and stacks. Figure 6 shows the approximate limits of the demolition activities. Environmental remediation and demolition would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and recycling of remaining equipment, waste management transport and disposal and backfill of below grade voids. Remediation and demolition are anticipated to take up to two years to complete.

Most of the outbuildings and transformers at the Power Plant property were removed in 2014. Several transformers and circuit breakers remain on the Power Plant property and are planned to be removed under a separate minor amendment application filed by the property owner. A detached garage and water tank near the main plant entrance would also be demolished. This work would be accomplished using cranes, torches, and shearing machines. All materials would be hauled to a qualified recycler or disposal facility.

Master Plan for Redevelopment of the Power Plant Property

The proposed project also includes a Master Plan which establishes a vision for the redevelopment of the Power Plant property as well as recommended improvements to pedestrian and circulation connections in the area. The Master Plan would amend the General Plan and LCP LUP land use designation on the BESS Site from Visitor Serving Commercial to General (Light) Industrial. The proposed Master Plan would not modify the existing land use designation on the remainder of the Power Plant property, retaining the Visitor Serving Commercial designation and Mixed-Use Residential Overlay recently implemented through Plan Morro Bay.

Figure 6 Demolition Site Boundary

Imagery provided by Microsoft Bing and its licensors © 2022.
Additional data provided by Vistra, 2022.

19-08915 MB, MB BESS EIR
Fig 2-5 Demolition Area

2 Regulatory Setting

The Project is subject to federal and State regulatory requirements that are intended to characterize and reduce the risks posed by geologic and other natural hazards. Mandatory compliance with current State and local construction, engineering, and geotechnical building standards, which are based on the best available science and technology, provide additional protection against such hazards. Regulatory requirements and industry standards address these risks primarily via design and construction techniques, which are confirmed and approved by regulatory entities at various stages of the Project's planning and implementation phases.

Generally, these regulatory requirements and industry standards are delineated in several documents; sources that may contain guidelines and/or requirements that are applicable to the Project include, but are not limited to, the following: the Morro Bay Municipal Code (MBMC); the International Code Council, Inc. (ICC) International Building Code (IBC; most recent update) as adopted by the California Building Code (CBC; Title 24 of the California Code of Regulations); the Morro Bay General Plan/LCP Coastal Land Use Plan (Plan Morro Bay; City of Morro Bay 2021); the Greenbook Committee of Standard Specifications for Public Works Projects (Greenbook Specifications; most recent update), and the State Water Quality Control Board's Construction Stormwater Program.

A brief description of each source is included below:

- **Morro Bay Municipal Code.** The MBMC largely adopts the CBC with specific edits. Chapter 14 of the Morro Bay Municipal Code includes building and construction requirements to reduce hazard potential that are applicable to all new constructions, including the Project. These requirements include, but are not limited to:
  - Seismic Safety Program – Chapter 14.18
  - Flood Damage Prevention – Chapter 14.72, Sections 14.72.010 – 14.72.060
- **California Building Code and International Building Code.** The CBC contains engineering and design requirements for buildings in California, and incorporates elements of the IBC, ASTM, and International and the American Society of Civil Engineers (ASCE) standards. The following CBC sections contain requirements that may be applicable to the Project:
  - General provisions – Chapter 1
  - Structural design (including soil, seismic, and tsunami flood loading) – Chapters 16/16a
  - Structural tests and special inspections (including seismic resistance) – Chapters 17/17A
  - Soils and foundations – Chapters 18/18A
  - Grading, including excavation, fill, drainage, and erosion control – Appendix J
  - Tsunami generated flood hazard – Appendix M

  ASCE 7-16 standards include tsunami load standards updated in December 2021 to improve building resilience and safeguard human life in response to tsunamis that struck Chile and Japan in 2010 and 2011.
- **Plan Morro Bay.** California Senate Bill 271 Assembly Bill 2038 required that counties and cities adopt General Plan policies regarding natural hazards. Coastal Act section 30253 provides, in part, that new development minimize risks to life and property in areas of high geologic, flood,

and fire hazards and neither create nor contribute significantly to erosion, geologic instability, or destruction of natural landforms along bluffs and cliffs. In response to this requirement LCPs require that safety and stability be assured for the life of new coastal development. Plan Morro Bay is the City of Morro Bay's General Plan/LCP Coastal Land Use Plan, and it provides direction and resources intended to mitigate death, injuries, and environmental and economic damage. Plan Morro Bay contains several policies that are applicable to the Project, including, but not limited to:

- Geologic and Seismic Hazards - Policies PS-2.8 through PS-2.13: Require new developments to complete soils reports and ensure structural designs address seismic, liquefaction, and other geologic hazards.
- Coastal Hazards - Policies PS3.6 through PS-3.11: Require new developments to incorporate design elements that address coastal hazards associated with natural disasters and climate change.

- **Greenbook Specifications.** The Standard Specifications for Public Works Construction, or "Greenbook," is produced by a committee of experts from the American Public Works Association, Engineering Contractors Association, Southern California Contractors Association, and others. The Greenbook provides standards for construction materials and methods, engineering, construction activities, and protocols for assessing and mitigating geologic and soil hazards. The Greenbook is widely adopted by regulatory agencies.
- **State Water Quality Control Board's Construction Stormwater Program.** Construction General Permit Order 2009-0009-DWQ requires that dischargers whose projects disturb one or more acres of soil obtain a Construction General Permit, in order to comply with the National Pollutant Discharge Elimination System (NPDES) program. The Construction General Permit requires the development of a Storm Water Pollution and Prevention Plan (SWPPP) to protect against the discharge of pollutants during construction.
- **Morro Bay Local Hazard Mitigation Plan.** The Morro Bay Local Hazard Mitigation Plan (LHMP) is a plan to improve the resiliency in the community by identifying natural hazards present in Morro Bay, determining the community's vulnerability to each hazard, and identifying development mitigation strategies to reduce vulnerability before emergency situations develop. Morro Bay's LHMP was adopted in 2006 and most recently updated in 2019. The LHMP identifies earthquakes (including fault rupture and liquefaction), floods, landslides, and hazardous materials releases as the most significant hazards present in the community and contains nine goals to improve resiliency (City of Morro Bay 2019a). The City's LHMP is part of the County of San Luis Obispo's Multi-Jurisdictional LHMP.
- **Morro Bay Multi-Hazard Emergency Response Plan.** The City of Morro Bay has a Multi-Hazard Emergency Response Plan revised in 2019 and developed by the MBFD. The Emergency Response Plan covers City policies and concepts for responding to any and all emergencies that could affect the health, safety, and property of the public within city limits, including earthquakes, hazardous materials, multi-casualty events, storms and floods, wildland fires, terrorism, nuclear power plant events, and tsunamis (City of Morro Bay 2019b). Most of the hazards in the response plan are also contained in the LHMP. The policies and general approach to emergency situations delineated in the plan follow a number of widely adopted emergency response standards and operations protocols, including the National Incident Management System, the State Emergency Management System, and the Incident Command System.

3 Physical Setting

3.1 Topography

The Project Site lies at an elevation of approximately 10 feet above NAVD88[2] (USGS 2021) and is generally flat with a gradual southwesterly slope towards the Pacific Ocean and the estuary of Morro Bay, which bounds the Power Plant property to the west. Morro Rock, a prominent volcanic plug (see Section 3.3), is located west of the Power Plant property, and sits at the mouth of Morro Bay. Morro Bay extends south and roughly parallel to the shore for approximately 3.5 miles before terminating at the unincorporated community of Los Osos. The hills of the Coast Ranges lie to the east of the Project Site.

3.2 Regional Geology

The Project Site is located in the Coast Ranges of the California Geomorphic Provinces (CGS 2002), which are characterized by northwesterly-trending mountains and valleys. The Coast Ranges extend from the Pacific Ocean east to the San Joaquin Valley. On the Central Coast, the mountains are primarily composed of sedimentary strata dating to Mesozoic and Cenozoic eras. Several major fault traces run parallel to the Coast Ranges, including the San Andreas, the Rinconada, the Hosgri, and the La Panza fault zones.

The Franciscan Complex is the predominant geologic formation on the portion of the Central Coast where the Power Plant property is located, and it is marked by a mélange (or mixture) of marine sediments that have experienced varying grades of metamorphism (Raymond 2019). Intrusive igneous units are also present in localized areas. Morro Rock is an example of such volcanic rocks.

3.3 Local Geology

The Project Site is underlain by Quaternary-age alluvium, composed of gravel, sand, and clay derived from Morro Creek (Dibblee 2006). Immediately surrounding the Project Site are beach and dune sand deposits, metamorphosed mélange units of the Franciscan Complex, and intrusive dacite blocks and volcanic plugs. Morro Rock is a prominent geologic feature at the mouth of Morro Bay with geologic, cultural, and regional value. Morro Rock, along with eight other hills, form a line of volcanic plugs extending towards the southeast known as the Nine Sisters.

Currently, no known faults have been mapped through the Power Plant property. The closest active fault is within the Cambria Fault Zone, located approximately 1.75 miles to the northeast (USGS 2017), which is of late Quaternary (less than 130,000 years) age. The Cambria Fault Zone is not identified as a significant seismic risk at the Power Plant property. The Los Osos Fault Zone, also of late Quaternary age, is mapped approximately 5.5 miles to the south of the Power Plant property. The Irish Hills section of the Los Osos Fault Zone, located 9 miles to the south, has a well-defined trace and is estimated to be younger than 15,000 years, and constitutes a zone of required Investigation (see Section 4.2.1).The Los Osos Fault Zone is inferred to pass through Morro Bay and extend into the Pacific Ocean west of Morro Rock, where evidence indicates that it may merge into

[2] North American Vertical Datum of 1988, as referenced on the Morro Bay South topographic map (USGS 2021).

the Hosgri Fault Zone. The Hosgri Fault Zone is an off-shore, large complex of faults of Quaternary age extending from Vandenberg Air Force Base to the south, to Big Sur, to the north (CGS 2022a).

The Project Site has been mapped in an area containing soils predominantly classified in the psamment and fluvent sub-orders with highly variable profiles, and with small areas of Corralitos and Tujunga series soils (USDA 1984[3]). Psamments are characterized by low-water holding capacity sands, commonly associated with dunes, and fluvents by typically stratified flood-plain deposits containing clayey and loamy material (USDA-NRCS 1999).

A number of site-specific geologic investigations have been conducted at the Power Plant property in support of historical Power Plant construction and improvement activities not associated with the current Project, including:

- *Geotechnical Studies and Evaluations of Two Fuel Oil Tank Farms at Morro Bay Power Plant*, Roger Foott Associates, August 31, 1993
- *Application for Certification, California Energy Commission, Moro Bay Power Plan Project*, Duke Energy, October 2000

Although these data were collected prior to the application for the current Project, they represent geologic information pertinent to portions of the Project Site and thus were reviewed for this Report. These investigations included the advancement of nearly 100 soil borings and 13 groundwater monitoring points to depths of up to approximately 75 to 100 feet below ground surface (ft bgs) (the depth of each pile will be determined during the final design-level geotechnical work based on loads and other location-specific analysis). Rincon reviewed select logs GT-1 through GT-6 , 84-1 through 84-11, 85-P1 and 85-P2, B-1 through B-18 and B-20 through B25 (Duke Energy 2000); these boring logs are included as Appendix A to this Report. Rincon was not provided with the text of the reports that are associated with these boring logs. Based on these historical boring logs, the Project Site overlies material predominantly composed of silty sand and sand mixtures with some thick zones (greater than 5 feet) of clay. A cross section based on a subset of the borings, which was prepared for the former Tank Farm area, shows that subsurface material consists of dune sand and silt, which lie over fine-grained estuarine deposits, medium to coarse grained marine terrace deposits, and shale bedrock (Duke Energy 2000).

Additionally, the Geotechnical (Foundation) Report for Morro Creek Multi-Use Trail and Bridge Project (Morro Creek Geotechnical Report), prepared by Bengal Engineering Inc. (Bengal), was reviewed as the study area was adjacent to the Project Site (Figure 2). The Morro Creek Geotechnical Report included a field program that consisted of advancing three hollow-stem auger borings along the alignment of a proposed multi-use trail; the boring logs for B-1 through B-3 are included as Appendix A of this Report. Bengal's field observations were consistent with those made from on Site borings, and indicate that the subsurface is composed of dune sand with deeper zones of silty sand and clayey sand.

---

[3] Soil Survey Area CA644; accessed from the University of California at Davis SoilWeb online viewer https://casoilresource.lawr.ucdavis.edu/gmap/ and from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

3.4 Hydrogeology

The Project Site is at the northern end of Morro Bay, a natural embayment on the Pacific Ocean that parallels the shore for approximately 3.5 miles before terminating south at the unincorporated community of Los Osos. The Project Site is not within a recognized groundwater basin but is situated directly south of the Morro Valley Groundwater Basin (Basin Number 3-041; DWR 2022a). Several groundwater monitoring wells have been installed and/or abandoned at the Project Site. As of the most recent gauging event in 2018, groundwater depths and elevations ranged from approximately 6 to 30 ft bgs, and 3.2 to 13.2 feet above mean sea level[4] (ft amsl), respectively (ETIC Engineering [ETIC] 2018). Borings advanced on an adjacent site encountered groundwater at a depths of 10 to 14 ft bgs in 2014 (Bengal 2014).

Little Morro Creek combines with Morro Creek approximately 1,800 feet northeast of the Power Plant property before running through the northwesterly portion of the Power Plant property directly north of the BESS Site/former tank farm, and discharges into the Pacific Ocean north of Morro Bay and the Project Site (Figure 2).

[4] A vertical reference datum was not provided in ETIC Engineering's 2018 Transmittal (ETIC 2018).

4 Evaluation Results

The results of the Geologic Hazards Evaluation for the Project Site are included below.

4.1 Significance Thresholds

In accordance with Appendix G of the CEQA Guidelines, an impact related to geology and soils would be significant if the proposed project would:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issues by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mile sand Geology Special Publication 42);
    ii. Strong seismic ground shaking;
    iii. Seismic-related ground failure, including liquefaction;
    iv. Landslides;

b. Result in substantial soil erosion or the loss of topsoil;
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or

The following discussion evaluates potential Project impacts related to geology and soils. In addition to these thresholds of significance, this Report also evaluates the potential for the project to result in environmental impacts associated with physical hazards related to hydrogeologic conditions described in Appendix G of the CEQA Guidelines. In accordance with these Guidelines, an impact related to hydrology and water quality would be significant if the proposed project would:

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

"Potentially significant impacts," as defined by the CEQA Guidelines, would generally result in the loss or degradation of public health and safety or conflict with local, State, or federal agency regulations. The discussion is based on the results of previous investigative studies. Supplementary information was obtained through review of maps, online databases, articles, reports, and published research papers as described in Section 1.1 of this Report, for information on local and on-site geology and hydrogeologic conditions.

The evaluation of geology and soils impacts assumes that the construction and development of the Project would adhere to all applicable federal, State, and local regulations, and conform to the current required State and local construction, engineering, and geotechnical building standards, as appropriate.

Because the proposed project does not propose the use of septic tank or any alternative wastewater disposal systems, an analysis of potential impacts related to septic tanks or alternative wastewater disposal systems (CEQA Guidelines Geology and Soils checklist question "e") is not included in this Report.

4.2 Potential Project Impacts

4.2.1 Seismic and Soil Hazards

Hazards associated with seismic phenomena, such as earthquakes, and other on-site soil characteristics are discussed below.

a.i)	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault?

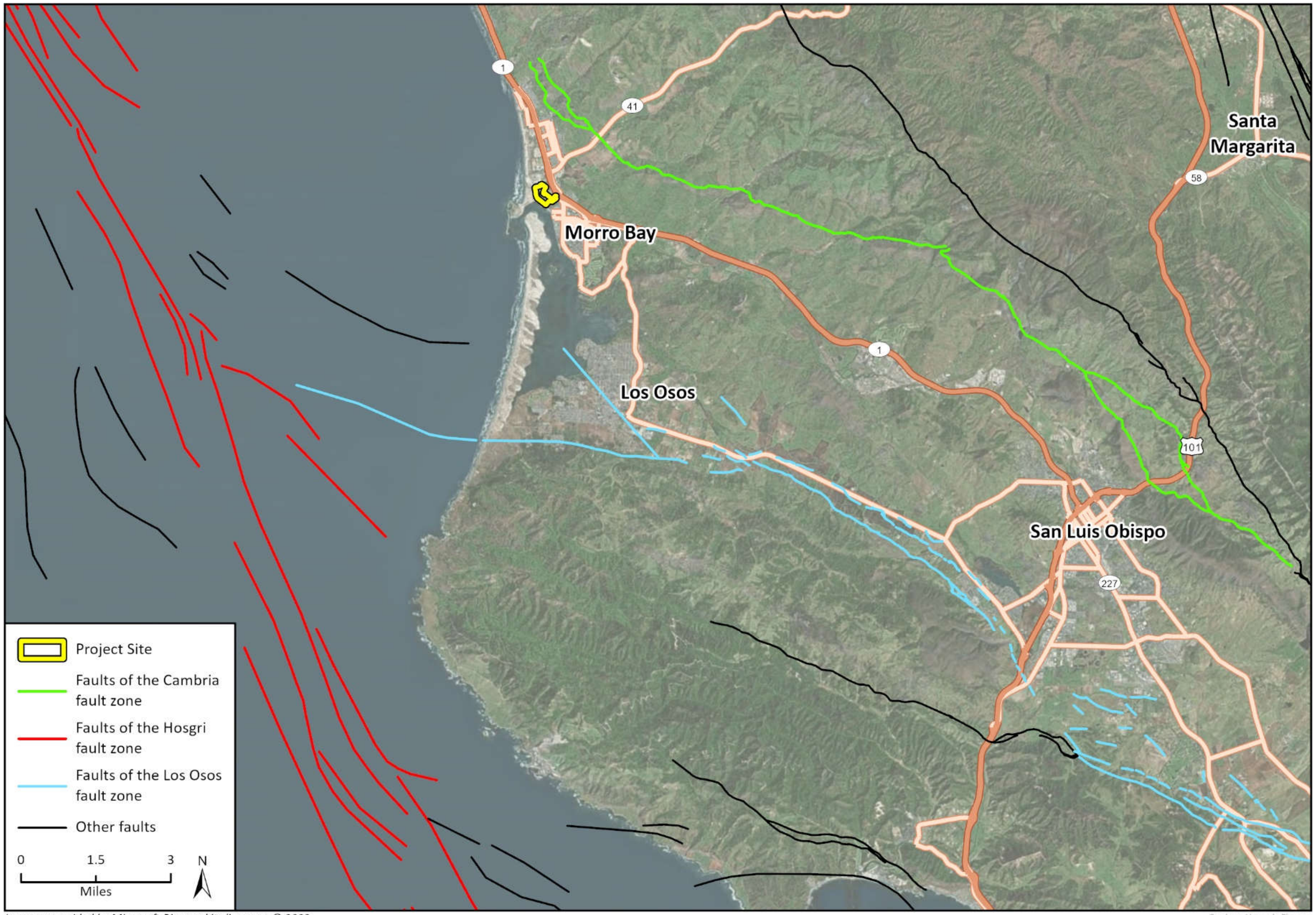
Ground Surface Fault Rupture

Surface rupture refers to the displacement of the ground surface along a pre-existing fault. Fault rupture can endanger life and property if structures are constructed on, or cross over, a fault, due to the differential movement of the ground surface. Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) directed the State Geologist to delineate regulatory "zones of required investigation" to reduce the threat to public health posed by geologic faults and earthquakes. Zones of required investigation indicate areas with active faults that have the potential for surface rupture.

As discussed in Section 3.3, the Project Site is located in a seismically-active area of California; however, the Project Site does not overlie the trace of any known fault (Figure 7). Additionally, the Project Site is not located within an earthquake zone of required investigation as designated by the Alquist-Priolo Act (CGS 2022b). The closest zone of required investigation is the Irish Hills section of Los Osos Fault Zone, located approximately 9 miles southeast of the Project Site (Figure 8). Therefore, the risk of ground surface fault ruptures at the site would be less than significant.

The Los Osos Fault Zone is a complex fault system of well-defined segments with dextral strike-slip and dip-slip displacement (USGS 2016). Geomorphic expressions include prominent spring lines, linear topographic scarps, and deflected drainages. The estimated slip-rate of the Irish Hills section is between 0.2 and 1 millimeter per year, and the most recent deformation age is late Quaternary (in the last 15,000 years).

Figure 7 Regional Quaternary Faults



Imagery provided by Microsoft Bing and its licensors © 2022.
Fault zone data provided by California Geological Survey, 2010.

Figure 8 Zones of Required Investigation

Imagery provided by Microsoft Bing and its licensors © 2022.
Fault zone data provided by California Geological Survey, 2017.

Geology Hazards Figures
Earthquake Zones of Required Investigation

a.ii)	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Seismically Induced Ground Shaking

As with virtually all of California, the Project Site is located in an area with the potential for ground shaking that may cause structural or property damage in the event of an earthquake. The intensity of ground motion depends upon the magnitude of an earthquake, the distance from the epicenter, and the geology between the epicenter and the Project Site. Ground motion caused by earthquakes can be amplified in softer, unconsolidated soil, in which seismic wave velocity decreases but wave amplitude increases, as opposed to in harder material, such as bedrock. As amplitude increases, so does ground acceleration, and the ground shaking intensity.

As discussed in Section 3.3, the Project Site overlies Quaternary-aged alluvium composed of gravel, sand, and some clay, and the material in the immediate vicinity of the Project Site is beach and dune sands; these materials have an increased risk of damage due to ground shaking (SLO County 1999). Additionally, the Project Site is in an area mapped as having a class 'yellow' earthquake shaking potential, which generally corresponds to a moderate earthquake hazard (CGS 2016)[5].

A list of historical earthquakes, occurring between 1900 and 2022, within 50 miles of the Project Site and having a magnitude of 4.5 or greater, are summarized on Table 2; a map illustrating the locations and magnitudes of these earthquakes is presented on Figure 9 (USGS 2023).

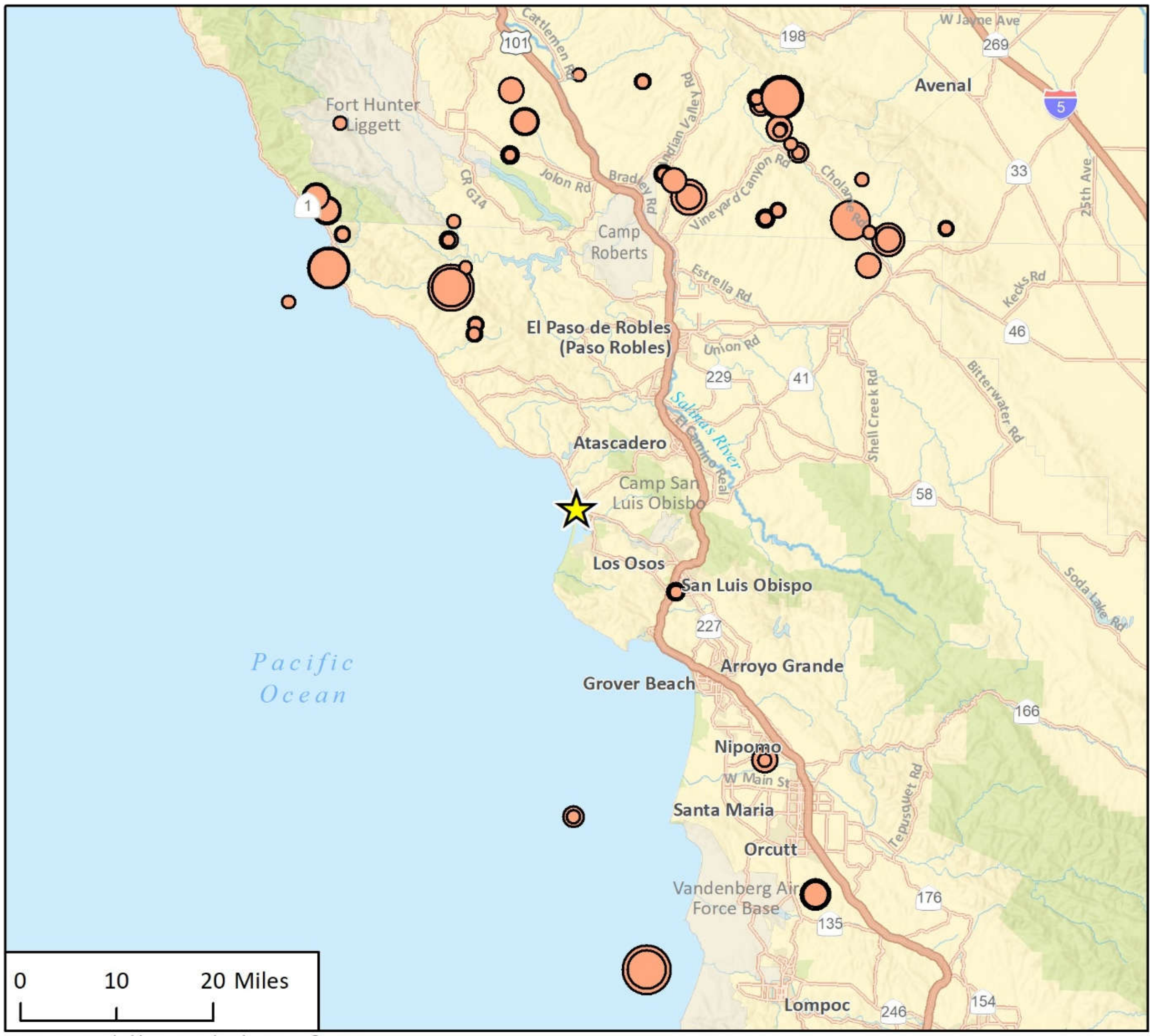
Table 2 Regional Earthquakes

Date (yr-mo-day)	Magnitude	General Location
2021-10-25	4.65	18km NW of San Simeon, CA
2004-09-30	4.88	13 km NW of Parkfield, California
2004-09-29	5	8 km NW of Parkfield, California
2004-09-28	4.71	12 km SE of Parkfield, California
2004-09-28	5.97	10 km SSE of Parkfield, California
2004-03-17	4.51	9 km WSW of Oak Shores, California
2003-12-23	4.7	9 km NNE of Cambria, California
2003-12-22	4.73	7 km NNE of Cambria, California
2003-12-22	6.5	10 km NE of San Simeon, California
1994-12-20	4.9	3 km NW of Parkfield, California
1993-11-14	4.82	8 km NW of Parkfield, California
1991-09-17	5.2	22 km NW of San Simeon, California
1985-11-24	4.5	2 km ENE of San Ardo, California
1983-08-29	5.2	25 km NW of San Simeon, California
1980-05-29	4.9	26 km WSW of Guadalupe, California
1975-11-13	4.79	11 km W of Oak Shores, California
1975-09-13	4.8	14 km NW of Parkfield, California

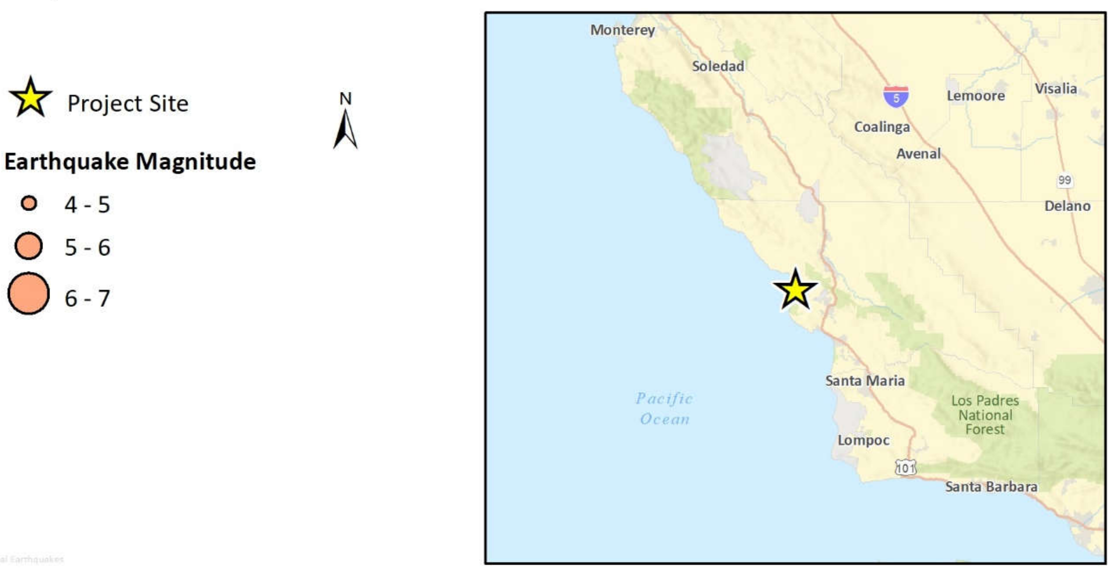
[5] Based on a 1-second spectral period with 2% exceedance probability in 50-years.

Date (yr-mo-day)	Magnitude	General Location
1966-06-28	4.5	8km NW of Parkfield, California
1966-06-28	5.47	8km N of Cholame, California
1966-06-28	4.69	14km NE of Cholame, California
1961-07-31	4.64	8km ESE of Parkfield, California A
1958-10-10	4.71	30km N of San Miguel, California
1955-03-02	4.77	22km NNW of Lake Nacimiento, California
1952-11-22	6.2	28km NW of Cambria, California
1949-06-27	4.5	11 km WNW of Oak Shores, California
1948-12-31	4.6	19 km W of San Simeon, California
1939-12-28	5.17	26km NNW of Lake Nacimiento, California
1938-11-22	4.5	5 km NW of Parkfield, California
1934-12-24	4.77	14km N of San Miguel, California
1934-12-03	4.53	34km SSW of King City, California
1934-06-14	4.5	14 km SE of Parkfield, California
1934-06-08	4.5	14 km SE of Parkfield, California
1934-06-08	5.84	11km NNE of San Miguel, California
1934-06-08	5.09	13km N of San Miguel, California
1934-06-05	4.81	12km SW of Parkfield, California
1932-02-26	5	8 km WSW of San Ardo, California
1931-07-21	4.8	3 km SSW of San Luis Obispo, California
1931-02-23	4.7	9 km SW of Parkfield, California
1927-11-19	5	5 km SSW of Nipomo, California
1927-11-04	6.9	18 km WSW of Vandenberg Air Force Base, California
1922-08-18	5	11 km NNE of Shandon, California
1922-03-16	5	11 km NNE of Shandon, California
1917-07-26	4.8	5 km SSW of Nipomo, California
1902-07-28	5.4	7 km SSE of Orcutt, California
1901-03-03	6.4	12 km NNW of Parkfield, California

Figure 9 Historical Regional Earthquakes



Imagery provided by Esri and its licensors © 2022.



The Los Osos Fault zone has been estimated to have a 0.25% probability of producing a magnitude 7.0 earthquake in the next 30 years (Field et. al. 2013).

According to the Duke Energy application, the Project Site is subject to a peak horizontal ground acceleration (PGA) of 33% of the acceleration of gravity (g-units; 0.33 g) from a maximum credible earthquake of magnitude 6.8 on the Los Osos Fault and is located within Seismic Zone 4 as designated by the CBC (Duke Energy 2000). According to the USGS Unified Hazard Tool[6], which calculates estimated ground accelerations based on site-specific parameters and published earthquake hazard and probability maps, the Project Site has a 2% chance in 50 years of experiencing a PGA of approximately 0.49g[7]. This PGA corresponds to a "moderate perceived shaking" and "very light potential damage," based on the Modified Mercalli scale (Kramer, Upsall 2006)[8.]

Based on this information, the Project Site is susceptible to seismic activity, and would be subject to moderate ground shaking during a reasonably likely earthquake. However, the Project would be required to minimize this risk through incorporation of applicable CBC standards as adopted by the City (MBMC Section 14.01.020). Proposed new project structures (including the battery racks) would be required to be designed in accordance with the minimum requirements of the versions of CBC and ASCE 7 in place at the time of construction permitting. During the plan check process, the City would review detailed structural engineering drawings of the proposed seismic anchoring, which would be reviewed and approved by a licensed structural engineer to ensure that in the event of an earthquake, the racks/cabinets would remain upright and have a low probability of resulting in property loss or injury. The project design and compliance with the CBC would minimize the risk of loss, injury, or death involving seismic ground shaking. With adherence to existing regulatory requirements, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, associated with seismic-related ground shaking, ground failure, or landslides.

a.iii)	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?
a.iv)	Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?
c.	Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Liquefaction

Liquefaction is a process in which saturated soil temporarily becomes fluid during intense and prolonged ground shaking, or because of a sudden shock or strain. Liquefaction typically occurs in areas with loose sand or silt where groundwater is shallow (less than 40 ft bgs [SMGB 2014]). Settlement is the vertical compression of the soil structure in response to a load, such as a building

[6] https://earthquake.usgs.gov/hazards/interactive/

[7] Calculated using Dynamic Conterminous U.S. 2014 (v4.2.0) hazard model edition assuming a Site Class of D/E

[8] The PGA derived for this Report is intended to offer a qualitative assessment of potential ground shaking and is not intended to provide information for use in engineering calculations or designs for the Project.

or compressive ground shaking in an earthquake. Settlement can be rapidly induced by liquefaction as sediments densify in response to the dissipation of pore water pressures (dewatering).

As discussed in Section 3.3, the Project Site overlies Quaternary-aged alluvium composed of gravel, sand, and some clay, and the material in the immediate vicinity of the Project Site is beach and dune sands (Figure 2). Areas containing beach and dune sand deposits have a high liquefaction potential (SLO County 1999), and the Site has a “moderate potential” liquefaction risk (SLO County 2023). Additionally, as of the most recent gauging event in 2018, groundwater depths and elevations ranged from approximately 6 to 30 ft bgs, and 3.2 to 13.2 ft amsl, respectively (ETIC 2018). An adjacent site was assessed to have soils that are highly susceptible to liquefaction (Bengal 2014).

Based on this information, the Project Site soils are susceptible to liquefaction and associated settlement that may result from a seismic event. This impact is potentially significant. Mitigation Measure GEO-1 would require the project applicant to prepare a geotechnical assessment according to the most current analytical procedures and industry standards. The required geotechnical assessment shall provide design recommendations for the proposed Project to withstand existing conditions or treat the Project Site in such a manner as to address liquefaction and associated settlement conditions. Suitable measures to reduce impacts are described in Mitigation Measure GEO-1 in Section 5.1.

Subsidence and Collapse

Subsidence is the differential (lateral or vertical) movement of the ground due to the collapse of soil pore space, which occurs without the application of an external load, such as a building. Subsidence can also occur during the compressive ground shaking of an earthquake. A common cause of subsidence in California is the over-pumping of groundwater, which reduces pore pressure, or the decay of organic matter, such as peat, which allows the soil substrate to compress and surface elevations to decrease. Subsidence is generally viewed as a regional change in surface elevation; however, localized differential displacements of the ground surface can damage foundations and structures as does settlement.

According to the boring logs that Rincon reviewed (included in this Report as Appendix A), the Project Site overlies a mix of cohesive and cohesionless soils containing silty sands and some clays. Although the fine-grained elements may provide enough structure to the soil matrix to protect against subsidence, the low-cohesion fractions may be susceptible in the event of dewatering or ground shaking. Additionally, organic estuarine deposits were encountered in select borings, which may contain peat that could compress and lead to subsidence as organic matter decays.

The Project Site is not located in an area with known locally specific subsidence risks (DWR 2022b & DWR 2022c, SLO County 1999, USGS 2022). However, localized subsidence can occur as a result of regional events, including seismic events. This impact is potentially significant. Mitigation Measure GEO-1 would require the project applicant to prepare a geotechnical assessment according to the most current analytical procedures and industry standards. The required geotechnical assessment shall provide design recommendations for the proposed Project to withstand existing conditions or treat the Project Site in such a manner as to address subsidence conditions. Suitable measures to reduce this impact are described in Mitigation Measure GEO-1 in Section 5.1.

Slope Stability and Landslides

Landslides are a form of mass wasting, in which rocks or soil material travel downhill under the force of gravity in a slope failure. Significant damage to structures and/or infrastructure can occur depending on the extent and energy of the landslide.

Since the Project Site is virtually flat and is located approximately at sea level, there is minimal risk of seismic induced landslides and slope instability on the Project Site, and the Site has a "low potential" for landslide risks (SLO County 2023).

The Project Site could also be affected by landslides that originate off-site and travel downslope for a distance. The Project Site is near the foothills of the Santa Lucia Mountains of the Coast Ranges. The closest known historical landslide is located approximately 1.9 miles to the north and is classified as active/historic or dormant young (CGS 2022c); no known landslides have been mapped in the immediate vicinity of the Project Site (Figure 10).

An unnamed ridge, with a maximum elevation of 226 feet above NAVD88 (USGS 2021), lies approximately 2,000 feet to the northwest of the Project Site (Figure 2). The western flank of this ridge has been assigned a Landslide Susceptibility Class of X (CGS 2022c), or the most susceptible combination of rock strength and slope to land sliding (CGS 2011), and has a "high potential" landslide risk (SLO County 2023). Although a landslide originating from this ridge poses a minor potential risk to the Project Site, given the low elevation of the ridge and its distance from the Project Site (located across Highway 1), the potential for damage to onsite infrastructure would be less than significant.

Lateral Spreading

Lateral spreading can occur when liquefiable soils present on a slope are subject to ground shaking. If the liquified soil is not laterally contained, it can deform and translate horizontally. The Project Site soils are susceptible to liquefaction; however, since the topography is generally flat, lateral spreading during an earthquake is not likely. Therefore, impacts from lateral spreading would be less than significant.

d. Would the project be located on expansive soil, creating substantial direct or indirect risks to life or property?

Expansive Soils

Soils with relatively high clay content that contain specific clay minerals (such as smectite clays) are considered expansive, which indicates that they shrink and swell in response to changing water content. This action is characterized by a soil's "shrink-swell potential," and can damage building and structural foundations via the differential movement of soil.

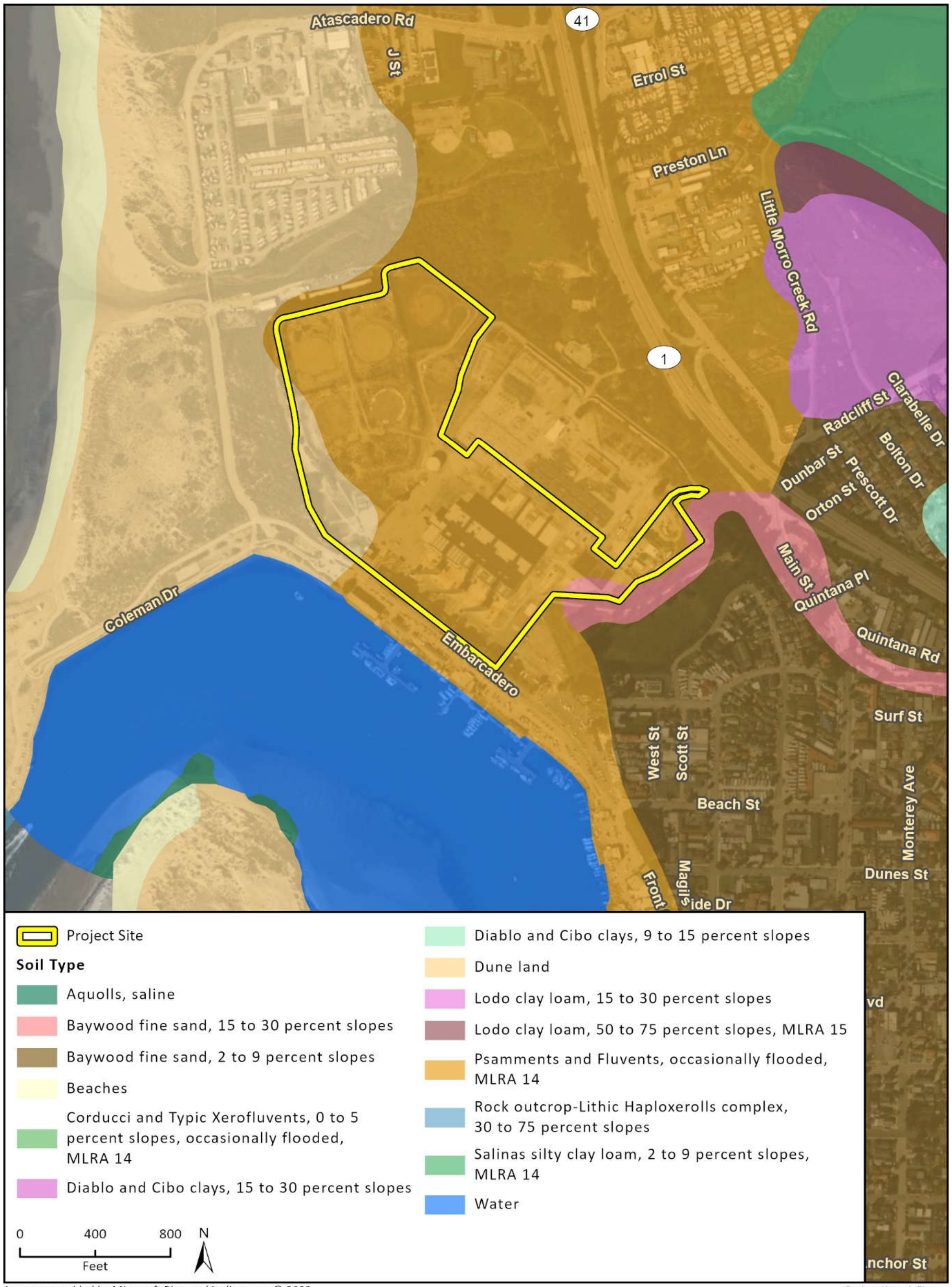
As discussed in Section 3.3, the Project Site has been mapped in an area containing soil classified as psamments and fluvents (Figure 11; USDA 1984). The specific soil profiles of psamments and fluvents are highly variable and include small areas of Corralitos and Tunjunga series soils. Corralitos and Tunjunga soils are considered to have low shrink-swell potential; however, fluvents contain flood-plain deposits that include zones of clay (USDA-NRCS 1999). Based on the boring logs that Rincon's geologist reviewed (included in this Report as Appendix A), the Project Site overlies soil with a mix of cohesive and cohesionless soils containing silty sands and undifferentiated clays. The clays tend to appear between 5 and 15 ft bgs and were classified as having "high plasticity." The

Figure 10 Regional Landslides

Imagery provided by Microsoft Bing and its licensors © 2022.
Landslide data provided by California Geological Survey, 2022.

Geology Hazards Figures
Regional Historical Landslides

Figure 11 Soil Classifications



Imagery provided by Microsoft Bing and its licensors © 2022.
Soil data provided by SSURGO Downloader, NRCS, USDA, 2022.

Geology Hazards Figures
Soil Classifications

specific shrink-swell potential of these clay zones has not been assessed; however, high plasticity clays suggests the presence of expansive soils with the potential to result in significant project impacts. Mitigation Measure GEO-1 would require the project applicant to prepare a geotechnical assessment according to the most current analytical procedures and industry standards. The required geotechnical assessment shall provide design recommendations for the proposed Project to withstand existing conditions or treat the Project Site in such a manner as to address expansive soil conditions. Suitable measures to reduce this impact are described in Mitigation Measure GEO-1 in Section 5.1.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Erosion

Erosion is a natural process whereby soil and weathered rock materials are worn away and transported, most commonly by wind or water. This action presents hazards to structures because it removes soils, which can undermine foundational elements, and transports and deposits the eroded material at other locations, which could cover roads, fill in reservoirs, and cause other impairments to infrastructure.

The Project Site is innately susceptible to some erosion risks because it lies in a coastal zone that is subject to ocean wave action. This action is currently being managed by emplaced rip-rap along Morro Bay's western shore and attenuated by the sand spit and dunes that form Morro Bay's western boundary (SLO County 1999).

The Project Site is previously developed, generally flat, and located in a developed area of the City. The primary source of erosion would be during initial site ground disturbance and construction and from storm water runoff. The soil erodibility factor, or K-value, of the Universal Soil Loss Equation (USLE) and Revised Universal Soil Loss Equation (RUSLE), was used to assess the Project Site's vulnerability to erosion by surface water run-off (sheet and rill erosion). The K-value is a measure of the susceptibility of soil particles to detachment and transport by rainfall and runoff. K-values range from 0.02 to 0.69, and other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by surface water flows. The Project Site has been mapped in an area containing soil classified as psamments and fluvents, with small areas of Corralitos and Tunjunga series soils (Figure 11). Because psamments and fluvents are taxonomical sub-orders and vary in profile at the Project Site, a K-value has not been established for psamments and fluvents, although they are described has having a "moderate" water erosion risk (USDA 1984). Corralitos and Tunjunga soils have K-values of 0.17 and 0.2 respectively (USDA 1984). Based on this information, the Project Site has a moderate erosion hazard.

Prior to the initiation of construction, the Project would be required to obtain coverage under a Construction General Permit to comply with NPDES permitting program to control construction stormwater discharges. Compliance with the conditions of the Construction General Permit would require the developer to develop and implement a SWPPP to reduce potential erosion and loss of topsoil during project construction activities. Typical Best Management Practices (BMPs) included in a SWPPP would include covering of inactive stockpiles, silt fences and gravel bag berms to trap sediments, and inlet protection, and slope stabilization to limit discharge of eroded soils from the construction site and sedimentation of surface waters offsite. Preparation of the required SWPPP would help ensure the project would not result in substantial temporary or long-term erosion or loss of topsoil. With implementation of required NPDES permitting program requirements, this impact would be less than significant.

4.2.2 Hydrogeologic Hazards

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Flooding

Floods cause damage to buildings and infrastructure by inundating them with water and, potentially, with debris. The Base Flood Elevation (BFE) is the computed elevation to which a flood is anticipated to rise during a 100-year flood event, or during a flood that statistically has a 1% chance of occurring in any given year. The BFE was derived from local topography and historical weather data, is shown on Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA). Areas that are within the 100-year flood zone are within Special Flood Hazard Areas (SFHAs).

The Project Site includes areas mapped in a flood zone designated with "AE" and "X" (Figure 12). Specifically, the BESS Site is within Zone X, which has a 0.2 percent annual (minimal) chance of flood hazard. The remaining portions of the Project Site are in an SFHA with a high flood risk (FEMA 2022), or AE Zone, which indicates that the area has a 1% annual flood risk and a 26% risk of flooding over 30 years. BFEs are estimated to range between 15 and 20 feet above NAVD88 for these areas. Based on the mapped flood zone, the BFE would primarily affect the Power Plant area; most of the BESS/former tank farm is outside of the SFHA.

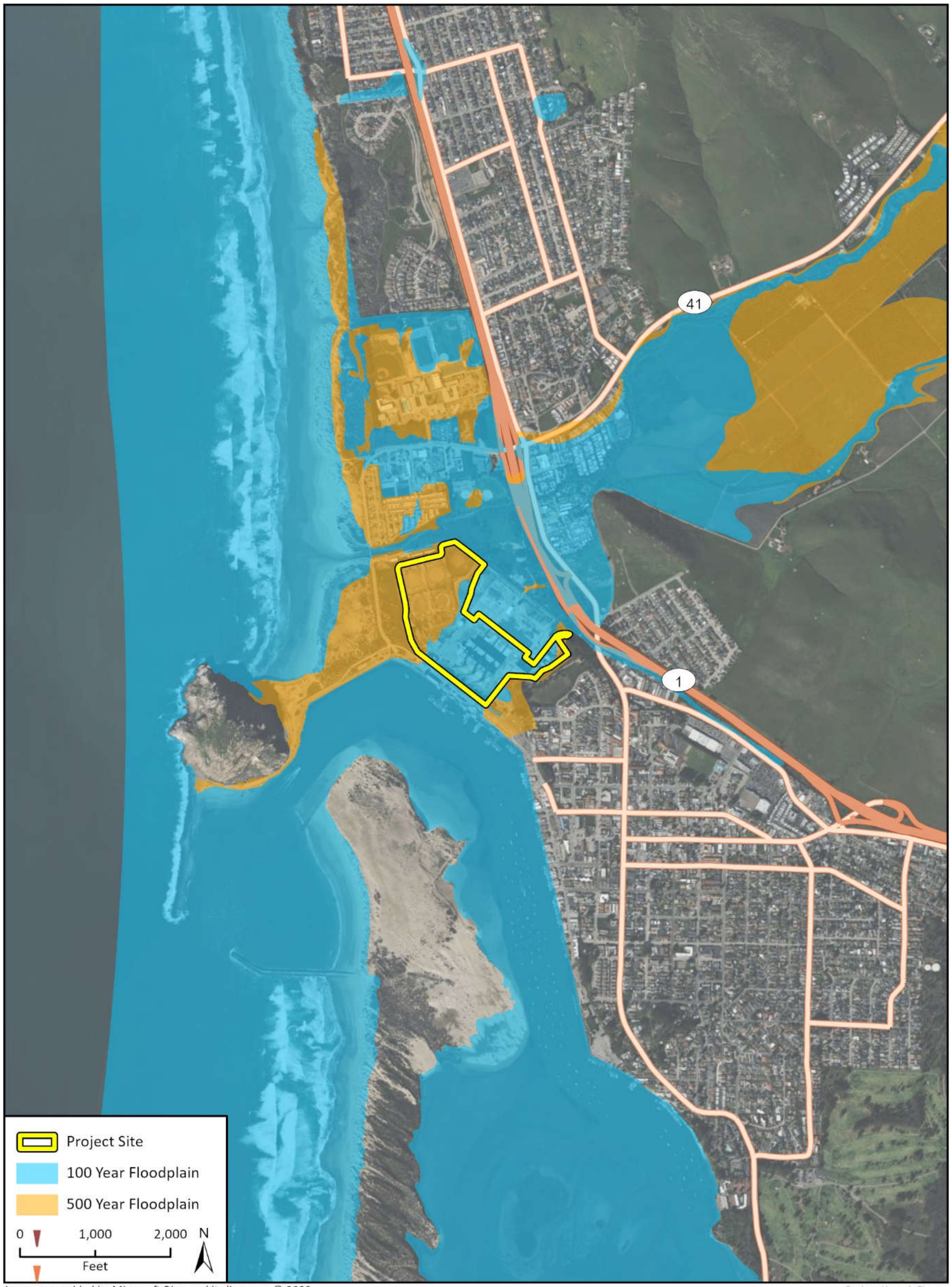
Based on this information, the Project Site (which includes both the BESS Site and the Demolition Site) is susceptible to a 100-year flood risk. However, the Project does not propose new structures on the portion of the Project Site within the Zone AE SFHA. The proposed BESS would be required to be constructed in accordance with FEMA Zone X requirements and would include stormwater detention and infiltration components in accordance with Regional Water Quality Control Board requirements. Therefore, the potential impact from flooding would be less than significant.

Tsunamis

Tsunamis are a powerful series of water waves generated by a substantial displacement of water, typically caused by an earthquake. Wave heights can reach tens of feet high and can cause significant damage to buildings and infrastructure in coastal areas. Tsunami Hazard Areas are generated by the California Geologic Survey (CGS) and are based on models that account for local geographic features. Tsunami Hazard Areas show coastal areas that may be at risk based on inundation limits corresponding to a 975-year average return period tsunami event and are revaluated at least every 5 to 10 years.

The Project Site lies within a Tsunami Hazard Area (CGS 2022d; Figure 13, which extends east approximately 1,600 feet to the foot of an unnamed ridge located adjacent to Little Morro Creek Road. According to the Duke Energy application, tsunamis occurred in the Morro Bay area in 1878, 1953, 1960 and 1964, which resulted in localized damage to piers, wharves, and buoys in Morro Bay Harbor. More recent tsunami advisories have been issued in 2011 and 2022. Based on historical records, there has been no resultant flooding or damage to the Power Plant site as a result of tsunamis. The potential for damage to the site from tsunamis is reduced by the existing sand spit, Morro Rock and the narrow harbor entrance (Duke Energy 2000). The proposed BESS Project has been sited to mitigate tsunami risk; the side of the project facing the ocean is protected by existing

Figure 12 Base Flood Elevations



Imagery provided by Microsoft Bing and its licensors © 2022.
Floodplain data provided by FEMA, 2021.

Geology Hazards Figures
Base Flood Elevations

Figure 13 Tsunami Inundation Zones

Imagery provided by Microsoft Bing and its licensors © 2022.
Tsunami data provided by California Geological Survey, 2021.

berms that are approximately 33 feet in height (Figure 14 and Figure 15). Nonetheless the Project Site is susceptible to tsunami risks.

The Project applicant would be required to minimize the risk of damage by incorporating applicable CBC standards as adopted by the MBMC into the final Project design plans. CBC structural design standards require buildings and structures in the Tsunami Design Zone to be designed and constructed in accordance with ASCE 7-16 standards. During the plan check process, the City would be required to review and approve detailed structural engineering drawings such that the BESS would be compliant with applicable CBC structural design standards, ASCE 7-16 standards, and MBMC requirements such that the Project would be reasonably expected to withstand a hypothetical Maximum Considered Tsunami (MCT)[9].

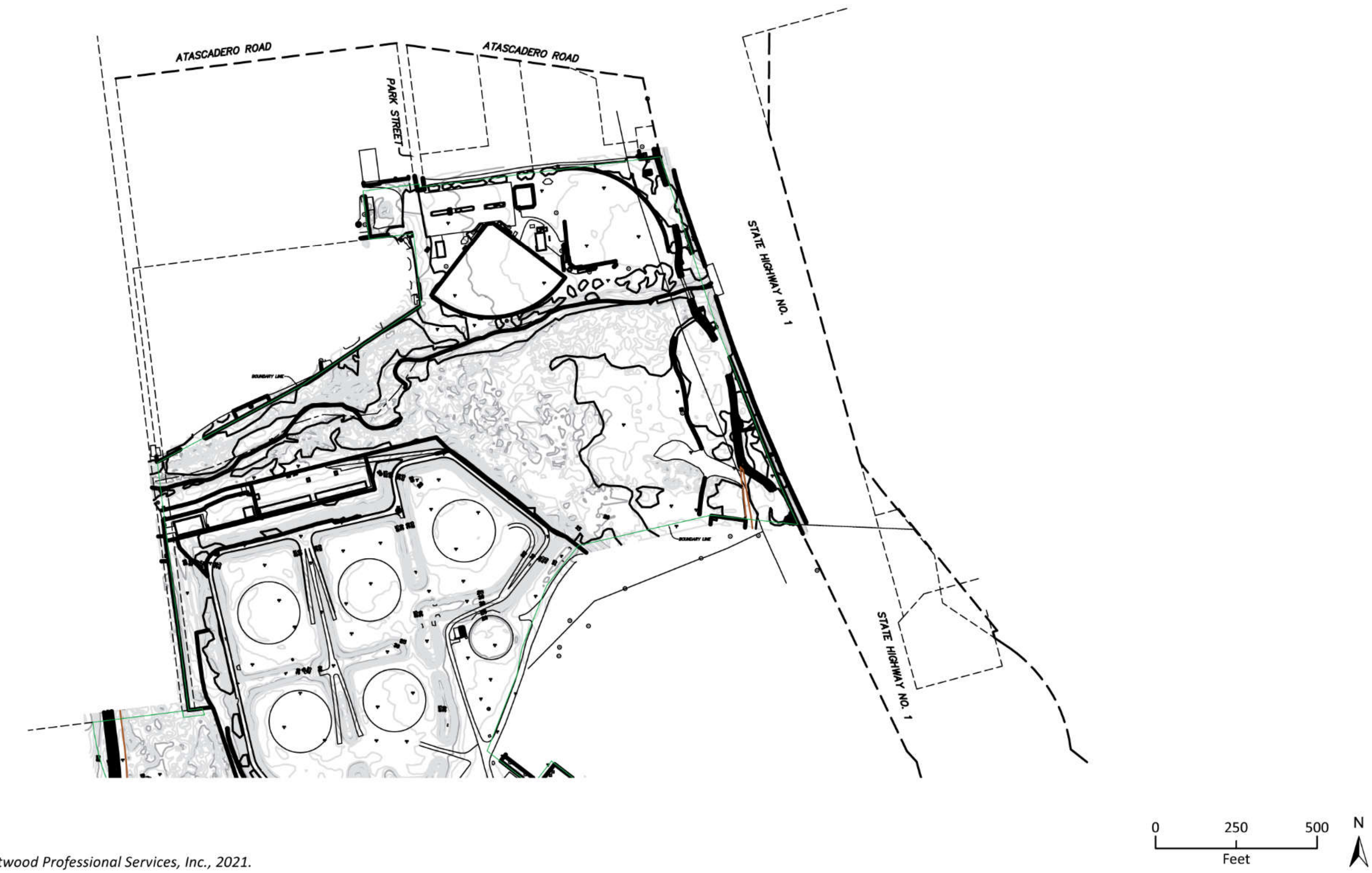
Lithium-ion batteries are regulated by the United States Department of Transportation as Class 9 Miscellaneous Dangerous Goods. The use, storage, and disposal of batteries during operation and maintenance of the Project would be subject to all applicable state and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the California Code of Regulations, Title 22.

The proposed BESS facility incorporates a multi-tiered safety system based on industrial best practices in consultation with the Morro Bay Fire Department (MBFD). Safety systems incorporate passive design considerations and include monitoring, automatic and manual protection elements, and explosion prevention protection, further described below.

- Passive Design Considerations. Compartmentalization is a passive method of fire protection that would be used to confine batteries into zones or areas. Each zone would be separated by rated fire barriers in accordance with the California Fire Code. The project would not locate any new structures in Federal Emergency Management Agency (FEMA) Flood Zone AE or any other FEMA-designated Special Flood Hazard Area, and has been sited to mitigate sea-level rise and tsunami risk. The former fuel tank farm area, including the west, north, and northeast sides of the BESS Site facing the ocean is protected by existing berms that are approximately 33 feet in height. The only voids in the berms surrounding the BESS Site are to the east and south, facing away from the ocean (Figure 14 and Figure 15). These external berms will remain intact and only the berms inside the former fuel oil tank farm area would be modified.
- Monitoring. The system would be continually monitored for electrical, gas/smoke, and thermal variations.
- Automatic Protection. The project would incorporate fire suppression for the various areas within the building based on the type of hazard. The design would incorporate an automatic sprinkler system. There would be one system dedicated to suppression at the battery/rack level and, if required, another system to protect the buildings.
- Manual Protection. The project would include on-site fire hydrants, automatic wet standpipes, Class III hose stations, and hand-held portable fire extinguishers.
- Explosion Prevention Protection. The lithium-ion batteries selected for the BESS would incorporate explosion prevention protection pursuant to the NFPA 855 or International Fire Code Chapter 12.

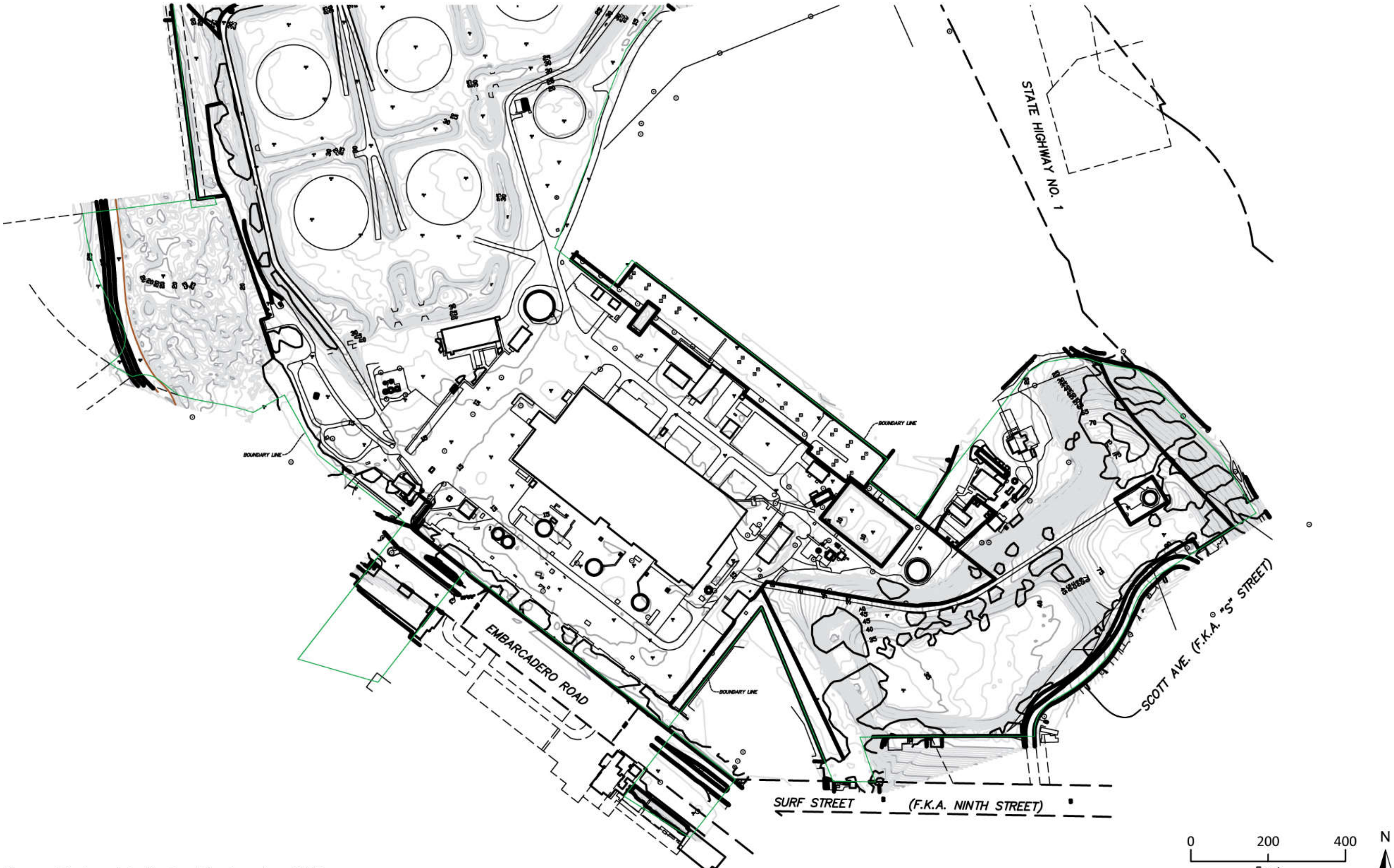
[9] The MCT is a hypothetical design basis event and has a 2% probability of being exceeded in a 50-year period, or a ~2,500 year average return period per ASCE-7 Tsunami Loads and Effects.

Figure 14 Project Topographic Survey (1/2)



Source: Westwood Professional Services, Inc., 2021.

Figure 15 Project Topographic Survey (2/2)



Source: Westwood Professional Services, Inc., 2021.

The City is requiring, as a Condition of Approval for the project, that the applicant prepare a Tsunami Response Plan for review and approval by the Fire Chief, Police Chief, Harbor Director, and the Community Development Director. The applicant's Tsunami Response Plan would be required to be approved prior to issuance of a building permit and would include components such as (but not limited to) clearly defined warning procedures, triggers for activation of the City's Emergency Operation Center (EOC), and a media and public information plan. The purpose of the Tsunami Response Plan would be to provide detailed project-specific procedures and coordination to implement the City's emergency response procedures. Any additional conditions required by the MBFD, including fire department site access, fire apparatus access roads, site warning signage, and building safety systems, would be incorporated into the final BESS project design.

During normal operation, lithium-ion batteries would not represent a significant risk of chemical release that may affect on-site or off-site receptors or involve hazardous emissions. Safety standards and features incorporated in the Project would minimize the potential for a release of pollutants associated with proposed onsite lithium-ion batteries. Incorporation of applicable CBC structural design standards into the structural plans for the BESS Project and compliance with applicable state and federal regulations regarding related to the use, storage, and disposal of hazardous materials, including lithium-ion batteries, would limit the risk that inundation of the Project Site due to a tsunami would result in the release of pollutants. Implementation of a Tsunami Response Plan approved by the City of Morro Bay Fire Chief, Police Chief, Harbor Director, and Community Development Director would ensure the project would provide clearly-defined project-specific warning procedures, triggers for activation of the City's EOC, and a media and public information plan to implement the City's emergency response procedures.

In the event of an emergency that could affect the health, safety, and property of the public, the policies and general approach of the City's Multi-Hazard Emergency Response Plan would apply. The Plan implements the City's LHMP, which is part of the County of San Luis Obispo's Multi-Jurisdictional LHMP The policies and general approach to emergency situations delineated in the Plan follow a number of widely adopted emergency response standards and operations protocols, including the National Incident Management System, the State Emergency Management System, and the Incident Command System. Implementation of the proposed safety standards and features incorporated in the Project; applicable CBC structural design standards; applicable state and federal regulations regarding related to the use, storage, and disposal of hazardous materials, including lithium-ion batteries; implementation of the required Tsunami Response Plan; and compliance with the provisions of the Emergency Response Plan would collectively minimize the potential for the project to release pollutants due to project inundation as well as the risk that any accidental release would result in adverse impacts to the health, safety, and property of the public. Therefore, this impact would be less than significant.

4.2.3 Radon Gas

Radon gas is produced by the radioactive decay of naturally occurring uranium present in soil and rocks, and poses a human health risk via the emission of high-energy alpha particles. Radon gas that intrudes into indoor air can build up and increase the risk of health conditions, such as cancer.

The United States Environmental Protection Agency has established an action level of 4 picocuries per liter (pCi/L); an estimated 5.9% of homes in San Luis Obispo County contain radon gas concentrations that are above this action level (CGS 2008). A non-regulatory, screening-level Radon Potential Zone Map was prepared by the CGS and California Department of Public Health to show areas with high, moderate, or low radon gas potential. The Project Site is in an area that has a low radon gas potential (CGS 2023).

5 Conclusions and Recommendations

Based on this Geologic Hazards Evaluation, Rincon concludes that the following geologic and hydrologic hazards could result in potentially significant environmental impacts:

- Liquefaction and Settlement
- Subsidence and Collapse
- Expansive soils

These impacts can be feasibly mitigated below the applicable thresholds of significance through implementation of the mitigation measures in Section 5.1.

5.1 Mitigation Measures

GEO-1 Geotechnical Assessments

A geotechnical assessment shall be prepared for the Project Site by a qualified engineer prior to development of the Power Plant property. The geotechnical assessment shall include onsite sampling of existing soil to ascertain current conditions and characterize the potential for risks associated with liquefaction (such as lateral spreading, sand boils, etc.) and implications for future building foundation elements. The analysis of the onsite potential for liquefaction, settlement, and the presence of expansive soils, will be based on laboratory results generated in accordance with current procedures and applicable State and local construction, engineering, and geotechnical building standards at the time the assessment is prepared. The Project's design and/or construction shall incorporate all recommendations of the geotechnical assessment. The design shall be prepared by a California-licensed engineer and shall comply with current State and Local Building Codes and Department of Transportation design standards. The design of all building foundations, subgrades, and transportation infrastructure shall such that they can withstand existing conditions, or the site shall be treated in such a manner as to address the conditions.

Suitable measures to reduce impacts include, but are not limited to, the following:

- Specialized design of foundations by a structural engineer
- Removal or treatment of liquefiable soils
- Drainage to increase the depth to groundwater
- In-situ densification of soils or other alterations to soil characteristics
- Excavation and recompaction of onsite or imported soils

Treatment of existing soils with fixing agents prior to recompaction

6 Limitations

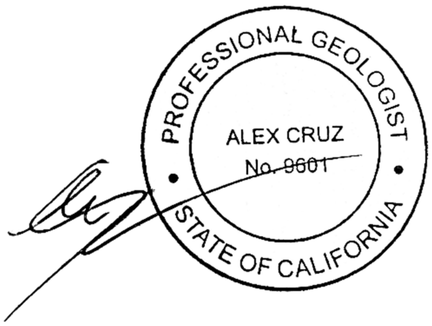
Rincon prepared this Report in a manner that is consistent with the level of care and skill ordinarily exercised by other members of the environmental profession. The conclusions, opinions, and recommendations presented herein are based on a limited number of observations and data; conditions could vary between or beyond the data evaluated. Rincon makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), Report, opinions, or instruments of service provided.

Rincon's Report is preliminary in nature and performed solely from a review of available public information. No interviews were conducted, regulatory agency personnel contacted or consulted, site reconnaissance performed, samples obtained, and no form of site or laboratory testing completed.

Although risk can never be eliminated, more detailed and extensive studies will yield more information, which may help understand and manage the level of risk involved. Since detailed study and analysis involves greater expense, clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies could be performed to reduce these uncertainties and are recommended. The Limitations of this Report apply to any electronic data submitted to the client that is associated with this desktop review.

7 List of Preparers

This Report was prepared in accordance with generally accepted practices and procedures, under the direction of the following registered environmental professionals with Rincon Consultants, Inc.



This document has been digitally signed and sealed by Alex Cruz, PG, on 4/13/2022.

This document has been digitally signed and sealed by Torin Snyder, PG, CHG on 4/13/2022.

Alex Cruz, PG
Senior Environmental Geologist

Torin Snyder, PG, CHG
Principal

8 References

Bengal Engineering, Inc. (Bengal). 2014. Geotechnical (Foundation) Report for Morro Creek Multi-Use Trail and Bridge Project (MB-2013-S2), Morro Bay, California. September 26, 2014. Retrieved on January 12, 2023, from https://www.morrobayca.gov/DocumentCenter/View/7684/Geotech-Report?bidId=

California Department of Water Resources (DWR). 2022a. Bulletin 118. Retrieved on July 21, 2022, from https://gis.water.ca.gov/app/bbat/

______. 2022b. Sustainable Groundwater Management Act (SGMA) Data Viewer. Retrieved on July 18, 2022 from https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#landsub

______. 2022c. Groundwater Live Dashboard. Retrieved on July 18, 2022, from https://storymaps.arcgis.com/stories/41574a6d980b4e5d8d4ed7b90f9698d2

California Geological Survey (CGS). 2002. Note 36 - California Geomorphic Provinces. Retrieved on July 6, 2022, from https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf

______. 2008. Special Report - Radon Potential in San Luis Obispo County, California. 2008. Retrieved on January 12, 2023, from https://www.conservation.ca.gov/cgs/Documents/Publications/Special-Reports/SR_208-Radon-Report.pdf

______. 2011. Map Sheet 58 – Susceptibility to Deep-Seated Landslides in California. Retrieved on July 18, 2022, from https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_058.pdf

______. 2016. Earthquake Shaking Potential for California, Map Sheet 48. Revised 2016. Retrieved on July 18, 2022, from https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_048.pdf

______. 2022a. Fault Activity Map of California. Retrieved on July 21, 2022, from https://maps.conservation.ca.gov/cgs/fam/

______. 2022b. Earthquake Zones of Required Investigation. Retrieved on July 7, 2022, from https://maps.conservation.ca.gov/cgs/EQZApp/app/

______. 2022c. Landslide Inventory Database. Retrieved on July 18, 2022, from https://maps.conservation.ca.gov/cgs/lsi/app/

______. 2022d. California Tsunami Hazard Areas. Retrieved on July 18, 2022, from https://cadoc.maps.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=2769c700c0694548b5435a60ff52b807

______. 2023. Indoor Radon Potential Interactive Map. Retrieved on January 12, from https://maps.conservation.ca.gov/cgs/radon/

Dibblee Geological Foundation (Dibblee). 2006. Geologic map of the Morro Bay South quadrangles, San Luis Obispo County, California. April 2006.

Duke Energy North America (Duke Energy). 2000. Application for Certification – Morro Bay Power Plant Project. October 23, 2000.

ETIC Engineering. 2018. Semi-Annual Groundwater Monitoring and Sampling Data Transmittal, 1 January through 30 June 2018, Pacific Gas and Electric Company Morro Bay Power Plant. July 31, 2018. From https://documents.geotracker.waterboards.ca.gov/esi/uploads/geo_report/1847744882/SL203431377.PDF

Federal Emergency Management Agency (FEMA). 2022. FEMA's National Flood Hazard Layer (NFHL) Viewer. Retrieved on July 20, 2022, from https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd

Field, E.H., Biasi, G.P., Bird, P., Dawson, T.E., Felzer, K.R., Jackson, D.D., Johnson, K.M., Jordan, T.H., Madden, C., Michael, A.J., Milner, K.R., Page, M.T., Parsons, T., Powers, P.M., Shaw, B.E., Thatcher, W.R., Weldon, R.J., II, and Zeng, Y. 2013. Uniform California earthquake rupture forecast, version 3 (UCERF3)—The time-independent model: U.S. Geological Survey Open-File Report 2013–1165, 97 p., California Geological Survey Special Report 228, and Southern California Earthquake Center Publication 1792, http://pubs.usgs.gov/of/2013/1165/. Retrieved on July 18, 2022, from https://pubs.usgs.gov/of/2013/1165/pdf/ofr2013-1165.pdf

Kramer, S.L. and Upsall, Sarah B. 2006. Instrumental Intensity Scales for Geohazards. 2006.

Morro Bay, City of. 2019a. Local Hazard Mitigation Plan. Available at: http://ca-morrobay.civicplus.com/DocumentCenter/View/780. Accessed September 2022.

_____. 2019b. Multi Hazard Emergency Response Plan. Available at: https://www.morro-bay.ca.us/DocumentCenter/Home/View/793. Accessed September 2022.

_____. 2021. Plan Morro Bay. May 2021.

Raymond, Loren A. 2019. Origin of Melanges of the Franciscan Complex, Diablo Range and Northern California: An Analysis and Review. August 1, 2019. Retrieved on July 18, 2022, fromhttps://www.mdpi.com/2076-3263/9/8/338/pdf

Renard, K.G., Laflen, J.M, Foster, G.R., McCool, D.K. 1994. Soil Erosion Research Methods, 2nd Edition. May 1, 1994.

San Luis Obispo County Department of Planning and Building (SLO County). 1999. Safety Element – San Luis Obispo General Plan. December 14, 1999. Retrieved on July 18, 2022, from https://www.slocounty.ca.gov/Departments/Planning-Building/Forms-Documents/Plans-and-Elements/Elements/Safety-Element.pdf

______. 2013. San Luis Obispo Guidelines for Engineering Geology Reports. January 2005, Updated October 2013. Retrieved on July 18, 2022, from https://www.slocounty.ca.gov/Departments/Planning-Building/Forms-Documents/Geologic-Report-Review-Documents/County-Guidelines-for-Engineering-Geology-Reports.pdf

______. 2023. Land Use View interactive map. Retrieved on January 11, 2023 from https://gis.slocounty.ca.gov/Html5Viewer/Index.html?configBase=https://gis.slocounty.ca.gov/Geocortex/Essentials/REST/sites/PL_LandUseView/viewers/PL_LandUseView/virtualdirectory/Resources/Config/Default

State Mining and Geology Board (SMGB). 2014. Recommended Criteria for Delineating Seismic Hazard Zones in California. Revised April 2014.

University of California Davis (UCD). 2022. SoilWeb. Retrieved on July 13, 2021, from https://casoilresource.lawr.ucdavis.edu/gmap/

United States Department of Agriculture (USDA). 1984. Soil Survey of San Luis Obispo County, Coastal Part. 1984.

United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS). 1999. Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys. Second Edition 1999. Retrieved on July 18, 2022, from https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051232.pdf

United States Geological Survey (USGS). 2016. Quaternary Fault and Fold Database of the Unites States – Los Osos fault zone, Irish Hills Section (Class A) No. 79b. December 1, 2016. Retrieved on July 18, 2022, from https://landslides.usgs.gov/static/lfs/nshm/qfaults/Reports/79b.pdf

______. 2017. United States Quaternary Faults. Retrieved on July 6, 2022, from https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf

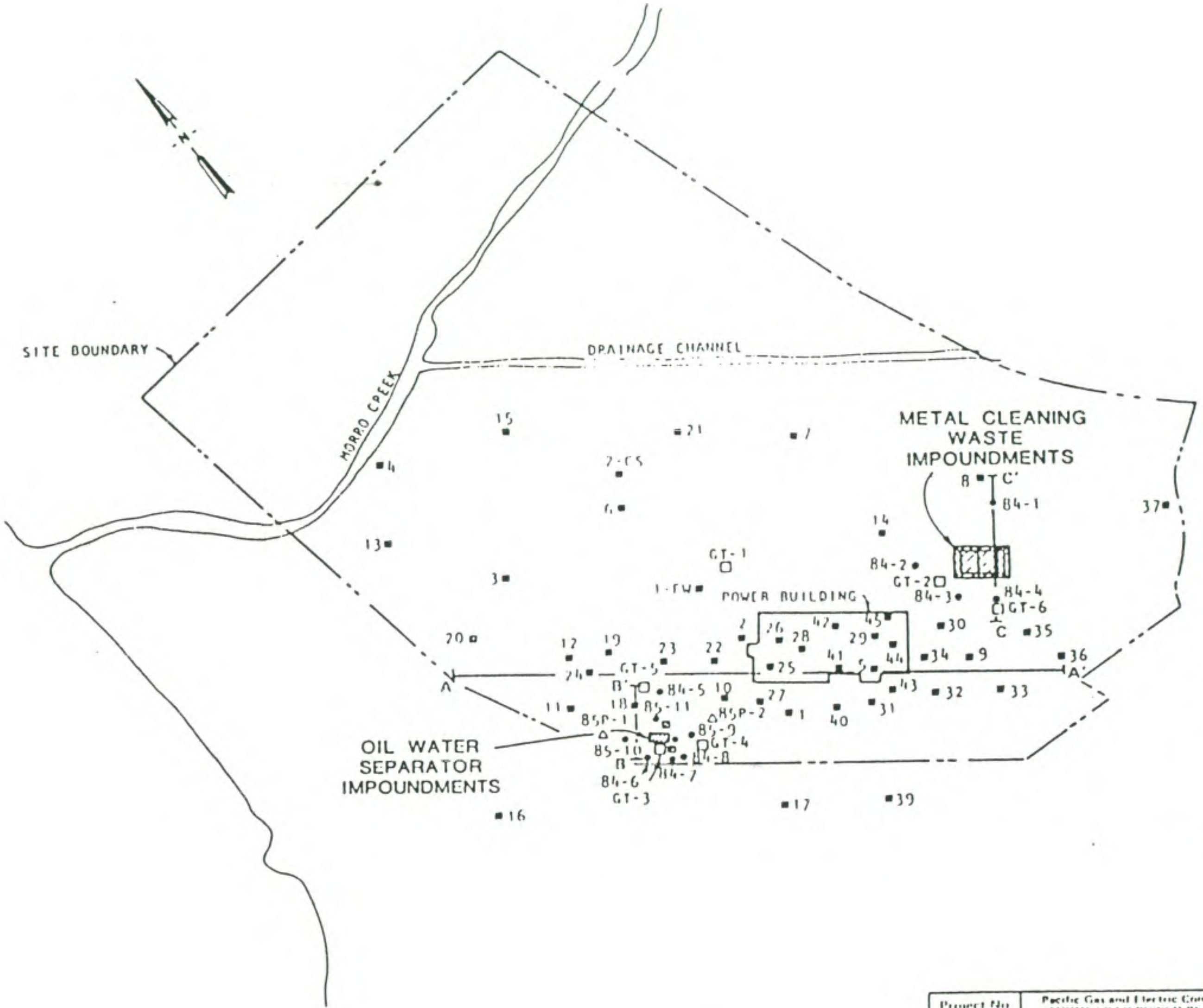
______. 2021. Morro Bay South Quadrangle. Retrieved on July 6, 2022, from https://ngmdb.usgs.gov/topoview/viewer/#14/35.3481/-120.8490

______. 2022. Areas of Land Subsidence in California. Retrieved on July 18, 2022 from https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html

______. 2023. Earthquake Catalog Interactive Map. Retrieved on January 12, 2023, from https://earthquake.usgs.gov/earthquakes/

This page intentionally left blank.

HAR



EXPLANATION

- □ Indicates Approximate Location of Geotechnical Boring
- • Indicates Approximate Location of Monitoring Well
- ■ Indicates Approximate Location of Boring for Previous Dames and Moore Investigations
- △ Indicates approximate Location of Piezometer
- ▨ Indicates Impoundment

0 200 400 feet

Project No. 901778	Pacific Gas and Electric Company MORRO BAY POWER PLANT Morro Bay, California	LOCATION OF BORINGS AND MONITORING WELLS	Figure B-1
Woodward-Clyde Consultants			

Project: PGandE Morro Bay Power Plant Morro Bay, California	LOG LEGEND SHEET

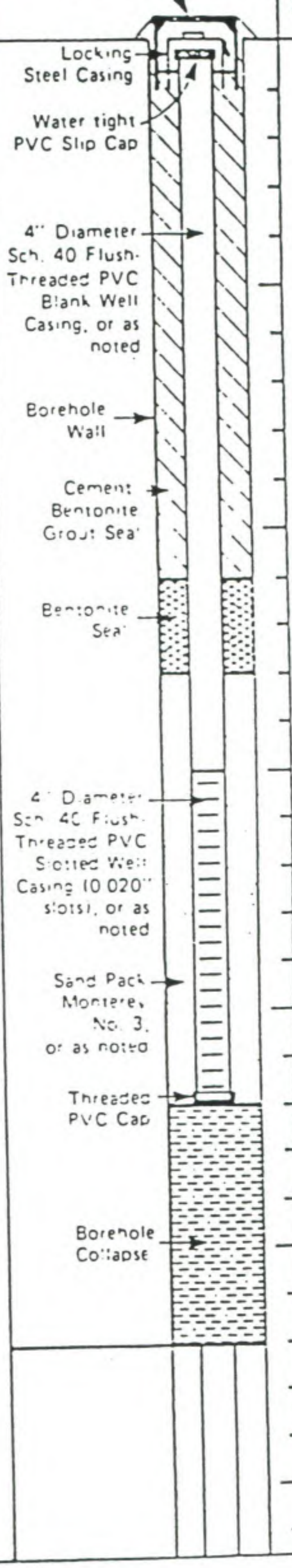
Date Drilled: ______ Remarks: ______

Type of Boring: ______

Hammer Weight: ______

Depth, Ft	Samples	Blows/Ft	MATERIAL DESCRIPTION
5			2-INCH I.D. MODIFIED CALIFORNIA SAMPLER
10			2-INCH O.D. STANDARD SPLIT-SPOON SAMPLER
15		29	BLOW COUNT WITH A 140-LB. HAMMER FALLING 30 INCHES
20			▽ 8-5-85 WATER LEVEL ON DATE INDICATED
			▽ ATD WATER LEVEL AT TIME OF DRILLING
25			
30			

WELL DETAILS



LABORATORY TESTS		
Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf

Project: PGandE Morro Bay Power Plant
Morro Bay, California

Log of Boring No. GT-1

Date Drilled: 8-13-85

Type of Boring: 8" Hollow stem auger

Hammer Weight: 140 lbs

Remarks:

(See Legend Sheet for sampler types and hammer weights)

Ground Surface Elevation:

Depth, Ft.	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			FILL: Dry, light gray brown, silty sand with gravel and some organic debris			
			Increasing moisture content			
5	1	14				
	2	5 23	SILTY TO SANDY CLAY (CL-CH) Soft, moist to wet, dark gray, with interbeds of silty sand with pebbles Some roots and layers of organic debris QUATERNARY ALLUVIUM	56.2		
	3	15 24				
10	4	23 25		43.9		
	5	15 21	Change to wet			
15	6	12 22				
	7	15 49				
			BOTTOM OF BORING AT 17.5'			
20						
25						
30						

Project: PGandE Morro Bay Power Plant
Morro Bay, California

Log of Boring No. GT-2

Date Drilled: 8-13-85

Type of Boring: 8" Hollow stem auger

Hammer Weight: 140 lbs

Remarks:

(See Legend Sheet for sampler types and hammer weights)

Ground Surface Elevation:

Depth, Ft.	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
0–2	1		FILL: Dry to damp, gray brown, silty sand with gravel			
2–12	2	72	HYDRAULIC FILL: Damp to moist, light gray brown, fine sand	13.2		
5	3	49				
	4	38		10.9		
12–25	5	8	SILTY CLAY TO SANDY CLAY (CL-CH) Soft, satuturated, dark gray to black, with beds of silty sand, organic debris QUATERNARY ALLUVIUM			
	6	34				
	7	18				
25–27.5			SILTY CLAY (CH) Stiff to very stiff, saturated, light brown to tan QUATERNARY TERRACE DEPOSITS?			
27.5–28.5	8	37	SILTY SAND (SM) Dense, saturated, tan			
28.5			BOTTOM OF BORING AT 28.5'			

Project: PGandE Morro Bay Power Plant
Morro Bay, California

Log of Boring No. GT-3

Date Drilled: 8-14-85
Type of Boring: 8" Hollow stem auger
Hammer Weight: 140 lbs

Remarks:

(See Legend Sheet for sampler types and hammer weights)

Depth, Ft.	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			Ground Surface Elevation: Approximately 15'			
			FILL: Dry to damp, gray brown, silty sand with scattered gravel			
	1			3.4		
5			HYRAULIC FILL: Damp to moist, gray brown, silty sand			
	2	42		3.0		
10						
	3	78	SAND (SP) Medium dense to dense, saturated, tan			
15			Change to gray			
	4	73	Gravel layers			
20						
	5	65				
25						
	6	68				
30						

Project: PGandE Morro Bay Power Plant
Morro Bay, California

Log of Boring No. GT-3
(Continued)

Depth, Ft.	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			SAND (SP) Cont'd.....			
	7	30	SILTY SAND (SM) Dense, saturated, gray, with shells and scattered gravel QUATERNARY ALLUVIUM			
35						
	8	49				
40						
	9	64				
45						
50	10	75	CLAY (CH) Gray			
			BOTTOM OF BORING AT 51.5'			
55						
60						
65						

Proj. No. 90177B — Woodward·Clyde Consultants — Figure B-6

Project: PGandE Morro Bay Power Plant, Morro Bay, California	Log of Boring No. GT-4

Date Drilled: 8-15-85

Type of Boring: 8" Hollow stem auger

Hammer Weight: 140 lbs

Remarks:

(See Legend Sheet for sampler types and hammer weights)

Depth, Ft	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			Ground Surface Elevation:			
			FILL: Dry to damp, gray brown, silty sand with gravel			
	1			4.9		
			HYDRAULIC FILL: Damp to moist, light gray brown, silty fine sand			
	2			2.2		
5						
	3	28				
	4	24				
10		39				
	5	32 / 51				
	6	25 / 59	SILTY SAND (SM-SW) Dense, saturated, gray brown to gray, with interbeds of small gravel QUATERNARY ALLUVIUM			
15						
	7	49				
20						
	8	78				
25						
	9	115				
30						

HAR

Project: PGandE Morro Bay Power Plant, Morro Bay, California	Log of Boring No. GT-4 (Continued)

Depth, Ft.	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			SILTY SAND (SM-SW) Cont'd.....			
	10	31				
35						
	11	53				
40						
	12	100				
45						
50	13	128				
			BOTTOM OF BORING AT 51.5'			
55						
60						
65						

Proj. No. 90177B | Woodward-Clyde Consultants | Figure B-8

HAR

Project: PGandE Morro Bay Power Plant, Morro Bay, California	Log of Boring No. GT-5

Date Drilled: 8-15-85

Type of Boring: 8" Hollow stem auger

Hammer Weight: 140 lbs

Remarks:

(See Legend Sheet for sampler types and hammer weights)

Ground Surface Elevation: Approximately 15'

Depth, Ft.	Samples	Blows/Ft.	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			FILL: Dry to damp, gray brown, silty sand with gravel			
	1			1.3		
	2		HYDRAULIC FILL: Damp, light brown and light gray, fine sand	0.9		
5	3	16 36		0.7	95.6	
	4	25 58				
	5	43 86				
10	6	36 64				
			BOTTOM OF BORING AT 12'			
15						
20						
25						
30						

HAR

Project: PGandE Morro Bay Power Plant Morro Bay, California	Log of Boring No. GT-6

Date Drilled: 8-15-85

Type of Boring: 8" Hollow stem auger

Hammer Weight: 140 lbs

Remarks:

(See Legend Sheet for sampler types and hammer weights)

Ground Surface Elevation:

Depth, Ft	Samples	Blows/Ft	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, pcf	Unconfined Compressive Strength, psf
			FILL: Dry to damp, light brown to gray brown, silty sandy gravel			
	1					
			HYDRAULIC FILL: Damp to moist, gray brown, silty sand	4.4		
	2					
5						
	3	18				
	4	13 / 20		25.3	98.5	
10	5	4	SILTY SAND (SM) Loose to medium dense, saturated, dark gray to black, interbeds of soft, black silty clay QUATERNARY ALLUVIUM			
	6	20	Layers of organics			
15						
			SANDY GRAVEL (GM) Medium dense, saturated, dark gray brown			
	7	32				
			SANDY TO SILTY CLAY (CH) Hard, saturated, tan QUATERNARY TERRACE DEPOSITS			
20						
	8	90				
			BOTTOM OF BORING 23.5'			
25						
30						

Proj. No. 90177B | Woodward·Clyde Consultants | Figure B-10

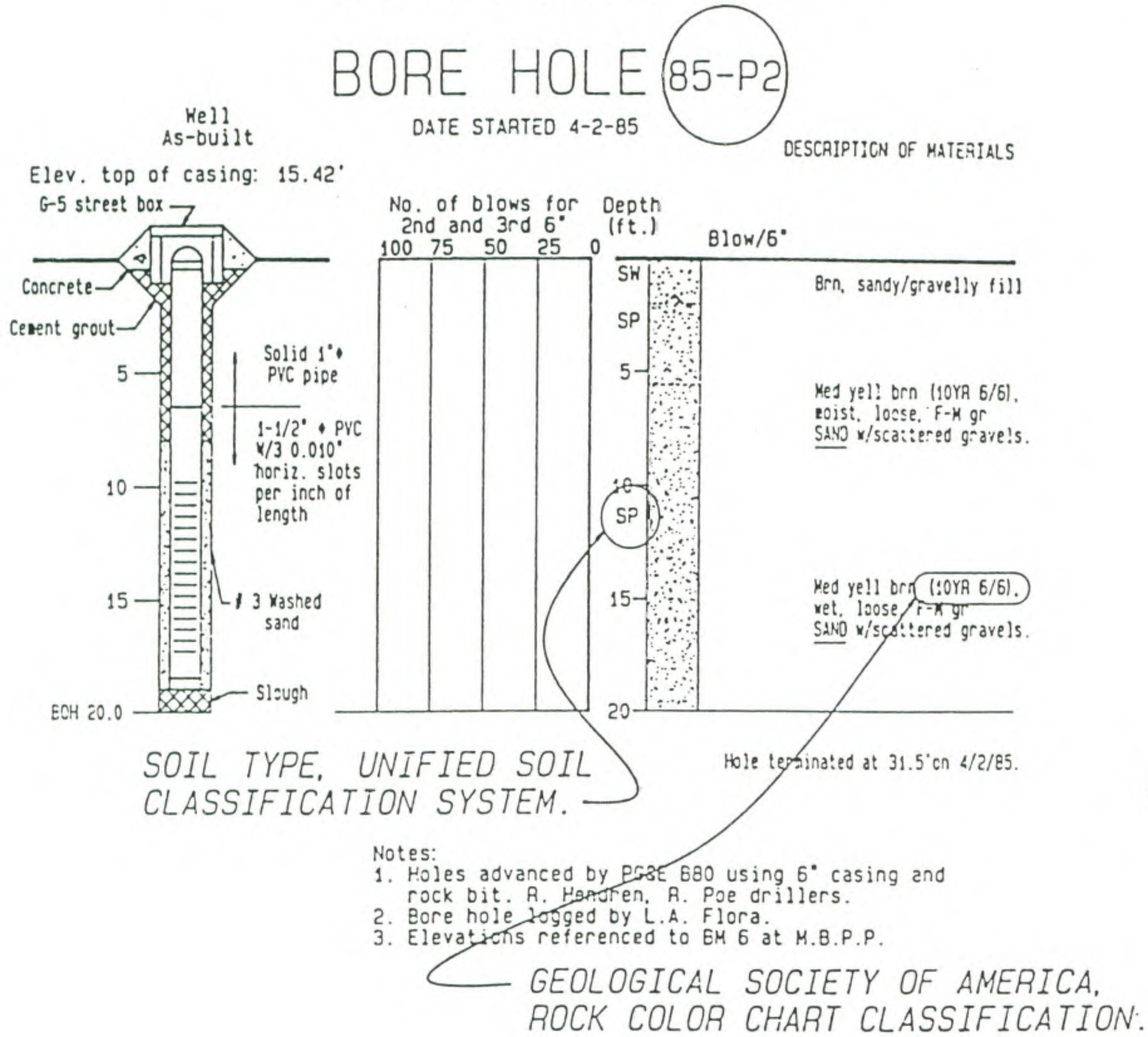
HAR

APPENDIX B-2

PGandE MONITORING WELL BORING LOGS

KEY to BORE HOLE LOG

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT



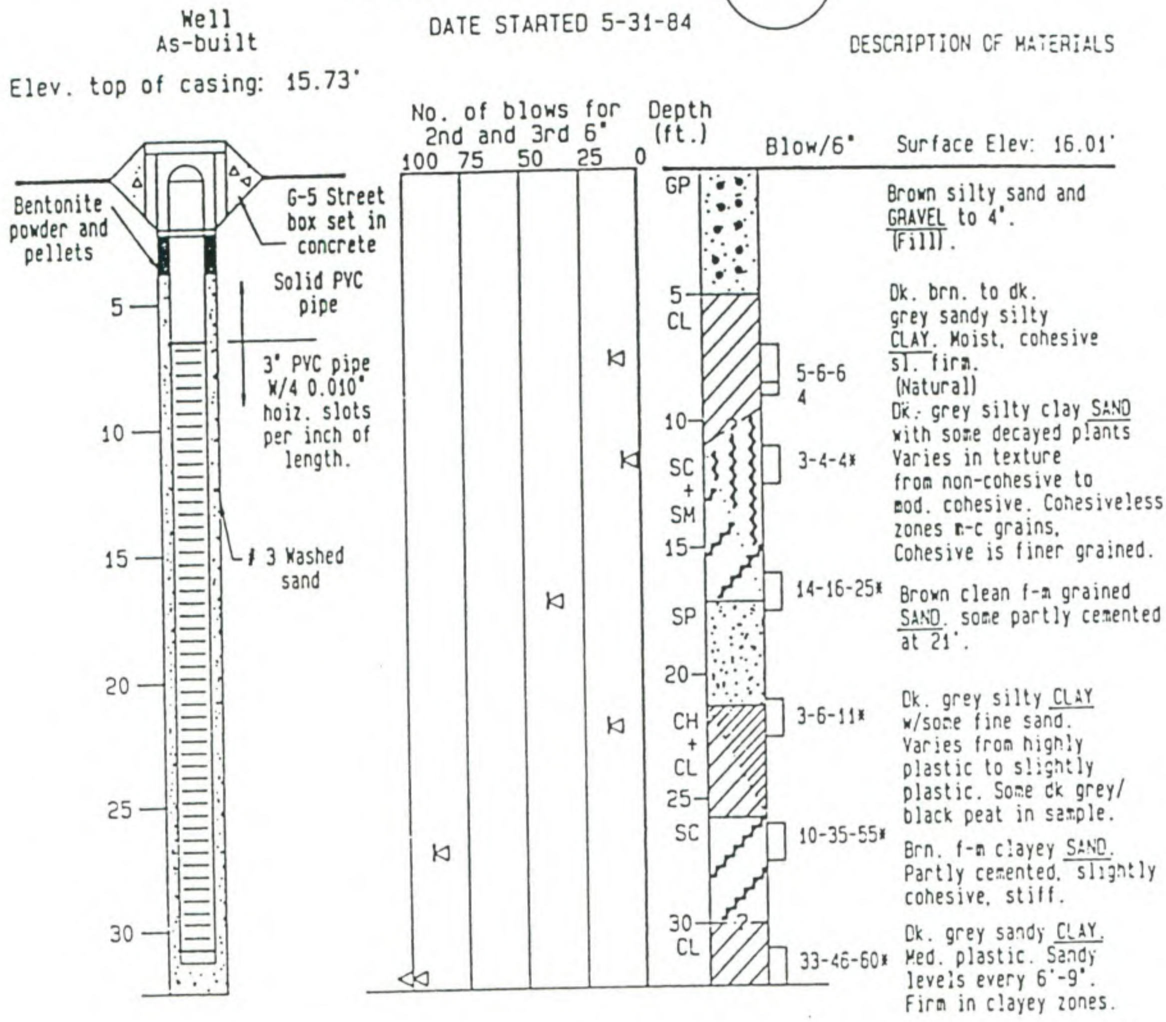
ABBREVIATIONS

brn	BROWN
C	COURSE
dk	DARK
f	FINE
frags	FRAGMENTS
gr	GRAINED
horiz	HORIZONTAL
M	MEDIUM
mod	MODERATE
rdd	ROUNDED
SRF	SEDIMENTARY ROCK FRAGMENTS
Subang	SUANGULAR
Subrdd	SUBROUNDED
w/	WITH
yell	YELLOW

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 84-1

DATE STARTED 5-31-84



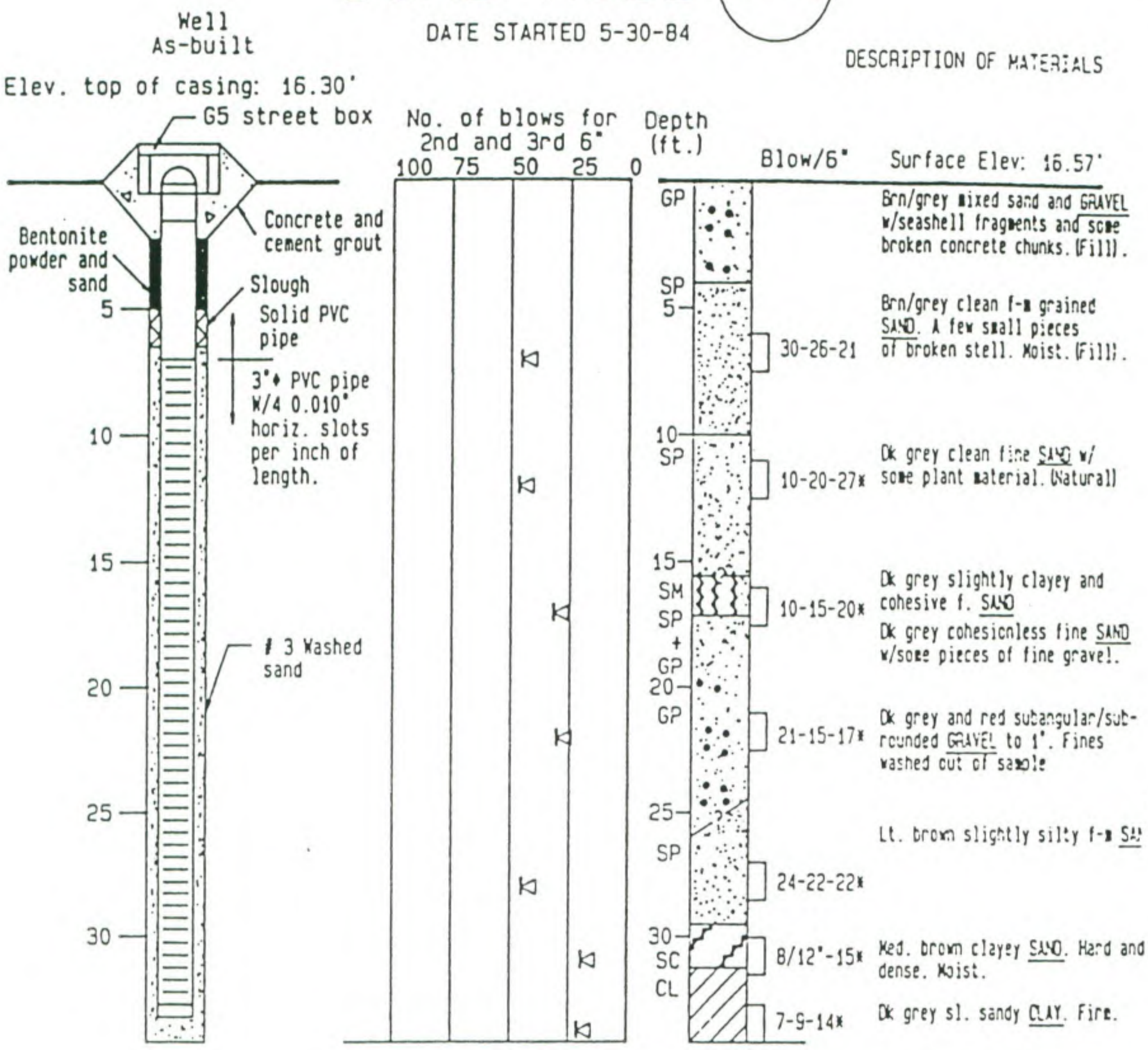
Hole terminated at 32.5' on 6/1/84.

Notes:
1. Holes advanced by PG&E 880 using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by R.A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy of blow not developed.
4. Elevations referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE (84-2)

DATE STARTED 5-30-84



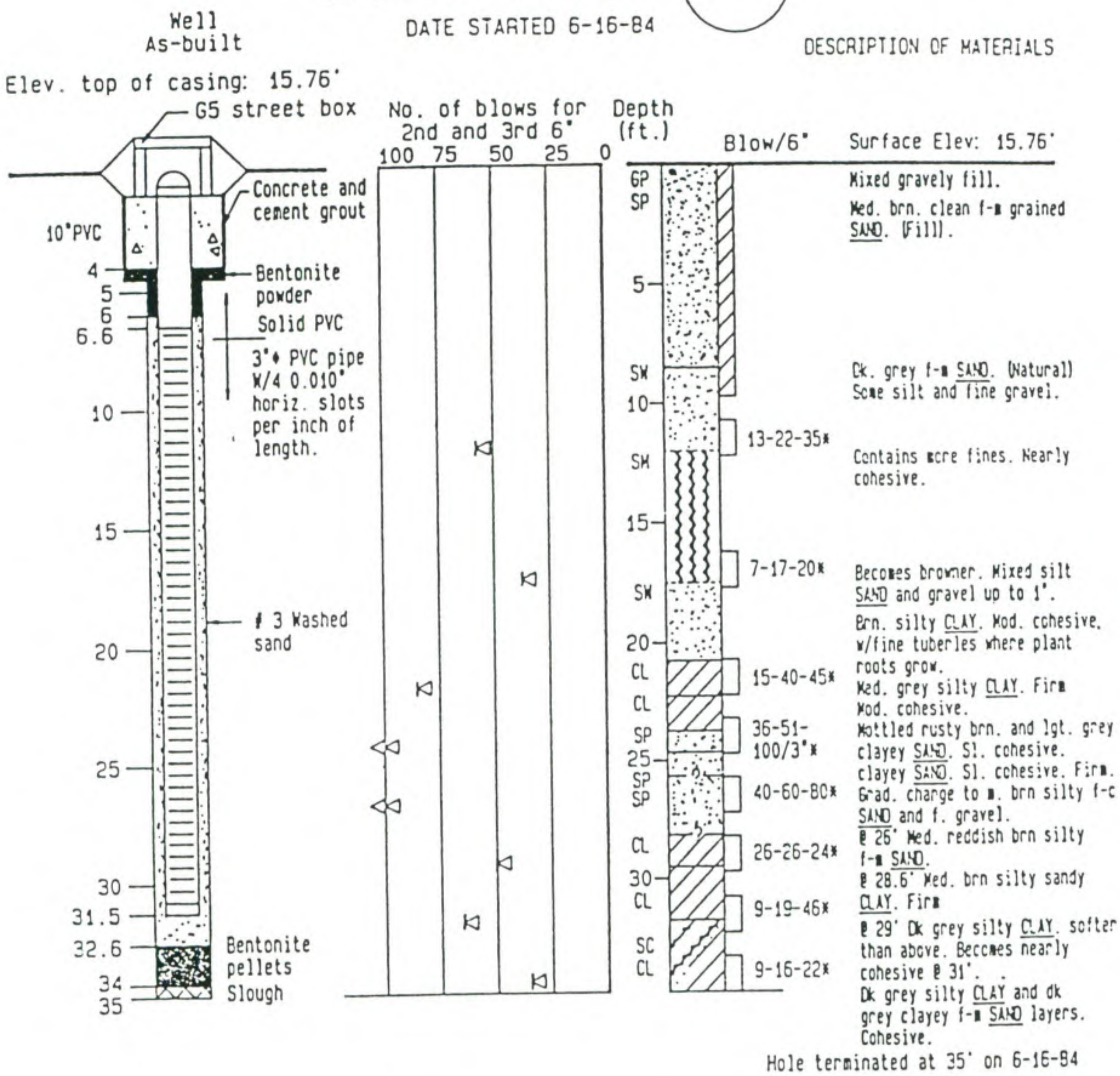
Hole terminated @ 34.5' on 5-30-84

Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R. Hendren, R. Poe, drillers.
2. Bore hole logged by R.A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy of blow not developed.
4. Elevations referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 84-3

DATE STARTED 6-16-84

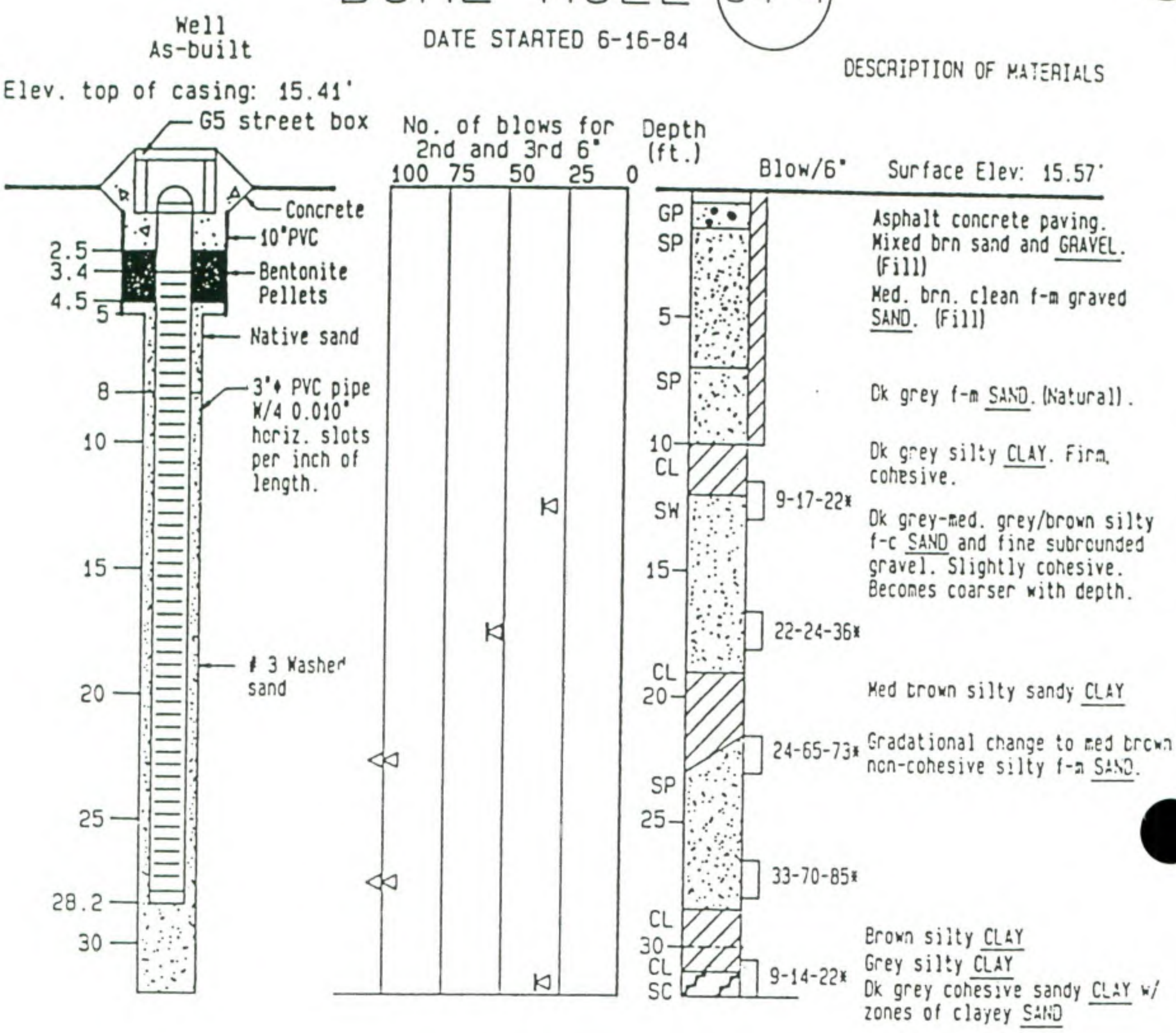


Notes:
1. Holes advanced by PG&E 880 using 6" casing and rock bit. R. Hendren, R Poe, drillers.
2. Bore hole logged by R.A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy blow not developed.
4. Elevations referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE (84-4)

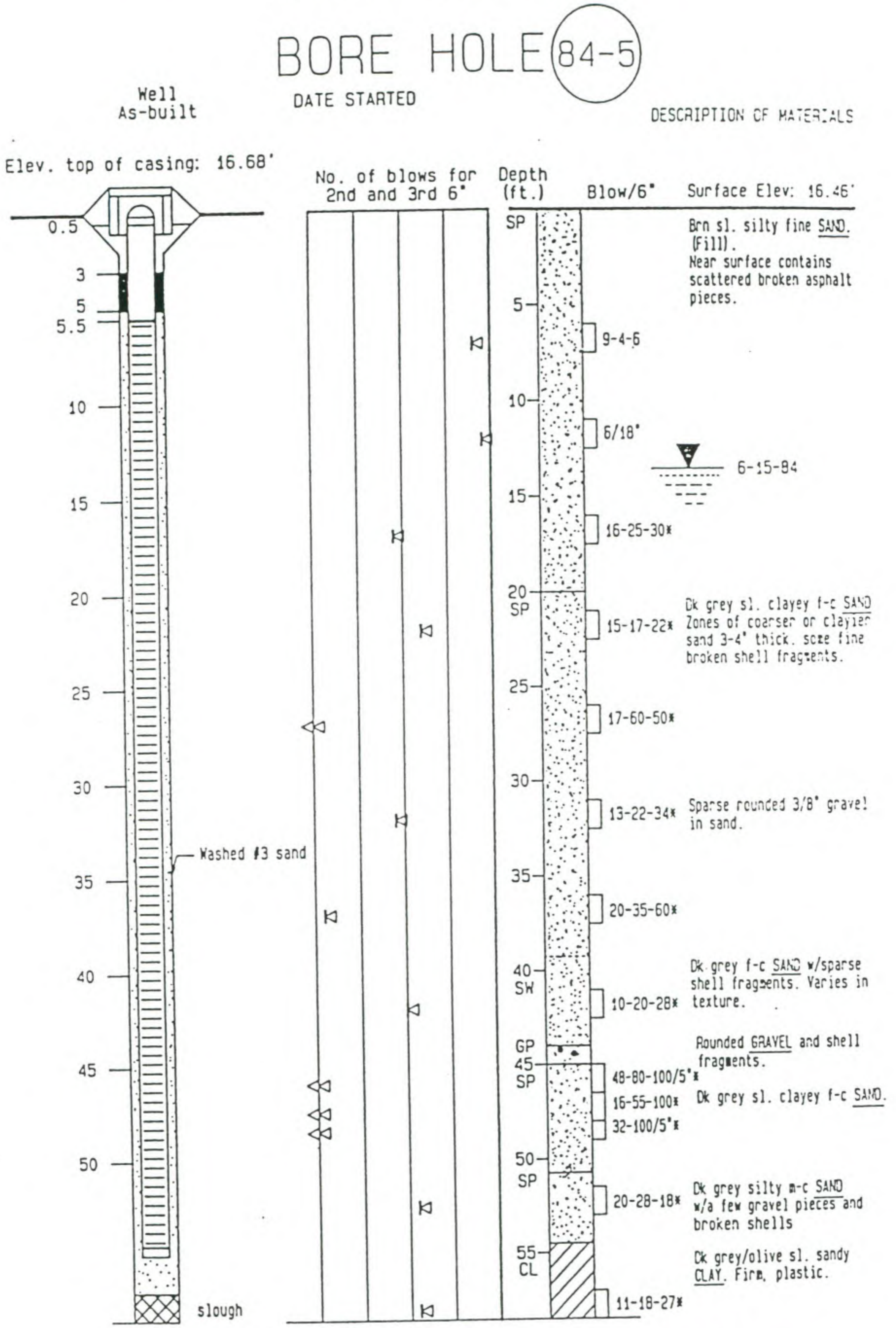
DATE STARTED 6-16-84



Hole terminated at 32' on 6-16-84

Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R. Hendren, R Poe, drillers.
2. Bore hole logged by R.A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy blow not developed.
4. Elevations referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

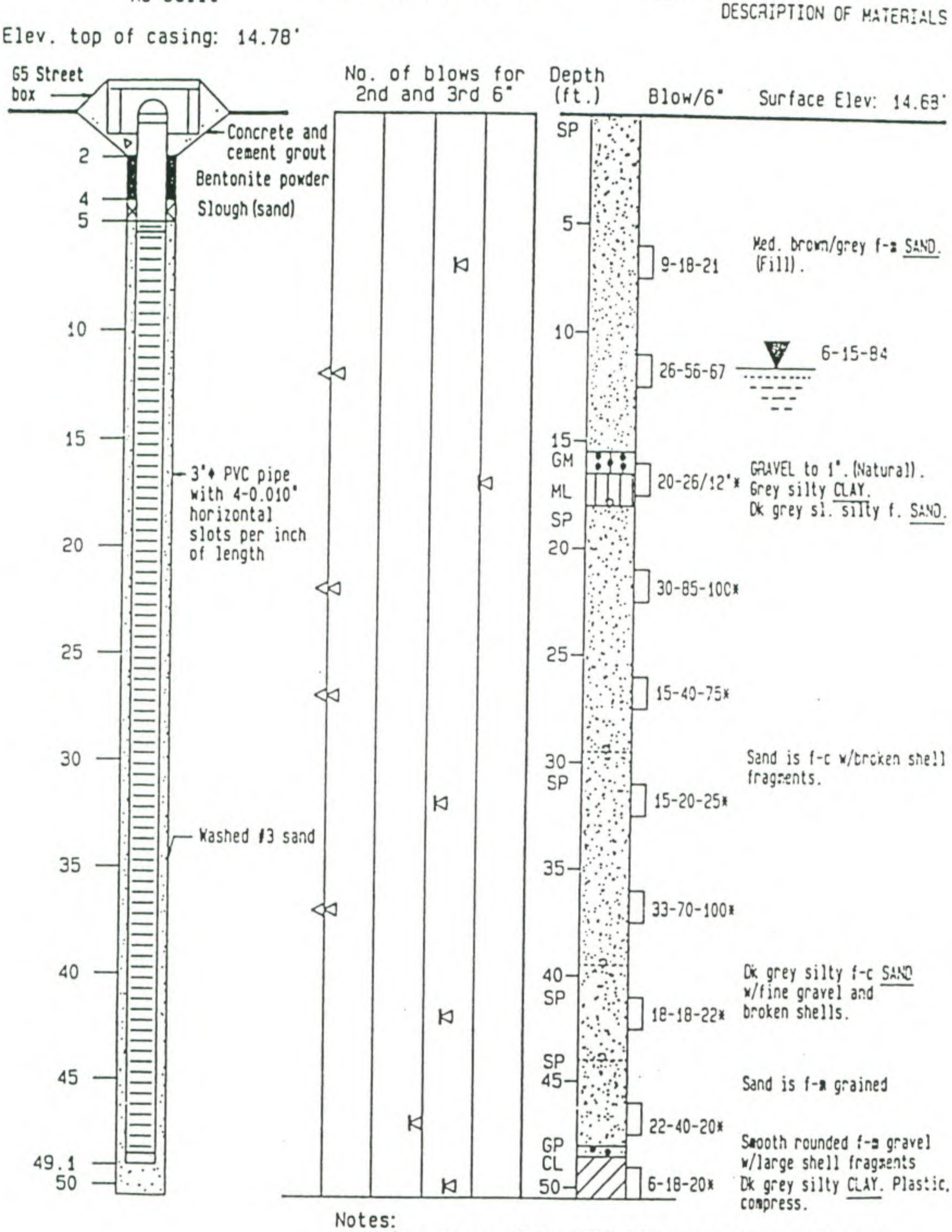


Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by R.A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy of blow not developed.
4. Elevtions referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 84-6

DATE STARTED 6-5-84

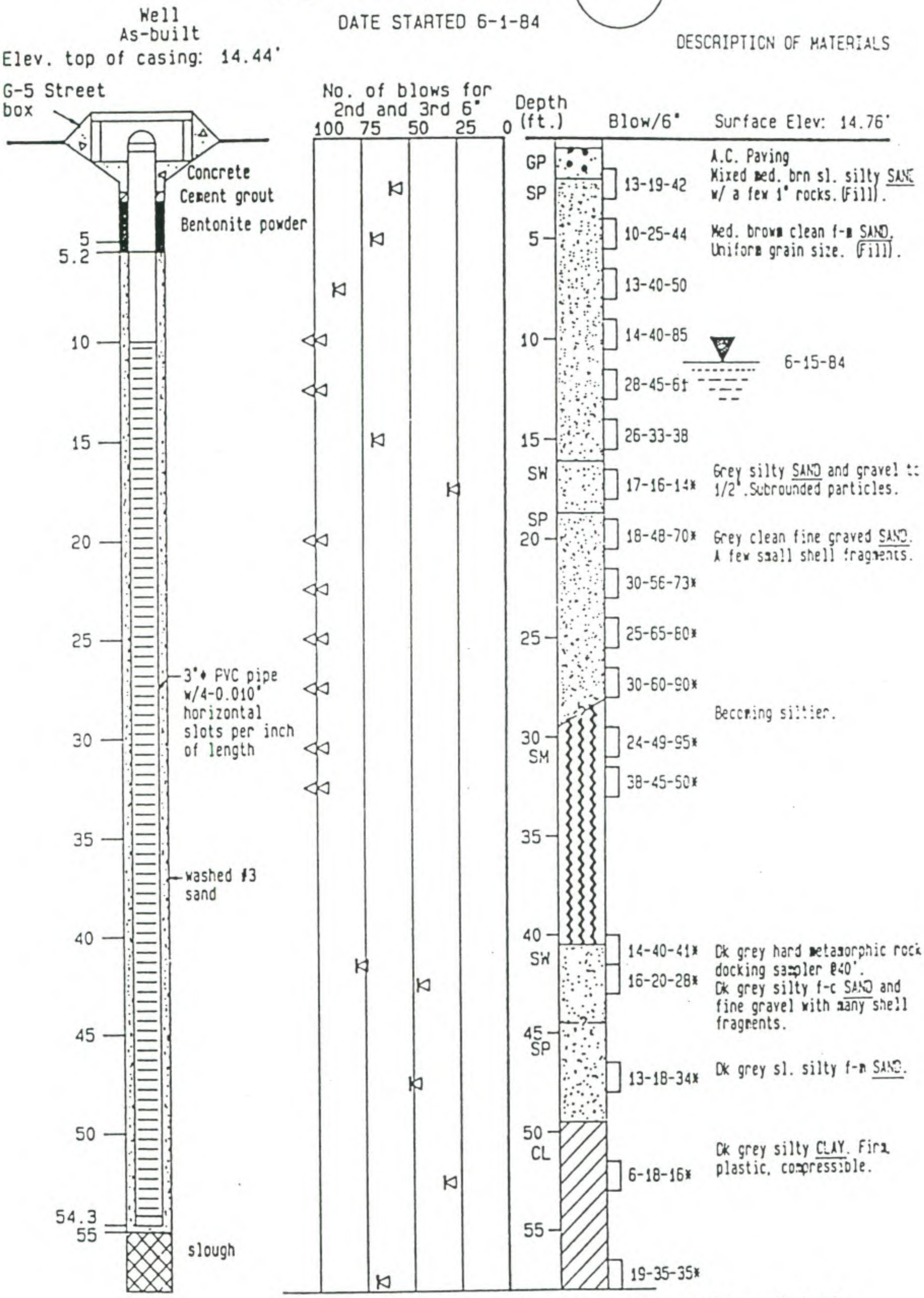


Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by R.A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy of blow not developed.
4. Elevtions referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 84-7

DATE STARTED 6-1-84



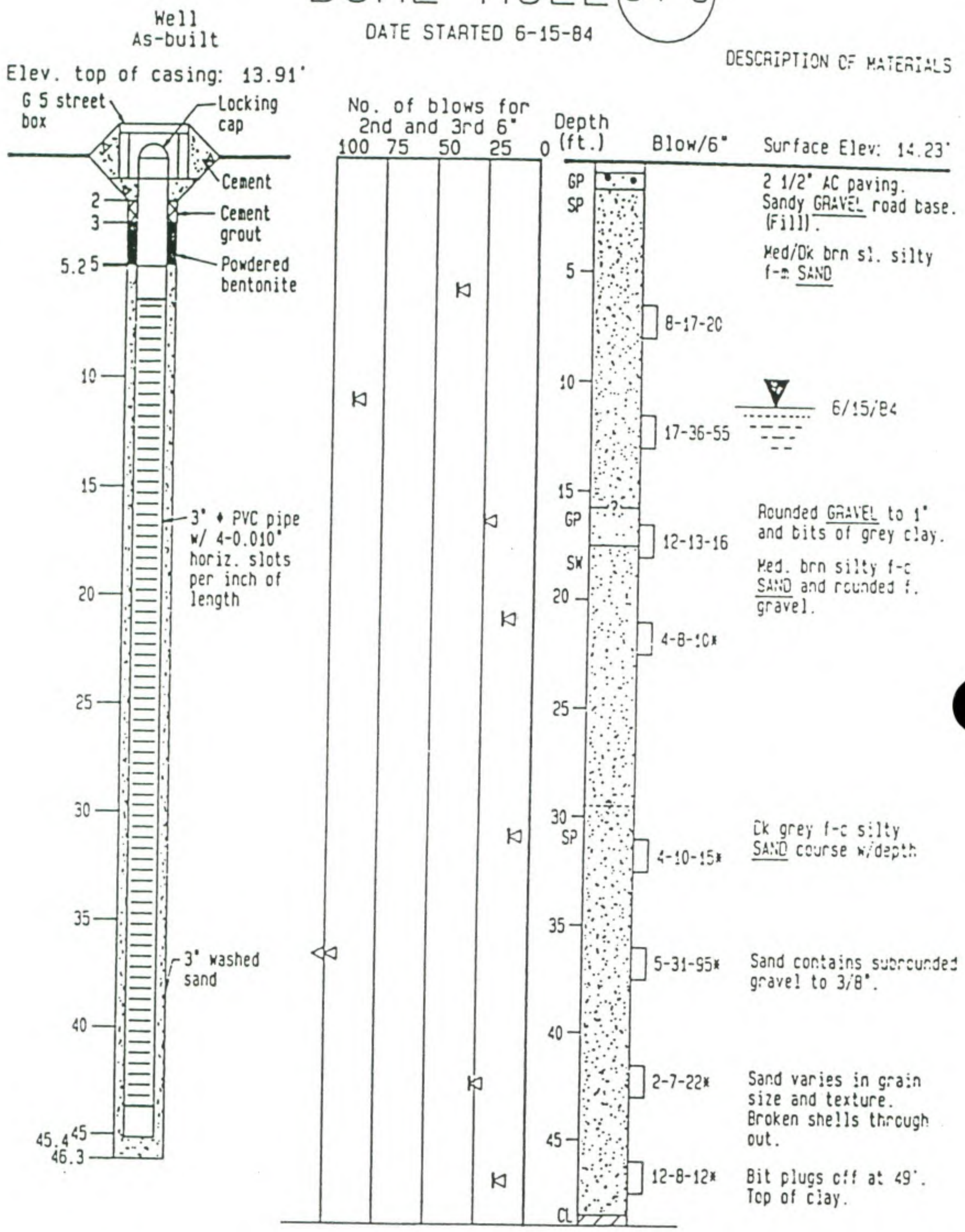
Hole terminated at 58' on 6-4-84

Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R.Hendren, R Poe, drillers.
2. Bore hole logged by R.A.McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30".* denotes hammer under water. Full energy of blow not developed.
4 Elevations referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE (84-8)

DATE STARTED 6-15-84



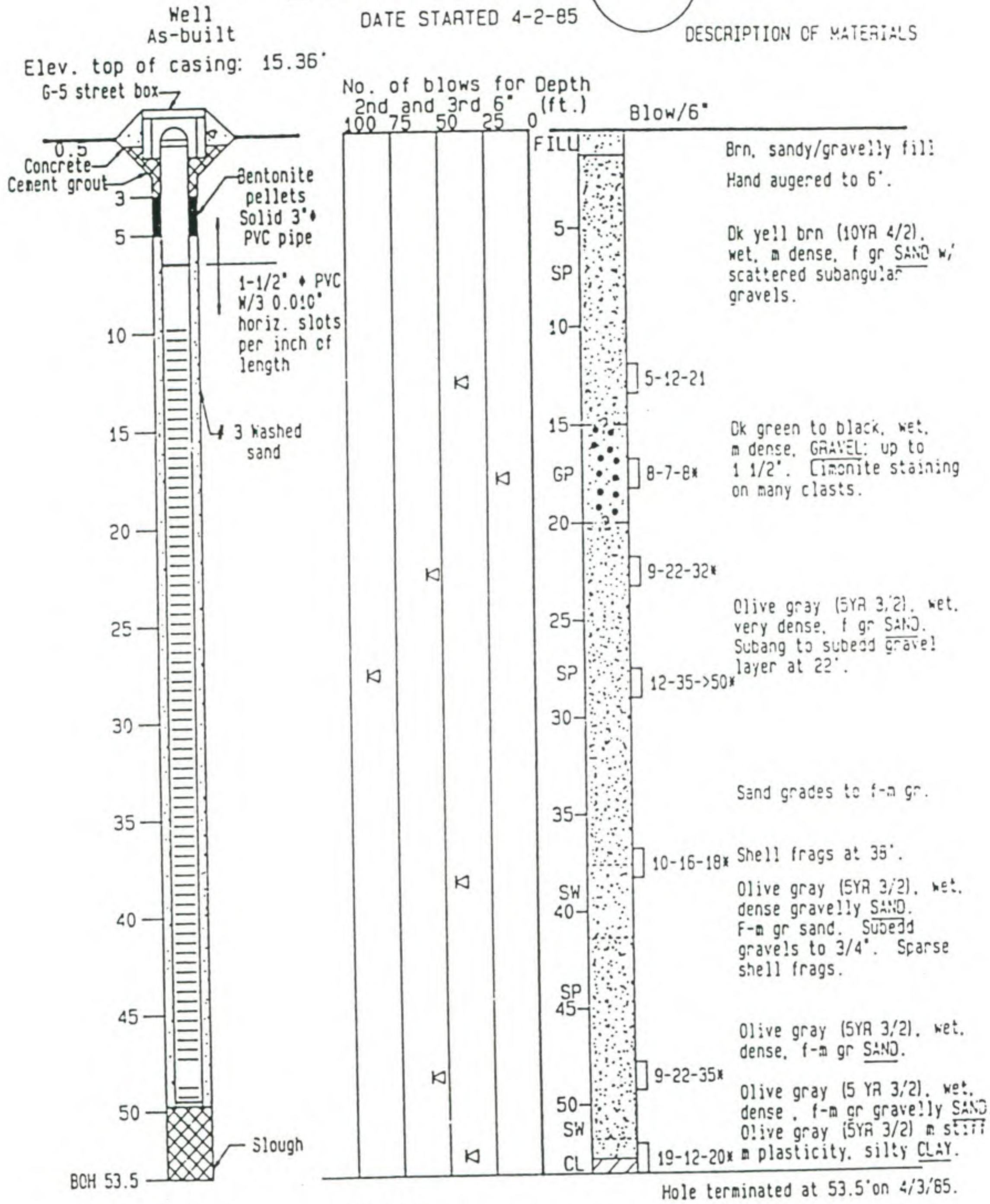
Hole terminated at 49' on 6-15-84.

Notes:
1. Hole advanced by PG&E B60 using 12" O.D. hollow stem augers. R. Hendren, R Poe drillers.
2. Borehole logged by R. A. McManus.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy not developed.
4. Elevations referenced to BM 6 at MB PP.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 85-9

DATE STARTED 4-2-85

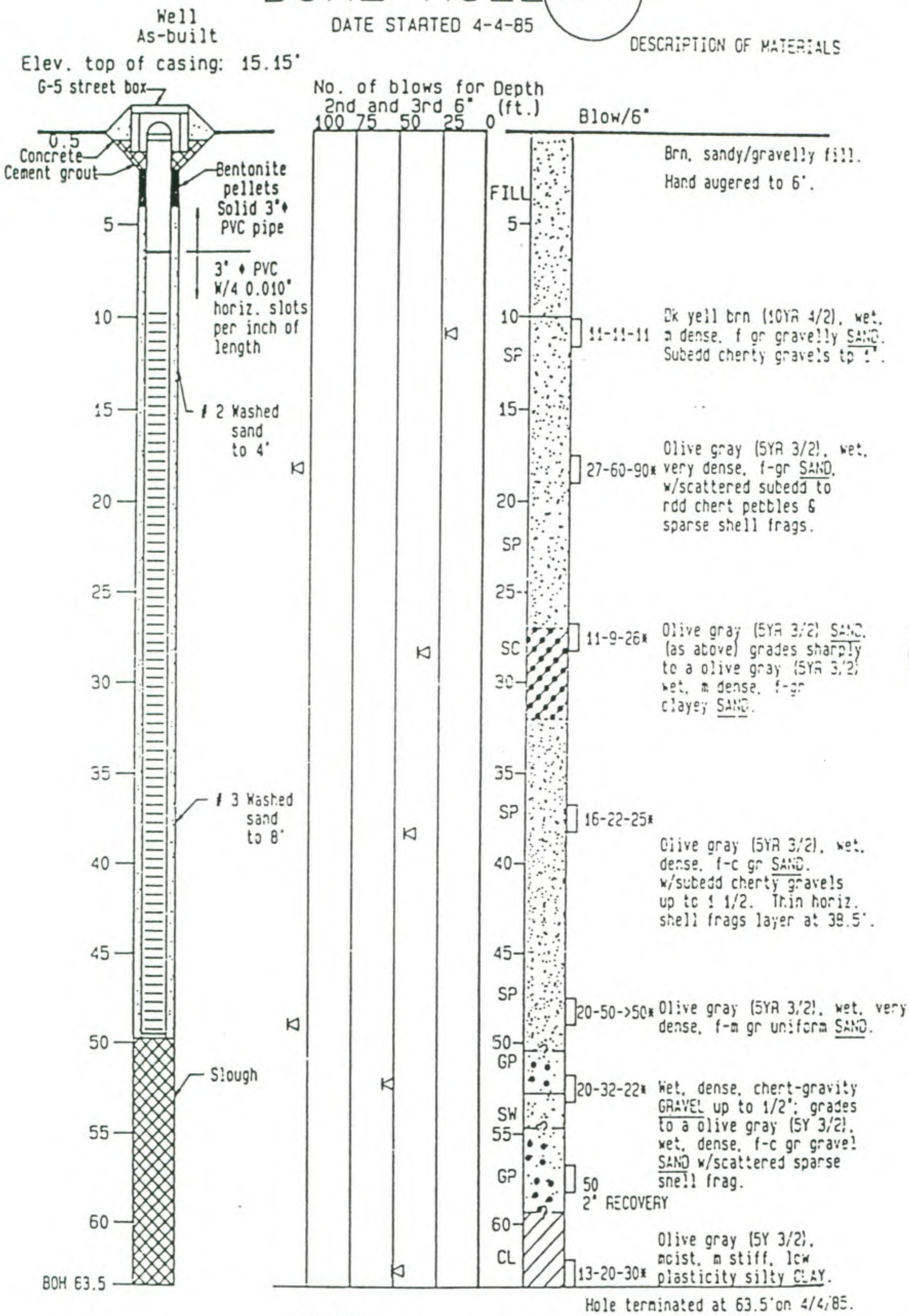


Notes:
1. Holes advanced by PG&E BBO using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by L.A. Flora.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energ of blow not developed.
4. Elevations referenced to BM 6 at M.B.P.P.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 85-10

DATE STARTED 4-4-85



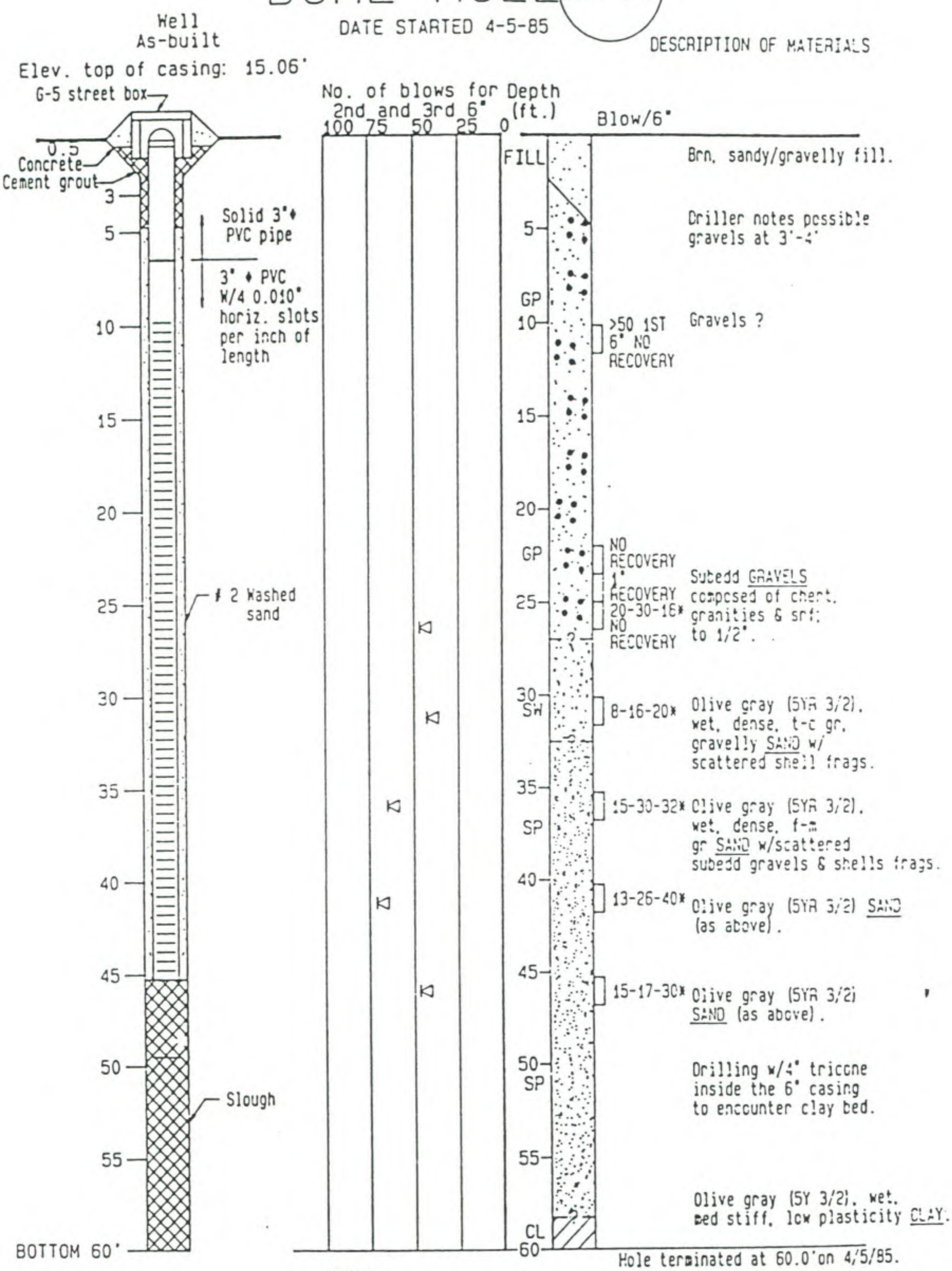
Hole terminated at 63.5' on 4/4/85.

Notes:
1. Holes advanced by PG&E BBO using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by L.A. Flora.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy of blow not developed.
4. Elevations referenced to BM 6 at M.B.P.P.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 85-11

DATE STARTED 4-5-85



Notes:
1. Holes advanced by PG&E BBO using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by L.A. Flora.
3. Blows are for SPT sampler advanced by 140# hammer falling 30". * denotes hammer under water. Full energy of blow not developed.
4. Elevations referenced to BM 6 at M.B.P.P.

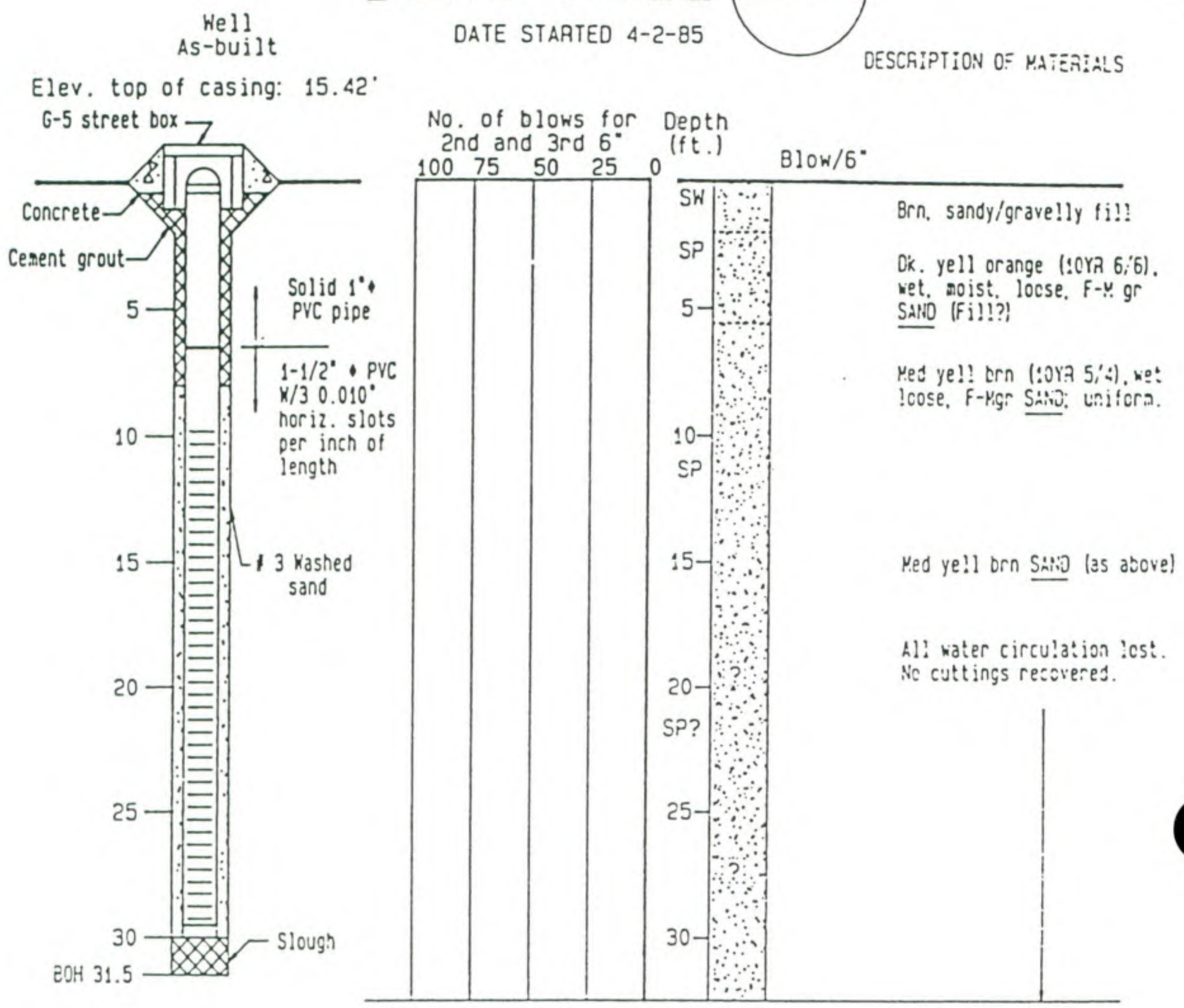
APPENDIX B-3

PGandE PIEZOMETER BORING LOGS

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 85-P1

DATE STARTED 4-2-85



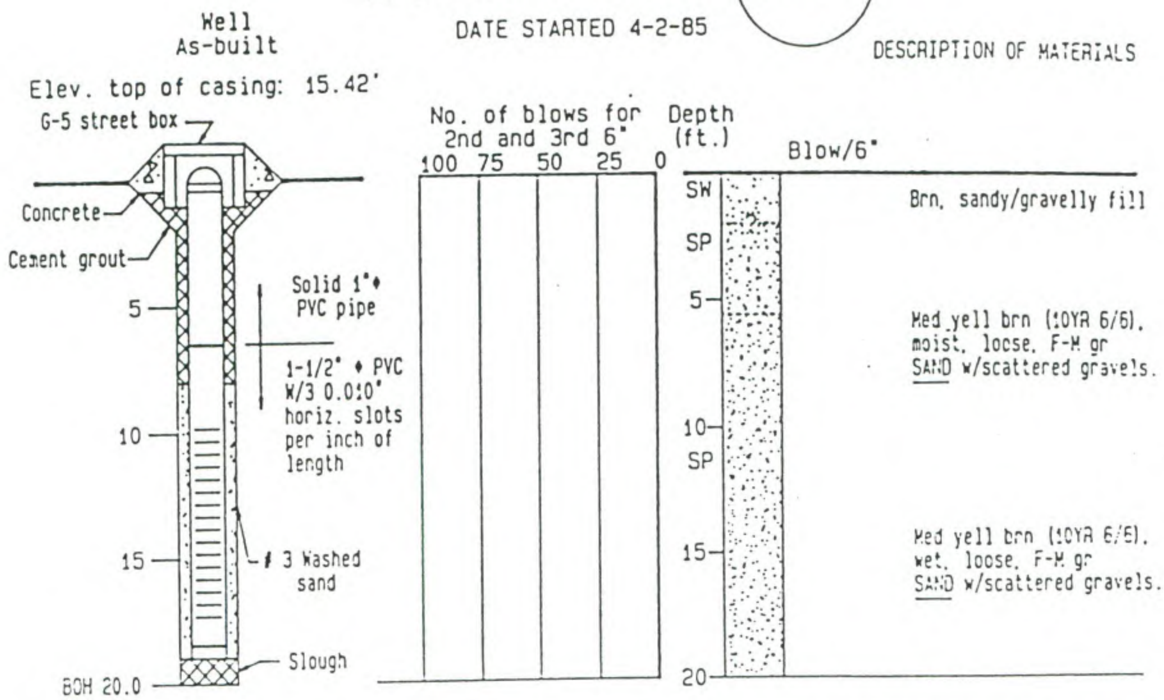
Hole terminated at 31.5' on 4/2/85.

Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by L.A. Flora.
3. Elevations referenced to BM 6 at M.B.P.P.

BOREHOLE LOGS AND WELL CONSTRUCTION RECORD
MORRO BAY POWER PLANT

BORE HOLE 85-P2

DATE STARTED 4-2-85



Hole terminated at 31.5' on 4/2/85.

Notes:
1. Holes advanced by PG&E B80 using 6" casing and rock bit. R. Hendren, R. Poe drillers.
2. Bore hole logged by L.A. Flora.
3. Elevations referenced to BM 6 at M.B.P.P.

APPENDIX 6.3-3

HUSHMAND ASSOCIATES, INC.
BORING LOGS AND CPT LOGS

NOTE:
PLANT BOUNDARY AND HORIZONTAL AND VERTICAL COORDINATES OF BOREHOLE LOCATIONS ARE BASED ON THE PSOMAS ALTA SURVEY DATED 6-25-98.

POINT	NORTHING	EASTING	ELEV	DESC
550	2, 335, 126. 05	5, 709, 246. 49	21. 58	B4
551	2, 335, 135. 86	5, 709, 381. 22	21. 60	B3
552	2, 334, 936. 78	5, 709, 417. 86	23. 33	B8
554	2, 334, 809. 08	5, 709, 488. 78	22. 36	C12
556	2, 334, 979. 43	5, 709, 565. 27	22. 78	C7
557	2, 334, 980. 55	5, 709, 614. 55	22. 83	B7
558	2, 335, 027. 03	5, 709, 747. 19	22. 24	C6
559	2, 335, 202. 46	5, 709, 707. 78	21. 40	C3
560	2, 335, 161. 38	5, 709, 553. 86	21. 59	B2
561	2, 335, 161. 26	5, 709, 407. 49	21. 63	C4
562	2, 334, 812. 31	5, 709, 618. 46	21. 27	C11
563	2, 334, 870. 31	5, 709, 733. 83	21. 02	C10
564	2, 334, 860. 05	5, 709, 797. 06	20. 76	B9
565	2, 334, 608. 60	5, 709, 768. 71	23. 21	C13
566	2, 334, 666. 32	5, 710, 043. 77	16. 44	B12
567	2, 334, 781. 74	5, 709, 981. 39	17. 68	B11
568	2, 334, 914. 69	5, 709, 900. 17	19. 44	C9
571	2, 335, 118. 57	5, 709, 874. 90	23. 20	B6
572	2, 335, 103. 69	5, 709, 978. 81	22. 36	B5
573	2, 335, 107. 06	5, 709, 971. 35	22. 43	C5
574	2, 335, 211. 78	5, 709, 827. 39	21. 06	C2
575	2, 335, 265. 01	5, 710, 077. 22	22. 63	C1
576	2, 335, 094. 88	5, 710, 231. 90	15. 92	B13
577	2, 335, 361. 74	5, 710, 581. 60	20. 97	B15
578	2, 335, 465. 52	5, 710, 368. 50	21. 79	B14
584	2, 334, 270. 65	5, 709, 672. 50	15. 97	B17
585	2, 334, 425. 71	5, 709, 298. 82	17. 07	B18
586	2, 334, 034. 40	5, 709, 692. 88	15. 18	B24
588	2, 334, 717. 99	5, 709, 087. 99	20. 53	B19
589	2, 334, 901. 09	5, 708, 828. 62	21. 40	B20
590	2, 335, 153. 73	5, 708, 777. 02	18. 75	B21
591	2, 335, 318. 79	5, 708, 787. 26	16. 97	B22
592	2, 335, 327. 71	5, 708, 783. 95	17. 06	C14
600	2, 333, 748. 10	5, 709, 856. 48	17. 23	B25
601	2, 335, 468. 70	5, 708, 750. 95	18. 65	B23
605	2, 335, 185. 72	5, 709, 887. 72	21. 43	B1
606	2, 335, 372. 95	5, 710, 807. 99	22. 03	B16
607	2, 333, 749. 21	5, 709, 858. 67	15. 26	B25
608	2, 334, 801. 00	5, 709, 481. 72		B10

EXPLANATION

GTG- Proposed Gas Turbine Generator
STG- Proposed Steam Turbine Generator
HRSG- Proposed Heat Recovery Steam Generator
SUB- Proposed Substations

APPROXIMATE LOCATION OF EXPLORATORY

B25 ● Boring
C14 ▼ Cone Penetration Test (CPT) Sounding

VII — VII' Subsurface soil profile

GRAPHIC SCALE
0 100 200 300
1 inch = 100 feet

References: Base topographic map by RRM Design Group (July 2000)

Project No. 00-0620	Morro Bay Power Plant Morro Bay, San Luis Obispo County, CA	SITE PLAN Exploration and Section Location Map	Figure 2
HUSHMAND ASSOCIATES INC.			

APPENDIX A

LOGS OF BORINGS

SOIL CLASSIFICATION SYSTEM-ASTM D2487

MAJOR DIVISION			LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 30% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 30% OF COARSE FRICTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL GRADED GRAVELS. GRAVEL-SAND MIXTURES, LITTLE OR FINES.
			GP	POOPLY GRADED-GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES.
			GC	CLAYEY GRAVELS, GRAVEL SAND-CLAY MIXTURES.
	SAND AND SANDY SOILS MORE THAN 30% OF COARSE FRICTION RETAINED ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR FINES.
			SP	POOPLY GRADED-SANDS, GRAVELLY SAND. LITTLE OR NO FINES.
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES.
			SC	CLAYEY SANDS. SAND-CLAY MIXTURES.
FINE GRAINED SOILS MORE THAN 30% OF MATERIAL IS SMALLER NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH LIGHT PLASTICITY.
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY GRAVELLY CLAYS SANDY CLAYS, SILTY CLAYS, LEAN CLAYS.
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	MH	INORGANIC SILTS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
			CH	INORGANIC CLAYS OF HIGH PLASTICITY.
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS SWAMP SOIL WITH HIGH ORGANIC CONTENTS.

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDER LINE SOIL CLASSIFICATIONS

Modified California Split Spoon sampler

Standard Penetration Test (SPT) sampler

Shelby Tube Sampler

Bulk sample

No recovery in sampler

Grounwater Surface

SPT "N" = Uncorrected total blow count for last foot of driving.

Equivalent SPT "N" for Modified California sampler=0.7 Blow Count for last foot.

N set to 100 for driving refusal.

NP = Non-plastic
TX = Triaxial Compression
RV = R Value
CA = Chemical Analysis
CONS = Consolidation
SA = Sleeve (particle size) analysis
COMP = Compaction Test
EIT = Expansion Index Test
SE = Sand Equivalent
UC = Unconfined Compresion
DS = Direct shear
HA = Hydrometer Analysis
#200 = Percentage passing No 200 sieve

Project No. 00-0620	Morro Bay Power Project Morro Bay, San Luis Obispo County, CA.	KEY TO BORING LOGS	Figure A1

HUSHMAND ASSOCIATES, INC.

evid\projects\morrobay\key.dwg

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 1** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.43**
Job No.: **00-0620**	Client: **FCII**	Date: **7/9/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Material Description (Depth in feet: 5, 10, 15, 20)

- Silty Sand (SM): tan; slightly moist to moist; medium dense; fine to medium grained sand; occasional gravel; becomes coarser with orange staining.
- Sand with Silt (SP-SM): fine grained sand; poorly graded.
- @ 10.0 feet: Becomes loose. (Water level ▼)
- Silty Sand to Sandy Silt (SM-ML): Gray.
- Fat Clay (CH): Gray; wet; soft.
- @ 22.5 feet: lense of loose, wet, dark gray Silty Sand (SM).

Samples: Blows Per 6"	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
	1.7		#200 COMP CORR
5, 7, 15			
12, 19, 15			
12, 15, 18	21.2		
8, 16, 17	21.6		
5, 4, 4			
5, 5, 2			
3, 3, 3	21.7		
2, 2, 2	36.4		
2, 1, 2	44.0 / 36.0	83.3	#200 AL
P	36.1	87.0	CONS
2, 3, 3			
3, 3			

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-1

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 1** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.43**
Job No.: **00-0620**	Client: **FCII**	Date: **7/9/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
	@ 25.0 feet: 6 inch thick lense of loose, wet, dark gray Silty Sand (SM).		3			
			3 3 4			
	Silty Sand with Gravel (SM): Gray; wet; medium dense; sand and gravel in drill cuttings; no recovery.		4 6 9			
30			8 9 6	16.4		#200
			8 9 3	14.7		
35			3 3 5	20.8	103.7	#200 AL
	Clay (CL): Dark gray; wet; stiff.		12 3 4	38.8		
			3 3 3			
40			4 8 12			
	Sand with Gravel (SM-SP): Dark brown; coarse grained sand.		4 4 5			
45			6 7 8			#200
			5 7 9	19.5		
			6 7 10			

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-2

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 1** (3 of 3)	
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.43**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/9/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				12 16 22					
				14 17 21					
55				16 7 6					
		Silt (ML): Light red; wet; stiff.		3 5 5			28.9		#200
				7 9 12			34.7	86.3	
60		Lean Clay (CL): Brown; wet; stiff.		6 7 8			28.8		#200 AL
				4 4 5					
65		Sandy/Clayey Silt (ML): Redish brown; occasional gravel.		6 11 25			36.3 25.8	82.9 98.0	#200 AL
		@ 66.0 feet: Shattering noise indicating significant increase in gravel content or bedrock top.		50/ 4"					
		Clayey Sand with Gravel to Clayey Gravel with Sand (SC-GC): Light reddish brown; very dense.							

Boring Terminated @ 68 feet
Groundwater @ 10.4 feet
Borehole backfilled with cement/bentonite grout.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 2** (1 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.59**
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0	**ARTIFICIAL FILL (Af)** Sand with Silt (SP-SM): Brown; moist; medium dense; poorly graded.		7 12 14	4.0	97.6	
			8 14 18	12.3		#200
5	@ 5.0 feet: Becomes dense.					
				4.2	92.6	
			8 15 19			
10			11 25 35			
	ESTUARINE DEPOSITS lenses of clay at approximately 13 feet with old stream channel deposits of coarse sand and fine gravel to 14 feet.	▼	3 4 6	24.2	100.4	
15	Silty Sand (SM): Dark gray; wet; loose; fine grained sand; with lenses of sandy silt.		2 3 6	31.6		
	Lean Clay (CL): Dark gray; wet; soft.		1 2 2	45.7	73.7	#200 AL
20	@ 20.0 feet: roots.					
	Silty Sand (SM): Gray; wet; loose.					
	Lean Clay (CL): Dark gray; wet; soft.		1 2			

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 2** (2 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.59**
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				2					
				P					
		@ 27.5 feet: lense of Sandy Silt with Gravel (ML) to Silty Fine Sand with Gravel (SM).							
		@ 29 feet: Becomes coarser with rounded gravel pieces, shell fragments; slightly plastic.		3 4 5			15.8	119.1	
30		Silty Sand with Gravel (SM): Gray; wet; loose; fine to coarse grained sand; fine gravel; contains shell fragments.							
		Lean Clay (CL): Olive brown; wet; firm.							
35				3 4 4					
40				3 3 4			32.9	88.4	#200 AL
		Grades to light olive brown Sandy Silt with Clay (ML) to Silty Fine Sand (SM) at 44 feet.		P					
45		Grades to Silty Clay (CL-ML) to Clayey Silt (ML) with sand.		0 2 6					

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-5

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 2** (3 of 4)	
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.59**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
			5 7 20	18.3	110.8	
55			4 6 8	31.2		#200
	PLEISTOCENE DEPOSITS Clayey Sand with Gravel to Clayey Gravel with Sand (SC-GC): Mottled reddish- to olive brown to orange; wet; medium dense; gravel to 2 inches.					
60			7 10 14	21.2	104.0	#200 AL
65	@ 65.0 feet: Becomes dense to very dense.		14 24 29	17.5		
70			11 12 16	26.5	97.5	
	@ 72.5 feet: Very hard drilling, Top of Bedrock.					

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 2** (4 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.59**
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Boring Terminated @ 75 feet Groundwater @ 12.2 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-7

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 3** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.60**
Job No.: **00-0620**	Client: **FCII**	Date: **7/13/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		**ARTIFICIAL FILL (Af)** Sand with Silt (SP-SM): Light brown; moist; medium dense; poorly graded.							
				11 15 16			4.0	94.7	CORR R-VALUE
5				4 9 10					
				6 8 10			5.2	92.7	
10				4 9 10					
		DUNE SANDS wet; becomes darker brown; siltier.	▼						
				10 15 18					
15				12 15 19			25.4		#200
20				7 9 12					
		ESTUARINE DEPOSITS Lean Clay (CL): Dark gray; wet; firm.							
				2 3					

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 3** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.60**
Job No.: **00-0620**	Client: **FCII**	Date: **7/13/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand (SM): Dark gray; loose.		3					
30		@ 30.0 feet: shell fragments.		P					
35		Lean Clay (CL): Olive brown; wet; stiff.		2 3 3			27.1	96.8	
		Clayey Silt with Sand (ML): Light brown; fine grained sand.							
40				P					
45		Grades to Silty Clay (CL-ML).		2 3 3					
				3 6					

PLATE A-9

Hushmand Associates, Inc.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 3** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.60**
Job No.: **00-0620**	Client: **FCII**	Date: **7/13/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		@ 50.5 feet: Becomes dark brown; wet; sandy.		4 3 4 6					
		Grades to light brown silty clay with sand (CL-ML) to clayey silt with sand and fine gravel (ML); fine to medium grained sand.							
55				8 11 15			19.1	111.9	#200
60		Lenses of light brown to reddish brown sandy silt and silty clay (CL-ML) to lean clay (CL) between 60.0 - 60.5 feet; lenses are approximately 3 inches thick; sand is fine to medium grained; clay is mottled with reddish stain/oxidation.		3 5 6					
65				3 4 8			24.3	101.5	
		Silty to Clayey Sand with Gravel (SM-SC): Light brown to orange; wet; dense.							
70				8 15 18			19.5		#200
		@ 71.0 feet: Shattering during drilling, indicating higher amounts of gravel at 71 feet and below; drill cuttings contain light brown, sharp-edged rock fragments below 71.5 feet.							
		Borehole Terminated @ 72.0 feet Groundwater @ 11.0 Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-10

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 4** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.58**
Job No.: **00-0620**	Client: **FCII**	Date: **7/13/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		ARTIFICIAL FILL (Af) Sand with Silt (SP-SM): Light brown; slightly moist; medium dense; fine to medium grained sand.		10 12 14			3.6	97.1	
				5 6 7					
5		**DUNE SANDS** Sand with Silt (SP-SM): Light brown to tan; moist; medium dense; fine to medium grained sand; poorly graded.							
				5 8 9			21.9	98.7	
10									
			▼	3 5 6					
				5 7 8			23.7	94.4	
15									
				9 12 15					
		Silty Sand (SM): Dark gray; wet; loose; medium grained sand.							
20				3 3 5					
		ESTUARINE DEPOSITS Clay (CH-CL): Dark gray; wet; firm.							
				3 3			47.7		

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 4** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.58**
Job No.: **00-0620**	Client: **FCII**	Date: **7/13/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Core	Bulk	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
				3					
30		@ 30.0 feet: Some shell fragments.		P					
35		@ 34.0 feet: mottled olive brown to gray.		5 6 9			20.7	107.6	
40		@ 39.0 feet: Becomes olive brown.		P					
45				3 4 4					
		Silty Sand (SM): Brown; wet; medium dense; fine grained sand.		5 6			31.1		

PLATE A-12

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 4**	(3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.58**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/13/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Core	Bulk	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
		Clay (CL to CH): Light olive brown; wet; stiff.		8			20.0		
55		@ 54.0 feet: Becomes gray; wet; Silty Clay (CL-ML) to Clayey Silt (ML) with occasional shell fragments.		8 12 15					
		Silty Sand (SM): Light brown; wet; medium dense; fine grained sand; occasional gravel pieces.							
60		Sand (SP): Reddish brown; wet; loose; medium to coarse grained sand; poorly graded.		P					
65		@ 65.0 feet: lense of light brown/tan clayey silt with sand.		4 5 5			29.4	90.8	
		Silty Sand (SM): Reddish brown; wet; loose to medium dense.							
70		Sand with Gravel (SP): medium to coarse grained sand.							
		@ 71.0 feet: Shattering noise during drilling indicating higher content of gravel in soils.							
		@ 71.5 feet: Drill cuttings bring sharp-edged rock indicating top of bedrock (Morro Rock).							
		Borehole Terminated @ 72 feet							
		Groundwater @ 11.0 feet							
		Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 5** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**
Job No.: **00-0620**	Client: **FCII**	Date: **7/5/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand (SM): Light brown to gray; moist; medium dense; some shell fragments; interbedded with occasional lenses of poorly graded Sand with Silt (SP-SM) and with occasional gravel to 2-inches maximum.		12 7 11					
5				8 20/ 6"					
				7 7 8					
10			▼	1 3 4			27.1		
15		@ 15.0 feet: becomes wet; interbedded with lenses of dark gray Sandy Silt (ML).		7 11 12					
				2 1 1			25.6	97.9	
20		Lean Clay (CL) interbedded Sandy Silt (ML): Dark gray; wet; soft; trace of roots.		1 1 2			34.9		
		Silty Sand with Gravel (SM): Dark gray; wet; loose to medium		2 2			33.0	88.8	

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 5** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**
Job No.: **00-0620**	Client: **FCII**	Date: **7/5/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
	dense.		2			
30			3 3 6			
35	@ 35.0 feet: Becomes light brown; coarse grained; pockets/lenses of fine gravel.		6 7 6	16.9	115.4	
40	@ 40.0 feet: Becomes fine to medium grained.		3 7 8			
45			8 12 14			
			12 21			

PLATE A-15

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 5** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**
Job No.: **00-0620**	Client: **FCII**	Date: **7/5/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		@ 50.0 feet: Becomes dense; coarse sand with gravel.		20					
		Clayey Silt (ML) to Silty Clay (CL-ML): Dark gray; wet; firm.							
55				3 3 3			27.7	93.2	AL
		Borehole Terminated @ 55.5 feet Groundwater @ 11.5 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 6** (1 of 3)	
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **23.20**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/5/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Material Description	Water	Blows Per 6"	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
	Silty Sand (SM): Light brown; moist; medium dense; fine to medium grained sand; occasional gravel; rock in sampler.		14 22 25			
5	Sand with Silt (SP-SM): poorly graded; occasional gravel pieces.		9 6 7			
			2 2 2			
10			3 3 4	25.1	92.3	
		▼				
15	@ 14.0 feet: Oxidation and traces of organic matter (roots); interbedded with lenses/layers of gray to brown Sand Silty (ML) and Silty Sand (SM) and fine gravel; with occasional roots (below 17 feet).		2 3 5			
			7 4 2			
20	Lean Clay (CL): Gray; wet; firm; some lenses/layers of Silty Sand (SM).		1 2 2	32.4		
	@ 24.5 feet: 6-inch thick lense of gray Silty Sand (SM).		4 3	27.3	96.5	

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-17

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 6** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **23.20**
Job No.: **00-0620**	Client: **FCII**	Date: **7/5/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Core	Bulk	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
				2					
30				4 6 7					
35		@ 35.0 feet: Clay becomes very stiff.		5 7 9			27.3	94.0	
40		@ 39.0 feet; Becomes sandy; interbedded with loose to medium dense Clayey Sand (SC).		4 5 5					
		Sand with Gravel (SP): Gray; wet; medium dense; coarse grained sand; poorly graded; interbedded with coarse Silty Sand with gravel.							
45				12 14 7			15.9	112.8	
				12 14					

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 6** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **23.20**
Job No.: **00-0620**	Client: **FCII**	Date: **7/5/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				15					
		Borehole Terminated @ 50.5 feet Groundwater @ 12.0 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 7** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.83**
Job No.: **00-0620**	Client: **FCII**	Date: **7/12/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0	Sand with Silt (SP-SM): tan; moist; medium dense; poorly graded.					
			9 10 14	4.1	97.9	#200
5			5 8 10			
				4.5	94.0	
			7 15 18			
10			6 14 14			
		▼	2 4 7	22.5	95.0	
15	**STREAM CHANNEL DEPOSITS** Silty Sand with Gravel (SM): Reddish brown; very moist; medium dense; fine gravel.		3 7 8			
20	**ESTUARINE DEPOSITS** Lean to Fat Clay (CL to CH): Dark gray; wet; soft.		P			
			2 2	33.3	85.6	#200

PLATE A-20

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 7** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.83**
Job No.: **00-0620**	Client: **FCII**	Date: **7/12/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				2					AL
30		Silty Sand with Shell Fragments (SM): Dark gray; wet; loose to medium dense; fine to coarse grained sand; contains a few particles of reddish Franciscan chert.		2 2 2 3 5 7			15.4	118.7	#200
35		Lenses of Sandy Lean Clay at 34.3 - 34.7 and 35.0 - 35.5.		6 2 2					
40		Clay (CL): Dark gray; wet; firm.		5 6 12 2 2 3			23.8	98.4	
45		**MORRO CREEK STREAM CHANNEL DEPOSITS** Silty Sand with Gravel (SM): Brown; wet; medium dense; fine to coarse grained sand.		9 12 12					
				8 8			13.4	124.4	#200

PLATE A-21

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 7** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.83**
Job No.: **00-0620**	Client: **FCII**	Date: **7/12/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				11					
55				15 16 19					
60		@ 60.0 feet: Becomes coarser grained.		5 12 15			13.3	121.7	
65				5 7 8			21.1	101.9	#200
		@ 66.0 feet: Shattering noise indicated the presence of higher amounts of gravel or Bedrock; cuttings contain dark gray, very hard rock.							
		Boring Terminated @ 68 feet Groundwater @ 13.3 feet Borehole backfilled with cement/grout bentonite.							

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 8** (1 of 4)	
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.33**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/12/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		ARTIFICIAL FILL (Af) Sand with Silt (SP-SM): Tan; dry to slightly moist; loose to medium dense; poorly graded.		3 4 8			6.5	91.8	
		@ 4.0 feet: Becomes slightly moist.		6 11 17					
5									
				4 6 9			15.8	96.3	
10				5 7 10					
		NATIVE Sand with Silt (SP-SM): Dark gray; very moist; medium dense; some shells; possible anthropic soil.							
				6 12 15			15.6	98.4	
15			▼						
				8 17 21					
				9 10 12			24.1	99.6	
20		@ 20.0 feet: Trace of orange staining.							
		ESTUARINE DEPOSITS		11 11					

PLATE A-23

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 8** (2 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.33**
Job No.: **00-0620**	Client: **FCII**	Date: **7/12/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Sand with Silt (SP-SM): Gray; traces of roots (former ground surface).		6					
		@ 29.0 feet: Grades to dark gray Silty Sand (SM).							
30		Lean Clay (CL): Dark gray; wet; soft.		2 2 2			33.9	84.9	#200 AL
35				P					
		@ 36.0 feet: Lense of dark gray wet Silty Sand with few fragments of shells.							
40		Lean Clay (CL-CH): Olive gray; wet; firm.		2 2 3			29.9	91.2	#200
45				P					
		@ 49.0 feet:6-inch thick lense/pocket of gray Silty Sand.		2 2			30.0	88.9	

PLATE A-24

Hushmand Associates, Inc.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 8** (3 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.33**
Job No.: **00-0620**	Client: **FCII**	Date: **7/12/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		@ 49.0 feet: Becomes sandy.		2					
55		Clayey Silt with Sand (ML) to Silty Clay with Sand (CL-ML): Tan; wet; soft.		P					
60		Grades from olive gray Sandy Clay (CL) to Clayey Silt with Sand to gray Silty medium to coarse Sand (SM).		3 3 7					
65		**TERRESTRIAL SANDS** Silty Sand (SM): Reddish brown; wet; medium dense; fine to medium grained sand.		7 9 12			23.9		#200
70		**MORRO CREEK FLOOD PLAIN DEPOSITS** Lean Clay with Sand (CL-CH): Reddish brown; wet; very stiff.		5 9 7			26.4		
		Silty Sand with Gravel (SM): Light olive brown; moist; very		12 35			9.5	132.8	

PLATE A-25

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

EXPLORATION LOG

Project: Morro Bay Power Plant		Boring No.: B- 8 (4 of 4)
Location: Morro Bay, San Luis Obispo, CA		Elevation: 22.33
Job No.: 00-0620	Client: FCII	Date: 7/12/00
Drill Method: Mud Rotary	Driving Weight: 140 lbs / 30 in	Logged By: EEV, PEM

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		dense; medium to coarse grained sand; slightly plastic.		50/ 3"					
		BEDROCK - PASO ROBLES FORMATION Interbedded Sandstone, Siltstone, Claystone: Unconsolidated to well consolidated;.		75/ 4"			13.1		
80									
				50 50/ 3"					
85									
		Boring Terminated @ 84.8 feet Groundwater @ 15.2 feet Borehole backfilled with cement/bentonite grout.							

PLATE A-26

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 9** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **20.76**
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
	SAND DUNE DEPOSITS Sand with Silt (SP-SM): Light brown; moist; medium dense; poorly graded.							
			6 8 10			3.6	99.0	
5			4 6 6					
			3 5 6			20.6		
10			2 4 6					
		▼						
	@ 13.0 feet: Interbedded with lenses/pockets of Sandy Silt (ML) and Sandy Gravel (GP); a few inches in thickness.		2 4 8			31.8	86.9	
15	Sandy Silt (ML): Black; wet; loose.							
			7 2 2					
	ESTUARINE DEPOSITS Lean Clay (CL): Dark gray; wet; soft.		2 2 2			39.5	78.0	
20								
			2 2					

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 9** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **20.76**
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				3					
30		Silty Sand (SM): Dark gray to black; wet; soft; abundant shell fragments.		4 6 9			16.7	116.0	
35		Lean to Fat Clay (CL-CH): Dark gray; wet; stiff.		3 6 8			32.5		
40		Lean Clay (CL): Dark gray; wet; soft to firm.		2 2 2			23.4	117.8	
45		Silty Clay with Sand (CL-ML): Becomes sandier, less clayey; interbedded with layer of Sandy Silt (ML) and Silty Sand (SM); fine grained sand.		3 3 4					
		Sand with Silt (SP-SM) and gravel to Gravelly Sand (SP):		3 6			20.0	106.5	

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B- 9** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **20.76**
Job No.: **00-0620**	Client: **FCII**	Date: **7/11/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Light brown; wet; medium dense; medium to coarse grained sand; poorly graded; fine to medium gravel.		8					
55		From 50 - 55 feet: Fragments of sharp-edged stone broken by men (according to archaeologist) observed in drill cuttings.		18 15 12					
		Consist of Clayey to Sandy Silt.		2 3 3					
60		Clayey to Silty Sand with Gravel (SC-SM): Orange brown to tan; medium dense.		4 11 12 3 6 12			11.7		
65		**PLEISTOCENE DEPOSITS** Silty to Clayey Sand with Gravel (SM-SM): Mottled orange, tan, gray; very dense.					10.9		
70		**BEDROCK** rock fragments are gray in color; with sharp edges.		75/ 5.5"					
		Boring Terminated @ 71 feet Groundwater @ 12.2 Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-29

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-10** (1 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**
Job No.: **00-0620**	Client: **FCII**	Date: **7/10/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		SAND DUNE DEPOSITS Sand with Silt (SP-SM): Tan; moist; medium dense; fine grained sand; porous.							
				5 5 7			20.2	98.1	
5		@ 5.0 feet: Becomes brown.		3 3 4			23.9		#200
		@ 8.0 feet: Shell fragments; charcoal.		4 5 6					
		@ 8.0 feet: Becomes tan.		3 5 7					
10				4 5 7			16.8	100.4	#200
		@ 12.0 feet: Becomes medium dense with occasional fine/medium gravel pieces.		7 11 14					
15			▼	7 9 12					
		@ 16.0 feet: Some porosity observed.		8 12 16					
				6 8 14					
20		@ 20.0 feet: Becomes gray.		4 9 12					
		@ 23.0 feet: Some roots.		12 21 14					
		Clayey Silt with Sand (ML): Gray; wet; firm; fine grained sand; interbedded with Silty Clay (CL-ML) and occasional		2 3			31.8	88.4	

PLATE A-30

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-10** (2 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**
Job No.: **00-0620**	Client: **FCII**	Date: **7/10/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Blows Per 6"	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
	lenses or layers of dark gray Silty Sand (SM).		3			
			P	33.1	93.0	CONS
			2 2 2			
30						
	@ 32.0 feet: Abundant shell fragments.		P			
35			2 3 4	25.9		
	Silty Sand (SM): Gray; wet; loose; fine to medium grained sand; interbedded with lenses of Sandy Silt.		3 4 4	23.5	101.4	#200
			3 3 4			
40	@ 40.0 feet: Becomes medium dense.		7 10 12			
			4 4 7	41.4		
	@ 43.0 feet: 1.5-foot thick layer of Clay with Sand (CL); gray; wet; stiff; some shell fragments in Silty Sand (SM) below.		11 12 16			
45			11 17 19	19.2		#200
	ESTUARINE DEPOSITS Sand with Silt (ML): poorly graded; some gravel, possible affected blow count.		18 25 40			

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-10** (3 of 4)	
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/10/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Material Description	Water	Blows Per 6"	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
			18 28 35			
			20 28 32			
55			9 21 26			
	@ 56.0 feet: Sand becomes very fine grained.		11 22 33	22.6	101.1	#200
			15 30 45			
60			25 35 45			
	Lean Clay (CL): Gray; wet; stiff; some shell fragments.		9 7 6	20.1		#200 AL
			4 4 7	30.4	91.9	
65	@ 65.0 feet: Abundant orange stained roots.					
			5 7 9			
			6 7 8			
70	@ 70.0 feet: Becomes sandier.		4 4 4	26.7	95.5	
			P			
	Silty Sand with Gravel (SM): Light brown; wet; medium to coarse grained sand.		18 24	16.4		

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-32

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-10** (4 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.36**
Job No.: **00-0620**	Client: **FCII**	Date: **7/10/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				21			18.8		#200
		Clayey Sand with Gravel (SC) to Clayey and Sandy Gravel (GC): Orange brown; medium to coarse grained sand.		9					
				45					
		Shattering noise indicating Bedrock; very hard drilling.		50/3"					
		Boring Terminated @ 78 feet Groundwater @ 14 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-11** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **17.68**
Job No.: **00-0620**	Client: **FCII**	Date: **7/8/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand (SM): Brown; moist; very dense; [Probably compacted fill].		23 25/ 6"			10.2	120.7	#200
5		Sand with Silt (SP-SM): Brown; moist; medium dense; poorly graded.		8 10 12					
		Lean Clay (CL): Dark gray; wet; very soft; with lenses of dark gray Silty Sand (SM) and occasional pieces of gravel [Hydraulic Fill?].	▼	1 1 1			21.7		
10		Silt with Sand (ML): Dark gray to black; wet; very soft.		1 1 1			35.7		
		Lean to Fat Clay (CL to CH): Dark gray; wet; soft.							
15				P					
20				1 2 2			42.4	77.5	
		Silty Sand with occasional Gravel (SM): Dark gray; wet; medium dense; piece of wood recovered with soil cuttings.		3 4			19.8	107.1	

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-11** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **17.68**
Job No.: **00-0620**	Client: **FCII**	Date: **7/8/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
			8			
	Lean Clay (CL): Olive gray; wet; soft.					
30			1 2 2	31.2		
	Silty Clay (CL-ML) to Clayey Silt (ML): Olive gray; wet; soft.					
35			1 1 1	32.1	89.9	#200
			P	31.9	93.9	CONS
40			2 2 2			
	Lean Clay (CL): Olive gray; wet; soft to firm.					
45			P			

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-35

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-11** (3 of 3)	
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **17.68**	
Job No.: **00-0620**	Client: **FCII**	Date: **7/8/00**	
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**	

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand with occasional Gravel (SM): Dark gray; wet; medium dense; piece of wood recovered with soil cuttings.		2 2 2			35.1	88.4	
55									
		Silty Sand (SM): Gray; wet; loose; fine to medium grained sand.		2 2 2			31.9	88.7	
		@ 57.5 feet: Becomes reddish brown; medium dense; coarser; fine gravel.							
60				6 11 9					
65				35 65/ 6"			13.6		
		@ 66.0 feet: Clast of green Franciscan Chert; shattering noise during drilling.							

Boring Terminated @ 68 feet
Groundwater @ 6.9 feet
Borehole backfilled with cement/bentonite grout.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-12** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **16.44**
Job No.: **00-0620**	Client: **FCII**	Date: **7/9/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand (SM): Light brown; wet; dense; occasional gravel; abundant shell fragments; (possible hydraulic fill).		12 15 18			4.4	116.1	
		Silt (ML): Dark gray; wet; very soft.							
5			▼	2 2 2			31.2		#200
		@ 8.0 feet: Lense of dark gray Silty Sand (SM).		2 2 2			27.8	94.6	
10		@ 10.0 feet: Becomes sandier.		4 3 3					
		No Recovery at 13.0'-14.5'.		2 2 5			46.8		
15		No Recovery at 14.5'-16.0'. Lean Clay (CL): Gray; wet; very soft.		1 1 1					
				1 2 2			37.9	82.9	
20		Silty Sand with occasional Gravel (SM): Gray; wet; medium to coarse grained sand.		P					
		@ 24.0 feet: Medium dense.		8 11			16.2		#200

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-12** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **16.44**
Job No.: **00-0620**	Client: **FCII**	Date: **7/9/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				12					
		Lean Clay (CL): Olive gray; wet; stiff.							
30				4 5 5			26.6	96.6	
35		@ 35.0 feet: Becomes firm.		3 4 5			34.4	83.6	
40				2 2 3			31.9	88.1	
45		@ 44.0 feet: Becomes olive brown.		4 4 4			38.8	81.0	
				P					

PLATE A-38

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-12** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **16.44**
Job No.: **00-0620**	Client: **FCII**	Date: **7/9/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Material Description	Water	Samples: Blows Per 6"	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
	@ 50.0 feet: Becomes soft.		P			
	@ 52 to 53 feet: Becomes more granular, less clayey.					
55	No Recovery at 55 feet.		3 3 2			
	@ 56.0 feet: Becomes dark gray with lenses of Sandy Silt.		3 3 3	32.3	88.7	
	No Recovery at 59.0'-60.5' and 60.5'-62.0'.		2 2 3			
60	Clayey Silt (ML) to Silty Clay (CL-ML): Dark gray to black; wet; soft to firm.					
			3 3 3	25.1	97.8	
65	@ 65.0 feet: Silt becomes sandier with medium dense lenses of dark gray to black Silty Sand; with pieces of wood at 65.0'; interbedded with lenses of lean clay.		4 10 40	27.1	93.3	
	From 66 feet cuttings consist of mostly grey rock fragments with sharp edges.					

Boring Terminated @ 69 feet
Groundwater @ 5.7 feet
Borehole backfilled with cement/bentonite grout.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-13** (1 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **15.92**
Job No.: **00-0620**	Client: **FCII**	Date: **7/8/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lith-ology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		ARTIFICIAL FILL (Af) Clayey Silt with Sand (ML) to Silty Clay (CL-ML): Mottled light to dark brown; moist; firm; with chunks of lean clay (CL).		2 3 3			28.4	89.4	
			▼						
5		@ 4.0 feet: Interbedded layers/lenses of light brown, wet Silty Sand (SM); sand is medium to coarse grained.		2 3 3					
		Silty Clay with Sand (CL-ML): Dark brown to black; wet; soft to firm.		3 2 2			25.4	94.3	
10		**YOUNG ALLUVIUM/LAGOONAL DEPOSITS** Lean to Fat Clay (CL to CH): Light olive brown; wet; soft to firm. Brown.		2 2 2					
		@ 13.0 feet: Very soft.		1 1 1			33.5 41.2	86.7	
15				1 2 2					
20		@ 19.0 feet: Becomes gray.		1 1 2			41.1	75.5	
		@ 23.0 feet: Becomes olive brown to gray.		1 3 3			35.2		

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-13** (2 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **15.92**
Job No.: **00-0620**	Client: **FCII**	Date: **7/8/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Lense/Layer of Silty to Clayey Sand (SM to SC)) with fine gravel; sand is medium to coarse grained.							
30				8 8 9					
		Lean Clay (CL): Olive brown; wet; soft to firm.							
35				P					
40				2 3 3			38.7	81.9	
45		@ 44.0 feet: Becomes olive gray.		2 2 2			29.3	92.6	
		Sandy to Clayey Silt (ML): Gray; wet; soft to firm.							
				P					

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-41

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-13** (3 of 3)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **15.92**
Job No.: **00-0620**	Client: **FCII**	Date: **7/8/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				P					
55		@ 54.0 feet: Becomes very soft to soft.		1 2 2			26.5	95.1	
60		<u>**OLDER ALLUVIUM / MARINE DEPOSITS**</u> <u>Silty Sand with Gravel (SM)</u>: Dark gray; gravel piece blocked shoe and may have affected blow count; No Recovery at 59'-61'.		P					
				8 17 30 60/ 6"					
65									
		<u>Clayey Sand with Gravel to Clayey Gravel with Sand (SC-GC)</u>: Possible top of weathered rock / Pleistocene deposits at 68'.							
		Boring Terminated @ 68.5 feet Groundwater @ 3.5 feet.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-14**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.79**
Job No.: **00-0620**	Client: **FCII**	Date: **7/7/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		ARTIFICIAL FILL (Af) Silty Sand (SM): Light brown; moist; loose; occasional gravel and shell fragments.		4 4 5			22.3		
5		Clayey Silt with Sand (ML): Light brown; moist; firm; interbedded with occasional layers/lenses of loose Silty Sand (SM) and Sandy Lean Clay (CL).		3 3 3					
				1 2 2			32.0	87.3	
10		@ 10.0 - 14.0: Very clayey.	▼	2 2 2			33.2		
				2 2 2			30.9	90.8	
15				2 2 2			30.5	91.1	
		Boring Terminated @ 17.5 feet Groundwater @ 9.4 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-43

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-15**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **20.97**
Job No.: **00-0620**	Client: **FCII**	Date: **7/7/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		ARTIFICIAL FILL (Af)							
		Silty Sand with Gravel (SM): Brown; moist; medium dense; fine to coarse grained sand.		4 7 8			10.4	109.2	
		Silty Sand with Gravel (SM): Dark brown; wet; medium dense; fine to coarse grained sand; soil cuttings contain plastic.		8 12 14					
5									
				6 7 7			11.2	114.0	
		@ 8.0 feet: Abundant gravel.	▼						
10				8 12 14			13.7		
		Sand with Silt (ML): Light brown to tan; wet; soft to firm.		2 2 2			33.7	87.3	
15									
		Lean Clay with Sand (CL): Light brown to tan; wet; soft to firm.		2 2 2			29.6		

Boring Terminated @ 17.5 feet
Groundwater @ 9.0 feet
Borehole backfilled with cement/bentonite grout.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-44

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-16**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **22.03**
Job No.: **00-0620**	Client: **FCII**	Date: **7/7/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Sandy Silt (ML): Brown; moist; stiff.							
				4 5 5			15.1	101.0	
5		Silty Sand with Gravel (SM): Dark brown; wet; medium dense; fine to coarse grained sand.		5 8 7					
			▼	4 5 6			13.7	116.9	
10				6 10 12					
				2 2 2			22.4	100.6	
15		Lean Clay (CL): Dark gray; wet; soft.							
				2 2 2			25.0	93.8	

Boring Terminated @ 17.5 feet
Groundwater @ 8.0 feet
Borehole backfilled with cement/bentonite grout.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-45

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-17**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **15.97**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		ARTIFICIAL FILL (Af) Silty Sand (SM): Light brown; moist; medium dense.							
				8 16 18			6.6	104.7	
5				8 10 8					
				2 2 2			18.1		
10		Silty Sand (SM) to Sandy Silt (ML): Light brown to tan; wet; very loose; very fine grained sand.		1 1 1					
			▼						
		@ 13.0 feet: Becomes coarser grained.		4 6 9			15.9	118.6	
15				6 7 9					
		@ 19.0 feet: Becomes darker; very interbedded with Sand Silty ML; fragments of roots @ 20 feet.		7 3 3			25.9	97.5	
20									
		Boring Terminated @ 20.5 feet Groundwater @ 11.8 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**			Boring No.: **B-18**
Location: **Morro Bay, San Luis Obispo, CA**			Elevation: **17.07**
Job No.: **00-0620**	Client: **FCII**		Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**		Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand (SM) to poorly graded Sand with Silt (SP-SM) Tan; moist; dense; fine to medium grained sand.							
				7 14 15			4.0	100.6	
5				7 12 14					
				5 8 12			7.9	100.5	
10		@ 10.0 feet: Becomes brown.		5 7 11					
			▼						
		@ 13.0 feet: Becomes wet.		7 8 11			23.7		
15									
				7 8 12					
		Boring Terminated @ 17.5 feet Groundwater @ 12.3 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-47

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-20**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **21.40**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Core	Bulk	Laboratory Tests: Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
0		Silty Sand (SM): Brown; slightly moist; loose; fine grained sand.							
				5 3 3			7.8	100.9	
4		@ 4.0 feet: Becomes medium dense.		4 6 6					
5									
7		Sand with Silt (SP-SM): poorly graded.		4 8 4			13.7	96.2	
10				4 8 9					
12.3			▼						
				8 4 14					
15									
				9 17 18					
17.5		Boring Terminated @ 17.5 feet Groundwater @ 12.3 feet Borehole backfilled with cement/bentonite grout.							

PLATE A-48

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-21**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **18.75**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Core	Bulk	Moisture Content (%)	Dry Density (pcf)	Other Lab Tests
		Sand with Silt (SP-SM): Brown; moist; medium dense; poorly graded.							
				3 5 8			4.4	96.8	
5				7 10 14					
				6 7 10			7.5	97.9	
10				7 10 14					
			▼						
15				6 9 9			24.2	100.2	
		@ 16.0 feet: Becomes wet; dense to very dense.		12 23 28					
		Boring Terminated @ 17.5 feet Groundwater @ 12.5 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-49

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-22**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **16.97**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
0		Sand with Silt (SP-SM): Light brown to tan; moist; loose; poorly graded.							
1				3 5 5			14.7	96.1	
4				3 2 2					
7				2 2 2			20.8	107.1	
10			▼	2 2 3					
13		@ 13.0 feet: Becomes dark brown with streaks of black.		9 11 15			23.6	102.0	
16		@ 16.0 feet: Gravel pieces blocking shoe likely resulting in unrealistic blow count.		14 25 28					

Boring Terminated @ 17.5 feet
Groundwater @ 10.8 feet
Borehole backfilled with cement/bentonite grout.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

PLATE A-50

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-23** (1 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **18.65**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		DUNE SAND DEPOSITS Silty Sand (SM): Brown Medium brown; moist; firm.		6 6 5			11.9	107.9	
5		@ 4.0 feet: Grades to (SP-SM).		2 2 3			22.5		#200
		@ 7.0 feet: Occasional gravel to 3/4-inch.		5 6 6					
10			▼	2 4 2			19.9		
15		**BEACH SANDS** Silty Sand with Gravel (SM): Gray; wet; medium dense; fine to medium grained sand; occasional layers of coarse sand; interbedded with lenses or pockets of Sandy Silt (ML).		8 8 10			23.8	100.1	
				6 6 9					
20				7 15 23			23.1	96.5	
				P					

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-23** (2 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **18.65**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				P					
30				12 18 20					
35		Fat to Lean Clay (CH-CL): Dark gray; wet; firm to stiff.		1 3 3			39.6	78.1	
40				4 7 8			29.2	92.3	
45		@ 22.0 feet: Black gray.		4 5 7			27.2	96.1	
				3 3					

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-23** (3 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **18.65**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
				3 3 3 3 4 4 5					
55		**LATE PLEISTOCENE DEPOSITS SANDS** Silty Sand / Clayey Sand (SM/SC): Reddish brown; medium dense.		6 8 9			22.7		#200 AL
60		@ 59.0 feet: Becomes coarser with increasing amounts of fine gravel.		12 22 25					
65									
70									

PLATE A-53

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-23** (4 of 4)
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **18.65**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Boring Terminated @ 75 feet Groundwater @ 11.6 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-24**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **15.18**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		SAND DUNE DEPOSITS Silty Sand (SM): Tan; moist; very dense; fine to medium grained sand.		15 17 19			5.6	117.5	
5				7 8 8					
		@ 8.0 feet: Becomes wet.		5 7 7			17.8	99.7	
10		@ 10.0 feet: Layer of lens of brown to grey, wet lean clay; several to four feet in thickness.	▼	2 4 4					
				5 6 8			21.6	100.9	
15				5 5 4					
20				5 6 6					
		Borehole Terminated @ 20.5 feet Groundwater @ 11.5 feet Borehole backfilled with cement/bentonite grout.							

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Hushmand Associates, Inc.

EXPLORATION LOG

Project: **Morro Bay Power Plant**		Boring No.: **B-25**
Location: **Morro Bay, San Luis Obispo, CA**		Elevation: **15.26**
Job No.: **00-0620**	Client: **FCII**	Date: **7/6/00**
Drill Method: **Mud Rotary**	Driving Weight: **140 lbs / 30 in**	Logged By: **EEV, PEM**

Depth (Feet)	Lithology	Material Description	Water	Samples: Blows Per 6"	Samples: Core	Samples: Bulk	Laboratory Tests: Moisture Content (%)	Laboratory Tests: Dry Density (pcf)	Laboratory Tests: Other Lab Tests
		Silty Sand (SM): Brown; moist; medium dense; fine grained sand.		10 11 11					
5				3 4 6					
				3 6 6					
		Boring Terminated @ 9.0 feet Underground concrete structure resulted in drilling refusal Borehole backfilled with cement/bentonite grout.							

PLATE A-56

Hushmand Associates, Inc.

EXPLORATION LOG - V3 00-0620.GPJ HAI.GDT 8/3/00

Bengal Engineering
250 Big Sur Drive
Goleta CA 93117
Telephone: (805) 685-6511

BORING NUMBER B-1

CLIENT RRM Design Group
PROJECT NAME Morro Creek Multi-Use Trail and Bridge
PROJECT NUMBER
PROJECT LOCATION Morro Bay, SLO County, CA
DATE STARTED 8/6/13 **COMPLETED** 8/6/13
GROUND ELEVATION 23 ft **HOLE SIZE** 8" inches
DRILLING CONTRACTOR S&G Drilling
GROUND WATER LEVELS:
DRILLING METHOD HSA - CME 75
AT TIME OF DRILLING ---
LOGGED BY E. Pongracz **CHECKED BY**
AT END OF DRILLING 18.50 ft / Elev 4.50 ft
NOTES *Drill Rod and Auto Hammer Used
AFTER DRILLING ---

ELEV (ft)	DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	UNDRAINED SHR STRENGTH (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)	OTHER TESTS
	0				**Asphalt Concrete (AC)**								
					Earth Fill (ef) Sand (SP/SM) - golden brown, medium dense to dense, slightly moist, occasional piece of gravel								
					Eolian Dune Sand (Qds)								
20		SPT 1	7-11-8 (19)				4						
	5	MC 2	6-10-17 (27)		Fine-grained Sand (SP) with thin interbeds of Gravelly Sand - light brown, dense, slightly moist		3	102					
15													
	10	SPT 3	6-9-11 (20)		same as above (SP), less gravel		5						
10													
	15	SPT 4	5-9-12 (21)		Very fine-grained Sand (SP) - light brown, dense, moist (increasing moisture content)		4						
5													
	20	SPT 5	6-11-14 (25)		same as above (SP), dense, wet (catcher used)		20						

GW measured at 18.5' below grade at conclusion of drilling.
Boring backfilled with native materials.
Bottom of borehole at 20.5 feet.

BENGAL GEOTECH BH V5 - BENGAL MOD GINT STD US LAB 2-10-10.GDT - 11/6/13 09:52 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\MORRO CREEK.GPJ

Bengal Engineering
250 Big Sur Drive
Goleta CA 93117
Telephone: (805) 685-6511

BORING NUMBER B-2

CLIENT RRM Design Group
PROJECT NAME Morro Creek Multi-Use Trail and Bridge
PROJECT NUMBER
PROJECT LOCATION Morro Bay, SLO County, CA
DATE STARTED 8/6/13 **COMPLETED** 8/6/13
GROUND ELEVATION 18 ft **HOLE SIZE** 8" inches
DRILLING CONTRACTOR S&G Drilling
GROUND WATER LEVELS:
DRILLING METHOD HSA - CME 75
▽ **AT TIME OF DRILLING** 10.50 ft / Elev 7.50 ft
LOGGED BY E. Pongracz **CHECKED BY**
AT END OF DRILLING ---
NOTES *Drill Rod and Auto Hammer Used
AFTER DRILLING ---

ELEV (ft)	DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	UNDRAINED SHR STRENGTH (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)	OTHER TESTS
	0				**Eolian Dune Sand (Qds)**								
15		BULK MC 1	2-3-4 (7)		Fine-grained Sand (SP) - light brown, slightly dense, slightly moist		1 / 1	102				1	MAX, SV
	5	GB 2	1-2-1 (3)		same as above (SP) with occ. small gravel, slightly moist								
		SPT 3											
10		MC 4	1-3-6 (9)		same as above (SP), moist		3	99				5	DS, SV
	10	SPT 5	2-2-5 (7)		same as above (SP), medium dense, very moist to wet in lower 6" of sample.		16					4	SV
		SPT 6	1-5-5 (10)		▽ same as above (SP) in sharp contact with Sandy Gravel (GP) - brown, medium dense, wet		18						
5		SPT 7	3-4-5 (9)		Fine-grained Sand with Gravel (SP-SM) - brown to light brown, dense, wet, poor recovery		15					8	SV
		SPT 8	6-15-16 (31)		Fine-grained Sand (SP) with occ. very small gravel - light brown, very dense, wet		24					3	SV
	15	SPT 9	6-13-20 (33)		**Alluvium (Qal)** same as above (SP) - olive brown to light olive, very dense, wet		22					2	SV
0		SPT 10	1-14-24 (38)		same as above (SP) - dense to very dense; in sharp contact with fine-grained Sand (SP) with shell hash and Gravelly Sand / Sand with Gravel (SW/SP)		22					3	SV
		SPT 11	3-24-50/5"				21					3	SV
	20	SPT 12	4-9-24 (33)		*Begin to add drilling mud to augers.		12					3	SV
-5		SPT 13	4-5-7 (12)		Sand with scattered small gravel (SW) - light brown to orange brown in sharp contact with 1/2" Clayey Sand (SC) and fine-grained Sand (SP) - gray to dark gray, dense, wet		26					14	SV
		SPT 14	0-1-1 (2)		Sandy Clay (SC) in sharp contact with Silty Clay (CL) - dark gray, soft, wet		46						
	25	MC 15	1-2-3 (5)		Sandy, Silty Clay (CL) - dark gray, slightly stiff, wet, scattered shells/shell fragments		26	102					CONS
-10		SPT 16	2-7-15 (22)		Fine-grained Sand (SP) with some Silt to Silty Sand (SM) - dark gray, dense, moist, scattered very small shell fragments		23						
	30	SPT	4-18-18		Fine-grained SiltySand (SM/SP) to Sand with Silt - dark		21						

(Continued Next Page)

Bengal Engineering
250 Big Sur Drive
Goleta CA 93117
Telephone: (805) 685-6511

BORING NUMBER B-2

CLIENT RRM Design Group
PROJECT NAME Morro Creek Multi-Use Trail and Bridge
PROJECT NUMBER
PROJECT LOCATION Morro Bay, SLO County, CA

ELEV (ft)	DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	UNDRAINED SHR STRENGTH (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)	OTHER TESTS
	30	17	(36)		gray, very dense, very moist, last 9" of sample contains abundant shells								
-15		SPT 18	1-2-3 (5)		Silty Clay (CL) with trace Sand grading to Silty Clay (CL/CH) - dark gray, medium stiff, very moist, scattered to abundant rootlets and scattered shell fragments		44						
	35	MC 19	1-6-7 (13)		Silty Clay (CH) - blue-gray, stiff, very moist		34	89					DS, CONS
-20		SPT 20	1-1-2 (3)				37						
	40	MC 21	2-5-6 (11)		Silty Clay (CL/CH) - olive green to blue gray (mottled), medium stiff, very moist		35	92					DS, CONS
							2						
-25		SPT 22	1-1-2 (3)		Silty Clay (CL) - olive green to olive brown (mottled), medium stiff, very moist grading to olive green Silt (ML) - slightly stiff, wet		36						
	45	MC 23	2-2-3 (5)		Silty Clay (CL/CH) and Clayey Silt (ML) - olive green, medium stiff, moist, mottled; grading to Clay (CL/CH) w/ scatt. small gravel - dark gray, medium stiff, very moist		35	90					DS, CONS
-30		SPT 24	1-3-10 (13)		Silty Clay / Clay (CL/CH) grading to Sandy Clay (SC) and Gravelly Sand (SW) with clay - olive green to olive brown, stiff to medium dense		29						
	50	SPT 25	5-7-3 (10)		Silty Clay (CL/CH), Clayey Gravel (GC), and fine-grained Silty Sand (SM) - olive green, stiff/medium dense, very moist to wet		19						

GW measured at 10.5' to 12.5' below grade at various times during drilling. Boring backfilled with native materials.
Bottom of borehole at 50.5 feet.

Bengal Engineering
250 Big Sur Drive
Goleta CA 93117
Telephone: (805) 685-6511

BORING NUMBER B-3

CLIENT RRM Design Group
PROJECT NAME Morro Creek Multi-Use Trail and Bridge
PROJECT NUMBER
PROJECT LOCATION Morro Bay, SLO County, CA
DATE STARTED 8/7/13 **COMPLETED** 8/7/13
GROUND ELEVATION 19 ft **HOLE SIZE** 8" inches
DRILLING CONTRACTOR S&G Drilling
GROUND WATER LEVELS:
DRILLING METHOD HSA - CME 75
∇ **AT TIME OF DRILLING** 13.50 ft / Elev 5.50 ft
LOGGED BY E. Pongracz **CHECKED BY**
AT END OF DRILLING ---
NOTES *Drill Rod and Auto Hammer Used
AFTER DRILLING ---

ELEV (ft)	DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	UNDRAINED SHR STRENGTH (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)	OTHER TESTS
	0				**Eolian Dune Sand (Qds)**								
15		SPT 1	2-2-2 (4)		Fine-grained Sand (SP) - light brown, slightly dense, slightly moist		3						
	5												
10		MC 2	6-8-12 (20)		same as above (SP) - light brown, slightly dense, moist		6	101				5	SV
	10	SPT 3	3-4-4 (8)		same as above (SP) with scatt. small gravel		7						
5		MC 4	9-22-24 (46)		∇ Fine-grained Sand with occasional gravel (SP) - brown to grayish brown, dense, wet		17	113				4	DS, SV
	15	SPT 5	4-8-8 (16)		Fine-grained Sand (SP) - light brown, medium dense, wet; in sharp contact with 5" bed of Gravelly Sand (SW) - dense, wet		23						
		SPT 6	0-1-4 (5)		Fine-grained Sand (SP) - light brown, medium dense; 3" thick Sandy Gravel (GP/GW) in sharp contact with gray Fine-grained Sand/Silty Sand with roots and 1" thick, gray Silty Clay (CL) - loose/soft, wet (Qes ?)		22					10	SV
0		SPT 7	7-15-22 (37)		**Alluvium (Qal)** Fine-grained Sand (SP) with widely scattered, small gravel and shell fragments - light gray to olive, very dense, very moist to wet		20						
	20	SPT 8	5-16-50/3"		Fine-grained Sand (SP) with some Silt - light gray to olive, very dense, wet, scatt. small shell fragments		20					3	SV
		SPT 9	10-4-6 (10)		2" thick gray Clay (CL) in sampler tip		15						
-5		MC 10	2-2-3 (5)		Sand to Gravelly Sand (SW) - olive brown, loose, wet; in sharp contact with Clayey Silt/Silty Clay (ML/CL) - gray, slightly stiff, very moist to wet		23	118					CONS
	25	MC 11	1-3-9 (12)		Clay / Silty Clay (CL) with interbedded Sand / Pebbly Sand (SW) - gray to light gray, soft to medium dense, wet		23	101					DS
		SPT 12	5-7-16 (23)		Gravelly Sand (SW) grading to fine-grained Sand (SP) with some Silt to Silty Sand (SM) - gray, dense, wet, scattered shell fragments		22					10	SV
-10		MC 13	6-11-2 (13)		same as above (SP)		20					7	SV
	30												

(Continued Next Page)

Bengal Engineering
250 Big Sur Drive
Goleta CA 93117
Telephone: (805) 685-6511

BORING NUMBER B-3

CLIENT RRM Design Group **PROJECT NAME** Morro Creek Multi-Use Trail and Bridge

PROJECT NUMBER **PROJECT LOCATION** Morro Bay, SLO County, CA

ELEV (ft)	DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	UNDRAINED SHR STRENGTH (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)	OTHER TESTS
	30	SPT 14	2-1-4 (5)		same as above (SP); contains 2" thick and 3/4" thick brown Clayey Silt (ML) seams		22					10	SV
		SPT 15	3-10-13 (23)				21					14	SV
-15		MC 16	5-8-6 (14)		same as above (SP)		24	107				2	DS, SV
	35	SPT 17	1-1-1 (2)		*Begin to add water to augers.		24					5	SV
		SPT 18	1-2-5 (7)		Gray, fine-grained Clayey Sand (SC) in sharp contact with blue-gray Silty Clay (CL) - medium dense to stiff, wet to very moist		30						
-20		MC 18	2-8-12 (20)		Silty Clay (CL/CH) - gray, stiff, very moist with organics; grading to olive green to gray, mottled Silty Clay (CH) - stiff, very moist		27	99					DS, CONS
	40	SPT 19	4-5-9 (14)		Fine-grained Sand (SP) in sharp contact with gray, mottled 3" thick Silty Clay (CL); grading to Clay with scatt., small gravel (CL) - stiff/medium dense, very moist to wet		22					46	SV
		MC 20	2-5-7 (12)		Silty Clay (CL/CH) - olive brown to light gray (rusty mottling), stiff, very moist		35	90					DS, CONS
-25	45	SPT 21	0-1-3 (4)		Clayey Silt (ML/MH) - olive green, slightly stiff, very moist; in sharp contact with Clay (CL/CH) with some sand and occasional pebble - dark gray, stiff, very moist		26						
		SPT 22	0-1-4 (5)		Clayey Silt / Silty Clay (ML/CL) - olive brown, slightly stiffl; grading to Silty Clay (CL) and Sandy Clay (SC) - olive brown, medium stiff, very moist		25						
-30	50	SPT 23	2-1-1 (2)		**Older Alluvium (Qoal)** Fine-grained Sandy Clay and Clayey Sand (SC) - orange brown to gray and reddish brown, medium stiff, very moist to wet		20						

GW measured at 13.5' below grade during drilling. Boring backfilled with native materials.

Bottom of borehole at 50.5 feet.

Appendix G

Paleontological Resources Evaluation

600-MW Morro Bay Battery Energy Storage System Project

Paleontological Resources Evaluation

prepared for

City of Morro Bay
Department of Community Development
595 Harbor Street
Morro Bay, California 93442

prepared by

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

January 2024

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Table of Contents

Figures

This page intentionally left blank.

Executive Summary

Purpose and Scope

Rincon Consultants, Inc. (Rincon) was retained by the City of Morro Bay to conduct a Paleontological Resources Evaluation (PRE) for the 1290 Embarcadero Road Battery Energy Storage System Project in Morro Bay, San Luis Obispo County, California (Project). This PRE includes a literature review, paleontological sensitivity assessment, formal locality search from the Santa Barbara Museum of Natural History (SBMNH), and reporting consistent with the professional standards of the Society of Vertebrate Paleontology (SVP; 2010) to determine whether the proposed action would result in significant impacts to paleontological resources under the California Environmental Quality Act (CEQA) within the Project Site.

Results of Investigation

Two geologic units are mapped within the Project Site: Quaternary young alluvial floodplain deposits and Quaternary old eolian deposits (Wiegers 2021). Quaternary young alluvial floodplain deposits is Holocene in age and likely too young (i.e., less than 5,000 years old) to preserve paleontological resources as defined by the SVP (2010) at the surface, but may have increased sensitivity at depth. Quaternary young alluvial floodplain deposits to 19 feet below the surface and undetermined paleontological sensitivity greater than 19 feet below the surface. Quaternary old eolian deposits are of sufficient age, but significant paleontological resources are very rarely discovered in coastal eolian deposits in California. The fossil locality search of the SBMNH recovered no known fossil localities within the Project Site or in similar sediments in San Luis Obispo County (Hoffman 2022).

Impacts and Recommendations

The Project Site is currently occupied by the Morro Bay Power Plant, so the Project Site has been previously disturbed. Grading for the Project is not likely to reach 19 feet below the surface, the depth at which Quaternary alluvial floodplain deposits have undetermined paleontological sensitivity. Pilings for the battery energy storage system buildings foundation may reach depths at which sediments other than Quaternary young alluvial floodplain deposits and Quaternary old eolian deposits would be expected to occur. However, these pilings will be driven into the sediment, so monitoring of this activity is impossible.

Mitigation Measures PAL-1 and PAL-2 are recommended to reduce potential impacts to paleontological resources associated with grading and excavation to a less-than-significant level. Mitigation Measure PAL-1 requires the creation and delivery of a Worker Environmental Awareness Program training for construction personnel, and Mitigation Measure PAL-2 requires provisions for management of paleontological resources if discovered during construction of the project.

1 Introduction

Rincon Consultants, Inc. (Rincon) conducted a desktop Paleontological Resources Evaluation (PRE) for the 1290 Embarcadero Road Battery Energy Storage System Project (Project) on behalf of the City of Morro Bay (City). This evaluation includes a literature review, paleontological sensitivity assessment, fossil locality search from the Santa Barbara Museum of Natural History and reporting consistent with the professional standards of the Society of Vertebrate Paleontology (SVP; 2010).

Paleontological resources (i.e., fossils) are the remains or traces of prehistoric life. Fossils are typically preserved in layered sedimentary rocks and the distribution of fossils across the landscape is controlled by the distribution and exposure of the fossiliferous sedimentary rock units at and near the surface. Construction-related impacts that typically affect or have the potential to affect paleontological resources include mass excavation operations, drilling/borehole excavations, trenching/tunneling, and grading. This PRE provides a list of the formations mapped at the surface within the Project Site and formations that underlie those mapped at the surface that may be impacted by Project construction activities.

1.1 Project Location

The approximately 95-acre Morro Bay Power Plant property (Assessor's Parcel Numbers [APNs] 066-331-046 and 066-461-016) is located at 1290 Embarcadero south of State Route 1 and north of Embarcadero in the City of Morro Bay. The Morro Bay Power Plant was operational on the Power Plant property since the 1950s but has been idle since its retirement in 2014. The Power Plant property currently includes the idled power plant building and smokestacks (stacks), the cooling water intake screenhouse located across Embarcadero to the south, Lila Keiser Park, and facilities operated by Pacific Wildlife Care and Marine Mammal Center. The Power Plant property is surrounded by Pacific Gas and Electric (PG&E) property (switchyards) and State Route 1 to the northeast; the Embarcadero, commercial uses, and a marina to the southwest; Morro Creek, a recreational vehicle (RV) park, and temporary lodging facilities (hotel and motel) to the north; and Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west.

The site of the proposed project (Project Site) covers approximately 43 acres of the 95-acre Power Plant property.[1] The Project Site includes approximately 24 acres located immediately north of the inactive Power Plant building in the northwestern portion of the property. This area is currently vacant but was previously developed with above-ground fuel oil storage tanks. In addition, the Project Site includes approximately 19 acres in the southwestern area of the site that includes the

[1] Following are definitions for several key terms used in this Project Description:
Power Plant Property refers to the approximately 95-acre Morro Bay Power Plant property. Refer to Figure 2.
Project Site refers to the portions of the Power Plant property that would be used for the proposed project. The Project Site covers approximately 43 acres of the 95-acre Power Plant property. Refer to Figure 2.
BESS Site refers to the portions of the Project Site used for construction and operation of the Battery Energy Storage System (BESS) and supporting facilities such as Gen-tie lines and access roads. The BESS Site includes approximately 24 acres of the 43-acre Project Site.
Demolition Site refers to the portions of the Project Site used for remediation and demolition of the idled power plant building and stacks. The Demolition Site includes the remaining 19 acres of the 43-acre Project Site.

inactive power plant building and three inactive stacks immediately southwest of the power plant building. The Project Site also includes the approximately 2.75-acre driveway that connects the Power Plant building to Quintana Road.

The Project Site is regionally accessible from SR 1, and locally accessible from Main Street, Beach Street, and Embarcadero, or from Main Street and Quintana Road. Figure 1 shows the regional location of the Project Site, and Figure 2 shows the location of the approximately 95-acre Power Plant property in its neighborhood context, and the Project Site in its neighborhood context.

1.2 Project Description

The proposed project has three components: (1) construction and operation of a 600-megawatt (MW) Battery Energy Storage System (BESS), (2) demolition and removal of the existing Power Plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial.

Construction and Operation of the BESS

Of the 43 acres included in the Project Site, approximately 24 acres (BESS Site) would be used for construction and operation of the BESS. The BESS would provide power to utility customers by interconnecting to the existing PG&E switchyard located east of the Power Plant property and Project Site. The BESS would operate year-round to store and discharge electricity to support demand on the power grid and improve grid reliability.

The proposed BESS includes three enclosed buildings to house the batteries. Each building would contain approximately 2,400 battery racks and be surrounded by approximately 60 Power Conversion Systems (PCSs) composed of inverters and transformers to convert the direct current to alternating current. The BESS would also include three substations with transformers, a transmission line (Gen-tie) connecting to the existing dead-end structures on the southwestern side of the existing PG&E switchyard (the final structures before the connection with the substation), water supply system improvements, and internal access roads.

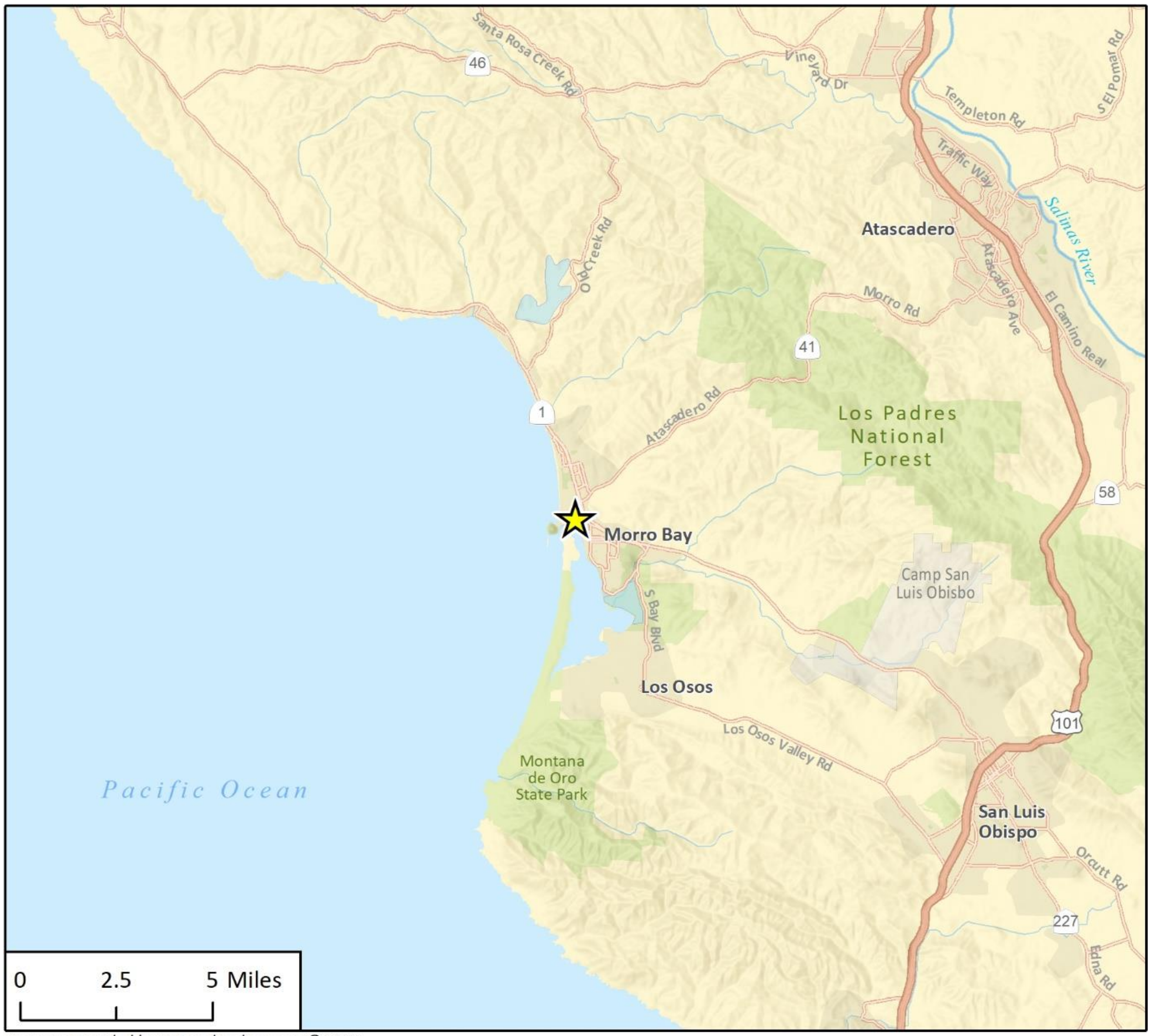
Buildings

The BESS would be installed in three (3) two-story buildings. Each building would be approximately 350 feet by 260 feet, for a total building area of 91,000 square feet (sf). The buildings would be 30 feet in height. Each building would require approximately 1,000 to 1,500 pilings which would be driven into the ground to a maximum depth of 75 feet. The bottom of building foundations would be approximately 6 feet below natural grade. The building exteriors would be steel frame with pre-cast concrete sides. Heating, ventilation, and air conditioning units would be either side- or roof-mounted.

Power Conversion Systems

The PCSs would be located adjacent to each building and installed on the pavement or gravel pads. Underground conduits buried three to five feet in depth would connect the PCSs to the batteries in the buildings. Each building would be surrounded by approximately 60 PCS units. Each PCS would be approximately 10 feet by 30 feet, with a height of approximately 15 feet.

Figure 1 Regional Location



Imagery provided by Esri and its licensors © 2021.

Project Location

N

Figure 2 Project Site Location

Imagery provided by Microsoft Bing and its licensors © 2022.
Additional data provided by Vistra, 2022.

Substations

The BESS would include three substations located outside the buildings. Each BESS substation would have a transmission Gen-tie line to connect to the existing PG&E substation. The dimensions of each substation would be approximately 218 feet by 228 feet and approximately 30 feet tall. The substation areas would be graded and compacted to level the ground. Drilled pilings to a maximum depth of 75 feet would be used to support the concrete pad for the transformers. One control house would be required for the three substations. The control house would be 30 feet by 40 feet in area for a total area of 1,200 square feet, and 15 feet in height.

Connection to the PG&E Switchyard

The three proposed substations would connect to the existing, adjacent PG&E switchyard. Approximately nine new transmission line poles (one 230-kilovolt [kV] double circuit transmission line pole and eight 230-kV single circuit transmission line poles) with a maximum height of 105 feet would be required for connection to PG&E existing 95-foot dead end structures (the final structures before the connection with the substation).

Construction-related Grading and Vegetation Management

The proposed structures would be located predominantly on the previously removed fuel oil tank farm area of the Morro Bay Power Plant. The area is relatively flat with the exception of some raised berms that would need to be removed prior to building construction. The area would be grubbed to remove vegetation and the internal berms would be excavated. Soil from those berms would be spread over the BESS Site and balanced on the site (no net import or export of material). The entire BESS Site would be disturbed during project construction. No soil import or export would be required. Once the berms have been removed, the soil would be compacted as needed. Water would be used to manage dust during construction activities.

Demolition and Remediation of Existing Power Plant Building and Stacks

Following construction of the BESS, the existing power plant building and stacks would be remediated and demolished. Remediation and demolition would be expected to commence within six months of completion of the BESS. Of the 43 acres included in the Project Site, approximately 19 acres (Demolition Site) would be used for remediation and demolition of the power plant building and stacks. Figure 3 shows the approximate limits of the demolition activities. Environmental remediation and demolition would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and recycling of remaining equipment, waste management transport and disposal and backfill of below grade voids. Remediation and demolition are anticipated to take up to two years to complete.

Most of the outbuildings and transformers at the Power Plant property were removed in 2014. Several transformers and circuit breakers remain on the Power Plant property and would be demolished in conjunction with or prior to the main building demolition. A detached garage and water tank near the main plant entrance would also be demolished. This work would be accomplished using cranes, torches, and shearing machines. All materials would be hauled to a qualified recycler or disposal facility.

Figure 3 Proposed Demolition Area

Imagery provided by Microsoft Bing and its licensors © 2022.

19-08915 MB, MB BESS EIR
Fig 2-8 Demolition Area

Master Plan for Redevelopment of the Power Plant Property

The proposed project also includes a Master Plan that would amend the General Plan and LCP LUP land use designation on the BESS Site from Visitor Serving Commercial to General (Light) Industrial. The proposed Master Plan would not modify the existing land use designation on the remainder of the Power Plant property, retaining the Visitor Serving Commercial designation and Mixed-Use Residential Overlay recently implemented through Plan Morro Bay.

2 Regulations

2.1 State Regulations

California Environmental Quality Act

Paleontological resources are protected under CEQA, which states a project would "normally" have a significant effect on the environment if project effects exceed an identified threshold of significance (CEQA Guidelines Section 15064.7[a]). Appendix G of the CEQA Guidelines (the Environmental Checklist Form) provides suggested thresholds of significance for evaluating a project's environmental impacts, including impacts to paleontological resources. In Section VII(f), the question is posed thus: "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" To determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Therefore, CEQA mandates mitigation of adverse impacts, to the extent practicable, to paleontological resources.

CEQA does not define "a unique paleontological resource or site." However, the SVP (2010) has defined a "significant paleontological resource" in the context of environmental review as follows:

> Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information.

Paleontological resources are typically to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010).

The loss of paleontological resources meeting the criteria outlined above (i.e., a significant paleontological resource) would be a significant impact under CEQA, and the CEQA lead agency is responsible for mitigating impacts to paleontological resources, where practicable, in compliance with CEQA and other applicable statutes.

California Public Resources Code

California Public Resources Code Section 5097.5 states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here "public lands" means those owned by, or under the jurisdiction of, the State or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

2.2 Regional and Local Regulations

City of Morro Bay General Plan

The Conservation Element of the City of Morro Bay General Plan (Plan Morro Bay) addresses paleontological resources (City of Morro Bay 2021). Goal C-2 states, "Cultural and historic resources are identified for protection and showcased as a vital part of Morro Bay history." Policy C-2.4 and Implementation Action C-5 also address paleontological resources.

Policy C-2.4: Cultural Resources Overlay. Develop a cultural resources overlay to protect cultural, archaeological, and paleontological resources in Morro Bay.

Implementation Action C-5: Require all discretionary proposals within the cultural resources overlay to consider the potential to disturb cultural resources. If preliminary reconnaissance suggests that cultural resources may exist, a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI) Professional Qualification Standard (PQS) for archaeology and/or architectural history, as appropriate (NPS 1983).

3 Paleontological Resources Assessment Guidelines

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state and local laws and regulations. Per the SVP (2010), significant paleontological resources are, by definition, older than middle Holocene (i.e., 5,000 years old) in age. This PRE satisfies Public Resources Code Section 5097.5 requirements, follows guidelines and significance criteria specified by the SVP (2010).

3.1 Paleontological Sensitivity

Paleontological sensitivity refers to the potential for a geologic unit to produce scientifically significant fossils. Direct impacts to paleontological resources occur when earthwork activities, such as grading or trenching, cut into the geologic deposits within which fossils are buried and physically destroy the fossils. Because fossils are the remains of prehistoric animal and plant life, they are considered to be nonrenewable. These activities may constitute significant impacts under CEQA or adverse effects under federal environmental protection laws and may require mitigation. Sensitivity is determined by rock type, history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey.

The discovery of a vertebrate fossil locality is of greater significance than that of an invertebrate fossil locality, especially if it contains a microvertebrate assemblage. The recognition of new vertebrate fossil locations could provide important information on the geographical range of the taxa, their radiometric age, evolutionary characteristics, depositional environment, and other important scientific research questions. Vertebrate fossils are almost always significant because they occur more rarely than invertebrates or plants. Thus, geological units having the potential to contain vertebrate fossils are considered the most sensitive.

3.2 Resource Assessment Criteria

In its Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, the SVP outlines guidelines for categorizing paleontological sensitivity of geologic units within a Project Site. The SVP describes sedimentary rock units as having a high, low, undetermined, or no potential for containing significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrates or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Significant paleontological resources are fossils or assemblages of fossils, which are unique, unusual, rare, uncommon, diagnostically, stratigraphically, taxonomically, or regionally (SVP 2010). The paleontological sensitivity of the Project Site has been evaluated according to the following SVP (2010) categories:

- **High Potential (Sensitivity).** Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered are considered to have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. Sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data. Areas which contain potentially datable organic remains older than recent, including deposits associated with nests or middens, and areas that may contain new vertebrate deposits, traces, or trackways are also classified as significant. Full-time monitoring is typically recommended during any project-related ground disturbance in geologic units with high sensitivity.

- **Low Potential (Sensitivity).** Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past; contain common and/or widespread invertebrate fossils of well-documented and understood taphonomic (processes affecting an organism following death, burial, and removal from the ground), phylogenetic relationships (evolutionary relationships among organisms), and paleoecology; or are believed to be too young to preserve paleontological resources (i.e., less than 5,000 years old). Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations.
- **Undetermined Potential (Sensitivity).** Specific areas underlain by sedimentary rock units for which little information is available are considered to have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.
- **No Potential.** Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

4 Methods

Rincon reviewed published geologic maps to identify the geologic units present at and below the surface within the Project Site (Wiegers 2021). Rincon reviewed the online paleontological collections database of the University of California Museum of Paleontology (UCMP; 2022) and Paleobiology Database (PBDB; 2022) and consulted primary literature to identify known fossil localities in San Luis Obispo County and surrounding regions from similar geologic units to those identified within the Project Site. Rincon requested a records search of the Santa Barbara Museum of Natural History (SBMNH) on June 2, 2022, to identify any fossil localities known from within the Project Site or nearby fossil localities known from the same geologic units as found in the Project Site. The Project Site contains no bedrock exposures, so a field survey was not warranted.

Paleontological sensitivity ratings of the geological formations were assigned based on the findings of the records search and literature review and based on the potential impacts to nonrenewable paleontological resources from project construction following SVP (2010) guidelines.

5 Description of Resources

5.1 Geologic Setting

The Project Site is situated in the Coast Ranges, one of the 11 geomorphic provinces of California (California Geological Survey 2002), defined as a region of unique topography and geology that is distinguished from other regions based on its landforms and geologic history. The Coast Ranges extend along the majority of California's coast from the California-Oregon border to Point Arguello in Santa Barbara County in the south and consist of northwest-trending mountain ranges and valleys. The Coast Ranges are composed of Mesozoic and Cenozoic sedimentary, igneous, and metamorphic strata. The eastern side is characterized by strike-ridges and valleys in the Upper Mesozoic strata. The Coast Ranges province runs parallel to and overlaps the San Andreas Fault in some areas (California Geological Survey 2002).

The City of Morro Bay is on the coast of the Pacific Ocean on the north side of Morro Bay at the western end of the Los Osos Valley. The Project Site is in the *Morro Bay North* and *Morro Bay South* United States Geological Survey 7.5-minute topographic quadrangles.

5.2 Geology of the Project Site

The geology of the region around the Project Site was mapped at a scale of 1:100,000 by Wiegers (2021), who identified two geologic units, Quaternary young alluvial floodplain deposits and Quaternary old eolian deposits, underlying the Project Site (Figure 4). The distribution, characteristics, and paleontological sensitivity of each of these geologic units is discussed below.

Quaternary Young Alluvial Floodplain Deposits (Qya)

Quaternary young alluvial floodplain deposits underlie the majority of the Project Site (Figure 4). Quaternary young alluvial floodplain deposits consist of unconsolidated clay, silt, and sand, that was deposited in floodplains and valley floors and is Holocene to late Pleistocene in age (Wiegers 2021). Quaternary young alluvial floodplain deposits are likely too young (i.e., less than 5,000 years old) to preserve paleontological resources at the surface. Therefore, Quaternary young alluvial floodplain deposits have **low paleontological sensitivity.** However, at some depth in the subsurface, they will likely become old enough to preserve paleontological resources.

Quaternary Old Eolian Deposits (Qoe)

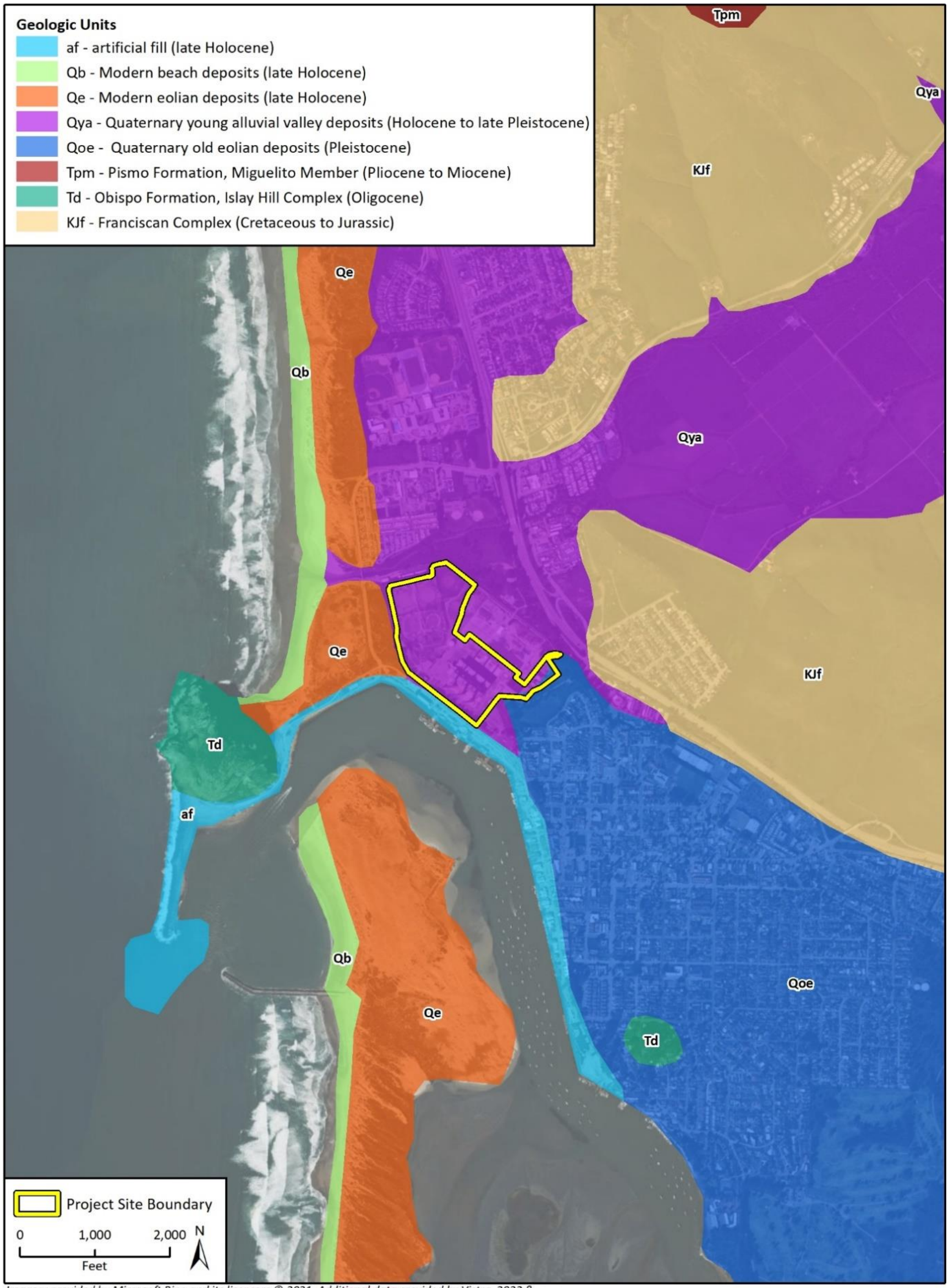
Quaternary old eolian deposits underlie the eastern edge of the Project Site (Figure 4). Quaternary old eolian deposits consist of brown, moderately consolidated, well-sorted sand that represent stabilized dune deposits that are late to middle Pleistocene in age (Wiegers 2021). Quaternary old eolian deposits are of appropriate age to contain paleontological resources, but coastal dune deposits very rarely preserve fossils in California (Jefferson 2010; PBDB 2022; UCMP 2022). Therefore, Quaternary old eolian deposits have **low paleontological sensitivity**.

Subsurface Geology

Holocene-aged units, such as Quaternary young alluvial floodplain deposits, are likely underlain in the subsurface by older, potentially higher-sensitivity geologic units. The depth at which these sediments become old enough to preserve paleontological resources (i.e., 5,000 years old; SVP 2010) represents the depth at which they potentially increase in paleontological sensitivity. Broadman et al. (2022) took sediment cores from the eastern end of Morro Bay. These cores were taken near mouths of Chorro Creek and Los Osos Creek, similar to the Project Site, which is located on the former site of the mouth of Morro Creek according to a topographic map of the region from 1897 (United States Geological Survey 2024). Broadman et al. (2022) calculated the sedimentation rate within these bay shore deposits by radiocarbon dating plant remains and recording the depth of known, dated events (e.g., appearance of non-native plant pollen and spike in lead concentration). At Los Osos Creek, which had the lower sedimentation rates of the two cores, extrapolating the Broadman et al. (2022) sedimentation rate yields an estimated depth of approximately 19 feet (5.8 meters) at which the sediments reach 5,000 years old, and thus, have high paleontological sensitivity. The Chorro Creek core, with its higher sedimentation rate, would yield a deeper estimated 5,000-year-old depth. We presume that the sedimentation rate at the project site, at the former mouth of Morro Creek, is similar to these two cores but choose to use the shallower depth estimate for the Project Site in the interest of being conservative.

Below this 19-foot depth, the sediments would either consist of older (i.e., early Holocene- or Pleistocene-aged) alluvial sediments, if one presumes the depositional environment has remained consistent through time, or Quaternary old eolian deposits, which are mapped within and east of the Project Site. If these underlying sediments consist of Quaternary old eolian deposits, then they have low paleontological sensitivity (see above). However, Pleistocene-aged alluvial sediments have produced significant paleontological resources in San Luis Obispo County, including mammoth (*Mammuthus*), sea cow (*Hydromalis*), horse (*Equus*), other mammals, and reptiles (Jefferson 2010). Given the fossil-producing history of similar sediments in the region, older alluvial sediments have high paleontological sensitivity. Given the uncertainty of whether these underlying sediments consist of Quaternary old eolian deposits or older alluvial sediments underlie Quaternary young alluvial floodplain deposits, these sediments are assigned undetermined paleontological sensitivity. Therefore, we determine that areas of the Project Site mapped as Quaternary young alluvial floodplain deposits have low paleontological sensitivity from the surface to 19 feet below the surface and undetermined paleontological sensitivity greater than 19 feet below the surface.

Figure 4 Regional Geologic Map



Imagery provided by Microsoft Bing and its licensors © 2021. Additional data provided by Vistra, 2022 & "Preliminary Geologic Map of the West Half of the San Luis Obispo 30' x 60' Quadrangle," Wiegers, 2021.

5.3 Paleontology of the Project Site

A formal fossil locality search of the SBMNH discovered no fossil localities within the Project Site nor from Holocene-aged alluvial sediments or Pleistocene eolian sediments in San Luis Obispo County (Hoffman 2022).

6 Evaluation, Impacts, and Recommendations

6.1 Significance Thresholds

The impact analysis included here is organized based on the paleontological resources thresholds included in the CEQA Guidelines Appendix G: Environmental Checklist Form, Section VII. Geology and Soils:

f. Would the project directly or indirectly destroy a unique paleontological resource or unique geologic feature?

The remaining environmental topics addressed in Section VII. Geology and Soils, which include seismic impacts, soil erosion, landslides, liquefaction, and septic system impacts, are addressed in separate studies being conducted for the proposed action.

6.2 Paleontological Sensitivity Evaluation

The Project Site is underlain by two geologic units with low paleontological sensitivity, Quaternary young alluvial floodplain deposits and Quaternary old eolian deposits (Figure 4). Quaternary young alluvial floodplain deposits consist of sediments that are likely too young (i.e., less than 5,000 years old) to preserve paleontological resources from the surface to 19 feet below the surface but have undetermined paleontological sensitivity greater than 19 feet below the surface. Quaternary old eolian deposits represent coastal dune deposits, which very rarely produce fossils in California.

6.3 Impacts

If construction activities result in the destruction, damage, or loss of scientifically important paleontological resources and associated stratigraphic and paleontological data, they would be considered as having a significant impact on paleontological resources.

The Project Site is currently occupied by the Morro Bay Power Plant, and large portions (including the berms that will be graded), if not all, of the Project Site are previously disturbed and therefore have no paleontological sensitivity. The Project Site is underlain by geologic units with low paleontological sensitivity at the surface (Figure 4), so ground-disturbing activities (i.e., grading, excavation) in previously undisturbed portions of the Project Site are unlikely to result destruction, damage, or loss of scientifically important paleontological resources. However, these low-sensitivity sediments are underlain by older sediments with undetermined paleontological sensitivity at an estimated depth of 19 feet. The final depth below surface required for mass grading associated with the proposed BESS building foundations is not yet known, but it is unlikely to reach 19 feet below the surface, the depth at which sediments within the Project Site have undetermined paleontological sensitivity. However, the 19-foot depth is an estimate based on sediment cores elsewhere in Morro Bay, so it is possible that the depth at which the sediments become old enough to preserve paleontological resources (i.e., 5,000 years old) is shallower than 19 feet within the Project Site. Therefore, although it is unlikely that mass grading will result in significant impacts to paleontological resources, it cannot be certain, so impacts to paleontological resources because of mass grading are potentially significant.

The types of ground-disturbing activities typically associated with construction of building foundations that can be monitored for paleontological resources include, but are not limited to: mass grading for creation of level building pads and roadways, excavation of stormwater management basins, trenching for underground wet and dry utilities, and large-diameter drilling (greater than about 18 inches in diameter) for foundation supports. Notably, not all types of ground-disturbing activities can be feasibly monitored for paleontological resources. For example, it is not practical to monitor post-driving or drilling with a small-diameter auger (less than about 18 inches) for paleontological resources. Paleontological monitoring of boreholes is typically conducted by examining spoils brought up during the drilling process for any contained fossil remains. For post-driving, no spoils are produced, thus paleontological monitoring cannot occur.

Construction of the BESS buildings are expected to require 1,000 to 1,500 pilings to be driven into the ground to depths up to 75 feet. At this depth, it is likely that older sediments and/or a geological unit other than older alluvial deposits and/or Quaternary old eolian deposits occur, which have high or low paleontological sensitivity, respectively. However, these pilings will be driven into the ground. No sediment will be excavated, meaning pile driving cannot be monitored. Therefore, it is impossible to know whether a paleontological resource is significantly impacted as a result of this activity. Because no known paleontological resources would be impacted and the level of potential impact to undiscovered resources is unknowable, pile-driving activities are therefore unlikely to result in destruction, damage, or loss of scientifically important paleontological resources, and thus, would not be a significant impact.

6.4 Recommended Mitigation

The following mitigation measure would address potentially significant impacts to paleontological resources. Implementation of Mitigation Measures PAL-1 and PAL-2 would reduce the project's potentially significant impacts to these resources by training construction personnel so that they can identify paleontological resources if encountered during project construction and requiring the project applicant to establish a protocol to follow if a paleontological resource is encountered during project construction.

PAL-1 Paleontological Worker Environmental Awareness Program

Prior to the start of construction, a Qualified Professional Paleontologist (as defined by SVP 2010) or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.

PAL-2 Unanticipated Discovery of Paleontological Resources

In the event a fossil is discovered during construction of the project, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a Qualified Professional Paleontologist. The project applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If the find is determined to be significant, the applicant shall retain a Qualified Professional Paleontologist to direct all mitigation measures related to paleontological resources. The Qualified Professional

Paleontologist shall design and carry out a data recovery plan consistent with the SVP (2010) standards.

6.5 Significance After Mitigation

The recommended mitigation measures described above would reduce the potential for impacts to paleontological resources encountered during project ground-disturbing activities. With implementation of the recommended mitigation, the project would not result the significant destruction, damage, or loss of scientifically important paleontological resources.

7 References

California Geological Survey. 2002. California Geomorphic Provinces. *California Geological Survey Note 36,* https://www.coastal.ca.gov/coastalvoices/resources/California_Geomorphic_Provinces.pdf (accessed June 2022).

Hoffman, J.M. 2022. Santa Barbara Museum of Natural History Earth Science Collections: Search Results of Paleontological Specimens from Localities Near the Morro Bay Battery Energy Storage System Project (19-08915), dated July 18, 2022.

Jefferson, G.T. 2010. A catalogue of late Quaternary vertebrates from California. *Natural History Museum of Los Angeles County Technical Report*. Volume 7, pp. 5-172.

Morro Bay, City of. 2021. Plan Morro Bay. Morro Bay, CA. May 25, 2021. https://www.morrobayca.gov/DocumentCenter/View/15424/Plan-Morro-Bay-GP-LCP-Final (accessed June 2022).

Norris, R.M., and R.W. Webb. 1990. *Geology of California. 2nd ed.* New York: John Wiley & Sons.

Paleobiology Database (PBDB). 2022. The Paleobiology Database, http://paleobiodb.org/ (accessed June 2022).

Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee. https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf.

University of California Museum of Paleontology (UCMP). 2022. UCMP online database specimen search portal, http://ucmpdb.berkeley.edu/ (accessed June 2022).

Wiegers, M.O. 2021. Preliminary geologic map of the west half of the San Luis Obispo 30' x 60' quadrangle, California. [map.] California Geological Survey, Preliminary Geologic Maps, scale 1:100,000.

8 List of Preparers

Rincon Consultants, Inc.

Primary Author

- Andrew McGrath, Ph.D., Paleontologist/Project Manager, 2 years as Professional Paleontologist

Technical Review

- Jennifer DiCenzo, B.A., Qualified Professional Paleontologist/Paleontological Program Manager, 10 years as Professional Paleontologist
- Nichole Jordan, M.A., Principal, 19 years as Cultural Resource Professional

Formatting Support

- Alvin Flores, Publishing Specialist

Appendix H

Greenhouse Gas Technical Report

Prepared by
Ramboll Americas Engineering Solutions, Inc
San Francisco, California

Project Number
1690027676

Date
November 2023

GREENHOUSE GAS TECHNICAL REPORT

MORRO BAY BATTERY ENERGY STORAGE SYSTEM PROJECT

MORRO BAY, CALIFORNIA

CONTENTS

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

°C	Degree Celsius
AB	Assembly Bill
ACC	Advanced Clean Car
ACE	Affordable Clean Energy
APCD	San Luis Obispo County Air Pollution Control District
AQ	Air Quality
AR4	Fourth Assessment Report on Climate Change
ATCM	Airborne Toxics Control Measure
BESS	Battery Energy Storage System
BMP	Best Management Practices
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CAIT	Climate Analysis Indicators Tool
CalEEMod®	California Emission Estimator Model
CALGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Criteria Air Pollutant
CARB	California Air Resources Board
CCCC	California Climate Change Center
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEQA Guidelines	California Environmental Quality Act Guidelines
CF_4	Perfluoromethane
CFC	Chlorinated Fluorocarbon
CH_4	Methane
CNRA	California Natural Resources Agency
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
DOE	Department of Energy
DOT	Department of Transportation

DWR	Department of Water Resources
E3	Energy + Environmental Economics
EGU	Electric Generating Units
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtor Model
EO	Executive Order
EV	Electric Vehicle
FR	Federal Register
GHG	Greenhouse Gas
GT	Billion Metric Tons
GW	Gigawatt
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
HOV	High-occupancy Vehicle
HVAC	Heating, Ventilation and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
lb	Pound
LCP	Local Coastal Program
LCFS	Low Carbon Fuel Standard
LFG	Landfill Gas
LUP	Land Use Plan
MEWLO	Model Water Efficient Landscape Ordinance
MMT	Million Metric Tons
mpg	Miles Per Gallon
MPO	Metropolitan Planning Organization
MT	Metric Tons
MWh	Megawatt-Hour
N_2O	Nitrous Oxide
NHTSA	National Highway Traffic Safety Administration
OPR	Office of Planning and Research
PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric

ppb	Parts Per Billion
ppm	Parts Per Million
Ramboll	Ramboll US Consulting, Inc.
RFS	Renewable Fuel Standard
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF_6	Sulfur Hexafluoride
SLCPs	Short-lived Climate Pollutants
SLO	San Luis Obispo
SLOCOG	San Luis Obispo Council of Governments
SMAQMD	Sacramento Metropolitan Air Quality Management District
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USEPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
ZEV	Zero-Emission Vehicle
ZNE	Zero Net Energy

1. INTRODUCTION

Morro Bay Power Company LLC ("Vistra") proposes to develop a battery energy storage system (BESS) on a 107-acre property in the City of Morro Bay, California. The project includes three components: (1) Construction and operation of a 600-MW Battery Energy Storage System, (2) demolition and removal of the existing Morro Bay Power Plant building and stacks, and (3) adoption of a Master Plan. The BESS Facility would be constructed on a 24-acre portion of the Project Site and would consist of three two-story buildings with a total building area of 91,000 sq ft. Supporting infrastructure, including power conversion systems, substations, and tie-ins to the existing Pacific Gas and Electric substation adjacent to the project site, would also be included. The project also includes demolition of the existing Morro Bay Power Plant building and stacks and backfill and restoration of the site. A Master Plan would be developed in accordance with the requirements of Plan Morro Bay Policy LU-5.4 to change the land use designation of the 24-acre BESS portion of the Project Site from Visitor Serving Commercial to General (Light) Industrial. The project will not be designed or constructed with natural gas infrastructure, and all EV Capable spaces shall instead be EV Ready (locations where drivers can use portable chargers for EV charging), consistent with CalGreen Tier 2 standards.

This report discusses the existing conditions in the project area, presents the regulatory framework for greenhouse gas (GHG) management, and analyzes the potential for GHG emissions. It analyzes the types and quantities of emissions that would be generated both on a temporary basis from the proposed construction activities and over the long term from operation of the Proposed Project. The analysis determines whether the Proposed Project emissions have the potential for the Proposed Project to result in significant adverse environmental impacts from GHG emissions and identifies feasible mitigation measures for significant adverse impacts, if required. The Proposed Project's emissions of criteria air pollutants (CAP) and toxic air contaminants and potential impacts on local and regional air quality are discussed in the Air Quality (AQ) Technical Report. The Proposed Project's energy usage characteristics are discussed in the Energy Analysis Technical Report to determine if the Project could result in any significant energy-related environmental impacts during its construction or operation activities.

The analysis is based on a review of existing conditions in the San Luis Obispo (SLO) region and globally along with climate regulations and targets set by the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the San Luis Obispo County Air Pollution Control District (SLO County APCD). This analysis includes methodologies identified in SLO County APCD's 2012 California Environmental Quality Act (CEQA) Air Quality Guidelines[1] and its companion documentation. Calculations were prepared to quantitatively assess the GHG contributions of the Proposed Project (see tables within **Appendix A** as referenced in more detail below); this information forms the basis of much of the assessment of climate impacts presented here.

[1] San Luis Obispo County Air Pollution Control District (SLO County APCD) CEQA Air Quality Guidelines, updated April 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf. Accessed October 24, 2022

Project construction would consist of two components: 1) construction[2] and subsequent operation of the BESS on approximately 24 acres of the 107-acre project site, and 2) demolition and removal of the existing Power Plant building and stack. The GHG impact methodologies and approaches to the analysis (described under "Approach to Analysis") assume that construction of the BESS would occur in three phases over a 36-48 month period and demolition and removal of the existing Power Plant building and stack, which would begin six months after completion of the BESS, would take up to two years. Operational impacts are analyzed assuming full occupancy immediately after the end of BESS construction. Further details on the GHG impact methodologies and approaches to the analyses are presented below.

[2] The three construction phases include Phase 1, Site Preparation (12-18 months); Phase 2, Installation (18-36 months); and Phase 3, Commissioning (12-18 months).

2. GHG SCIENTIFIC BACKGROUND AND REGULATORY OVERVIEW

2.1 GHG Scientific Background

There is international scientific consensus that anthropogenic emissions of GHGs[3] have and will continue to contribute to changes in the global climate. Although there is uncertainty concerning the magnitude, rate, and ultimate effects of this change, it is generally accepted that climate change will result in substantial adverse environmental impacts.

Climate change is the cumulative effect of all natural and anthropogenic sources of GHGs on a global scale. GHG emissions from an individual project, even a very large development project, would not individually generate sufficient GHG emissions to measurably influence global climate change.[4] Consideration of a project's climate change impact, therefore, is essentially an analysis of a project's contribution to a cumulatively significant global impact through its emission of GHGs. While it is possible to examine the quantity of GHGs that would be emitted from individual project sources, it is not currently possible to link GHGs emitted from a specific source or location to particular global climate changes.

The State of California, particularly through Assembly Bill (AB) 32 and Senate Bill (SB) 32, has set state-wide targets for the reduction of GHG emissions. The goals are to reduce future GHG emissions in a state that is expected to experience growth in both population and economic output.

2.1.1 Global Setting

This section describes the status of global science on climate change and the scientific consensus regarding the role of anthropogenic GHG emissions in contributing to climate change and global warming. This section also describes global-scale estimates of GHG trends and projected effects on climate.

2.1.1.1 Global Climate Change

Global warming and global climate change are both terms that describe changes in the earth's climate. Global climate change is a broad term used to describe any worldwide, long-term change in the earth's climate. This change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific than global climate change and refers to a general increase in temperatures across the earth. Though global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique locations may be cooler even though the

---

[3] For the purposes of this analysis, the term "GHGs" refers to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride, those gases regulated under California AB 32 and the Kyoto Protocol of the United Nations Framework Convention on Climate Change. Although the State of California also declared nitrogen trifluoride a GHG, there is no nitrogen trifluoride associated with this project. Therefore, nitrogen trifluoride will not be further considered.

[4] California Office of Planning and Research (OPR). 2008. Technical Advisory. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. June 19. Available at: http://opr.ca.gov/docs/june08-ceqa.pdf. Accessed August 19, 2022.

world, on average, is warmer. All of these changes fit under the umbrella of global climate change.[5]

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet.[6] This human-made, or anthropogenic, warming is primarily caused by increased emissions of GHGs that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role that GHGs play in it are described below.

2.1.1.2 The Greenhouse Effect

Greenhouses allow sunlight to enter, and then they capture some of the heat generated by the sunlight. Similarly, the earth's atmosphere acts like a greenhouse by retaining some of the heat that is generated by the sun. When solar radiation from the sun reaches the earth, much of it penetrates the atmosphere to ultimately reach the earth's surface; this solar radiation is absorbed by the earth's surface and then re-emitted as heat in the form of infrared radiation.[7] The warming potential of GHGs does not come from the absorption of solar radiation but from the absorption of infrared radiation. When the infrared radiation is absorbed by the molecules of GHGs, it is re-radiated in all directions. A portion of the infrared radiation is emitted back toward the surface of the earth, in effect "trapping" the heat in the atmosphere.[8] This phenomenon is referred to as the "greenhouse effect."

The earth's greenhouse effect has existed far longer than humans have and has played a key role in the development of life. Concentrations of major GHGs, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and water vapor, have been naturally present for millennia at relatively stable levels in the atmosphere, maintaining hospitable temperatures on the surface of the earth. Without these GHGs, the earth's temperature would be too cold for life to exist.

In the absence of major industrial human activity, natural processes have maintained atmospheric concentrations of GHGs, and, therefore, global temperatures at relatively constant levels over the last several centuries.[9] As human industrial activity has increased, atmospheric concentrations of certain GHGs have grown dramatically. Concentrations of CO_2 and CH_4 over the past 10,000 years have increased, particularly dramatically since the Industrial Revolution. As the concentrations of GHGs increase due to human activity, more infrared radiation is reflected back toward the earth, subsequently heating the surface of the earth to higher temperatures. This is the process that is described as human-induced global warming.

---

5 Other definitions of "greenhouse effect" and "global warming" can be found on Merriam-Webster online at http://www.m-w.com/. A definition for "climate change" can be found at https://www.dictionary.com/, which uses the Random House Unabridged Dictionary. (Websites accessed August 19, 2022.)

6 IPCC. 2007. *Summary for Policymakers.* In: *Climate Change 2007: The Physical Science Basis*. Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf. Accessed: August 19, 2022.

7 All light, be it visible, ultraviolet, or infrared, carries energy.

8 Infrared radiation is characterized by longer wavelengths than solar radiation. GHGs reflect radiation with longer wavelengths. As a result, instead of escaping back into space, GHGs reflect much infrared radiation (i.e., heat) back to the earth.

9 Examples of natural processes include the addition of GHGs to the atmosphere from respiration, fires, and decomposition of organic matter. The removal of GHGs is mainly from plant and algae growth and absorption by the ocean.

In 2013, the Intergovernmental Panel on Climate Change (IPCC) began releasing components of its Fifth Assessment Report,[10] providing a comprehensive assessment of climate change science. The Fifth Assessment Report states that there is a scientific consensus that the global increases in GHGs since 1750 are mainly due to human activities such as fossil fuel use, land use change (e.g., deforestation), and agriculture. In addition, the report states that it is likely that these changes in GHG concentrations have contributed to global warming. Confidence levels of claims in this report have increased since the release of the Third and Fourth Assessment Reports due to the large number of simulations run and the broad range of available climate models.[11] The IPCC released its Sixth Synthesis Report in March 2023.[12]

2.1.1.3 GHGs and GHG Emission Sources

The term "greenhouse gases" includes gases that are emitted from natural processes, such as forest fires, and anaerobic degradation, as well as man-made fossil fuel combustion, such as CO_2, CH_4, N_2O, and water vapor, as well as gases that are only human-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfur hexafluoride (SF_6). These last three families of gases, while not naturally present in the atmosphere, have properties similar to the naturally occurring GHGs that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Protocol (water vapor is not included).[13] A seventh gas, nitrogen trifluoride, was also recognized by CARB as a GHG.[14] There are other GHGs that are not recognized by the Kyoto Protocol or CARB, due to either the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Protocol or CARB because there is not an obvious correlation between atmospheric water vapor concentrations and specific human activities. Atmospheric water vapor appears to act in a positive feedback manner; higher temperatures lead to higher atmospheric water vapor concentrations, which in turn cause more global warming.[15]

The effect each GHG has on global warming is a combination of the volume of its emissions and its global warming potential (GWP). GWP indicates, on a pound (lb)-for-pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent than CO_2, with GWPs of 25 and 298,[16] respectively. However, these GHGs are nowhere near as potent as

---

[10] IPCC. 2014. Fifth Assessment Report. Climate Change 2014: Working Groups I, II, and III Reports. Available at: http://www.ipcc.ch/report/ar5/syr/. Accessed August 19, 2022.

[11] IPCC. 2001. Third Assessment Report. Available at: https://www.ipcc.ch/reports/?rp=ar3. Accessed: August 19, 2022.

[12] IPCC. 2022. AR6 Synthesis Report. Available at: https://www.ipcc.ch/report/sixth-assessment-report-cycle/. Accessed: March 2022.

[13] The Kyoto Protocol sets legally binding targets and timetables for cutting the GHG emissions of industrialized countries. The US has not approved the Kyoto Protocol.

[14] Senate Bill 104, which directs CARB to regulate nitrogen trifluoride and possibly other gases found to be at least as harmful as CO_2 was signed into law by Governor Schwarzenegger in October 2009.

[15] IPCC. 2001. Third Assessment Report. Available at: https://www.ipcc.ch/reports/?rp=ar3. Accessed: August 19, 2022.

[16] These GWPs are from the IPCC's Fourth Assessment Report. (Available at: https://www.ipcc.ch/report/ar4/wg1/. Accessed August 19, 2022).

synthetic chemicals such as SF_6 and perfluoromethane (CF_4), which have GWPs of 22,800 and 7,390, respectively, compared to a GWP of 1 for CO_2.[17]

GHG emissions are typically measured in terms of mass of carbon dioxide equivalent (CO_2e). CO_2e is calculated as the product of the mass of a given GHG and its specific GWP.

The most important GHG in human-induced global warming is CO_2. While many gases have much higher GWPs than the simple GHGs, CO_2 is emitted in such vastly higher quantities that it accounts for 81% of the GWP of all GHGs emitted by the United States (US).[18] Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions and thus substantial increases in atmospheric CO_2 concentrations. The most recent measurements of atmospheric CO_2 concentrations are about 416 parts per million (ppm) for 2020, around 48% higher than the pre-industrial concentrations of about 280 ppm. [19,20] In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH_4, have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. Present levels of atmospheric CH_4 are more than double pre-industrial levels, up to 1,907 parts per billion (ppb) as compared to 715 ppb.[21,22] CH_4 has a relatively short atmospheric lifespan of only 12 years but has a higher GWP than CO_2.

N_2O concentrations increased from about 270 ppb in pre-industrial times to about 334 ppb by 2021.[23,24] Most of this increase can be attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. N_2O's 120-year atmospheric lifespan increases its role in global warming.

Besides CO_2, CH_4, and N_2O, there are several gases and categories of gases that were not present in the atmosphere in pre-industrial times but now exist and contribute to warming. These include CFCs, used often as refrigerants, and their more stratospheric-ozone-friendly replacements, HFCs. Fully fluorinated species, such as SF_6 and CF_4, are present in the atmosphere in relatively small concentrations but have extremely long lifespans of 50,000 and 3,200 years each, making them potent GHGs.

SF_6 is predominantly used in electric power systems for voltage electrical insulation, current interruption, and arc quenching in the transmission and distribution of electricity. While

---

[17] Fourth Assessment Report.

[18] USEPA. 2020. Inventory of US GHG Emissions and Sinks: 1990-2018. Available at: https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html. Accessed October 13, 2020.

[19] NOAA Global Monitoring Laboratory. 2022. Global Monthly Mean CO2. Available at: https://www.esrl.noaa.gov/gmd/ccgg/trends/global.html#global, accessed March 2022.

[20] IPCC. 2007. *Summary for Policymakers.* In: *Climate Change 2007: The Physical Science Basis.* Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf, accessed March 2022.

[21] NOAA Global Monitoring Laboratory. 2021. Global Monthly Mean CH4. Available at: https://www.esrl.noaa.gov/gmd/ccgg/trends_ch4/, accessed March 2022.

[22] IPCC. 2007. *Summary for Policymakers.* In: *Climate Change 2007: The Physical Science Basis.* Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf, accessed March 2022.

[23] IPCC. 2007. *Summary for Policymakers.* In: *Climate Change 2007: The Physical Science Basis.* Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf, accessed March 2022.

[24] NOAA Global Monitoring Laboratory. 2021. Global N2O Monthly Means. Available at: https://www.esrl.noaa.gov/gmd/ccgg/trends_n2o/, accessed March 2022.

electrical equipment is designed to prevent SF_6 emissions, leaks can occur from aging equipment or during manufacturing, installation, maintenance and servicing, and de-commissioning. While it is expected that some SF_6 or similar insulating GHGs would be used in the BESS when initially constructed, usage will be reduced over time and will eventually be entirely or nearly entirely eliminated as required by current regulation (see Section 2.2.2.8). As a result, emissions of SF_6 or similar insulating GHGs from the BESS are expected to be minimal.

2.1.1.4 Current and Projected Climatic Impacts of Global Warming

A strong indication that anthropogenic global warming is currently taking place is the fact that nine of the top ten warmest years since 1880 have occurred since 2005, with 2016 as the hottest year on record.[25] According to the IPCC, "human activities are estimated to have caused approximately 1 degree Celsius (°C) of global warming above pre-industrial levels" as of 2017.[26] It is currently accepted that warming of 1.5°C above pre-industrial levels by 2100 represents a threshold for significant global impacts due to warming; currently accepted climate models indicate that this threshold will be far surpassed under current emissions levels.

There is scientific consensus that global climate change will increase the frequency of heat extremes, heat waves, and heavy precipitation events. Other likely direct effects include an increase in the areas affected by drought and by floods, an increase in tropical cyclone activity, a rise in sea level, and recession of polar ice caps. The impacts of global warming have already been demonstrated by substantial ice loss in the Arctic.[27,28] Scenarios for 2100 modeled in the IPCC's Fifth Assessment Report include the following:[29]

Temperature Increase by 2100

- Low Emissions Scenario: 1.1°C to 2.6°C
- High Emissions Scenario: 2.5°C to 7.8°C

Sea Level Rise by 2100

- Low Emissions Scenario: 0.26 to 0.55 meters
- High Emissions Scenario: 0.45 to 0.82 meters

---

[25] NOAA National Centers for Environmental Information. 2020. State of the Climate: Global Climate Report for Annual 2019. Available at: https://www.ncdc.noaa.gov/sotc/global/201913. Accessed October 14, 2020.

[26] IPCC. 2018. Special Report: Global Warming of 1.5*C. Summary for Policymakers. Available at: https://www.ipcc.ch/sr15/chapter/chapter-1/. Accessed: October 13, 2020.

[27] IPCC. 2007. *Summary for Policymakers.* In: *Climate Change 2007: The Physical Science Basis.* Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf. Accessed October 13, 2020.

[28] IPCC. 2007c. Summary for Policymakers. In: Climate Change 2007: Impacts, Adaption and Vulnerability. Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf. Accessed October 13, 2020.

[29] Future GHG emissions are the product of very complex dynamic systems, determined by driving forces such as demographic development, socio-economic development, and technological change. Their future evolution is highly uncertain. Scenarios are alternative images of how the future might unfold and are an appropriate tool with which to analyze how driving forces may influence future emission outcomes and to assess the associated uncertainties. They assist in climate change analysis, including climate modeling and the assessment of impacts, adaptation, and mitigation. The possibility that any single emissions path will occur as described in scenarios is highly uncertain. More information on the IPCC's selection of scenarios is available at: IPCC, 2014. https://ar5-syr.ipcc.ch/topic_summary.php. Accessed October 13, 2020.

2.1.2 United States Setting

In 2020, the US emitted about 5.9 billion metric tons (gross emissions) of CO_2e. This represents a 7.4 percent decrease since 1990, and a 20 percent reduction below peak levels in 2005. Of the six economic sectors - residential, commercial, industrial, transportation, electric power, and agriculture - transportation accounted for the highest fraction of GHG emissions in 2020 (approximately 36 percent). Of the transportation-related emissions, 5.1 percent were from commercial aircraft and 1.8 percent from other aircraft. Most transportation emissions were from passenger cars (40.5 percent); freight trucks (25.5 percent), and light-duty trucks (17.2 percent).[30]

According to the Climate Analysis Indicators Tool (CAIT) Emissions, global GHG emission totaled approximately 47.2 billion metric tons (GT) CO_2e in 2018.[31] The top 10 emitting countries in 2018 were as follows:

- China – 11.7 GT CO_2e
- US – 5.8 GT CO_2e[32]
- India – 3.3 GT CO_2e
- Russian Federation – 2.0 GT CO_2e
- Indonesia – 1.7 GT CO_2e
- Brazil – 1.4 GT CO_2e
- Japan – 1.2 GT CO_2e
- Iran – 0.8 GT CO_2e
- Germany – 0.8 GT CO_2e
- Canada – 0.8 GT CO_2e

In 2019, CO_2e emissions from industrialized countries reporting their inventories to the United Nations Framework Convention on Climate Change (UNFCCC) were as follows:[33]

- US – 6.6 GT CO_2e
- European Union (27 members) – 4.1 GT CO_2e
- Russian Federation – 2.1 GT CO_2e
- Japan – 1.2 GT CO_2e
- Canada – 0.73 GT CO_2e

[30] USEPA. 2022. Inventory of US Greenhouse Gas Emissions and Sinks. Available at: https://www.epa.gov/system/files/documents/2022-02/us-ghg-inventory-2022-main-text.pdf, accessed March 2022.

[31] Climate Watch. 2022. Global Historical Emissions. CAIT data. Available at: https://www.climatewatchdata.org/ghg-emissions?breakBy=countries&end_year=2018&regions=TOP&source=CAIT&start_year=1990, accessed March 2022.

[32] Differences between USEPA value and CAIT values may be due to differences in sources and methodology used by the two organizations in addition to the different years.

[33] UNFCCC. 2021. *Time Series Annex I: GHG Total Excluding Land Use, Land-Use Change and Forestry.* Available at: https://di.unfccc.int/time_series, accessed March 2022.

2.1.3 California Setting

In 2019, California emitted approximately 418 million metric tons of CO_2e, or about 8 percent of the U.S. emissions. Of these emissions, approximately 40 percent were attributed to the transportation sector, including direct emissions from vehicle tailpipe, off-road transportation mobile sources, intrastate aviation, rail, and watercraft.[34] California's percentage contribution to overall US emissions is due primarily to the sheer size of California compared to other states, as California has among the lowest per capita GHG emission rates in the country, due to the success of its energy efficiency and renewable energy programs and other commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise. Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The largest contributor to California's 2019 GHG emissions inventory was the transportation sector at 40 percent, followed by industrial sources at 21 percent, electricity generation (both in-state and out-of-state) at 14 percent, and commercial and residential sources at 10 percent. Agriculture, high GWP sources (including the release of ozone depleting substances, losses from the electricity transmission and distribution system, and gases from semiconductor manufacturing processes), and the recycling and waste sectors made up the remainder of the inventory.[35]

2.1.4 San Luis Obispo County Setting

SLO County APCD reported community-wide 2006 GHG emissions by sector as part of the SLO Climate Action Plan. Total GHG emissions within SLO County in 2006 were estimated as 917,700 metric tons (MMT) CO_2e.[36] The transportation sector represents the largest source of GHG emissions in SLO County in 2006 at 40% followed by industrial sources at 24%, residential at 15%, livestock at 9%, off-road equipment at 7%, and crops at 2%.[37]

2.1.5 City of Morro Bay Setting

The SLO County APCD CEQA Air Quality Handbook includes guidelines intended to assist local governments with developing community scale Climate Action Plans. Some of these guidelines include a community wide GHG emissions inventory, GHG reduction targets in compliance with AB 32, analyses of local and state policies that may impact GHG emissions, quantification of GHG reduction measures, implementation and monitoring strategies, and an adequate environmental review. In accordance with these guidelines, the City of Morro Bay developed a Climate Action Plan in 2014. According to the Climate Action Plan, the largest contributors of GHG emissions in Morro Bay in 2005 were transportation at 40%, followed by

---

[34] CARB. 2021. California Greenhouse Gas Emissions for 2000-2019 – Trends of Emissions and Other Indicators. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/ca_ghg_inventory_trends_2000-2019.pdf. Accessed March 2022. Note that as of March 2022, 2019 was the most recent year for which data was available.

[35] Ibid.

[36] County of SLO Department of Planning and Building. 2011. County of San Luis Obispo EnergyWise Plan: Designing Energy and Climate Solutions for the Future. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/County_CAP_Web.pdf. Accessed October 28, 2022.

[37] SLO County APCD. 2021. SLO County APCD Update on CEQA & GHG. Available at: https://www.ourair.org/wp-content/uploads/2021-06bcc-4pp.pdf. Accessed October 25, 2022.

residential at 29%, industrial sources at 21%, off-road sources at 5%, and solid waste at 5%. [38]

In 2022, the Morro Bay City Council adopted several goals and short-term actions, which include support for climate action planning efforts, education on climate action, identification of critical next steps, and opportunities to reduce reliance on carbon-producing energy sources. Of particular note, this plan includes a short term action to continue review of Vistra proposed battery project, aimed at both supporting climate action and upholding the fiscal sustainability and economic vitatlity of the City. The strategy also proposes a short term action of designating one week per year to conduct a renewable energy outreach campaign targeting a specific group.[39]

2.1.6 Climate Change Effects

2.1.6.1 Potential Effects of Climate Change on State of California

According to the CARB, some of the potential impacts in California of global warming may include loss of snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.[40] The California Climate Change Center (CCCC) has released four assessment reports on climate change in California, the most recent in 2019.[41] Per California's Fourth Climate Change Assessment, by 2050, the statewide average annual maximum daily temperature is projected to warm by approximately 5.6 to 8.8°F above 2000 averages.[42]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California because of global warming and climate change.

2.1.6.2 Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. Studies have been conducted to evaluate the potential impacts of climate change on wildfire frequency based on lower and higher emissions scenarios. Per California's Fourth Climate Change Assessment, under a higher emissions scenario, the average area burned statewide could increase by 77 percent above historic levels by 2100.[43] Per California's Third Climate Change

---

[38] City of Morro Bay Final Climate Action Plan. Adopted January 14, 2014. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/Morro%20Bay%20Final%20CAP%201.14.14.pdf. Accessed October 28, 2022.

[39] City of Morro Bay Goals and Short Term Actions. 2022. Available at: https://www.morrobayca.gov/DocumentCenter/View/16355/20212022-Adopted-Goals--Short-Term-Actions. Accessed November 8, 2023.

[40] California Air Resources Board (CARB). 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, Sacramento, CA. December 1.

[41] California Climate Change Center (CCCC). 2019. California's Fourth Climate Change Assessment. Available at: http://www.climateassessment.ca.gov/. Accessed: October 13, 2020.

[42] CCCC. 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: http://www.climateassessment.ca.gov/state/overview/. Accessed: October 13, 2020.

[43] Ibid.

Assessment, the estimated burned area is projected to increase between 57 and 169 percent, depending on location. To emphasize that, 2017, 2018 and 2020 have been among the top five years since 1987 in acres burned in California.[44] However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.[45] It is estimated that over the next decade, higher temperatures could increase the demand for electricity by 1 Gigawatt (GW) during summer months, which would require purchase of costly peak power from out-of-state energy sources or the construction of one new large power plant in California.[46] During periods of extreme heat, efficiency of electricity generation is reduced at natural gas plants; hydropower generation is reduced; and increased losses occur at substations; all while electricity demands are increased. These factors are projected to result in the need for more than 17 GW, or 38 percent more than additional capacity, needed by 2100. Additionally, transmission lines lose 7 to 8 percent of transmitting capacity in higher temperatures, which also results in a need for increased power generation.[47] This additional predicted need for electricity does not include the additional demand that will result from the electrification of the transportation system.

2.1.6.3 Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions suggest decreased reservoir inflows and storage, and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions project increased reservoir inflows and storage, and increased river flows.[48]

A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta. Although the report projects that, "[c]limate change will likely have a significant effect on California's future water resources … [and] future water demand," it also reports that, "there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between

---

[44] CalFire. 2020. California Wildfires and Acres for All Jurisdictions. Available at: https://www.fire.ca.gov/media/11397/fires-acres-all-agencies-thru-2018.pdf. Accessed: October 13, 2020.

[45] California Climate Change Center (CCCC). 2006. Our Changing Climate: Assessing the Risks to California, CEC500-2006-077, Sacramento, CA. July. Available at: https://www.engr.scu.edu/~emaurer/papers/CEC-500-2006-077.pdf. Accessed: October 13, 2020.

[46] California Climate Change Center. 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July, 2012.

[47] Ibid.

[48] Brekke, L.D., et al. 2004. ―Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California.‖ Journal of the American Water Resources Association. 40(2): 149–164. Malden, MA, Blackwell Synergy for AWRA.

climate change and its potential effect on water demand is not well understood,"[49] DWR adds that "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future."[50] Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.[51]

California's Third Climate Change Assessment outlines the state's urgent water management challenges brought on because of climate change. These include increasing demand from a growing population as temperatures rise, earlier snowmelt and runoff, and faster-than-historical sea-level rise threatening aging coastal water infrastructure and levees in the Sacramento-San Joaquin Delta.[52] Additionally, they predict that competition between urban and agriculture water users and environmental needs will increase due to effects on water supply and stream flows. The Fourth Climate Change Assessment concludes that by 2100, water supply from snowpack is projected to decline by two-thirds, and that by 2050, California's agricultural production could face climate-related water shortages of up to 16 percent in certain regions of California.[53]

2.1.6.4 Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea level rise can be a product of global warming through two main processes - expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events. Assuming the rate of sea level rise continues to follow global trends, sea level along California's coastline in 2050 could be 10-18 inches higher than in 2000, and 31-55 inches higher by the end of this century.[54] Based on these current projections, the current 100-year storm could occur once every year. California's Fourth Climate Assessment projects that without implementation of protective measures, major airports will be susceptible to major flooding from a combination of sea-level rise and

[49] California Department of Water Resources (DWR). 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July.

[50] California Department of Water Resources (DWR). 2006. Progress on Incorporating Climate Change into Management of California Water Resources, Sacramento, CA. July.

[51] Kiparsky 2003, op. cit; DWR, 2005, op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February.

[52] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July, 2012.

[53] CCCC. 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: http://www.climateassessment.ca.gov/state/overview/. Accessed October 13, 2020.

[54] Ibid.

storm surge by years 2040 to 2080 and that the miles of highways susceptible to coastal flooding from a 100-year storm will triple from current levels by 2100. [55]

2.1.6.5 Agriculture

California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. The CCCC notes that higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[56]

2.1.6.6 Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.[57] The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

2.2 Regulatory Overview

2.2.1 Federal Provisions

Although the US is not a party to the Kyoto Protocol, in 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the US economy by 18% by 2012.[58] The goal did not establish binding reduction mandates. Rather, the USEPA began to administer a variety of voluntary programs and partnerships with industries that produce and use synthetic gases to reduce emissions of particularly potent GHGs.

In 2015, the US State Department submitted the nation's GHG emissions reduction target to the UNFCCC. The submission, referred to as Intended Nationally Determined Contribution, is a formal statement of the US target to reduce the nation's emissions by 26 to 28 percent below 2005 levels by 2025. On November 4, 2020, the US withdrew from the Paris Agreement which bound the US to these guidelines. In February 2021, President Joe Biden signed the instrument to re-join the Paris Agreement.

The emissions reduction target is the culmination of a process that examined opportunities under existing regulatory authorities to reduce GHG emissions in 2025 from all sources in all economic sectors. Several US laws, as well as existing and proposed regulations, are relevant to the implementation of the US target, including the Clean Air Act (42 U.S.C. §

---

[55] CCCC. 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: http://www.climateassessment.ca.gov/state/overview/. Accessed October 13, 2020.

[56] California Climate Change Center (CCCC). 2006. op. cit.

[57] Parmesan, C. and H. Galbraith. Observed Impacts of Global Climate Change in the U.S., Arlington, VA: Pew Center on Global Climate Change. November 2004.

[58] NOAA. 2002. President Announces Clear Skies and Global Climate Change Initiative, February. http://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html. Accessed October 13, 2020.

7401 et seq.), the Energy Policy Act (42 U.S.C. § 13201 et seq.), and the Energy Independence and Security Act (42 U.S.C. § 17001 et seq).[59]

2.2.1.1 Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of the EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

2.2.1.2 Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the USEPA published a final rule establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electricity Utility Generating Units (80 FR 64510-64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units (EGUs). The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the USEPA published a final rule establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 Federal Register [FR] 64661-65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. On June 19, 2019, the USEPA issued the final Affordable Clean Energy rule (ACE), which replaced the Clean Power Plan. The ACE rule establishes emission guidelines for states to use when developing plans to limit CO_2 at their coal-fired EGUs. In this notice, the USEPA also repealed the Clean Power Plan, and issued new implementing regulations for ACE and future rules

[59] The White House, FACT SHEET: US Reports its 2025 Emissions Target to the UNFCCC (May 2015). https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc. Accessed October 13, 2020

under section 111(d). In January 2021, the US Court of Apeals for the District of Columbia Circuit vacated the ACE rule and remanded the matter to the USEPA for further proceedings consistent with the court's decision.

2.2.2 California Provisions

2.2.2.1 Executive Order S-3-05

In 2005, former Governor Schwarzenegger signed Executive Order (EO) S-3-05, which identified the following statewide GHG emission reduction goals for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels.

2.2.2.2 2017 Second Update to the Scoping Plan

In November, 2017, CARB published California's 2017 Climate Change Scoping Plan (Second Update).[60] This update identifies CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below).The strategy includes continuation of the Cap-and-Trade Program through 2030, and incorporates a Mobile Source Strategy that includes strategies targeted to increase zero emission vehicle fleet penetration and a more stringent target for the Low Carbon Fuel Standard by 2030. The Second Update also incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), and acknowledges the need for reducing emissions in agriculture and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon. During development of the Second Update, CARB held a number of public workshops in the Natural and Working Lands, Agriculture, Energy and Transportation sectors to inform development of the 2030 Scoping Plan Update.[61]

When discussing project-level GHG emissions reduction actions and thresholds, the Second Update states "[a]chieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan.

2.2.2.3 2022 Scoping Plan

In November 2022, CARB published California's 2022 Scoping Plan for Achieving Carbon Neutrality (Third Update).[62] This update extends the previous Scoping Plans and lays out a path to achieve carbon neutrality no later than 2045, as directed by AB 1279. The previous 2017 Scoping Plan lays out a technologically feasible and cost-effective path to achieve the 2030 GHG reduction target by leveraging existing programs such as the Renewables Portfolio Standard, Advanced Clean Cars, Low Carbon Fuel Standard, Short-Lived Climate Pollutant (SLCP) Reduction Strategy, Cap-and-Trade Program, and Mobile Source Strategy that includes strategies targeted to increase zero emission vehicle fleet penetration. The 2022

[60] CARB. 2017. California's 2017 Climate Change Scoping Plan. November. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed October 13, 2020.

[61] CARB. 2016. Timeline of AB 32 Scoping Plan Activities. Available at: https://www.arb.ca.gov/cc/scopingplan/timeline.htm. Accessed October 13, 2020.

[62] CARB. 2022 Scoping Plan for Achieving Carbon Neutrality. November 2022. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf

Scoping Plan looks toward the 2045 climate goals and the deeper GHG reductions needed to meet the state's statutory carbon neutrality target specified in AB 1279 and EO B-55-18.

When discussing project-level GHG emissions reduction actions and thresholds, the Third Update states "when a lead agency determines that a proposed project would result in potentially significant GHG impacts due to its GHG emissions or a conflict with State climate goals, the lead agency must impose feasible mitigation measures to minimize the impact." On November 16, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality.

2.2.2.4 Executive Order B-30-15

In April 2015, Governor Brown signed EO B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This EO also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05 (see discussion above). Additionally, the EO directed CARB to update its Scoping Plan (see discussion above) to address the 2030 goal.

2.2.2.5 Senate Bill 32

Enacted in 2016, SB 32 (Pavley, 2016) codifies the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

2.2.2.6 Executive Order B-55-18

In 2018, Governor Jerry Brown signed EO B-55-18. This established a new state-wide goal to achieve carbon neutrality as soon as possible and no later than 2045 and to achieve and maintain net negative emissions thereafter.

2.2.2.7 Executive Order EO N-79-20

In September 2020, Governor Jerry Brown signed an executive order calling for a ban on the sale of new passenger gas cars and trucks after 2035. It would still allow such vehicles to be owned and sold on the used-car market.

2.2.2.8 Regulation for Reducing SF_6 Emissions from Gas Insulated Switchgear

CARB adopted the Regulation for Reducing SF_6 Emissions from Gas-Insulated Switchgear (17 CCR 95350-95359.1) in 2010. The regulation was further amended in 2021 in response to emerging technologies using lower or zero GWPs in gas-insulated equipment (GIE). Key components of the regulation include phasing-out acquisition of SF_6 GIE and expanding the scope of the regulation to include other GHGs used in GIE. While phaseout dates vary based on the configuration (aboveground or belowground) and voltage of the GIE, acquisition of SF_6 GIE will be fully phased out by 2033 unless exempt.

2.2.2.9 Energy Sources

Renewable Portfolio Standard

As most recently amended by SB 1020 (2022), California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services and local publicly-owned electric utilities to increase procurement from eligible renewable energy resources and zero-carbon resources to 90% of retail sales to California end-use customers by 2036, 100% of retail sales to California end-use customers by 2046, and 100% of retail sales to all state agencies by 2036.

Building Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations, were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, lighting, and whole envelope. The 2005, 2008, 2013, 2016 and 2019 updates to the efficiency standards included provisions such as cool roofs on commercial buildings, increased use of skylights, and higher efficiency lighting, heating, ventilation and air conditioning (HVAC), and water heating systems. Additionally, some standards focused on larger energy saving concepts such as reducing loads at peak periods and seasons and improving the quality of such energy-saving installations. Past updates to the Title 24 standards have proven very effective in reducing building energy use. The 2022 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2023.[63] These standards introduce electric heat pump and electric-ready requirements, expand solar PV system and battery storage standards, and strengthen ventilation standards to improve indoor air quality.

In addition to the California Energy Commission's (CEC's) efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen Building Standard (CALGreen) and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CALGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update. The 2022 CALGreen standards took effect on January 1, 2023. The 2022 standards require new multifamily development projects with 20 or more dwelling units to have 10% of parking spaces be EV capable, 25% with low power Level 2 EV charging receptacles, and 5% of parking spaces with Level 2 chargers (see Sections 4.106.4.2.1 and 4.106.4.2.2).[64]

Appliance Standards

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the California Code of Regulations. The regulations establish water and energy efficiency standards for both federally regulated appliances and non-federally regulated appliances. The most current Appliance Efficiency Regulations, dated January 2020, cover

[63] CEC. 2022. California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Available online at: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency. Accessed February 2023.

[64] CBSC, 2022. 2022 California Green Building Standards Code, Effective January 1, 2023. https://www.dgs.ca.gov/BSC/CALGreen, accessed February 2022.

24 categories of appliances (e.g., refrigerators; plumbing fixtures; dishwashers; clothes washer and dryers; televisions) and apply to appliances offered for sale in California.[65]

Senate Bill 253

On October 7, 2023, California Governor Gavin Newsom signed into law Senate Bill 253 (SB 253), also known as the Climate Corporate Data Accountability Act. Beginning in 2026, SB 253 requires entities with revenue greater than $1 billion and that do business in California to report emissions resulting directly from their operations (Scope 1) and indirect emissions from energy use (Scope 2). In 2027, these entities will also be required to disclose emissions from indirect upsteam and downstream (Scope 3) activities.

2.2.2.10 Mobile Sources

Sustainable Communities Strategy Plans

SB 375 (Steinberg, 2008), the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. SB 375 specifically requires the Metropolitan Planning Organization (MPO) relevant to the Project area (in this case, the San Luis Obispo Council of Governments [SLOCOG]) to include a Sustainable Communities Strategy (SCS) in its Regional Transportation Plan (RTP) that will achieve GHG emission reduction targets set by CARB by reducing vehicle miles travelled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities.

In March 2018, CARB approved GHG emission reduction targets (expressed as a percent change in per capita passenger vehicle GHG emissions) of 3% for 2020 and 11% for 2035 relative to 2005 for SLOCOG, which will be applied by SLOCOG in future planning cycles.

Low Carbon Fuel Standard

EO S-1-07, as issued by former Governor Schwarzenegger, called for a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020. [66] In response, CARB approved the Low Carbon Fuel Standard (LCFS) regulations in 2009, which became fully effective in April 2010. Thereafter, a lawsuit was filed challenging CARB's adoption of the regulations; and, in 2013, a court order was issued compelling CARB to remedy substantive and procedural defects of the LCFS adoption process under CEQA. [67] However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. In September 2015, CARB re-adopted the LCFS regulations.

2.2.2.11 Solid Waste Diversion

The California Integrated Waste Management Act of 1989, as modified by AB 341 (Chesbro, 2011), requires each jurisdiction's source reduction and recycling element to include an

---

[65] CEC. 2020. 2019 Appliance Efficiency Regulations. Available at: https://www.energy.ca.gov/programs-and-topics/programs/appliance-efficiency-program-outreach-and-education. Accessed October 13, 2022.

[66] Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel.

[67] *POET, LLC v. CARB* (2013) 217 Cal.App.4th 1214.

implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) source reduction, recycling and composting of 75 percent of all solid waste on or after 2020, and annually thereafter. The California Department of Resources Recycling and Recovery (CalRecycle) is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled *California's New Goal: 75 Percent Recycling,* which identified concepts that would assist the State in reaching the 75 percent goal by 2020. Subsequently, in August 2015, CalRecycle released the *AB 341 Report to the Legislature*, which identifies five priority strategies for achievement of the 75 percent goal: (1) moving organics out of landfills; (2) expanding recycling/ manufacturing infrastructure; (3) exploring new approaches for State and local funding of sustainable waste management programs; (4) promoting State procurement of post-consumer recycled content products; and (5) promoting extended producer responsibility.

2.2.2.12 California Environmental Quality Act Guidelines on Greenhouse Gas Emissions

In 2007, SB 97 was enacted and directed OPR and the California Natural Resources Agency (CNRA) to prepare amendments to the CEQA Guidelines addressing the analysis of GHG emissions under CEQA. Following formal rulemaking, a series of amendments to the CEQA Guidelines were adopted to provide the general framework for the analysis of GHG emissions and became effective in 2010. The amendments do not provide a mandatory, quantitative rubric for GHG emissions analysis, but instead provide general guidance and recognize long-standing CEQA principles regarding the discretion afforded to lead agencies where supported by substantial evidence. More specifically, CEQA Guidelines Section 15064.4(a) recognizes that the "determination of the significance" of GHG emissions "calls for careful judgment by the lead agency" in accordance with the more general provisions of CEQA Guidelines Section 15064; each agency "shall have discretion to determine" whether to conduct quantitative or qualitative analysis, provided its determination is supported by substantial evidence.

2.2.3 Regional Provisions

2.2.3.1 SLO County APCD Clean Air Plan

SLO County APCD and other air districts prepare clean air plans in accordance with the state and federal Clean Air Acts. The Clean Air Plan is a comprehensive plan that focuses on the closely related goals of protecting public health and protecting the climate. The most recent Clean Air Plan is the 2001 Clean Air Plan adopted by SLO County APCD in December 2001.[68] The 2001 Clean Air Plan mainly addresses reducing ROG and NO_x emissions to meet the state ozone standard in SLO County, but states that implementing the Plan will also have the ancillary benefit of reducing GHG emissions.

On November 16, 2005, the SLO County APCD published Options for Addressing Climate Change in San Luis Obispo County summarizing current programs that have an ancillary benefit of reducing GHG emissions and potential district actions to specifically address GHG

[68] SLO County APCD. 2001 Clean Air Plan San Luis Obispo County. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/business/pdf/CAP.pdf. Accessed October 28, 2022.

emissions. [69] Current programs that have been implemented to reduce GHG emissions include the CEQA review process to mitigate emission impacts from land use development projects, District rules to regulate combustion sources, and involvement in the Central Coast Clean Cities Coalition (C5) to promote cleaner alternative fuel technologies.

2.2.3.2 SLO County APCD CEQA Guidelines

SLO County APCD developed quantitative thresholds of significance to assist in review of projects under CEQA in 2012 and updated the guidelines for GHG emissions in the 2021 Interim CEQA GHG Guidance document.[70] The new GHG thresholds are qualitative and are based on what will be required of new land use development projects to achieve California's long-term climate goal of carbon neutrality by 2045.

Because the 2012 SLO County APCD CEQA Air Quality Handbook is based on AB 32, which has a target year of 2020, the 2021 Interim CEQA Greenhouse Gas Guidance document was drafted to set thresholds beyond 2020 in SLO County. While the GHG threshold of 10,000 MT CO_2e/yr for permitted stationary (industrial) sources remains applicable, the quantitative ("bright-line") thresholds for residential and commercial projects are no longer applicable. The 2021 document establishes three parameters that may be considered to meet CEQA GHG requirements in lieu of the residential and commercial significance threshold. These parameters include:

- Consistency with a Qualified Climate Action Plan: Climate Action Plans conforming to CEQA Guidelines § 15183 and 15183.5 would be qualified and eligible for project streamlining under CEQA.
- No-net Increase: Page 101 of California's 2017 Climate Change Scoping Plan states that no-net increase in GHG emissions relative to baseline conditions "is an appropriate overall objective for new development"
- Lead Agency Adopted Defensible CEQA GHG Thresholds:
  - Meeting Local GHG Emission Targets with Best Management Practices: Lead agencies may set SB 32-based local GHG emission targets for 2030 by evaluating the GHG inventory for local emission sectors relative to statewide sector inventories and the state's GHG reduction target of 40% below 1990 levels.
  - GHG Bright-line and Efficiency Thresholds: SB 32-based local bright-line and operational efficiency thresholds can be developed and adopted by evaluating local emission sectors in the local GHG inventory relative to statewide sector inventories and the state's GHG reduction target of 40% below 1990 levels.

2.2.3.3 SLOCOG Sustainable Communities Strategy (SB 375)

As discussed above, SB 375 is intended to help achieve AB 32's goals by coordinating land use and transportation planning, along with funding priorities. SB 375 requires each MPO in

---

[69] SLO County APCD. 2005. Options for Addressing Climate Change in San Luis Obispo County. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/programs/pdf/GlobalWarmingReport.pdf. Accessed October 28, 2022.

[70] SLO County APCD. 2021. Interim CEQA Greenhouse Gas Guidance for the San Luis Obispo County Air Pollution Control District's 2012 CEQA Air Quality Handbook. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA-GHGInterimGuidance_Final2.pdf. Accessed October 28, 2022.

California to develop a SCS as part of its RTP that will achieve the GHG reduction targets required by AB 32. As described above, the SLOCOG developed an SCS for SLO County, which was incorporated into the 2021 Morro Bay General Plan along with a new RTP.

2.2.4 Local Provisions

2.2.4.1 City of Morro Bay General Plan

The General Plan for the City of Morro Bay contains several environmental management policies aimed at sustainability within the city. They are outlined below[71]:

- POLICY CD-2.2: Flexible Use. Identify potential buildings for future adaptive reuse, and encourage incorporating flexibility in building designs to maximize the future use of buildings.
- POLICY ED-3.1: Sustainable Businesses. Attract and retain environmentally conscious businesses that contribute to the long-term economic and environmental sustainability of Morro Bay
- POLICY ED-3.2: Environmental Guidelines. Develop guidelines that describe desired environmentally conscious building landscapes, designs, features, and practices that will be used to give recommendations to businesses and to provide City staff with suggested conditions of approval for permitting new or significantly renovated homes and businesses.
- POLICY CIR-1.12: Climate Change Impacts on Transportation. Require ongoing evaluation of the transportation infrastructure system and its ability to withstand future effects of climate change. Identify future points to begin incorporating resilient strategies and materials into design, using the most up-to-date guidance from the Federal Highway Administration.
- Policy CIR-2.3: Active Transportation Amenities. Provide facilities and amenities for active transportation users at public facilities, including bicycle storage and seating areas. Require new developments or significant renovations to transportation facilities on private commercial or multifamily residential land to incorporate convenient active transportation facilities where possible. (See also Policies LU-8.4 and OS-1.8.)
- POLICY CIR-3.1: LOS (Level of Service) Standards. Update City guidelines to formally adopt an LOS standard.
- POLICY CIR-3.2: VMT Thresholds. Achieve State-mandated reductions in VMT by establishing and adopting a VMT standard.
- POLICY CIR-3.3: Updating Guidelines. Regularly update guidelines for transportation impact analyses to ensure consistency with established metrics and standards.
- POLICY CIR-4.7: Alternative Options. Require or establish EV charging stations, bike sharing and park and ride locations throughout Morro Bay and in particular, close to transit and amenities.

[71] City of Morro Bay. 2021 General Plan and Local Coastal Plan (Plan Morro Bay). Adopted May 25, 2021. Available at: https://www.morrobayca.gov/DocumentCenter/View/15424/Plan-Morro-Bay-GP-LCP-Final.Accessed October 31, 2022.

- POLICY C-3.2: Interagency Cooperation. Continue to cooperate with the SLOAPCD and other regional, state, and national agencies to implement the County Clean Air Plan, including enforcing air quality standards and improving air quality
- POLICY C-3.5: Vehicle Idling. Explore and implement strategies to minimize vehicle idling.
- POLICY C-3.6: Air Quality in Sensitive Land Uses. Minimize exposure of sensitive land uses to toxic air contaminants by locating new pollutant sources away from sensitive uses such as schools, hospitals, parks, playgrounds, residential areas, and natural and open space areas.
- POLICY C-3.7: Park and Ride. Support the future development of park and ride lots in Morro Bay. Site lots near commuter transit service and provide bicycle storage lockers at the lots to ensure they are designed to facilitate use by transit and active transportation users
- POLICY C-3.8: Telecommuting. Encourage employers to adopt teleworking, teleconferencing, and telelearning options for their employees and adopt policies and/or programs to further promote teleworking, teleconferencing, and telelearning among City staff.
- POLICY C-4.1: Emissions Reduction Target. By 2040, reduce greenhouse gas emissions by 53.33 percent below the 2020 target, placing the community on a path to meet the state’s 2050 greenhouse gas emissions reduction goals.
- POLICY C-4.2: Climate Action Plan. Continue to implement and regularly evaluate the Morro Bay Climate Action Plan and greenhouse gas inventory to evaluate progress, celebrate successes, and adjust strategies as needed to meet emissions goals
- POLICY C-4.3: Greenhouse Gas Inventory. Continue to update the greenhouse gas inventory to determine whether emissions are within recommended levels.
- POLICY C-4.4: Greenhouse Gas Reduction Strategies. Pursue a variety of greenhouse gas reduction strategies across the transportation, residential, waste, and commercial sectors, commensurate with their share of the community’s greenhouse gas emissions.
- POLICY C-4.5: Grant Funding. Seek grant funding to support implementation of greenhouse gas reduction projects for the City, as well as for residents and businesses.
- POLICY C-5.2: Energy Efficiency Standards. Construct all new City facilities to be more energy efficient than the minimum energy efficiency standards in the California Building Standards Code and achieve zero net energy performance for new City facilities when possible
- POLICY C-6.1: Renewable Energy Incentive Programs. Create incentives that promote renewable and sustainable energy systems as a component of new development or reuse projects. Require water- and energy-efficient features in all new and significantly renovated development, such as lowflow and energy-

efficient appliances, drought-tolerant vegetation, rooftop solar, and passive heating and cooling features.

- POLICY C-6.2: Renewable Energy in Home and Commercial Uses. Encourage the use of solar energy systems in homes and commercial businesses as a form of renewable energy, including in support of zero net energy goals.
- POLICY C-6.4: Partnerships. Support public/private partnerships to implement energy efficiency, energy storage, and microgrid development to achieve cost savings, reduce energy use, and improve energy reliability.
- POLICY C-8.1: Disposal Rates. Continue to reduce disposal rates to zero.
- POLICY PS-1.4: Climate Change. Consider how climate change impacts may change anticipated hazard conditions when planning for emergency response.
- POLICY EJ-4.1: Plan Updates. Recognize and address the health effects of climate change when updating local hazard mitigation plans, hazard emergency plans, specific plans, and other policies and ordinances

3. IMPACTS AND MITIGATION MEASURES

3.1 Standards of Significance

3.1.1 CEQA Guidelines Appendix G Thresholds

As described in Section 2.2, the 2009 amendments to the State CEQA Guidelines do not establish specific thresholds of significance for GHG impacts. Rather, Section 15064.4 of the CEQA Guidelines emphasizes the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA.[72] It further recommends that lead agencies focus their analysis on the reasonably foreseeable incremental contribution of a project's emissions to the effects of climate change. Appendix G of the CEQA Guidelines, the Environmental Checklist Form, is often used as a basis for lead agencies' selection of significance thresholds, but it does not prescribe specific thresholds. Rather, Appendix G suggests evaluating whether a project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant adverse impact on the environment; or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Guidelines section 15064.4(b) states that in evaluating the significance of impacts from GHG emissions, the lead agency should consider the following factors, among others:

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions.

3.1.2 SLO County APCD Significance Threshold

SLO County APCD presents its thresholds of significance along with methods for evaluating compliance in its guidance document entitled A Guide for Assessing the Air Quality Impact for Projects Subject to CEQA Review.[73] The SLO County APCD's guidelines provide two thresholds for land use projects through 2045 based on if the project is a permitted stationary source, or if it is residential or commercial. Permitted stationary sources have a significance threshold of 10,000 MT CO_2e/yr based on emission reductions necessary to meet EO S-03-05, which sets a goal of 80% below 1990 levels by 2050. For residential and commercial projects, the SLO County APCD provides bright-line and efficiency thresholds.[74]

[72] CNRA. 2009. Revised Text of Proposed Guideline Amendments. Sacramento, CA. http://resources.ca.gov/ceqa/docs/FINAL_Text_of_Proposed_Amendemts.pdf. Accessed August 2022.

[73] SLO County APCD. 2023. A Guide for Assessing the Air Quality Impact for Projects Subject to CEQA Review https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA%20Handbook%202023_Final.pdf

[74] Ibid

To assess significance of a project's GHG emissions, construction emissions must be amortized over the project lifetime and added to the annual average operational emissions.

3.1.3 Thresholds and Approaches Used in Assessment

Although the Vistra BESS project does not require a SLO County APCD permit to operate, in October 2023 the SLO County APCD recommended that the project be evaluated under the agency's industrial threshold for permitted stationary sources.[75] Therefore, this analysis compares quantified GHG emissions against the 10,000 MT CO_2e/yr threshold described above and set forth in the SLO County APCD's CEQA Air Quality Handbook, 2023 Administratrive Update.

Analysis of the Project's GHG emissions is based primarily on default values in the California Emission Estimator Model (CalEEMod®) version 2022.1 and the latest version of Emission Factors Model version 2021 (EMFAC2021). CalEEMod® is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The CalEEMod® was developed for the California Air Pollution Officers Association in collaboration with the CARB's California Air Disticts. The CalEEMod® has not been updated for the most recent executive orders, specifically EO N-79-20 which bans the sale of gasoline-powered cars in California by 2035, and the newly implemented CARB rules; and EO B-55-18 which set as a goal carbon neutrality in California by 2045. Both EOs, if implemented, will change the energy mix in California for future operations at the Proposed Project. However, as there is insufficient information to incorporate these executive orders into this analysis, to do so would be speculative. Accordingly, this GHG analysis has been conducted with the most recent available tools prepared and accepted by the regulatory agencies. CalEEMod® outputs for this analysis are included as **Appendix B.**

3.2 Impact Evaluation

3.2.1 Impact GHG-1

Impact GHG-1: The Project Would Not Generate GHG Emissions, Either Directly or Indirectly, that Would Make a Cumulatively Considerable Contribution to Global Climate Change (Less than Significant)

The Project's GHG emissions are less than 10,000 MT CO_2e/yr and therefore less than significant. GHG emissions are summarized in Appendix A and reproduced in Table 1, below.

Table 1. Project Greenhouse Gas Emissions Significance Assessment

Amortized Construction Emissions (MT CO_2e/yr) [a]	Operational Emissions (MT CO_2e/yr)	Total Annual Emissions (MT CO_2e/yr)	Significance Threshold (MT CO_2e/yr)	Exceeds Threshold?
510	278	788	10,000	***No***

Notes: [a] Total construction GHG emissions (20,393 MTCO_2e) were amortized assuming a Project lifetime of 40 years.

[75] Personal communicatios and email correspondence on October 10, 2023 between the City and Andy M., SLO County APCD's Division Manager.

3.2.2 Impact GHG-2

Impact GHG-2: The Project Would Be Consistent with the Plans, Policies, and Regulations Adopted for the Purpose of Reducing GHG Emissions. (Less than Significant)

The Project has been evaluated for consistency with the following plans, policies, and regulations:

- 2022 CARB Scoping Plan adopted under AB32
- City of Morro Bay 2021 General Plan
- SLOCOG 2019 Sustainable Communities Strategy/ Regional Transportation Plan
- Executive Order S-3-05
- Executive Order B-30-15
- Executive Order B-55-18
- SB 32

Each plan, policy, and regulation is described in detail in Section 2.2, above. A discussion of Project consistency with each plan, policy, and regulation is presented below.

2022 CARB Scoping Plan

The AB 32 Scoping Plan identified over 70 measures for reducing GHG emissions to 1990 levels by 2020. The 2022 CARB Scoping Plan is an update to the AB 32 Scoping Plan and identifies measures to reduce GHG emissions to 40% below 1990 levels by 2030 and to 85% by 2045. **Table 2** evaluates the Proposed Project's consistency with the 2022 Scoping Plan.

Table 2. 2022 CARB Scoping Plan Consistency Analysis

Scoping Plan Reduction Measure	Consistency
Deploy Zero Emission Vehicles (ZEVs) for light-duty and heavy-duty vehicles. The ZEV mandates 100% of LDV sales are ZEV by 2035, and 100% of MDV/HDV sales are ZEV by 2040	**Consistent.** The Proposed Project will meet the latest CalGreen Tier 2 requirements which will improve EV charging infrastructure and contribute to State ZEV goals.
Smart Growth / Vehicle Miles Traveled (VMT) Expanding the SB 375, the 2022 Scoping Plan requires VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	**Consistent.** The Proposed Project would not substantially increase VMT because only minor work-related trips would occur long-term. Because of the negligible nature of these trips, the Proposed Project would be consistent with SB 375's VMT reduction goals.
Electricity Generation. As required by SB 350, SB 100, and SB 1020, utilities subject to the legislation will be required to increase their renewable energy share and reduce GHG in the electric generation sector to 38 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in 2030 and 30 $MMTCO_2e$ in 2035	**Not applicable/Enabling.** This measure would apply to utilities and not to individual development projects. However, the Proposed Project would store renewable electricity (e.g., from solar panels), which would help utilities meet the renewable energy mandates in SB 350, SB 100, and SB 1020 and other State and local efforts.

Table 2. 2022 CARB Scoping Plan Consistency Analysis

Scoping Plan Reduction Measure	Consistency
Decarbonize Residential and Commercial Buildings. New residential buildings to use all electric appliances beginning in 2026 and New commercial buildings to use all electric appliance beginning in 2029	**Not applicable/Enabling.** This measure is not directly applicable to the Proposed Project; however, the Proposed Project will contribute to decarbonization goals by increasing capacity for renewable energy in the State.
Construction Equipment. Reduce demand for fossil energy and GHGs and improve air quality.	**Consistent.** The Proposed Project will use construction equipment with engines that are compliant with CARB Tier 4 Interim standards, achieving compliance with local and State air quality limits.
Low Carbon Fuels for Transportation. To use biomass supply to produce conventional and advanced biofuels, as well as hydrogen.	**Not applicable.** This measure would mainly apply to fuel suppliers and not to individual development projects or energy storage systems.
Reduce non-combustion Emissions and High GWP Potential Emissions. Following SB 1383: Reduce short-lived climate pollutants mandates, to increase landfill and dairy digester methane capture. Moderate adoption of enteric strategies by 2030. Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions to be reduced 50% by 2030 and with further reductions as infrastructure components. Low GWP refrigerants to be introduced as building electrification increases, to mitigate HFC emissions.	**Not applicable/Enabling.** This measure would mainly apply to the agricultural industry. However, the Proposed Project will not include natural gas infrastructure, so may help reduce and minimize methane emissions. The Proposed Project is subject to the latest Title 24 Building Codes, which requires the usage of low-GWP refrigerants.
Natural and Working Lands (NWLs). A series of land management actions are identified by the 2022 Scoping Plan. Key actions include: conserve 30% of the state's NWL and coastal waters by 2030; land conversion at 50% of the Reference Scenario land conversion rate; increase urban forestry investment by 200% above current levels and utilize tree watering that is 30% less sensitive to drought; and no land conversion of forests, shrublands/chaparral, or grasslands.	**Not applicable**. The Proposed Project site will be built on a site that is already developed and was formely used as a powerplant.
Carbon Dioxide Removal and Capture. 2022 legislation on carbon removal and sequestration, including: AB 1279, SB 905, SB 1137 and AB 1757 signed by Governor Newsom, indicated that CO_2 removal and carbon capture are important tools to compensate remaining GHG emissions to achieve carbon neutrality.	**Not applicable.** The Project does not propose to construct any CCS/CDR facilities directly.

Notes:

[A] CARB. 2022. California's 2022 Climate Change Scoping Plan. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

As shown in **Table 2**, the Proposed Project is consistent with the 2022 CARB Scoping Plan reduction measures where applicable and helps achieve the Scoping Plan's goals of obtaining carbon netutrality in the State by 2045.

City of Morro Bay 2021 General Plan

As described in Section 2.2.4, the City of Morro Bay 2021 General Plan was established to preserve the identity and resources of the City while moving toward more sustainable policies. The Plan includes several goal areas aimed at GHGs within the City that are relevant to the Proposed Project. Assessment of consistency is shown in **Table 3** below.

Table 3. City of Morro Bay 2021 General Plan Consistency Analysis

Goal Area	General Plan Goals and Policies	Consistency
Community Design	**CD-2.2:** Flexible Use. Identify potential buildings for future adaptive reuse, and encourage incorporating flexibility in building designs to maximize the future use of buildings.	**Not applicable.** This measure applies to the City, not individual projects.
Economic Development	**ED-3.1:** Sustainable Businesses. Attract and retain environmentally conscious businesses that contribute to the long-term economic and environmental sustainability of Morro Bay	**Consistent.** The Vistra BESS Project supports the implementation of California RPS and promotes a renewable energy ecosystem and sustainable energy use.
	ED-3.2: Environmental Guidelines. Develop guidelines that describe desired environmentally conscious building landscapes, designs, features, and practices that will be used to give recommendations to businesses and to provide City staff with suggested conditions of approval for permitting new or significantly renovated homes and businesses.	**Not applicable.** This measure applies to the City, not individual projects.
Circulation	**CIR-1.12**: Climate Change Impacts on Transportation. Require ongoing evaluation of the transportation infrastructure system and its ability to withstand future effects of climate change. Identify future points to begin incorporating resilient strategies and materials into design, using the most up-to-date guidance from the Federal Highway Administration	**Not applicable.** This measure applies to the City, not individual projects.
	CIR-3.1: Level of Service (LOS) Standards. Update City guidelines to formally adopt an LOS standard.	**Not applicable.** This measure applies to the City, not individual projects.
	CIR-3.2: VMT Thresholds. Achieve State-mandated reductions in VMT by establishing and adopting a VMT standard.	**Not applicable.** This measure applies to the City, not individual projects.
	CIR-3.3: Updating Guidelines. Regularly update guidelines for transportation impact analyses to ensure consistency with established metrics and standards.	**Not applicable.** This measure applies to the City, not individual projects.

Goal Area	General Plan Goals and Policies	Consistency
	CIR-4.7: Alternative Options. Require or establish EV charging stations, bike sharing and park and ride locations throughout Morro Bay and in particular, close to transit and amenities.	**Consistent.** The Project will meet current CalGreen Tier 2 standards except all EV Capable spaces (locations that can accommodate future installation of EV charging station) shall instead be EV Ready (locations where drivers can use portable chargers for EV charging).
Conservation	**C-3.2:** Interagency Cooperation. Continue to cooperate with the SLOAPCD and other regional, state, and national agencies to implement the County Clean Air Plan, including enforcing air quality standards and improving air quality.	**Consistent.** The Project includes full air quality CEQA analyses and will mitigate any significant impacts to the extent feasible. The Project's energy storage capabilities will promote deployment of renewable energy sources, thereby reducing emissions from fossil-fuel energy sources.
	C-3.5: Vehicle Idling. Explore and implement strategies to minimize vehicle idling.	**Consistent.** Vehicles during construction, demolition and operation will be prohibited from idling for more than three minutes at any given location pursuant to the Implementation Action O-1.2 of the City of Morro Bay Climate Action Plan. This would also be consistent with the idling limit of five minutes at any given location pursuant to the 2004 CARB Airborne Toxics Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling.
	C-3.7: Park and Ride. Support the future development of park and ride lots in Morro Bay. Site lots near commuter transit service and provide bicycle storage lockers at the lots to ensure they are designed to facilitate use by transit and active transportation users	**Not applicable.** This measure applies to the City, not individual projects.
	C-4.1: Emissions Reduction Target. By 2040, reduce greenhouse gas emissions by 53.33 percent below the 2020 target, placing the community on a path to meet the state's 2050 greenhouse gas emissions reduction goals.	**Consistent.** The Project will follow SLO County APCD GHG thresholds and guidelines as described in the 2021 Interim Greenhouse Guidance for the SLO County APCD 2021 CEQA Air Quality Handbook.
	C-4.2: Climate Action Plan. Continue to implement and regularly evaluate the Morro Bay Climate Action Plan and greenhouse gas inventory to evaluate progress, celebrate successes, and adjust strategies as needed to meet emissions goals	**Not applicable.** This measure applies to the City, not individual projects.
	C-4.3: Greenhouse Gas Inventory. Continue to update the greenhouse gas inventory to determine whether emissions are within recommended levels.	**Not applicable.** This measure applies to the City, not individual projects.

Goal Area	General Plan Goals and Policies	Consistency
Conservation	**C-4.4:** Greenhouse Gas Reduction Strategies. Pursue a variety of greenhouse gas reduction strategies across the transportation, residential, waste, and commercial sectors, commensurate with their share of the community's greenhouse gas emissions.	**Consistent.** The Project will meet current CalGreen Tier 2 standards except all EV Capable spaces shall instead be EV Ready (locations where drivers can use portable chargers for EV charging).
	C-4.5: Grant Funding. Seek grant funding to support implementation of greenhouse gas reduction projects for the City, as well as for residents and businesses	**Not applicable.** This measure applies to the City, not individual projects.
	C-5.2: Energy Efficiency Standards. Construct all new City facilities to be more energy efficient than the minimum energy efficiency standards in the California Building Standards Code and achieve zero net energy performance for new City facilities when possible	**Not applicable.** This measure applies to the City, not individual projects.
	C-6.1: Renewable Energy Incentive Programs. Create incentives that promote renewable and sustainable energy systems as a component of new development or reuse projects. Require water- and energy-efficient features in all new and significantly renovated development, such as lowflow and energy-efficient appliances, drought-tolerant vegetation, rooftop solar, and passive heating and cooling features.	**Not applicable.** This measure applies to the City, not individual projects.
	C-6.4: Partnerships. Support public/private partnerships to implement energy efficiency, energy storage, and microgrid development to achieve cost savings, reduce energy use, and improve energy reliability.	**Not applicable.** This measure applies to the City, not individual projects.
	C-8.1: Disposal Rates. Continue to reduce disposal rates to zero.	**Not applicable.** This measure applies to the City, not individual projects.
Public Safety	**PS-1.4:** Climate Change. Consider how climate change impacts may change anticipated hazard conditions when planning for emergency response.	**Not applicable.** This measure applies to the City, not individual projects.
Environmental Justice	**EJ-4.1:** Plan Updates. Recognize and address the health effects of climate change when updating local hazard mitigation plans, hazard emergency plans, specific plans, and other policies and ordinances	**Not applicable.** This measure applies to the City, not individual projects.

2019 SLOCOG RTP/SCS

SB 375, the Sustainable Communities and Climate Protection Act of 2008, supports the State's climate action goals to reduce GHG emissions through coordinated transportation and land use planning. SB 375 required CARB to establish GHG emission reduction targets (Regional Targets) for each metropolitan planning region. On September 23, 2010, CARB adopted Regional Targets applying to the years 2020 and 2035.[76] In 2011, CARB adopted GHG emission reduction targets (expressed as a percent change in per capita passenger vehicle GHG emissions) of 3% for 2020 and 11% for 2035 relative to 2005 for the area under SLOCOG's jurisdiction, which includes the Project site.

SB 375 requires MPOs including the SLOCOG to incorporate a SCS in their RTPs that will achieve the GHG emission Reduction Targets set by CARB, primarily by reducing VMT from light-duty vehicles through development of more compact, complete, and efficient communities.

The Project is located within the City of Morro Bay's existing city boundary. **Table 4** evaluates the Proposed Project's consistency with the 2019 RTP/SCS.

Table 4. 2019 RTP/SCS Consistency Analysis

Goal	#	Policy Objectives	Consistency
Preservation			
1. Preserve the transportation system	1.1	Maintain and maximize efficiency of existing transportation system and operations.	Not applicable.
	1.2	Employ low-cost solutions whenever possible, including transportation demand management principles.	
	1.3	Preserve the region's transportation system to a state of good repair.	
Mobility			
2. Improve intermodal mobility and accessibility for all people.	2.1	Provide reliable, integrated, and flexible travel choices across and between modes.	**Consistent**. The proposed project would include construction of a pedestrian path along the Embarcadero frontage as requested by the City of Morro Bay.
	2.2	Improve opportunities for businesses and citizens to easily access goods, jobs, services, and housing.	
	2.3	Integrate new technologies and concepts to make the transportation system more efficient and accessible.	
	2.4	Identify and improve major transportation corridors for all users.	
	2.5	Support cooperative planning activities that lead to an integrated intermodal transportation system.	
Economy			
3. Support a vibrant economy.	3.1	Support transportation investments and choices to enhance economic activity, travel, and tourism.	Not applicable.
	3.2	Improve the freight network and strengthen the region's ability to access national and international trade markets.	
Safety			
4. Improve public safety and security.	4.1	Reduce fatalities, serious injuries, and collisions for motorized and non-motorized users.	Not applicable.

[76] CARB. 2010. Sustainable Communities. Available at: http://www.arb.ca.gov/cc/sb375/sb375.htm. Accessed November 8, 2023.

Table 4. 2019 RTP/SCS Consistency Analysis

Goal	#	Policy Objectives	Consistency
	4.2	Reduce congestion and increase safety by improving operations.	
	4.3	Enhance public safety and security in all modes of transportation	
Healthy Communities			
5. Foster livable, healthy communities and promote social equity	5.1	Reflect community values while integrating land use and transportation planning to connect communities through a variety of transportation choices that promote healthy lifestyles.	Not applicable.
	5.2	Integrate public health and social equity in transportation planning and decision-making.	
	5.3	Support efforts to increase the supply and variety of housing, jobs, and basic services in locations that reduce trips, travel distances, and congestion on U.S. Route 101.	
	5.4	Make investments and develop programs that support local land use decisions that implement the SCS and other strategies to reduce GHG emissions and make our communities more healthy, livable, sustainable, and mobile.	**Consistent.** The proposed project would install a battery energy storage system, which would reduce the amount of fossil fuels consumed during peak hours and maximize renewable energy usage.
Environment			
6. Practice environmental stewardship.	6.1	Integrate environmental considerations in all stages of planning and implementation.	**Consistent.** The Project will be designed, constructed, and operated in a sustainable manner.
	6.2	Preserve aesthetic resources and promote environmental enhancements.	**Consistent.** The Project would be built on disturbed land and would demolish components of an old power plant. The new BESS would not hinder aesthetic resources and would promote environmental enhancements.
	6.3	Reduce GHG emissions from vehicles and improve air quality in the region.	**Not applicable/Enabling.** The Project would indirectly improve air quality in the region by reducing its reliance on fossil fuels. While some additional trips will be added during operations for ongoing maintenance, the additional trips are minimal and would have a negligible effect in the region.

Table 4. 2019 RTP/SCS Consistency Analysis

Goal	#	Policy Objectives	Consistency
	6.4	Conserve and protect natural, sensitive, and agricultural resources.	**Not applicable/Enabling.** While the Project would not directly conserve and protect these resources, by decreasing the region's reliance on fossil fuels, the Project would be an indirect benefit. In addition, locating a BESS on a previously industrial site promotes conservation of undeveloped natural, sensitive and agricultural resources.
Fiscally Responsible			
7. Practice financial stewardship	7.1	Invest strategically to optimize transportation system performance for the long-term.	Not applicable.
	7.2	Assure early and continual involvement of all parties affected by major transportation improvement projects and programs.	
	7.3	Seek sustainable, flexible, and competitive funding to maintain and improve the transportation system.	

Source:

SLOCOG. 2019. 2019 RTP: Connecting Communities. Available at: https://www.dropbox.com/s/oc6i8wshikuirsh/__FINAL%202019%20RTP.pdf?dl=0

As shown in Table 4, the Proposed Project would be consistent with the 2019 RTP/SCS where applicable.

Executive Order B-30-15 and SB 32

In April 2015, Governor Brown signed Executive Order B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This Executive Order also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in Executive Order S-3-05 (see discussion below). Additionally, the Executive Order directed CARB to update its Scoping Plan to address the 2030 goal. SB 32 codifies the 2030 emissions reduction goal of Executive Order B-30-15 requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

The Project's 2030 emissions total represents the emissions inventory for the Project at full build-out. As explained in the preceding impact analysis, the Project emissions would be consistent with a trajectory needed to achieve the State's 2030 requirements. Several regulatory requirements further reduce the Project's emissions and help ensure that the State's 2030 GHG target is achieved, including the following:

- SB 1020 requires retail sellers of electric services to increase procurement from eligible renewable energy resources and zero-carbon resources to 90% of retail sales to California end-use customers by 2036.

- CPUC, CEC, and CARB have a shared, established goal of achieving zero net energy (ZNE).

The measures above will all help ensure that the State meets the 2030 GHG target. The Project will be consistent with all of these initiatives and regulatory requirements.

Executive Order S-3-05 and B-55-18

This report also evaluates the Project's consistency with Executive Order No. S-3-05's goal of reducing the State's GHG emissions to 80 percent below the 1990 level by the year 2050; and Executive Order No. B-55-18's goal of reducing the State's GHG emissions to net carbon neutral by the year 2045 and maintain net negative emissions thereafter. Based on existing emissions trends, the Project's emissions are expected to decline from 2030 through at least 2050 due to continued regulatory and technological advancements. Therefore, the Project is unlikely to obstruct the attainment of the State's long-term GHG reduction goal for 2045 or 2050.

In 2004, (prior to the 2006 passage of AB 32) California was emitting 12 percent more GHG emissions than in 1990.[77] For California to emit 80 percent less than it emitted in 1990, the statewide GHG emissions would be only 18 percent of the 2004 statewide GHG emissions. Accounting for a population growth from 35,840,000 people in 2004 to approximately 55,000,000 people in 2050, the emissions per capita would have to be only 12 percent of what they were in 2004. This means 88 percent reductions in per capita GHG emissions from 2004 emissions intensities must be realized in order to achieve California's 2050 GHG goals. The reductions need be even more stringent to meet the net zero emission 2045 goals. Clearly, energy efficiency and reduced VMT will play important roles in achieving this aggressive goal, but the decarbonization of energy sources and increased energy storage capabilities will also be necessary.

The extent to which GHG emissions from mobile sources indirectly attributed to the Project will change in the future depends on the quantity (e.g., number of vehicles, average daily mileage) and quality (i.e., carbon content) of fuel that will be available and required to meet both regulatory standards and workers' needs. In addition, renewable power requirements, low carbon fuel standards, and vehicle emissions standards discussed above will all decrease GHG emissions per unit of energy delivered or per VMT. Due to the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing a Project's impacts further relative to the 2050 target are speculative for purposes of CEQA.

That being said, studies have shown that, in order to meet the 2050 target, aggressive technology changes in the transportation and energy sectors, such as electrification and maturation of technologies still in development (e.g., advanced batteries and more efficient biofuels), will be required. A 2015 study shows that the existing and proposed regulatory framework will allow the State to reduce GHG emissions to 40 percent below 1990 levels by 2030, and to 60 percent below 1990 by 2050.[78] Even though this study did not provide a

[77] CARB. 2007. California Greenhouse Gas Inventory – By IPCC Category. 1990-2004 Inventory. Available at: https://ww3.arb.ca.gov/cc/inventory/archive/tables/ghg_inventory_ipcc_90_04_sum_2007-11-19.pdf. Accessed October 13, 2020.

[78] Jeffery Greenblatt. 2015. Modeling California Impacts on Greenhouse Gas Emissions. Energy Policy. Volume 78, March 2015, pages 158-172. Abstract available at: http://www.sciencedirect.com/science/article/pii/S0301421514006892. Accessed: October 13, 2020.

regulatory and technology roadmap to achieve the Governor's 2050 goal, it demonstrated that various combinations of policies could allow statewide emissions to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the study could allow the State to meet the Governor's 2050 goal. In August 2020, Energy + Environmental Economics (E3) developed modeling scenarios for CARB that demonstrate potential pathways for the State to achieve the 2045 and 2050 targets. These scenarios all require ambitious reductions including "high levels of energy efficiency across all sectors, high levels of renewable electricity generation, high levels of electrification in the transportation and buildings sector, and deep reductions in non-energy, non-combustion GHG emissions like methane CH_4 and HFCs. As a result, all scenarios achieve at least an 80% reduction in gross GHG emissions (under AB 32) by 2045".[79]

While it would be speculative to quantitatively estimate the Project's emissions level in 2045 and 2050 and to assess the impacts to the Executive Order's horizon-year goals, statewide efforts are underway to facilitate the State's achievement of these goals and it is reasonable to expect the Project's emissions level to decline as the regulatory initiatives identified by CARB in the First Update to the Climate Change Scoping Plan and 2017 Scoping Plan are implemented, and other technological innovations occur. Many of these initiatives include reducing the carbon content of motor fuels and fuels for electricity generation. Reducing the carbon content of motor fuels and fuels for electricity generation will reduce CO_2e emissions from this Project over time. Stated differently, the Project's emissions total at build-out represents the maximum emissions inventory for the Project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives. Given the reasonably anticipated decline in Project emissions once fully constructed and operational, the Project is consistent with the Executive Order's horizon-year goals.

For example, CARB's First Update to the Scoping Plan "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." And many of the emission reduction strategies recommended by CARB would serve to reduce the Project's post-2020 emissions level to the extent applicable by law:

- Energy Sector: Continued improvements in California's appliance and building energy efficiency programs and initiatives would serve to reduce the Project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the Project's emissions level.
- Transportation Sector: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the Project's emissions level.
- Water Sector: The Project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- Waste Management Sector: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the Project's emissions level.

[79] E3. 2020. Achieving Carbon Neutrality in California: PATHWAYS Scenarios Developed for the California Air Resources Board. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-08/e3_cn_draft_report_aug2020.pdf. Accessed: October 13, 2020.

In addition to CARB's First Update, in January 2015, during his inaugural address, Governor Jerry Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions: (1) increasing the State's RPS from 33 percent in 2020 to 50 percent in 2030; (2) cutting the petroleum use in cars and trucks in half; and (3) doubling the efficiency of existing buildings and making heating fuels cleaner. Two of these expressions of Executive Branch policy – (1) and (3) – already have been manifested in adopted legislative action (i.e., SB 350). SB 100 and SB 1020 further increased the emissions reductions for (1), while Governor Newsom's 2020 EO N-79-20 sets the stage to improve upon the target set in (2).

Battery storage is used to store energy during off-peak hours when energy usage/demand is lower and dispatch stored energy on an as-needed basis during peak demand hours. This technology reduces the amount of fossil fuels consumed during peak hours and maximizes usage of energy from renewable sources, such as wind and solar facilities that may not be able to produce energy during times of peak demand. The proposed project would accelerate California's decarbonization efforts by increasing the battery storage capacity in the State.

In summary, because the Project meets and exceeds the emissions reduction targets presented in this report, and because many aspects of the Project's emissions inventory will benefit from further regulatory and technological advancements, the Project is not expected to obstruct the attainment of the Governor's long-term GHG reduction goal for 2050. Therefore, the Project's impacts are **less than significant** under this methodology.

APPENDIX A
GREENHOUSE GAS CALCULATION TABLES

Table 1
Land Use Summary
Vistra BESS
Morro Bay, California

Land Use[1]	CalEEMod Land Use	Size	Units
Industrial	User Defined Industrial	273	1000sqft

Notes:
1. Land uses analyzed based on information provided by the Project Sponsor. The site location is shown in Figure 1.

Table 2
Construction Schedule
Vistra BESS
Morro Bay, California

Construction Subphase[1]	CalEEMod Subphase	Start Date	End Date	Year	Number of Work Days	Days per Week
Fencing and Site Preparation	Site Preparation	9/30/2023	10/31/2023	2023	22	5
Foundation and Pile Installation	Grading	11/1/2023	7/30/2024	2024	195	5
BESS, substation, and Gen-tie installation	Building Construction	7/31/2024	7/31/2026	2026	523	5
	Paving	8/1/2026	8/28/2026	2026	20	5
	Architectural Coating	8/29/2026	9/30/2026	2026	23	5
Demolition of Existing Power Plant Stacks	Demolition	10/30/2026	5/31/2028	2028	414	5

Notes:

1. All construction phasing information was provided by the Project Sponsor. Construction is generally expected to occur between 7am-7pm Monday-Friday per San Luis Obispo County's construction ordinance.

Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA

Anticipated Construction Start Date:	9/30/2023

Construction Subphase(s)	Equipment Name[1]	CalEEMod Equipment Name[2]	Fuel[3]	Number[1]	Horsepower[1]	Daily Usage (hours/day)[1]	Utilization[4]	Controlled Engine Tier[5]
Site Preparation	Scrapers	Scrapers	Diesel	2	500	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
Grading	Pile Drivers	Excavators	Diesel	10	600	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
Building Construction	Cranes	Cranes	Diesel	16	750	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
	Trenchers	Trenchers	Diesel	4	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
Paving	Pavers	Pavers	Diesel	2	81	8	100%	Tier 4 Interim
	Paving Equipment	Paving Equipment	Diesel	2	89	8	100%	Tier 4 Interim
	Rollers	Rollers	Diesel	2	36	8	100%	Tier 4 Interim
Architectural Coating	Air Compressors	Air Compressors	Diesel	2	37	6	100%	Tier 4 Interim
Demolition	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim
	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	85	5	100%	Average
	Skid Steer Loaders	Skid Steer Loaders	Diesel	2	85	6	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	435	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	2	360	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	355	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	290	4	100%	Tier 4 Interim
	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	225	4	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim

Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA

Notes:

1. Equipment information was provided by the Project Sponsor.
2. CalEEMod equipment types are assigned using CalEEMod Appendix G.
3. All equipment is conservatively assumed to be diesel-fueled.
4. Equipment horsepower is based on information provided by the Project Sponsor. Where no horsepower was provided, CalEEMod Appendix G defaults were used.
5. Controlled equipment engine tiers are conservatively assumed to be Tier 4 Interim.

References:

The California Emissions Estimator Model (CalEEMod). Available at: http://www.caleemod.com/

Table 4
Construction Trips
Vistra BESS
Morro Bay, California

Construction Area	Construction Activity	Year	Construction Days	Worker Trip Rates[1] (one-way trips/day)	Vendor Trip Rates[2] (one-way trips/day)	Hauling Trips[3] (one-way trips/day)	Trip Lengths[4] (miles/one way trip)		
							Worker	Vendor	Hauling
Project Site	Site Preparation	2023	22	100	0	0	10.8	6.9	20
	Grading	2023	44	200	30	0	10.8	6.9	20
		2024	151	200	30	0	10.8	6.9	20
	Building Construction	2024	110	600	40	0	10.8	6.9	20
		2025	262	600	40	0	10.8	6.9	20
		2026	151	600	40	0	10.8	6.9	20
	Paving	2026	20	600	10	0	10.8	6.9	20
	Architcectural Coating	2026	23	600	0	0	10.8	6.9	20
	Demolition	2026	45	134	5	32	10.8	6.9	101
		2027	261	134	5	32	10.8	6.9	101
		2028	108	134	5	32	10.8	6.9	101

EMFAC Data[5]

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Luis Obispo County Calendar Years 2023-2028 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		100% MHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

1. Worker trip rates are based on the number of expected staff in each phase provided by the Project Sponsor.
2. Vendor trip rates are based on the number of expected daily deliveries in each phase provided by the Project Sponsor.
3. Hauling trips were estimated based on the demolition tonnage provided by the Project Sponsor assuming no import material. Export quantities are converted from tons to corresponding one-way trips per phase by assuming 20 tons per truck. Default truck capacities are consistent with CalEEMod User Guide.
4. Worker, vendor and haul trip lengths are based on CalEEMod Appendix G defaults for San Luis Obispo County.
5. Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

EMFAC2021 - California Air Resources Board EMission FACtor model
LDA - light-duty automobiles
LDT - light-duty trucks
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References:

The California Emissions Estimator Model (CalEEMod). Available at: http://www.caleemod.com/
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

Table 5
CAP and GHG Emissions Comparison to Thresholds
Morro Bay BESS Installation
Morro Bay, California

ROG + NOx, DPM

Pollutant[1]	Unmitigated Emissions (tons/quarter)[2]	Tier 1 Threshold (tons/quarter)	Exceeds Threshold?	Mitigated Emissions (tons/quarter)[3]	Tier 2 Threshold (tons/quarter)	Exceeds Threshold?
ROG + NO_x (Combined)	14.97	2.5	***Yes***	3.45	6.3	***No***
DPM	0.56	0.13	***Yes***	0.02	0.32	***No***

Fugitive Particulate Matter (PM10), Dust

Unmitigated Emissions (tons/quarter)[4]	Threshold (tons/quarter)	Exceeds Threshold?
0.32	2.5	***No***

GHGs

Annual Construction Emissions (MT CO_2e/year)		
Emissions	**Threshold[5]**	**Exceeds Threshold?**
788	10,000	***No***

Notes:

1. Maximum annual emissions of ROG and NOx were divided by four and summed to obtain a quarterly average for comparison with the applicable SLO County APCD threshold. Because these maximums occurred in different years, the total emissions presented here is a conservative estimate. Maximum annual emissions of Diesel Particulate Matter were also divided by four to obtain a quarterly average for comparison with the applicable SLO County APCD threshold.
2. Unmitigated emissions were modeled using off-road construction equipment with an average Tier emissions standards rating.
3. Mitigated emissions were modeled using off-road construction equipment with a Tier 4 Interim emissions standards rating.
4. Maximum annual emissions of fugitive PM_{10} were divided by four to obtain a quarterly average for comparison with applicable SLO County APCD threshold.
5. Greenhouse gas threshold is based on SLO County APCD's GHG thresholds for permitted stationary sources, which was selected based on conversations with SLO County APCD.

Abbreviations:

CO2e - Carbon dioxide equivalent
ROG - Reactive organic gases
NOx - Oxides of nitrogen
GHG - Greenhouse gases
PM10 - Particulate matter <10 microns
SLO County APCD - San Luis Obispo Air Pollution Control District
MT - Metric ton

References:

SLO County APCD. CEQA Air Quality Handbook. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA%20Handbook%202023_Final.pdf

APPENDIX B
CALEEMOD® OUTPUTS

Vistra BESS - Tier Mitigated v3 Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vistra BESS - Tier Mitigated v3
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	24.0
Location	35.37488204736745, -120.85921757800375
County	San Luis Obispo
City	Morro Bay
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3324
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	24.0	273,000	0.00	—	—	Buildings housing battery energy storage system

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.70	278	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	1.95	24.4	48,335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.73	5.63	103	212	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	1.95	0.68	48,105
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	19.6	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	34,130	34,130	1.35	1.40	7.39	34,314
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	3.58	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,651	5,651	0.22	0.23	1.22	5,681
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshol	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.39	3.36	64.1	131	0.23	0.47	18.2	18.6	0.47	8.28	8.75	—	25,585	25,585	1.05	0.23	3.94	25,685
2024	5.70	5.56	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	0.67	24.4	48,335
2025	4.51	4.28	43.2	101	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,952	47,952	2.01	0.67	22.7	48,225
2026	4.40	278	43.0	100.0	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,813	47,813	1.86	0.66	21.0	48,079
2027	2.74	2.18	46.5	73.9	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,165	25,165	1.06	1.95	24.0	25,796
2028	2.63	2.17	45.8	73.5	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,833	24,833	0.99	1.88	21.9	25,439
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.73	5.63	103	212	0.38	0.78	18.3	19.0	0.78	8.42	9.20	—	43,164	43,164	1.78	0.50	0.25	43,357
2024	5.65	5.54	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	0.67	0.63	48,105
2025	4.50	4.24	43.5	100	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,750	47,750	1.89	0.67	0.59	47,998
2026	4.39	4.14	47.6	98.8	0.40	0.46	11.1	11.6	0.39	2.15	2.54	—	47,615	47,615	1.89	1.95	0.68	47,860
2027	2.74	2.18	46.9	73.7	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,122	25,122	1.07	1.95	0.62	25,731
2028	2.62	2.17	46.2	73.3	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,791	24,791	0.99	1.88	0.57	25,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.89	0.87	16.2	33.1	0.06	0.12	3.27	3.39	0.12	1.50	1.62	—	6,694	6,694	0.28	0.07	0.60	6,724
2024	3.72	3.60	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	32,299	32,299	1.35	0.41	4.79	32,459
2025	3.19	3.01	31.0	71.6	0.28	0.20	3.38	3.58	0.20	0.80	1.00	—	34,130	34,130	1.35	0.48	7.01	34,314

2026	2.46	19.6	24.5	53.3	0.19	0.18	3.86	4.04	0.17	0.85	1.02	—	23,544	23,544	0.93	0.54	6.14	23,734
2027	1.95	1.55	33.6	52.6	0.14	0.33	7.91	8.24	0.28	1.53	1.80	—	17,949	17,949	0.76	1.40	7.39	18,391
2028	0.78	0.64	13.8	21.8	0.06	0.12	3.29	3.41	0.12	0.64	0.75	—	7,376	7,376	0.29	0.56	2.81	7,553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.16	0.16	2.95	6.04	0.01	0.02	0.60	0.62	0.02	0.27	0.30	—	1,108	1,108	0.05	0.01	0.10	1,113
2024	0.68	0.66	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,347	5,347	0.22	0.07	0.79	5,374
2025	0.58	0.55	5.66	13.1	0.05	0.04	0.62	0.65	0.04	0.15	0.18	—	5,651	5,651	0.22	0.08	1.16	5,681
2026	0.45	3.58	4.47	9.72	0.03	0.03	0.70	0.74	0.03	0.16	0.19	—	3,898	3,898	0.15	0.09	1.02	3,930
2027	0.36	0.28	6.12	9.60	0.03	0.06	1.44	1.50	0.05	0.28	0.33	—	2,972	2,972	0.13	0.23	1.22	3,045
2028	0.14	0.12	2.51	3.98	0.01	0.02	0.60	0.62	0.02	0.12	0.14	—	1,221	1,221	0.05	0.09	0.47	1,250

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Area	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Area	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.04	0.25	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	58.9	58.9	< 0.005	< 0.005	0.08	59.9
Area	1.91	9.34	0.09	10.7	< 0.005	0.01	—	0.01	0.02	—	0.02	—	44.1	44.1	< 0.005	< 0.005	—	44.3

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.2	24.2	< 0.005	< 0.005	—	24.2
Total	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Area	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	255	255	0.04	< 0.005	—	257
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,924	12,924	0.52	0.10	—	12,969

Demolitio	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.05	8.04	0.01	0.03	—	0.03	0.03	—	0.03	—	1,593	1,593	0.06	0.01	—	1,599
Demolitio n	—	—	—	—	—	—	0.88	0.88	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	264	264	0.01	< 0.005	—	265
Demolitio n	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.53	0.43	4.81	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,015	1,015	0.03	0.04	0.11	1,029
Vendor	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	110	110	< 0.005	0.02	0.01	114
Hauling	0.67	0.16	14.2	4.02	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,363	11,363	0.51	1.79	0.56	11,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	126	126	< 0.005	0.01	0.22	128
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.1

Hauling	0.08	0.02	1.76	0.49	0.01	0.03	0.10	0.12	0.02	0.04	0.05	—	1,401	1,401	0.06	0.22	1.15	1,469
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.34
Hauling	0.02	< 0.005	0.32	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	232	232	0.01	0.04	0.19	243

3.3. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	1.07	23.5	46.6	0.09	0.17	—	0.17	0.17	—	0.17	—	9,230	9,230	0.37	0.07	—	9,261

Demolitio	—	—	—	—	—	—	5.11	5.11	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	4.28	8.50	0.02	0.03	—	0.03	0.03	—	0.03	—	1,528	1,528	0.06	0.01	—	1,533
Demolitio n	—	—	—	—	—	—	0.93	0.93	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.35	4.74	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,040	1,040	0.02	0.04	3.88	1,057
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.25	112
Hauling	0.67	0.16	13.2	3.87	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,095	11,095	0.51	1.79	19.9	11,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.40	4.49	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	997	997	0.03	0.04	0.10	1,011
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.01	112
Hauling	0.67	0.16	13.5	3.88	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,096	11,096	0.51	1.79	0.51	11,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.36	0.28	3.19	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	717	717	0.02	0.03	1.20	728
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	76.6	76.6	< 0.005	0.01	0.08	80.1
Hauling	0.48	0.12	9.71	2.76	0.05	0.15	0.56	0.71	0.10	0.20	0.31	—	7,925	7,925	0.36	1.28	6.12	8,321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.58	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	119	119	< 0.005	0.01	0.20	121
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3

Hauling	0.09	0.02	1.77	0.50	0.01	0.03	0.10	0.13	0.02	0.04	0.06	—	1,312	1,312	0.06	0.21	1.01	1,378

3.5. Demolition (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	9.77	19.4	0.04	0.07	—	0.07	0.07	—	0.07	—	3,839	3,839	0.16	0.03	—	3,852
Demolition	—	—	—	—	—	—	2.13	2.13	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	1.78	3.54	0.01	0.01	—	0.01	0.01	—	0.01	—	636	636	0.03	0.01	—	638
Demolition	—	—	—	—	—	—	0.39	0.39	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.51	0.31	4.46	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,022	1,022	0.02	0.04	3.56	1,039
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	104	104	< 0.005	0.02	0.22	109
Hauling	0.60	0.16	12.5	3.72	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,800	10,800	0.44	1.72	18.1	11,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.50	0.36	4.26	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	980	980	0.03	0.04	0.09	993
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	105	105	< 0.005	0.02	0.01	109
Hauling	0.60	0.16	12.8	3.73	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,801	10,801	0.44	1.72	0.47	11,324
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	293	293	0.01	0.01	0.46	298
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.5
Hauling	0.18	0.05	3.85	1.11	0.02	0.04	0.23	0.28	0.04	0.08	0.13	—	3,213	3,213	0.13	0.51	2.33	3,371
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.08	49.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.14	5.14	< 0.005	< 0.005	< 0.005	5.37
Hauling	0.03	0.01	0.70	0.20	< 0.005	0.01	0.04	0.05	0.01	0.02	0.02	—	532	532	0.02	0.08	0.39	558

3.7. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	3.84	7.59	0.01	0.03	—	0.03	0.03	—	0.03	—	1,492	1,492	0.06	0.01	—	1,497
Dust From Material Movement	—	—	—	—	—	—	1.05	1.05	—	0.49	0.49	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.70	1.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	247	247	0.01	< 0.005	—	248
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.37	4.64	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	835	835	0.05	0.03	3.94	850
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.43	4.41	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	800	800	0.05	0.03	0.10	811
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.10	49.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.04	8.04	< 0.005	< 0.005	0.02	8.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,873	40,873	1.66	0.33	—	41,013
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.56	12.1	24.2	0.05	0.09	—	0.09	0.09	—	0.09	—	4,879	4,879	0.20	0.04	—	4,896
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.96	0.96	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	808	808	0.03	0.01	—	811

Dust From Material Movement	—	—	—	—	—	—	0.36	0.36	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.94	0.86	8.82	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,600	1,600	0.10	0.07	0.20	1,622
Vendor	0.06	0.03	1.11	0.46	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	691	691	0.02	0.10	0.05	722
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	192	192	0.01	0.01	0.40	195
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.5	82.5	< 0.005	0.01	0.09	86.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	31.8	31.8	< 0.005	< 0.005	0.07	32.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	14.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.93	1.93	41.9	84.0	0.16	0.32	—	0.32	0.32	—	0.32	—	16,928	16,928	0.69	0.14	—	16,986
Dust From Material Movement	—	—	—	—	—	—	6.88	6.88	—	3.32	3.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.35	7.65	15.3	0.03	0.06	—	0.06	0.06	—	0.06	—	2,803	2,803	0.11	0.02	—	2,812

Dust From Material Movement	—	—	—	—	—	—	1.25	1.25	—	0.61	0.61	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.98	0.87	0.69	8.63	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,641	1,641	0.09	0.07	7.34	1,670
Vendor	0.06	0.03	1.03	0.42	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	1.76	713
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.93	0.86	0.76	8.18	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,572	1,572	0.10	0.07	0.19	1,594
Vendor	0.06	0.03	1.07	0.43	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	0.05	712
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.35	0.31	3.39	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	657	657	0.04	0.03	1.31	667
Vendor	0.02	0.01	0.44	0.18	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	283	283	0.01	0.04	0.31	296
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.62	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	109	109	0.01	< 0.005	0.22	110
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	46.8	46.8	< 0.005	0.01	0.05	48.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.52	12.1	23.2	0.12	0.08	—	0.08	0.08	—	0.08	—	12,727	12,727	0.52	0.10	—	12,771
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.22	0.02	0.01	—	0.01	0.01	—	0.01	—	2,107	2,107	0.09	0.02	—	2,114
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.95	2.61	2.06	25.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,922	4,922	0.27	0.20	22.0	5,010
Vendor	0.08	0.04	1.38	0.56	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	908	908	0.03	0.13	2.35	951
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.57	2.28	24.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,715	4,715	0.30	0.20	0.57	4,781
Vendor	0.07	0.04	1.42	0.58	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	909	909	0.03	0.13	0.06	949
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.77	0.68	7.38	0.00	0.00	0.09	0.09	0.00	0.00	0.00	—	1,431	1,431	0.09	0.06	2.86	1,454
Vendor	0.02	0.01	0.43	0.17	< 0.005	< 0.005	0.01	0.02	< 0.005	0.01	0.01	—	274	274	0.01	0.04	0.30	286
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	237	237	0.01	0.01	0.47	241
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	45.3	45.3	< 0.005	0.01	0.05	47.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	1.24	28.6	54.9	0.28	0.19	—	0.19	0.19	—	0.19	—	30,163	30,163	1.22	0.24	—	30,267
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	5.22	10.0	0.05	0.04	—	0.04	0.04	—	0.04	—	4,994	4,994	0.20	0.04	—	5,011
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.70	2.51	1.89	24.1	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,831	4,831	0.26	0.20	20.4	4,916
Vendor	0.07	0.04	1.31	0.53	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	892	892	0.03	0.13	2.34	935
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.69	2.47	2.11	22.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,628	4,628	0.15	0.20	0.53	4,690
Vendor	0.07	0.04	1.35	0.54	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	893	893	0.03	0.13	0.06	933
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.89	1.74	1.49	16.4	0.00	0.00	0.20	0.20	0.00	0.00	0.00	—	3,329	3,329	0.10	0.14	6.29	3,380
Vendor	0.05	0.03	0.96	0.38	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	638	638	0.02	0.10	0.72	667
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.32	0.27	2.99	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	551	551	0.02	0.02	1.04	560
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	106	106	< 0.005	0.02	0.12	110

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.72	16.6	31.9	0.16	0.11	—	0.11	0.11	—	0.11	—	17,505	17,505	0.71	0.14	—	17,565

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.03	5.82	0.03	0.02	—	0.02	0.02	—	0.02	—	2,898	2,898	0.12	0.02	—	2,908
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.06	0.03	1.25	0.50	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	2.18	917
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.38	1.94	21.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,545	4,545	0.15	0.20	0.49	4,607
Vendor	0.06	0.03	1.28	0.51	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	0.06	915
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	0.98	0.79	8.87	0.00	0.00	0.12	0.12	0.00	0.00	0.00	—	1,899	1,899	0.05	0.08	3.38	1,928
Vendor	0.03	0.01	0.53	0.21	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	364	364	0.01	0.05	0.39	380
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	1.62	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	314	314	0.01	0.01	0.56	319
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	60.2	60.2	< 0.005	0.01	0.06	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.39	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.02	0.01	0.31	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	219	219	0.01	0.03	0.54	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.17	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	251	251	0.01	0.01	0.45	255
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.21	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	41.5	41.5	< 0.005	< 0.005	0.07	42.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.44
Architectural Coatings	—	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.39	1.39	< 0.005	< 0.005	—	1.40
Architectural Coatings	—	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	0.51	293
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.25	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.8	47.8	< 0.005	< 0.005	0.09	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Total	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257
Total	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.11	1.95	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Total	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.35	0.32	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Total	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/30/2026	5/31/2028	5.00	414	—
Site Preparation	Site Preparation	9/30/2023	10/31/2023	5.00	22.0	—
Grading	Grading	11/1/2023	7/30/2024	5.00	195	—
Building Construction	Building Construction	7/31/2024	7/31/2026	5.00	523	—
Paving	Paving	8/1/2026	8/28/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	8/29/2026	9/30/2026	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	500	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Grading	Excavators	Diesel	Tier 4 Interim	10.0	8.00	600	0.38
Grading	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Grading	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.40
Grading	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Grading	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	16.0	8.00	750	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Building Construction	Trenchers	Diesel	Tier 4 Interim	4.00	8.00	250	0.50
Building Construction	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Concrete/Industrial Saws	Electric	Average	1.00	5.00	85.0	0.73
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	6.00	85.0	0.37

Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	435	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	2.00	8.00	360	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	355	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	4.00	290	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.00	225	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Site Preparation	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36
Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Building Construction	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	134	10.8	LDA,LDT1,LDT2
Demolition	Vendor	5.00	6.85	HHDT,MHDT
Demolition	Hauling	32.0	101	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	100	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.85	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	10.8	LDA,LDT1,LDT2
Grading	Vendor	30.0	6.85	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	600	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	40.0	6.85	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	600	10.8	LDA,LDT1,LDT2
Paving	Vendor	10.0	6.85	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	600	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.85	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	409,500	136,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	134,000	—
Site Preparation	—	—	176	0.00	—
Grading	—	—	1,170	0.00	—
Building Construction	—	—	24.0	0.00	—
Paving	0.00	0.00	0.00	0.00	5.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	5.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	231	204	0.03	< 0.005
2027	231	204	0.03	< 0.005
2028	231	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Industrial	13.0	0.00	0.00	3,389	105	0.00	0.00	27,266

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	409,500	136,500	—

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	330

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Industrial	2,753,533	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Fire Pump	Diesel	1.00	0.08	30.0	350	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.70	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	36.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	13.6
AQ-PM	8.43
AQ-DPM	16.6
Drinking Water	44.2
Lead Risk Housing	54.6
Pesticides	61.6
Toxic Releases	11.4
Traffic	40.3
Effect Indicators	—
CleanUp Sites	78.0
Groundwater	35.0
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	83.0
Solid Waste	59.2
Sensitive Population	—
Asthma	40.0
Cardio-vascular	25.3

Low Birth Weights	98.9
Socioeconomic Factor Indicators	—
Education	26.4
Housing	17.4
Linguistic	—
Poverty	52.1
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—

Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	75.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	9.6
Physically Disabled	23.7
Heart Attack ER Admissions	73.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	65.9
Children	94.5
Elderly	6.6
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	87.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	54.0
Traffic Density	0.0
Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0

Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use changed to reflect information provided by project sponsor.
Construction: Construction Phases	All phases - updated duration to match information provided by project sponsor
Construction: Off-Road Equipment	All phases - updated construction equipment list to match information provided by project sponsor
Operations: Vehicle Data	Weekday trip rate - adjusted to reflect information provided by project sponsor
Operations: Energy Use	Energy use - used electricity intensity defaults for General Light Industry in EDFZ 6 (Central Coast). The buildings housing the batteries are not expected to use any natural gas, as there will be no refrigeration or heating capacity.
Construction: Trips and VMT	Updated trip numbers and trip length to match information provided by the project sponsor.
Construction: Dust From Material Movement	In the data request, water trucks are associated with building construction and are added here to reflect that. Total acres graded for Building Construction was set to 24 to reflect the project acreage
Construction: Paving	Update paved area acreage to reflect information provided by the project sponsor.

Appendix I

Hazardous Materials Technical Study

600-MW Morro Bay Battery Energy Storage System Project

Hazardous Materials Technical Study

prepared for

City of Morro Bay
Community Development Department
955 Shasta Avenue
Morro Bay, California 93442

prepared by

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

April 2023

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

rincon

Rincon Consultants, Inc.

1530 Monterey Street, Suite D
San Luis Obispo, California 93401

805 547 0900

info@rinconconsultants.com
www.rinconconsultants.com

April 17, 2023
Project No: 19-08915

Cindy Jacinth, Senior Planner
City of Morro Bay
Community Development Department
955 Shasta Avenue
Morro Bay, California 93442
Via email: cjacinth@morrobayca.gov

Subject: Hazardous Materials Technical Study
Morro Bay Battery Energy Storage System Project
Morro Bay, California

Dear Ms. Jacinth:

This report presents the findings of a Hazardous Materials Technical Study completed by Rincon Consultants, Inc. (Rincon) for the Morro Bay Battery Energy Storage System Project in Morro Bay, California. The Hazardous Materials Technical Study was performed in accordance with Amendment No. 1 (April 4, 2022) and Amendment No. 2 (May 1, 2022) to our contract scope of services for the Morro Bay Battery Energy Storage System EIR dated March 19, 2021.

Thank you for selecting Rincon for this project. If you have any questions, or if we can be of any future assistance, please contact us.

Sincerely,
Rincon Consultants, Inc.

PROFESSIONAL GEOLOGIST
TORIN R. SNYDER
No. 8663
CHG
Exp. 12/31/23
STATE OF CALIFORNIA

This document has been digitally signed and sealed by Torin Snyder, PG, CHG on 4/17/2023.

Lisa Bestard
Senior Environmental Scientist

Torin Snyder, PG, CHG
Principal

Savanna Vrevich
Environmental Scientist

Table of Contents

Figures

Tables

Appendices

1 Introduction and Background

Rincon Consultants Inc. (Rincon) has prepared this Hazardous Materials Technical Study (HMTS) for the Morro Bay Battery Energy Storage System (BESS) Project in the City of Morro Bay (the City), California (Figure 1). The BESS Project is planned for construction at the location of the Morro Bay Power Plant (Power Plant), which has been idle since 2014.

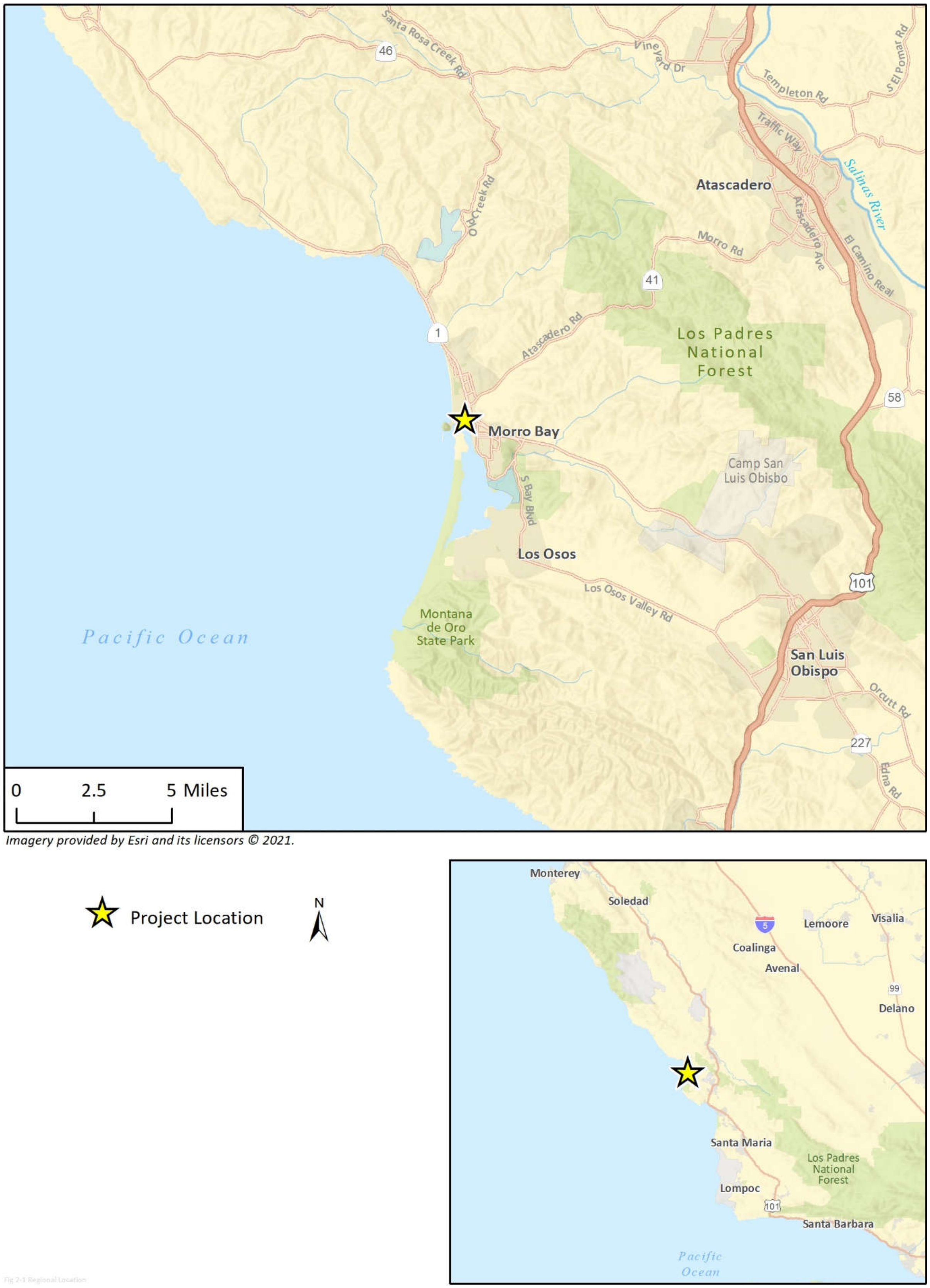
The purpose of this HMTS is to provide a preliminary evaluation of the potential for environmental effects from hazardous materials and hazardous wastes for the Project as a result of past or current activities in the area. Our report documents areas of potential environmental concern within the Project Site, which have or may have been impacted by hazardous materials or wastes, and identifies environmental concerns that have the potential to impact the operation or construction of the proposed project.

1.1 Methodology

The scope of services conducted during the HMTS is outlined below:

- Reviewed Project Site environmental documents provided by the Project Applicant.
- Reviewed Project Site environmental documents available online at the State Water Resources Control Board (SWRCB) GeoTracker website and the California Department of Toxic Substances Control (DTSC) EnviroStor website.
- Reviewed the SWRCB GeoTracker website and DTSC EnviroStor website to identify known onsite and adjacent releases (including Cortese sites).
- Reviewed agency records regarding the onsite and adjacent release sites (identified above).
- Reviewed solid waste landfills near the Project Site using the California Department of Resources, Recycling, and Recovery (CalRecycle) Solid Waste Information System (SWIS) website.
- Reviewed oil and gas wells, and oil fields near the Project Site using the California Geologic Energy Management Division (CalGEM) website.
- Reviewed buried hazardous material pipelines near the Project Site using the Department of Transportation (USDOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), National Pipeline Mapping System (NPMS) website.
- Reviewed per- and polyfluoroalkyl substances (PFAS) investigations near the Project Site using the SWRCB website.
- Reviewed reasonably ascertainable historical resources (e.g., aerial photographs, topographic maps, fire insurance maps) to assess the historical land use of the Project Site and adjacent properties.
- Identified airports and educational facilities in the vicinity of the Project Site.
- Reviewed asbestos-containing materials (ACM) and lead-based paint (LBP) demolition surveys, as provided by the Project Applicant.

Figure 1 Regional Location



1.2 Project Site

The 43-acre Project Site is located on a portion of the 95-acre Morro Bay Power Plant property (Power Plant property) (Assessor's Parcel Numbers [APNs] 066-331-046 and 066-461-016) at 1290 Embarcadero south of State Route 1 (SR 1)/Cabrillo Highway and north of Embarcadero in the City of Morro Bay (Figure 1). Specifically, the project encompasses portions of Section(s) 25 of Township 29 South, Range 10 East on the Morro Bay South, California United States Geological Survey (USGS) 7.5-minute topographic quadrangle.

The Morro Bay Power Plant began operating in 1955, but has been idle since its retirement in 2014. The Power Plant property currently contains the idled power plant building and stacks, Lila Keiser Park, and facilities operated by Pacific Wildlife Care and Marine Mammal Center. The Power Plant property is surrounded by Pacific Gas and Electric (PG&E) property (switchyards) and SR 1 to the northeast; the Embarcadero, commercial uses, and a marina to the southwest; Morro Creek, a recreational vehicle (RV) park, and temporary lodging facilities (hotel and motel) to the north; and Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west.

The site of the proposed project (Project Site) covers approximately 43 acres of the 95-acre Power Plant property.[1] The Project Site includes approximately 24 acres located immediately north of the inactive power plant building in the northwestern portion of the property. This area is currently vacant but was previously developed with above-ground fuel oil storage tanks (ASTs). In addition, the Project Site includes approximately 19 acres in the southwestern area of the site that includes the inactive power plant building and three (3) inactive stacks immediately southwest of the power plant building. The Project Site also includes the approximately 2.75-acre driveway that connects the power plant building to Quintana Road (Figure 2).

Current Land Use Designation and Zoning

The Project Site includes approximately 24 acres that are currently vacant but were previously developed with five fuel oil ASTs associated with the inactive Morro Bay Power Plant. All five ASTs were removed in 2011. The remaining area of the Project Site includes the inactive power plant building and three (3) inactive stacks immediately southwest of the power plant building.

Under Plan Morro Bay, which was adopted by the City of Morro Bay in May 2021 and serves as the City's General Plan and Local Coastal Program (LCP) Coastal Land Use Plan, the Project Site has a land use designation of Visitor Serving Commercial with a Mixed-Use Residential Overlay. The Project Site is currently zoned M-2/PD/I with a Planned Development overlay and Interim Use overlay designation under the City's current Zoning Code.

The Project Site is subject to two land use restrictions, as described below.

---

[1] Following are definitions for several key terms used in this report:
Power Plant Property refers to the approximately 95-acre Morro Bay Power Plant property. Refer to Figure 2.
Project Site refers to the portions of the Power Plant property that would be used for the proposed project. The Project Site covers approximately 43 acres of the 95-acre Power Plant property. Refer to Figure 2.
BESS Site refers to the portions of the Project Site used for construction and operation of the BESS and supporting facilities such as Gen-tie lines and access roads. The BESS Site includes approximately 24 acres of the 43-acre Project Site. Refer to Figure 2.

Figure 2 Power Plant Property Location and Existing Adjacent Land Uses

Imagery provided by Microsoft Bing and its licensors © 2022.

PG&E Deed Restriction

PG&E purchased the Morro Bay Power Plant site in 1951 and constructed the power plant in the early 1950s. In connection with the subsequent sale of the property to Duke Energy in 1997, PG&E imposed a deed restriction across much of the approximately 95-acre Power Plant property, including the entire Project Site. That deed restriction prohibits developing portions of the power plant site (including the Project Site) for permanent or temporary lodging, hospitals or other health-care facilities, schools, daycare centers for children, parks, playgrounds, or other recreational uses. This deed restriction remains in place today. Figure 3 shows the location of these restrictions on the Power Plant property.

Proposed DTSC Land Use Restriction

In 2006, PG&E entered into a Corrective Action Consent Agreement with DTSC to address areas of the Power Plant property that were contaminated as a result of past operations at the Morro Bay Power Plant. In October 2021, DTSC released a Revised Statement of Basis for the Morro Bay Power Plant site. This report, prepared by the DTSC for five "Areas of Concern" (AOCs) at the Power Plant, indicates the public-reviewed Statement of Basis recommended that a land use covenant (LUC)[2] be recorded to address total petroleum hydrocarbons (TPH) and arsenic in soil and groundwater at the Power Plant, which would restrict land and groundwater uses and would require a soil management plan (SMP) and annual inspections. In the Revised Statement of Basis, DTSC recommends that this proposed remedy be revised to require a LUC and SMP only for soil at AOC 1, and that "the other AOCs at the [Power Plant] will be appropriate for Corrective Action Complete without Controls determinations for soil" (DTSC 2020b).[3] The proposed land use restriction would restrict future land uses in this area to commercial/industrial uses and prohibit future development of the property for permanent or temporary lodging, school, day care centers, recreation, or hospital uses. Figure 3 shows the location of these restrictions on the Power Plant property. The current regulatory status of the AOCs discussed above is summarized in Table 1.

Table 1 Current Status of AOCs

Area of Concern	Description	Current Status
AOC 1	Former Tank Farm	Former tank farm portion (within the Project Site and consistent with the BESS Site) requires a LUC for commercial/industrial use only and a SMP. Remainder (outside of the Project Site) was given a determination of No Further Action and unrestricted/residential land use
AOC 2	Beach Valve Area	Given a determination of No Further Action and unrestricted/residential land use by DTSC
AOC 3	Fire House No. 1	Given a determination of No Further Action and unrestricted/residential land use by DTSC
AOC 4	Storage Area	Given a determination of No Further Action and unrestricted/residential land use by DTSC
AOC 5	Switchyard	Portion on the Project Site only given a determination of No Further Action and unrestricted/residential land use by DTSC
AOC 6	Multi-Use Area	Given a determination of No Further Action and unrestricted/residential land use by DTSC

[2] According to DTSC, "LUCs are used when DTSC has determined that it is safe to leave specific types of contamination at a property as long as defined restrictions are adhered to" (DTSC 2022d).

[3] A "Corrective Action Complete without Controls" determination indicates that the DTSC has determined that institutional or engineering controls are not required for corrective action at a hazardous materials/waste release site to be considered complete.

Area of Concern	Description	Current Status
AOC 7	Power Plant Building	Has not been assessed due to the presence of the power plant building*
AOC 8	Metal Cleaning Waste Ponds	Granted clean closure by DTSC in 2008

* Will need to be assessed after demolition of the power plant building/stacks to receive a No Further Action determination from DTSC.

Surrounding Land Uses

The Project Site is surrounded by Morro Creek, an RV park, and temporary lodging facilities (a hotel and motel) to the north; Coleman Park, the Morro Bay harbor walk, and dune habitat associated with Morro Rock beach to the west; the Embarcadero, commercial uses, and a marina to the southwest; commercial and residential development to the south; and the PG&E switchyard to the east.

1.3 Project Description

The following project description has been adapted from information provided by the Project Applicant and the City of Morro Bay. The proposed project has three components: (1) construction and operation of a 600-megawatt (MW) BESS, (2) demolition and removal of the existing power plant building and stacks, and (3) adoption of a Master Plan that would change the land use designation of the BESS Site from Visitor Serving Commercial to General (Light) Industrial.

Construction and Operation of the BESS

Of the 43 acres included in the Project Site, approximately 24 acres (BESS Site) would be used for construction and operation of the BESS. The BESS would provide power to utility customers by interconnecting to the existing PG&E switchyard located east of the Power Plant property and Project Site. The BESS would operate year-round to store and discharge electricity to support demand on the power grid and improve grid reliability.

The proposed BESS includes three enclosed buildings with fire protection systems to house the batteries. Each building would contain approximately 2,400 battery racks and be surrounded by approximately 60 Power Conversion Systems (PCSs) composed of inverters and transformers to convert the direct current to alternating current. The PCSs would be located on concrete pads outside the buildings. The BESS would also include three substations with transformers, a transmission line (Gen-tie) connecting to the existing dead end structures on the southwestern side of the existing PG&E switchyard (the final structures before the connection with the substation), water supply system improvements, and internal access roads. Figure 4 presents the proposed locations of these facilities on the approximately 24-acre BESS Site. Figure 5 shows typical battery energy storage system components. Table 2 summarizes the characteristics of the BESS component of the proposed project.

Figure 3 Former Tank Farm and Areas of Concern 1 through 8

Source: Terraphase Engineering, 2022.

Table 2 Project Characteristics

Address	1290 Embarcadero, Morro Bay, California 93442
APN	066-331-046
Parcel Acreage	95 acres
BESS Site Acreage	24 acres
Demolition Site Acreage	19 acres
Battery Storage Buildings (3)	91,000 sf, 30 feet tall (2 stories)
Power Conversion Systems (approx. 180)	300 sf
Substations (3)	49,704 sf, 30 feet tall
Control House (1)	1,200 sf, 15 feet tall

sf = square feet

Battery Energy Storage

The BESS would be installed in three (3) two-story buildings. Each building would be approximately 350 feet by 260 feet, for a total building area of 91,000 square feet (sf) (refer to Figure 4). Each building would require approximately 1,000 to 1,500 pilings to a cement depth of 75 feet. The building exteriors would be steel frame with pre-cast concrete sides. Heating, ventilation, and air conditioning (HVAC) units would be either side- or roof-mounted.

Each building would house approximately 2,400 racks containing lithium-ion batteries with storage capacity of 200 MW for a total storage capacity of 600 MW. The battery modules (approximately 60,000 per building) would be housed in racks that are approximately 9 to 24 feet tall, depending on the use of stacked racking systems. The contract with the battery supplier would include provisions that provide for the recycling of batteries through the life of the BESS project. The racks would be grouped into blocks with their own access, fire protection, and safety systems. A typical rack is presented in Figure 5.

Power Conversion Systems

The PCSs would be located adjacent to each building and installed on the pavement or gravel pads. Underground conduits buried three to five feet in depth would connect the PCSs to the batteries in the buildings. Each PCS contains an inverter and transformer, which convert the power between direct current (DC) and alternating current (AC) and the voltage from 1,500V to 34.5kV. This is necessary because the electrical power grid operates in AC while the batteries store energy in DC. The transformer changes the voltage, as required, during battery charging and discharging. Each building would be surrounded by approximately 60 PCS units. Each PCS would be approximately 10 feet by 30 feet, with a height of approximately 15 feet. The location of the power conversion systems is identified in Figure 4. A typical PCS unit is shown in Figure 5.

Substations

The BESS would include three substations located outside the buildings. The substations would include transformers to increase the voltage to the required level for interconnection to the electrical grid, as well as associated switches, breakers, and control systems. Each BESS substation would have a transmission Gen-tie line to connect to the existing PG&E substation. The dimensions of each substation would be approximately 218 feet by 228 feet and approximately 30 feet tall.

Drilled pilings to a maximum depth of 75 feet would be used to support the concrete pad for the transformers. A typical substation is shown in Figure 5.

The substation areas would be graded and compacted to level the ground. Concrete pads would be constructed on site as foundations for substation equipment, and the remaining area would be graveled to a maximum depth of approximately six inches. Pilings drilled to a maximum depth of 75 feet would be used to support the concrete pad for the transformers. Because each of the substation transformers would contain oil as an insulating fluid, the substations would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting.

One control house would be required for the three substations (refer to Figure 4). The control house would be 30 feet by 40 feet in area for a total area of 1,200 square feet, and 15 feet in height.

Connection to the PG&E Switchyard

The three proposed substations would connect to the existing, adjacent PG&E switchyard. Approximately nine new transmission line poles (one 230-kilovolt [kV] double circuit transmission line pole and eight 230-kV single circuit transmission line poles) with a maximum height of 105 feet would be required for connection to PG&E existing 95-foot dead end structures (the final structures before the connection with the substation). The locations of the proposed transmission poles and lines, and the existing dead end structures are shown on Figure 4.

Operation and Maintenance Building

The existing administration building located south of the southernmost battery storage building and just inside the Morro Bay Power Plant property front gate along Embarcadero (refer to Figure 4) would be renovated and upgraded to serve as the BESS's operation and maintenance (O&M) building. This building would include restrooms to accommodate permanent staff. No exterior modifications are planned for this building.

BESS Construction

Construction of the BESS is anticipated to take 36 to 48 months. Construction would generally occur in three phases, which would overlap. For example, Phase 2 would begin towards the end of Phase 1. Phasing is anticipated to occur as follows:

- Phase 1, Site Preparation, would extend for a duration of 12-18 months;
- Phase 2, Installation, would extend for a duration of 18-36 months; and
- Phase 3, Commissioning (Start-up and Testing), would extend for a duration of 12-18 months.

Access during construction would be provided via two routes from SR 1:

- From Main Street to Quintana Road and then along the northern boundary of the existing PG&E substation; and
- From Main Street to Beach Street to the Morro Bay Power Plant property front gate along Embarcadero.

Erosion and Sediment Control and Pollution Prevention. The project would be subject to the City's adopted Low Impact Development (LID) and Post Construction requirements pursuant to Morro Bay Municipal Code Section 14.48.140. Construction activity would require coverage under the Stormwater Construction General Permit for the National Pollutant Discharge Elimination System

(NPDES) program, which requires the applicant/developer to prepare a single or multiple Stormwater Pollution Prevention Plans (SWPPPs) which would be based on the final engineering design and include all project components. The SWPPP would be designed to reduce potential erosion and surface water quality impacts during construction activities and throughout the life of the project. The SWPPP would include project information and best management practices (BMPs) for water quality.

Hazardous Materials and Construction Waste. Construction of the project would involve the use of hazardous materials, such as fuels and greases, to fuel and service construction equipment. A Hazardous Materials Business Plan (HMBP) that describes the allowable uses and storage of fuels and greases would be developed prior to construction. The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, State, and county regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 335 of the Code of Federal Regulations [CFR]) are anticipated to be produced, used, stored, transported, or disposed of as a result of project construction. Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel and emergency services. Trucks and construction vehicles would be serviced at off-site facilities, except that routine fueling may be completed in designated areas within the Project Parcel outside of the BESS footprint.

Construction waste would be sorted on-site throughout construction and transported to a facility licensed to accept construction waste. The nearest landfills are the Chicago Grade Landfill, located about 20 miles to the northeast via SR 41, and Cold Canyon Landfill, located about 33 miles to the southeast via SR 1 and U.S. 101. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Hazardous waste and electrical waste would be transported to a hazardous waste handling facility.

Pile Installation, Building Assembly, and Racking. The structures supporting the building foundation would consist of steel piles which would be driven into the soil. The piles typically would be spaced eight feet apart. Between 1,000 and 1,500 pilings would be installed up to a maximum depth of 75 feet. Once the piles are in place, a concrete foundation of 36 inches thick would be poured. The buildings would be erected using a steel frame and pre-cast concrete side panels. HVAC units would be installed on the roof or at the side of the building. After building erection is complete, the batteries would be installed in the buildings along with the associated wiring and control and fire protection systems.

Power Conversion Systems and Substations. Underground cables to connect the batteries to the PCSs would be installed using trenching techniques. Wire depths would be in accordance with local, State, and federal requirements, and would likely be buried two to three feet below grade, by excavating a trench approximately three to six feet wide to accommodate the conduits or direct buried cables. After excavation, cables rated for direct burial or cables installed inside a polyvinyl chloride (PVC) conduit would be installed in the trench and the excavated soil would typically be used to backfill the trench.

The substation areas would be excavated for the transformer equipment and control building foundations and oil containment area. The site area for the substations would be graded and compacted to an approximately level grade. Concrete pads would be constructed as foundations for substation equipment, and the remaining area would be graveled. Concrete for foundations would be brought on-site via truck.

BESS Operation and Maintenance

The operational phase of the project would begin with commissioning (start-up and testing). The project would operate continuously. The BESS would store and dispatch power during both daylight and non-daylight hours as required by grid operators year-round.

Maintenance and Staffing. Once operational, the project would require only minimal long-term maintenance. Periodically, it may be necessary to test and/or replace individual battery modules. The BESS would be continually monitored to determine if and when such maintenance is required. To maintain consistent operation and fulfill contractual requirements, it is anticipated that routine module replacement would occur over the life of the project, starting at approximately year five after beginning operation. Batteries would be recycled at the appropriate facilities. The batteries are anticipated to have a 20-year life. At the end of this period the batteries would be replaced.

Operation and maintenance activities would produce negligible volumes of solid and liquid wastes. The transformers proposed to be located at the PCSs and substations would use oil as an insulating fluid. As required for routine maintenance of the transformers, the oil would be replaced and disposed of in accordance with applicable regulations.

Safety Systems. Although the proposed new structures would not be occupied, personnel would be required to access the batteries for maintenance. Therefore, the project would incorporate a multi-tiered safety system based on industrial best practices in consultation with the Morro Bay Fire Department (MBFD). Safety systems would incorporate passive design considerations and include monitoring, automatic and manual protection elements, and explosion prevention protection, further described below.

- Passive Design Considerations. Compartmentalization is a passive method of fire protection that would be used to confine batteries into zones or areas. Each zone would be separated by rated fire barriers in accordance with the California Fire Code. The project has been sited to mitigate sea-level rise and tsunami risk; the side of the project facing the ocean is protected by existing berms that are approximately 33 feet in height.
- Monitoring. The system would be continually monitored for electrical, gas/smoke, and thermal variations.
- Automatic Protection. The project would incorporate fire suppression for the various areas within the building based on the type of hazard. The design would incorporate an automatic sprinkler system. There would be one system dedicated to suppression at the battery/rack level and, if required, another system to protect the buildings.
- Manual Protection. The project would include on-site fire hydrants, automatic wet standpipes, Class III hose stations, and hand-held portable fire extinguishers.
- Explosion Prevention Protection. The lithium-ion batteries selected for the BESS would incorporate explosion prevention protection pursuant to the National Fire Protection Association (NFPA) 855 or International Fire Code Chapter 12.

In addition, any additional conditions required by the MBFD, including fire department site access, fire apparatus access roads, site warning signage, and building safety systems, would be incorporated into the final BESS project design.

Demolition and Remediation of Existing Power Plant Building and Stacks

Prior to the demolition of the existing power plant building and stacks, environmental remediation would occur. Significant environmental remediation was completed at the time the Power Plant closed in February 2014. This included the removal or all oils and flammable materials. The equipment housed inside the Morro Bay Power Plant structure still contains some regulated materials such as mercury switches, lighting devices, and asbestos. Prior to commencement of structural demolition, all remaining regulated materials would be removed and disposed of off-site in compliance with California and federal regulations.

Following construction of the BESS, the existing power plant building and stacks would be remediated and demolished. Remediation and demolition would commence within six months of completion of the BESS. Of the 43 acres included in the Project Site, approximately 19 acres (Demolition Site) would be used for remediation and demolition of the power plant building and stacks. Figure 6 shows the approximate limits of the demolition activities. Environmental remediation and demolition would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and recycling of remaining equipment, waste management transport and disposal and backfill of below grade voids. Remediation and demolition are anticipated to take up to two years to complete.

Most of the outbuildings and transformers at the Power Plant property were removed in 2014. Several transformers and circuit breakers remain on the Power Plant property and are planned to be removed under a separate minor amendment application filed by the property owner. A detached garage and water tank near the main plant entrance would also be demolished. This work would be accomplished using cranes, torches, and shearing machines. All materials would be hauled to a qualified recycler or disposal facility.

Master Plan for Redevelopment of the Power Plant Property

The proposed project also includes a Master Plan which establishes a vision for the redevelopment of the Power Plant property as well as recommended improvements to pedestrian and circulation connections in the area. The Master Plan would amend the General Plan and LCP LUP land use designation on the BESS Site from Visitor Serving Commercial to General (Light) Industrial.[4] The proposed Master Plan would not modify the existing land use designation on the remainder of the Power Plant property, retaining the Visitor Serving Commercial designation and Mixed-Use Residential Overlay recently implemented through Plan Morro Bay.

[4] **Policy LU-5.4: Vistra Site Master Plan**. Create a master plan for the redevelopment of the former Vistra power plant site and surrounding area, which could include reuse of some of the existing buildings. The master plan will be the responsibility of the developer or property owner upon property development. Encourage extensive community participation in the master plan process. Ensure that the land use map identified in Figure LU-4 and development capacity established in Table LU-2 guide land planning for the site. Other objectives for the master plan include creating a better connection between the two sides of the Embarcadero at the Vistra site and creating a pedestrian-friendly atmosphere along the site's Embarcadero street frontage. The master plan shall be incorporated into the LCP via an LUP amendment with Chapter 3 of the Coastal Act with the standard of review prior to any CDP processing for associated development.

1.4 Regulatory Setting

Federal Laws and Regulations

United States Environmental Protection Agency (USEPA)

USEPA is the agency primarily responsible for enforcement and implementation of Federal laws and regulations pertaining to hazardous materials. Applicable Federal regulations pertaining to hazardous materials are contained in the CFR Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. The management of hazardous materials is governed by the following laws:

- Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S. Code [USC] 6901 et seq.);
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also called the Superfund Act) (42 USC 9601 et seq.);
- Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99 499); and
- Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (40 CFR Section 370).

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials. USEPA provides oversight and supervision for Federal Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards.

The Resource Conservation and Recovery Act (RCRA) of 1976

This act established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. Among other things, the use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (enacted 1980), amended by the Superfund Amendments and Reauthorization Act (SARA) (1986)

This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Among other things, CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled revision of the National Contingency Plan (NCP), which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List (NPL).

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986

This act, authorized by SARA Title III, was passed in 1986 and established requirements for federal, state, and local governments, tribes, and industry with regard to emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. These provisions are designed to help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. EPCRA is implemented by state requirements to appoint a State Emergency Response Commission (SERC), which are required to divide their state into Emergency Planning Districts and to name a Local Emergency Planning Committee (LEPC) for each district. EPCRA Sections 311 and 312 contain emergency and hazardous chemical inventory reporting requirements, including maintenance of safety data sheets for hazardous chemicals used or stored at a facility and annual submittal of hazardous chemicals to the local fire department, SERC, and LEPC.

Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act (OSHA) of 1970, which is implemented by the federal OSHA, contains provisions with respect to hazardous materials handling. OSHA was created to assure safe and healthful working conditions by setting and enforcing standards and by providing training, outreach, education, and assistance. OSHA provides standards for general industry and construction industry on hazardous waste operations and emergency response. OSHA requirements, as set forth in 29 CFR Section 1910, et. seq., are designed to promote worker safety, worker training, and a worker's right–to-know. The United States Department of Labor has delegated the authority to administer OSHA regulations to the State of California. The California OSHA program (Cal/OSHA) (codified in the California Code of Regulations [CCR], Title 8, or 8 CCR generally and in the Labor Code secs. 6300-6719) is administered and enforced by the Division of Occupational Safety and Health (DOSH). Cal/OSHA is very similar to the OSHA program. Among other provisions, Cal/OSHA requires employers to implement a comprehensive, written Injury and Illness Prevention Program for potential workplace hazards, including those associated with hazardous materials.

In addition, pursuant to OSHA, a developer that undertakes a construction project that involves the handling of contaminated site conditions must prepare and implement a Health and Safety Plan (HASP) that sets forth the measures that would be undertaken to protect those that may be affected by the construction project. While a HASP is prepared and implemented pursuant to OSHA, the HASP is not subject to regulatory review and approval, although a HASP is typically appended to a Site Management Plan if this document is required by the Certified Unified Program Agency (CUPA), which is the San Luis Obispo County Environmental Health Services Division (EHS). HASPs must comply with the most current OSHA regulations, including 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response and 29 CFR 1926, Construction Industry Standards, as well as other applicable federal, State, and local laws and regulations.

Lead-Based Paint Elimination Final Rule 24 Code of Federal Regulations

Regulations for LBP are contained in the Lead-Based Paint Elimination Final Rule 24 CFR 33, governed by the United States Housing and Urban Development (HUD), which requires sellers and lessors to disclose known LBP and LBP hazards to perspective purchasers and lessees. Additionally, all LBP abatement activities must be in compliance with California and Federal OSHA and with the State of California Department of Health Services requirements. Only LBP-trained and -certified abatement personnel are allowed to perform abatement activities. All LBP removed from structures must be hauled and disposed of by a transportation company licensed to transport this type of material at a landfill or receiving facility licensed to accept the waste.

Toxic Substances Control Act

In 1976, the federal Toxic Substances Control Act (TSCA) (15 USC Sections 2601–2671) established a system of evaluation in order to identify chemicals which may pose hazards. TSCA is enforced by the USEPA through inspections of places in which ACMs are manufactured, processed, and stored and through the assessment of administrative and civil penalties and fines, as well as injunctions against violators. TSCA establishes a process by which public exposure to hazards may be reduced through manufacturing, distribution, use and disposal restrictions or labeling of products. PCBs are hazardous materials regulated by the USEPA under the TSCA. These regulations ban the manufacture of PCBs although the continued use of existing PCB-containing equipment is allowed. PCBs were formerly used in such applications as hydraulic fluids, plasticizers, adhesives, fire retardants, and electrical transformers, among others. TSCA also contains provisions controlling the continued use and disposal of existing PCB-containing equipment. The disposal of PCB wastes is also regulated by TSCA (40 CFR 761), which contains life cycle provisions similar to those in RCRA. In addition to TSCA, provisions relating to PCBs are contained in the Hazardous Waste Control Law (HWCL), which lists PCBs as hazardous waste.

Under TSCA, the USEPA has enacted strict requirements on the use, handling, and disposal of ACMs. These regulations include the phasing out of friable asbestos and ACMs in new construction materials beginning in 1979. In 1989, the USEPA banned most uses of asbestos in the country. Although most of the ban was overturned in 1991, the current banned product categories include corrugated paper, rollboard, commercial paper, specialty paper, flooring felt, and any new uses. TSCA also establishes USEPA's Lead Abatement Program regulations, which provide a framework for lead abatement, risk assessment, and inspections. Those performing these services are required to be trained and certified by USEPA.

Hazardous Materials Transportation Act

The USDOT prescribes strict regulations for the safe transportation of hazardous materials, including requirements for hazardous waste containers and licensed haulers who transport hazardous waste on public roads. The Secretary of the Department of Transportation receives the authority to regulate the transportation of hazardous materials from the Hazardous Materials Transportation Act (HMTA), as amended and codified in 49 USC Section 5101 et seq. The Secretary of Transportation is authorized to issue regulations to implement the requirements of 49 USC. The Pipeline and Hazardous Materials Safety Administration, formerly the Research and Special Provisions Administration, was delegated the responsibility to write the hazardous materials regulations, which are contained in Title 49 CFR Parts 100-180 (USDOT 2021). Title 49 of the CFR, which contains the regulations set forth by the HMTA, specifies requirements and regulations with respect to the transport of hazardous materials. It requires that every employee who transports hazardous materials receive training to recognize and identify hazardous materials and become familiar with hazardous materials requirements. Under the HMTA, the Secretary of Transportation "may authorize any officer, employee, or agent to enter upon, inspect, and examine, at reasonable times and in a reasonable manner, the records and properties of persons to the extent such records and properties relate to: (1) the manufacture, fabrication, marking, maintenance, reconditioning, repair, testing, or distribution of packages or containers for use by any "person" in the transportation of hazardous materials in commerce; or (2) the transportation or shipment by any "person" of hazardous materials in commerce."

Other Hazardous Materials Regulations

In addition to the USDOT regulations for the safe transportation of hazardous materials, other applicable federal laws that also address hazardous materials. These include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act

State Laws and Regulations

The primary state agencies with jurisdiction over hazardous chemical materials management are DTSC and the State Water Resources Control Board (SWRCB). Other state agencies involved in hazardous materials management include Cal/OSHA and the State Office of Emergency Services (Cal OES).

Authority for the statewide administration and enforcement of RCRA rests with DTSC. While DTSC has primary state responsibility in regulating the generation, storage, and disposal of hazardous materials, DTSC may further delegate enforcement authority to local jurisdictions. In addition, DTSC is responsible and/or provides oversight for contamination cleanup and administers statewide hazardous waste reduction programs. DTSC operates programs to accomplish the following: (1) manage the aftermath of improper hazardous waste management by overseeing site cleanups; (2) prevent releases of hazardous waste by ensuring that those who generate, handle, transport, store, and dispose of wastes do so properly; and (3) evaluate soil, water, and air samples taken at sites.

The storage of hazardous materials in USTs is regulated by the SWRCB, which delegates authority to the Regional Water Quality Control Board (RWQCB) on the regional level, and typically to the local fire department on the local level.

The Cal/OSHA program is administered and enforced by the DOSH. Cal/OSHA is very similar to the federal OSHA program. For example, both programs contain rules and procedures related to exposure to hazardous materials during demolition and construction activities. In addition, Cal/OSHA requires employers to implement a comprehensive, written IIPP. An IIPP is an employee safety program for potential workplace hazards, including those associated with hazardous materials.

The Cal OES Hazardous Materials section under the Fire and Rescue Division coordinates statewide implementation of hazardous materials accident prevention and emergency response programs for all types of hazardous materials incidents and threats. In response to any hazardous materials emergency, the Hazardous Materials section staff is called upon to provide state and local emergency managers with emergency coordination and technical assistance.

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the SWRCB, and the California Department of Resources, Recycling, and Recovery to compile and annually update lists of hazardous waste sites and land designated as hazardous waste sites throughout the state. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the lead agency accepts an application for any development project as complete, the applicant must consult these lists to determine if the site at issue is included.

California Hazardous Materials Release Response Plans and Inventory Law of 1985

The Business Plan Act requires preparation of HMBPs and disclosure of hazardous materials inventories, including an inventory of hazardous materials handled, plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures for businesses that handle, store, or transport hazardous materials in amounts exceeding specified minimums (California Health and Safety Code [HSC], Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies are responsible for administering these regulations.

Several state agencies regulate the transportation and use of hazardous materials to minimize potential risks to public health and safety, including CalEPA and the California Emergency Management Agency. The California Highway Patrol and California Department of Transportation (Caltrans) enforce regulations specifically related to the transport of hazardous materials. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roadways.

Hazardous Waste Control Act

The hazardous waste management program enforced by DTSC was created by the Hazardous Waste Control Act (HSC Section 25100 et seq.), which is implemented by regulations described in CCR Title 26. The State program is similar to, but more stringent than, the Federal program under RCRA. The regulations list materials that may be hazardous, and establish criteria for their identification, packaging, and disposal. Environmental health standards for management of hazardous waste are contained in CCR Title 22, Division 4.5. In addition, as required by California Government Code Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List for the State called the Cortese List.

If any soil is excavated from a site containing hazardous materials, it would be considered a hazardous waste if it exceeded specific criteria in CCR Title 22. Remediation of hazardous wastes found at a site may be required if excavation of these materials is performed, or if certain other soil disturbing activities would occur. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking jurisdiction.

Underground Storage Tanks Program

The State regulates USTs through a program pursuant to HSC, Division 20, Chapter 6.7, and CCR Title 23, Division 3, Chapter 16 and Chapter 18. The State’s UST program regulations include among others, permitting USTs, installation of leak detection systems and/or monitoring of USTs for leakage, UST closure requirements, release reporting/corrective action, and enforcement. Oversight of the statewide UST program is assigned to the SWRCB which has delegated authority to the RWQCB and typically on the local level, to the fire department. EHS administers and enforces federal and state laws and local ordinances for USTs in San Luis Obispo County. Plans for the construction/installation, modification, upgrade, and removal of USTs are reviewed by EHS inspectors. If a release affecting groundwater is documented, the project file is transferred to the appropriate RWQCB for oversight.

Aboveground Petroleum Storage Act

In 1989, California established the Aboveground Petroleum Storage Act instituting a regulatory program covering ASTs containing specified petroleum products (HSC Sections 25270–25270.13). The Aboveground Petroleum Storage Act applies to facilities with storage capacities of 10,000 gallons or more or are subject to oil pollution prevention and response requirements under 40 CFR Part 112. Under the Aboveground Petroleum Storage Act, each owner or operator of a regulated AST facility must file biennially a storage statement with the SWRCB disclosing the name and address of the AST facility; the contact person for the facility; and the location, size, age, and contents of each AST that exceeds 10,000 gallons in capacity and that holds materials that are at least five percent petroleum. In addition, each owner or operator of a regulated AST must prepare a Spill Prevention Control and Countermeasure Plan (SPCC) in accordance with federal and state requirements (40 CFR Part 112 and HSC Section 25270.5[c]). The responsibility for inspecting ASTs and ensuring that SPCCs have been prepared lies with the RWQCBs.

Lead-Based Paint Regulations

The United States Consumer Product Safety Commission (16 CFR 1303) banned paint containing more than 0.06 percent lead for residential use in 1978. The demolition of buildings containing LBP is subject to a comprehensive set of California regulatory requirements that are designed to assure the safe handling and disposal of these materials. Cal/OSHA has established limits of exposure to lead contained in dusts and fumes, which provides for exposure limits, exposure monitoring, and respiratory protection, and mandates good working practices by workers exposed to lead, particularly since demolition workers are at greatest risk of adverse exposure. Lead-contaminated debris and other wastes must also be managed and disposed of in accordance with applicable provisions of the California HSC.

California Occupational Safety and Health Act

The California Occupational Safety and Health Act of 1973 addresses California employee working conditions, enables the enforcement of workplace standards, and provides for advancements in the field of occupational health and safety (California Labor Code, Section 6300 et seq). The Act also created Cal/OSHA, the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA's standards are generally more stringent than federal regulations. Under the former, the employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure. The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. At sites known or suspected to be contaminated by hazardous materials, workers must have training in hazardous materials operations and a Site Health and Safety Plan must be prepared. The Health and Safety Plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

Cal/OSHA is responsible for developing and enforcing workplace safety standards and ensuring worker safety in the handling and use of hazardous materials (8 CCR, Section 1529). Among other requirements, Cal/OSHA requires entities handling specified amounts of certain hazardous chemicals to prepare injury and illness prevention plans and chemical hygiene plans and provides specific regulations to limit exposure of construction workers to lead. OSHA applies to this project because contractors will be required to comply with its handling and use requirements that would increase worker safety and reduce the possibility of spills, and to prepare an emergency response plan to respond to accidental spills.

Safe Drinking Water and Toxic Enforcement Act

The Safe Drinking Water and Toxic Enforcement Act (HSC Section 25249.5, et seq.), Proposition 65, lists chemicals and substances believed to have the potential to cause cancer or deleterious reproductive effects in humans. It also restricts the discharges of listed chemicals into known drinking water sources above the regulatory levels of concern, requires public notification of any unauthorized discharge of hazardous waste, and requires that a clear and understandable warning be given prior to a known and intentional exposure to a listed substance.

California Water Code (CWC)

The CWC authorizes the SWRCB to implement provisions of the Clean Water Act, including the authority to regulate waste disposal and require cleanup of discharges of hazardous materials and other pollutants. Groundwater may be encountered during deeper excavations for the subterranean parking structure, building foundations, or other subterranean building components. Under the CWC, discharges of any such groundwater to surface waters, or any point sources hydrologically connected to surface waters, such as storm drains, is prohibited unless conducted in compliance with a Waste Discharge Requirement permit. In addition to the CWC, these permits implement and are in compliance with the federal Clean Water Act's NPDES program.

California Fire Code (2019)

The 2019 California Fire Code is based on the 2018 International Fire Code. The California Fire Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

Uniform Fire Code

The Uniform Fire Code, Article 80 (Section 80.103 of the Uniform Fire Code as adopted by the State Fire Marshal pursuant to HSC Section 13143.9), includes specific requirements for the safe storage and handling of hazardous materials. These requirements are intended to reduce the potential for a release of hazardous materials and for mixing of incompatible chemicals, and specify the following specific design features to reduce the potential for a release of hazardous materials that could affect public health or the environment:

- Separation of incompatible materials with a noncombustible partition;
- Spill control in all storage, handling, and dispensing areas; and
- Separate secondary containment for each chemical storage system. The secondary containment must hold the entire contents of the tank, plus the volume of water needed to supply the fire suppression system for a period of 20 minutes in the event of catastrophic spill.

State Emergency Plan

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction, and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all state agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The Act provides the basic authorities for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. The Act further describes the function and operations of government at all levels during extraordinary emergencies, including war.

All local emergency plans are extensions of the State of California Emergency Plan. The State Emergency Plan conforms to the requirements of California's Standardized Emergency Management System (SEMS), which is the system required by Government Code 8607(a) for managing emergencies involving multiple jurisdictions and agencies (California Emergency Management Agency [CalEMA][5] 2009). The SEMS incorporates the functions and principles of the Incident Command System (ICS), the Master Mutual Aid Agreement (MMAA), existing mutual aid systems, the operational area concept, and multi-agency or inter-agency coordination. Local governments must use SEMS to be eligible for funding of their response-related personnel costs under state disaster assistance programs. The SEMS consists of five organizational levels that are activated as necessary, including: field response, local government, operational area, regional, and state. Cal OES divides the state into several mutual aid regions. The City of Morro Bay is located in Mutual Aid Region I, which includes San Luis Obispo, Santa Barbara, Ventura, Los Angeles, and Orange Counties (CalEMA 2011).

Regional and Local Laws and Regulations

Certified Unified Program Agency

The primary local agency with responsibility for implementing federal and state laws and regulations pertaining to hazardous materials management is the San Luis Obispo County EHS. EHS is the CUPA for San Luis Obispo County. A CUPA is a local agency that has been certified by CalEPA to implement the six state environmental programs within the local agency's jurisdiction. This program was established under the amendments to the California HSC made by Senate Bill 1082 in 1994. The six consolidated programs are:

- Hazardous Materials Release Response Plan and Inventory (Business Plans);
- California Accidental Release Prevention (CalARP);
- Hazardous Waste (including Tiered Permitting);
- USTs;
- ASTs (SPCC requirements); and
- UFC Article 80 Hazardous Material Management Program (HMMP) and Hazardous Material Identification System (HMIS).

[5] California Emergency Management Agency is now called CalOES.

As the CUPA for San Luis Obispo County, EHS maintains the records regarding location and status of hazardous materials sites in the county and administers programs that regulate and enforce the transport, use, storage, manufacturing, and remediation of hazardous materials. By designating a CUPA, San Luis Obispo County has accurate and adequate information to plan for emergencies and/or disasters and to plan for public and firefighter safety.

In addition, EHS, in their role as the CUPA, also oversees and addresses issues relating to the presence and handling of contaminated soils that may be present at sites within San Luis Obispo County. Any such hazardous materials that may be encountered would be managed (using tools, such as a SMP) in accordance with all relevant and applicable federal, State, and local laws and regulations that pertain to the use, storage, transportation and disposal of hazardous materials and waste. In addition, EHS may consult with other agencies (e.g., DTSC and the Central Coast RWQCB) if the nature of the contamination warrants the involvement of these agencies.

The Household Hazardous Waste Disposal program of the CUPA is implemented by the San Luis Obispo County Integrated Waste Management Authority.

Airport Land Use Compatibility Plans

The Section 65302.3 of the Government Code requires general plans and applicable specific plans to be consistent with amended Comprehensive Airport Land Use Plans (CALUP). The nearest airport to the Project Site is the San Luis Obispo County Regional Airport, located approximately 15 miles to the southeast. The Project Site is not located in the airport land use plan area for this airport.

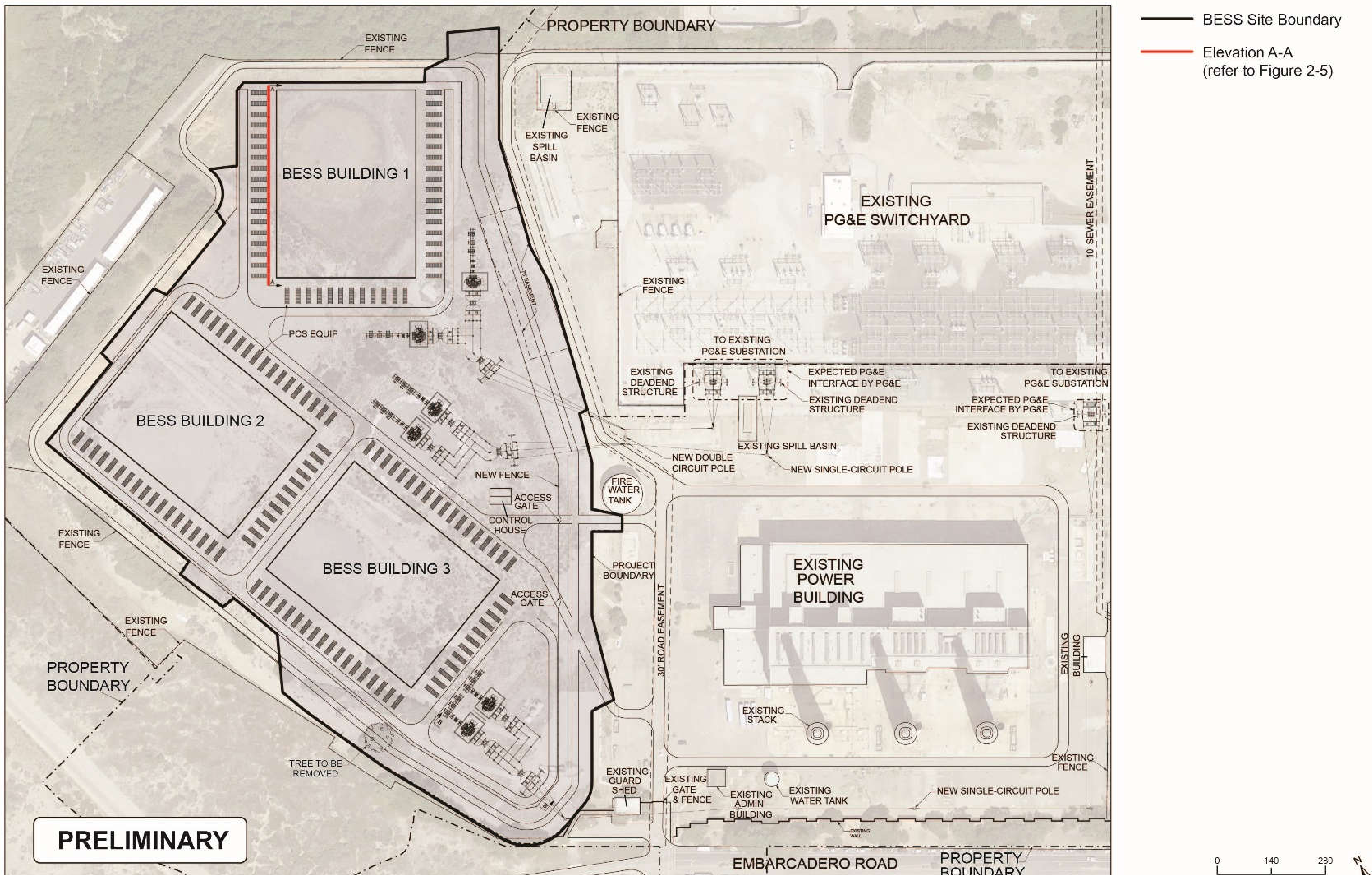
Morro Bay Local Hazard Mitigation Plan

The Morro Bay Local Hazard Mitigation Plan (LHMP) is a plan to improve the resiliency in the community by identifying natural hazards present in Morro Bay, determining the community's vulnerability to each hazard, and identifying development mitigation strategies to reduce vulnerability before emergency situations develop. Morro Bay's LHMP was adopted in 2006 and most recently updated in 2019. The LMHP identifies earthquakes (including fault rupture and liquefaction), floods, landslides, and hazardous materials releases as the most significant hazards present in the community and contains nine goals to improve resiliency (City of Morro Bay 2019a). The City's LHMP is part of the County of San Luis Obispo's Multi-Jurisdictional LHMP.

Morro Bay Comprehensive Emergency Response Plan

The City of Morro Bay has a Comprehensive Emergency Response Plan revised in 2019 and developed by the MBFD. The Emergency Response Plan covers City policies and concepts for responding to any and all emergencies that could affect the health, safety, and property of the public within city limits, including earthquakes, hazardous materials, multi-casualty events, storms and floods, wildland fires, terrorism, nuclear power plant events, and tsunamis (City of Morro Bay 2019b). Most of the hazards in the response plan are also contained in the LHMP. The policies and general approach to emergency situations delineated in the plan follow a number of widely adopted emergency response standards and operations protocols, including the National Incident Management System, the State Emergency Management System, and the Incident Command System.

Figure 4 Proposed BESS Location



Source: Sargent & Lundy, 2020.

Figure 5 Example BESS Components

Battery Energy Storage

Power Conversion System

Substation

Source: Vistra, 2018 and 2021.

Figure 6 Demolition Area

Imagery provided by Microsoft Bing and its licensors © 2022.
Additional data provided by Vistra, 2022.

19-08915 MB, MB BESS EIR
Fig 2-5 Demolition Area

2 Records Review

2.1 Known Release Sites Review

Project Site

A review of the SWRCB online GeoTracker database and the DTSC online EnviroStor database indicates that the Project Site is associated with the following known release cases:

- An open Cleanup Program Site case for Morro Bay Power Plant – PG&E with oversight by the DTSC (lead), case #40490006, and the Central Coast Regional Water Quality Control Board (RWQCB), case #SL203431377 (SWRCB 2022a)
- An open Corrective Action case for Dynegy Morro Bay LLC with oversight by the DTSC, case #100220/102365 (DTSC 2022a)
- A closed Historical Permitted Hazardous Waste Facility case for Dynegy Morro Bay LLC with oversight by the DTSC (DTSC 2022a)

As part of the research effort, Rincon reviewed select environmental documents available online for the cases listed above at the SWRCB GeoTracker website and the DTSC EnviroStor website, which are discussed below. Areas of hazardous materials concern are depicted on Figure 7.

Final Screening-Level Human Health Risk Assessment Report – Dynegy-Owned Portion of the Former Morro Bay Power Plant (March 2020)

This report, prepared for the Power Plant property (the Project Site plus additional offsite areas to the north and south of the Project Site), evaluated potential risks associated with residential and construction worker exposure to soil in areas of the former Power Plant owned by Dynegy Morro Bay, LLC. The report indicates that the Power Plant property was owned and occupied by the United States Navy and used as an amphibious training base prior to 1951, PG&E purchased the Power Plant property in 1951, and the Power Plant operated on the Power Plant property from 1955 to 2014 (Terraphase Engineering Inc. 2020).

According to the report, soil and groundwater conditions at the Power Plant property have been investigated since 1986. In 2006, PG&E and the DTSC entered into a Corrective Action Consent Agreement to investigate and clean up releases of chemicals at the Power Plant. Eight AOCs were identified as warranted for further evaluation, all of which are located within the Project Site (excluding the northern part of AOC 1 and the majority of AOC 5) (Figure 3):

- AOC 1, Former Tank Farm, comprises six former ASTs, five of which stored “No. 6 fuel oil” and one stored “No. 2 fuel oil.” An oil/water separator unit and an “oil transfer pond” were also formerly located in AOC 1. Undifferentiated total petroleum hydrocarbons (TPH-u), middle distillate TPH (TPH-md) (comparative to diesel-range TPH), and residual TPH (TPH-r) (comparable to motor oil-range TPH) have been detected in soil at AOC 1 at concentrations up to 20,000 milligrams per kilogram (mg/kg), and the highest concentrations detected are correlated with the former AST footprints in the top 2 feet of soil at AOC 1. The portion of AOC 1 located on the Project Site is consistent with the boundaries of the BESS Site.
- AOC 2, Beach Valve Area, contained a former septic system leach field and a pipeline to deliver fuel to the ASTs in AOC 1.

Figure 7 Areas of Hazardous Materials Concern

Imagery provided by Microsoft Bing and its licensors © 2022.

- AOC 3, Fire House No. 1, formerly contained equipment with pumps and diesel fuel for Power Plant emergencies.
- AOC 4, Storage Area, is a less-than-1,000-square-foot area located adjacent to the lube storage area, hazardous waste storage building, and other storage buildings.
- AOC 5, Switchyard, is the 75-foot-wide section of the switchyard.
- AOC 6, Multi-Use Area, comprised buildings used in routine maintenance operations for the Power Plant, including painting and sandblasting.
- AOC 7, Power Building, comprises the Demolition Site and cannot be assessed for purposes of characterization until it is demolished; soil samples have been collected immediately adjacent to the Power Building (within and adjacent to AOC 7) and "generally did not indicate the presence of TPH in soil at concentrations greater than commercial/industrial [2019 San Francisco Bay RWQCB Environmental Screening Levels (ESLs)]."
- AOC 8, Metal Cleaning Waste Ponds, was issued "clean closure"[6] by the DTSC in 2008 and was not evaluated as part of the 2020 Human Health Risk Assessment (HHRA).

The report indicates that polychlorinated biphenyls and asbestos were not screened as part of the HHRA "because they have not been detected in soil at the [Power Plant property]." Site-specific soil screening levels (SSLs) were calculated for the selected contaminants of concern at the Project Site based on the most conservative scenarios for generic regulatory screening levels (i.e., residential and construction worker ESLs, residential DTSC Screening Levels, and residential USEPA Regional Screening Levels).

According to the report, detected concentrations of constituents in soil at the Project Site exceeded the SSLs at the following AOCs and depths:

- TPH-u was detected above the SSL of 255 mg/kg in shallow soil (1 foot or less) in or adjacent to AOCs 1, 2, 4, 6, 7, and 8 and at 12 to 12.5 feet below ground surface (bgs) in AOC 3
- TPH-md was detected above the SSL of 255 mg/kg in shallow soil (1 foot or less) in or adjacent to AOCs 1, 5, and 7; at 4.5 to 6 feet bgs in AOC 5; and at 11 to 12 feet and 14 feet bgs in AOC 3
- TPH-r was detected above the SSL of 12,000 mg/kg at 1 foot bgs in AOC 1
- Arsenic was detected above the SSL of 7.54 mg/kg at depths ranging from 0.5 foot bgs to 14 feet bgs in AOCs 3 and 5, adjacent to AOC 7, and nearby to the southwest of AOC 8
- Cobalt was detected above the SSL of 34.3 mg/kg in shallow soil (1 foot or less) in AOCs 1, 5, and 7 and nearby to AOCs 6, 7, and 8, in addition in AOC 1 at 5 feet bgs and 8.5 to 9 feet bgs
- Hexavalent chromium was detected above the SSL of 0.3 mg/kg at depths ranging from 1 to 17 feet bgs in AOC 1, at 2.5 feet bgs adjacent to AOC 3, and at 1 foot bgs and 2.5 feet bgs nearby to the south of AOC 6
- Lead was detected above the SSL of 80 mg/kg at depths of 0.5 to 1 foot bgs in AOC 1 and between AOC 6 and AOC 8, and at 4.5 to 5 feet bgs in AOC 5
- Nickel was detected above the SSL of 216 mg/kg at 0.5 to 1 foot bgs and 3 to 3.5 feet bgs in AOC 1, and at depths ranging from 0.5 foot to 18 feet bgs nearby to AOCs 1, 3, 6, 7, and 8
- Thallium was detected above the SSL of 1 mg/kg at 1 foot bgs in AOC 1

[6] According to DTSC, "Clean closure means the owners [of a hazardous waste management site] remove all wastes from the [site] and decontaminate or remove equipment, structures, and contaminated soil" (DTSC 2022e).

- The polycyclic aromatic hydrocarbon (PAH) benzo(a)pyrene was detected above the SSL of 0.11 mg/kg in shallow soil (less than 1 foot bgs) in AOC 2
- The PAHs benzo(a)pyrene and dibenz(a,h)anthracene were detected above the SSLs of 0.11 mg/kg and 0.028 mg/kg, respectively, in shallow soil (less than 1 foot bgs) adjacent to AOC 6

The report indicates that the detected concentrations of VOCs and chlordane in soil at the Project Site were below their respective SSLs. PCBs were not detected in soil at the Project Site. The report also indicates that based on a data distribution/outlier evaluation for the detections of arsenic in soil borings located outside of AOC 1, "apart from the two outliers ([detections above the SSL in soil borings located adjacent to AOC 7]), all remaining non-Tank-Farm soil arsenic data represent background soil conditions." The two arsenic outliers are concluded to not be "indicative of soil contamination resulting from site activities."

The report concludes that the findings of the HHRA "demonstrate that a LUC and a SMP may be needed for the Former Tank Farm area, but not for the entire AOC 1, which includes areas outside of the Former Tank Farm area [(and outside of the Project Site)]" and "a separate SMP may be needed for soil in AOC 7, depending on the results of future investigations" (Terraphase Engineering Inc. 2020).

DTSC approved the report in a letter dated July 16, 2020 and made a discretionary decision that "while AOC 1 will still need a LUC for soil within it, AOCs 2 through 4 and 6 will no longer need to be incorporated into the LUC for soil" (DTSC 2020a).

Please refer to Appendix A for tables of soil sampling results at the Project Site (Terraphase Engineering Inc. 2020).

Responsiveness Summary to Draft Statement of Basis – Areas of Concern 1 Through 4 and 6, Morro Bay Power Plant (December 2020)

This report, prepared by the DTSC for AOCs 1 through 4 and 6 at the Power Plant, indicates the public-reviewed Statement of Basis recommended that a LUC be recorded to address TPH and arsenic in soil and groundwater at the Power Plant, which would restrict land and groundwater uses and would require a SMP and annual inspections. According to the report, the DTSC recommends that this proposed remedy be revised to require a LUC and SMP only for soil at AOC 1, and that "the other AOCs at the [Power Plant] will be appropriate for Corrective Action Complete without Controls determinations for soil" (DTSC 2020b).

Determination of Corrective Action Complete Without Controls Status for Soil at Areas of Concern 2, 3, 4, and 6 – Morro Bay Power Plant (April 2021)

This letter, prepared by the DTSC for AOCs 2 through 4 and 6 at the Power Plant, indicates that based on the DTSC's assessment of existing documents, including the December 2020 Draft Responsiveness Summary (in which the DTSC indicated that "the Screening-Level HHRA concluded that the only AOC that requires a LUC for soil is AOC 1"), DTSC considered corrective action for AOCs 2 through 4 and 6 as "Corrective Action Complete without Controls" (DTSC 2021a).

Final Soil Management Plan – Former Tank Farm Area, MBPC-Owned Portion of the Former Morro Bay Power Plant (May 2021)

This report, prepared by Terraphase Engineering Inc. for the former tank farm portion of AOC 1 at the Power Plant, indicates that "in the event of future excavation and/or soil movement within the [former tank farm area], appropriate precautions and controls should be instituted to protect construction workers and the environment from exposure to residual concentrations of TPH in soil" (Terraphase Engineering Inc. 2021a). According to the report, "only diesel-range TPH concentrations at the [former tank farm area] pose a potential risk to construction workers." The SMP outlines dust and stormwater control measures to be performed during soil-disturbing activities, the management and storage of excavated soil, excavated soil reuse within the former tank farm area, excavated soil characterization and profiling for offsite disposal, waste transport and disposal, project personnel training requirements, and annual reporting for years during which soil-disturbing activities occur at the former tank farm area.

Final Screening-Level Human Health Risk Assessment Report for Groundwater – MBPC-Owned Portion of the Former Morro Bay Power Plant (June 2021)

This report, prepared for the Project Site, indicates that previous investigations conducted at the Power Plant "identified the presence of petroleum hydrocarbons and arsenic in groundwater in select wells" and that "the Former Tank Farm in AOC 1 has been identified as the primary source of petroleum hydrocarbons in [Project Site] soil and groundwater" (Terraphase Engineering Inc. 2021b). According to the report, groundwater sampling was conducted at the Project Site between 1984 and 2018 and all 22 groundwater monitoring wells on the Project Site were destroyed in July 2020 after approval from the DTSC. During the most recent groundwater sampling event in May 2018, TPH was detected at concentrations ranging from 22 to 1,400 micrograms per liter (µg/L) of diesel-range TPH and 58 to 1,100 µg/L of motor oil-range TPH in five groundwater monitoring wells located in the southwestern portion of the Project Site, within AOC 1, AOC 2, and adjacent to AOC 3 and AOC 7. Please refer to Appendix A for a table of groundwater sampling results at the Project Site (Terraphase Engineering Inc. 2021b).

The report also indicates that "between 2011 and 2018, there were sporadic, very low detections of arsenic in some [groundwater monitoring] wells" and because the detected concentrations of arsenic in the three groundwater monitoring wells that previously had detections above the SSL were below the SSL during the May 2018 groundwater sampling event, and no other metals exceeded SSLs in groundwater during the May 2018 groundwater sampling event, "the potential significance of potable use exposure to metals in groundwater has not been evaluated in this Screening Level HHRA" (Terraphase Engineering Inc. 2021b). The report concluded that a LUC was not warranted for groundwater use at the Project Site to protect human health based on several reasons, including that the calculated exposure concentrations for diesel- and motor oil-range TPH are "highly conservative," and the use of shallow groundwater at the Project Site for water supply is impractical and inconsistent with state and local regulations.

DTSC approved the report in a letter dated August 25, 2021, which also indicated that Power Plant "groundwater will not need to be incorporated into the proposed LUC to be recorded for a portion of AOC 1" and that "DTSC is determining that since [Power Plant] groundwater meets potable and non-potable groundwater use, No Further Action is necessary for [Power Plant] groundwater" (DTSC 2021b).

Responsiveness Summary to Draft Revised Statement of Basis – Areas of Concern 1 Through 4 and 6, Morro Bay Power Plant (June 2022)

This report, prepared by the DTSC for AOCs 1 through 4 and 6 at the Power Plant, indicates the public-reviewed, revised Statement of Basis proposed implementation of a LUC that restricts the former tank farm portion of AOC 1 soil to future commercial/industrial use, establishment of an

SMP for the safe handling and disposal of contaminated soil, and a requirement of annual inspections and reporting to ensure compliance with the LUC (DTSC 2022b).

DTSC approved the report in a letter dated June 21, 2022, which also indicated that "the rest of AOC 1 (i.e., portion of AOC outside of the former tank farm) and AOCs 2 through 6 were determined to be appropriate for unrestricted/residential use of both soil and groundwater" (DTSC 2022c).

The current regulatory status of the AOCs discussed above is summarized in Table 1.

Adjacent Release Sites

A review of the SWRCB online GeoTracker database and the DTSC online EnviroStor database indicates that one adjacent property is associated with a known release case: the Morro Bay Amphibious Training Site, a Formerly Used Defense Sites (FUDS) case with oversight by the DTSC and an "inactive: needs evaluation" status as of July 1, 2005, is mapped as located adjacent to the southwest of the Project Site (DTSC 2022a). The potential contaminants of concern are listed as explosives (unexploded ordnance, and munitions and explosives of concern). No case documents or other information is available on EnviroStor. A FUDS Program Management Action Plan report available on the United States Army Corps of Engineers' online FUDS database indicates that small arms and high-explosive magazines were stored at this amphibious training base during its operation in the 1940s; however, "no reports were found of ordnance left on this site" (United States Army Corps of Engineers 2019). Therefore, this adjacent site is not expected to impact the Project.

No other known release cases are associated with adjacent properties.

2.2 Historical Records

According to a review of aerial photographs and topographic maps provided by Environmental Risk Information Services (ERIS), it appears that the Project Site was undeveloped in 1937, developed with several former commercial or industrial buildings in the southern portion by 1949, and developed with at least four ASTs and at least one stack from approximately 1956 to 2010. By 2012, the six largest ASTs were removed from the northern portion of the Project Site. By 2018, one AST was removed from the southeastern portion of the Project Site. The three existing stacks and at least one AST remain on the Project Site as of 2020. One retention basin has been located on the southeastern portion of the Project Site from at least 1978 to present day, and two retention basins were formerly located in the western portion of the Project Site from at least 1956 to 1988. Fire insurance maps were searched for the Project Site but are not available for the Project Site (ERIS 2022).

2.3 Potential Regional Hazards

Rincon completed additional research to determine if landfills, oil and gas wells, hazardous material transportation pipelines, and per- and polyfluoroalkyl substances (PFAS) investigative sites are located onsite or could be affecting the Project Site.

Landfills

According to a review of the CalRecycle online SWIS database, there are no landfills within 2,000 feet of the Project Site (CalRecycle 2022). Therefore, landfills would have no impact on the operation or construction of the Project.

CalGEM Records

According to a review of CalGEM online oil and gas well and field records, the Project Site is not located within an oil/gas field and there are no oil or gas wells located within 0.5 mile of the Project Site (CalGEM 2022). Therefore, the oil and gas wells and fields would have no impact on the operation or construction of the Project.

NPMS Records

According to a review of the PHMSA online NPMS database, there are no hazardous liquid pipelines within or adjacent to the Project Site, or within 1,000 feet of the Project Site (USDOT 2022). However, there is one natural gas transmission pipeline (PG&E Pipeline ID 7331, active/filled) located approximately 500 feet to the northeast of the northeastern corner of the Power Plant property along Main Street.

California Statewide PFAS Investigation

Beginning in 2019, the SWRCB issued letters to property owners of sites that may be potential sources of PFAS. These sites currently include select landfills, airports, chrome plating facilities, publicly owned treatment works facilities, Department of Defense sites, and bulk fuel storage terminals and refineries. The letters included a SWRCB Water Code Section 13267 Order (Investigative Order); an Investigative Order is a directive from the SWRCB to conduct on-site testing of groundwater and/or leachate. This does not mean that PFAS has been produced, used, or discharged at these sites. According to the SWRCB, "PFAS are a large group of human-made substances that do not occur naturally in the environment and are resistant to heat, water, and oil" (SWRCB 2022b).

According to a review of the California Statewide PFAS Investigation online Public Map Viewer, there are no current airport, chrome plating, Department of Defense, or landfill PFAS orders at any facilities listed as located within seven miles of the Project Site (SWRCB 2022b). According to a review of the SWRCB's March 12, 2021 Bulk Fuel Terminal/Refinery Investigative Order, the Project Site is not listed on the Bulk Fuel Storage Terminals and Refineries List (Attachment 1 of the Order). Furthermore, none of the Bulk Fuel Storage Terminals or Refineries on the list are located within one mile of the Project Site (SWRCB 2021).

However, there is one public works treatment facility PFAS order located adjacent to the north of the Project Site: the Morro Bay Wastewater Treatment Plant (160 Atascadero Road). According to GeoTracker, the facility is active and has a NPDES permit with oversight by the Central Coast RWQCB. A PFAS order was issued for the facility in September 2020 and according to the PFAS questionnaire completed by the facility in July 2020 to comply with the PFAS order, the facility had not conducted PFAS sampling prior to receiving the order. Water quality laboratory results for the facility were submitted to GeoTracker in July 2021, which include one influent and one effluent composite water sample analyzed for PFAS. Perfluorooctanoic acid (PFOA) was detected in these samples at a maximum concentration equal to its SWRCB response level, and perfluorooctanesulfonic acid (PFOS) was detected in these samples at a maximum concentration below its SWRCB notification level (SWRCB 2022c). Although the wastewater treatment plant is located in close proximity to the Project Site, because effluent is discharged to the Pacific Ocean in accordance with the facility's NPDES permit (SWRCB 2017), PFAS-impacted groundwater is not anticipated to be migrating beneath the Project Site.

2.4 Airports and Educational Facilities

Rincon completed additional research to identify airports and educational facilities in the vicinity of the Project Site.

Airports

The Project Site is not located within an airport land use plan or within two miles of a public or private airport. The closest airport is San Luis Obispo County Regional Airport, located approximately 15 miles southeast.

Educational Facilities

According to a review of the California Department of Education (CDE) online School Directory database, the Project Site is not located within 0.25 mile of a school (CDE 2022). The closest schools to the Project Site are Morro Bay High School, located approximately 0.31 mile to the north of the northern boundary of the Project Site, and the Family Partnership Charter School, located approximately 0.30 mile to the southeast of the southeastern boundary of the Project Site. In addition, the Rockies Teen Center, which provides summer programming and after-school programming, is located approximately 0.25 mile north of the northern boundary of the Project Site.

3 Impact Summary

3.1 Significance Thresholds and Methodology

In accordance with Appendix G of the CEQA Guidelines, a hazards and hazardous materials impact would be significant if the proposed project would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
e. Be located in an airport land use plan or within two miles of a public airport or public use airport and result in a safety hazard or excessive noise for people residing or working in the project area;
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The following discussion evaluates potential Project impacts related to hazards and hazardous materials. "Potentially significant impacts," as defined by the CEQA Guidelines, would generally result in the loss or degradation of public health and safety or conflict with local, State, or federal agency regulations. The discussion is based on the results of the previous on-site investigative studies. Supplementary information was obtained through review of online databases, as described under Section 2, Records Review of this HMTS, for information on landfills, oil and gas wells, hazardous material transportation pipelines, and PFAS.

The evaluation of hazards and hazardous materials impacts assumes that the construction and development of the Project would adhere to all applicable federal, State, and local regulations, and conform to the current standard of care in the industry, as appropriate.

An analysis of potential impacts related to emergency response/evacuation plans and wildland fires (CEQA Guidelines Hazards and Hazardous Materials checklist questions "f" and "g") is not included in this HMTS.

3.2 Project Impacts

a)	Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
b)	Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Demolition and Construction

Asbestos surveys conducted at the Project Site in 2014 and 2019 indicated the presence of ACM in the power plant building (AOC 7; Demolition Site); however, soil in this area is not able to be characterized until the stacks are demolished (TRC 2014, 2019). Thus, there is known ACM in the Demolition Site building materials and there is the potential for LBP and other hazardous materials to be present in Demolition Site building materials.

Due to the presence of ACM and the potential for LBP, demolition of the power plant building prior to construction of the BESS facility has the potential to release LBP dust and asbestos fibers into the atmosphere if not remediated prior to demolition, exposing workers and the community to health hazards. In addition, demolition of these structures has the potential to release other toxic constituents in building components, including PCBs from electrical and other components. Demolition activities may also include temporary storage or transport of these hazardous materials.

With respect to ACM, the San Luis Obispo County Air Pollution Control District (APCD) enforces Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), which regulate the control of asbestos during the renovation and demolition of buildings under the Federal Clean Air Act (FCCA; APCD 2022). The FCAA requires a thorough inspection for asbestos where demolition will occur and specifies work practices to control emissions, such as removing all asbestos-containing materials, adequately wetting all regulated asbestos-containing materials, sealing the material in leak tight containers, and disposing of the asbestos-containing waste material as expediently as practicable (USEPA 2022). Compliance with FCCA requirements would reduce the potential for impacts related to ACM to a less than significant level.

Similarly, there are existing federal and State regulations that would apply to handling of LBP and PCBs (e.g., Title 40 of the CFR, Title 22 of the CCR, TSCA, and HMTA, described in Section 1.4, above). Consequently, the impact related to the release of LBP or PCBs from demolition as part of the proposed project would be less than significant.

During project construction, accidental conditions could occur as a result of any of the following: direct dermal contact with hazardous materials, incidental ingestion of hazardous materials, or inhalation of airborne dust released from dried hazardous materials. The transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion. Appropriate documentation for all hazardous waste that is transported, stored, or used in connection with specific project-site activities would be provided as required for compliance with existing hazardous materials regulations codified in the CCR. Compliance with federal, State, and local laws, regulations, and Cal/OSHA training programs would minimize potential impacts associated with the routine transport, use, or disposal of hazardous materials during construction. Therefore, impacts associated with project construction would be less than significant.

Operation

Operation of the BESS facility would involve the use and storage of lithium-ion batteries, which may pose a risk of upset and accidental release of hazardous chemicals contained within the batteries (e.g., in the event of a fire). Damage to lithium-ion batteries can also occur from physical impact, exposure to certain temperatures, and/or improper charging, which can result in a fire and/or explosion hazard.

Lithium-ion batteries are regulated by the United States Department of Transportation as Class 9 Miscellaneous Dangerous Goods. The transport, use, storage, and disposal of batteries during operation and maintenance of the Project would be subject to all applicable state and federal laws, such as the HMTA, RCRA, the California Hazardous Material Management Act, Title 40 of the CFR, and Title 22 of the CCR (as described in Section 1.4, Regulatory Setting).

The proposed BESS facility incorporates a multi-tiered safety system based on industrial best practices in consultation with the MBFD. Safety systems incorporate passive design considerations and include monitoring, automatic and manual protection elements, and explosion prevention protection, further described below.

- Passive Design Considerations. Compartmentalization is a passive method of fire protection that would be used to confine batteries into zones or areas. Each zone would be separated by rated fire barriers in accordance with the California Fire Code. The project would not locate any new structures in Federal Emergency Management Agency (FEMA) Flood Zone AE or any other FEMA-designated Special Flood Hazard Area, and has been sited to mitigate sea-level rise and tsunami risk; the side of the project facing the ocean is protected by existing berms that are approximately 33 feet in height.
- Monitoring. The system would be continually monitored for electrical, gas/smoke, and thermal variations.
- Automatic Protection. The project would incorporate fire suppression for the various areas within the building based on the type of hazard. The design would incorporate an automatic sprinkler system. There would be one system dedicated to suppression at the battery/rack level and, if required, another system to protect the buildings.
- Manual Protection. The project would include on-site fire hydrants, automatic wet standpipes, Class III hose stations, and hand-held portable fire extinguishers.
- Explosion Prevention Protection. The lithium-ion batteries selected for the BESS would incorporate explosion prevention protection pursuant to the NFPA 855 or International Fire Code Chapter 12.

In addition, any additional conditions required by the MBFD, which may include but would not be limited to fire department site access, fire apparatus access roads, site warning signage, and building safety systems, would be required by the City to be incorporated into the final BESS project design.

Operation of the BESS facility may also involve the use and/or storage of potential hazardous materials, such as fuels/oils, paint products, lubricants, solvents, cleaning products, and pesticides/herbicides, in regular industrial facility maintenance. Similar to the use and storage of lithium-ion batteries, potential hazardous materials may pose a risk of upset and accidental release. Transport, use, and storage of hazardous materials during operation of the Project would be conducted pursuant to all applicable local, state, and federal laws, including Title 40 of the CFR, Title 49 of the CFR implemented by Title 13 of the CCR, Title 22 of the CCR, HMTA, RCRA, the California

Hazardous Material Management Act. As required by HSC Section 25507, a business shall establish and implement a HMBP for emergency response to a release or threatened release of a hazardous material. As required, the hazardous materials would be stored in locations according to compatibility and in storage enclosures (i.e., flammable material storage cabinets and biological safety cabinets) or in areas or rooms specially designed, protected, and contained for such storage, in accordance with applicable regulations. Additionally, Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel and emergency services.

During normal operation, lithium-ion batteries and potential hazardous materials would not represent a risk of chemical release that may affect on-site or off-site receptors or involve hazardous emissions, and safety standards and features incorporated into the Project would prevent any reasonable possibility of a substantial adverse effect on the environment related to the lithium-ion batteries and potential hazardous materials stored onsite. Compliance with applicable state and federal regulations related to the transport, use, or disposal of hazardous materials would ensure that on-site and off-site receptors would not be adversely affected by the proposed project during normal operations. Therefore, impacts associated with project operation would be less than significant.

c)	Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The closest schools to the Project Site are Morro Bay High School, located approximately 0.31 mile to the north of the northern boundary of the Project Site, and the Family Partnership Charter School, located approximately 0.30 mile to the southeast of the southeastern boundary of the Project Site. In addition, the Rockies Teen Center, which provides summer programming and after-school programming, is located approximately 0.25 mile north of the northern boundary of the Project Site.

The proposed project would involve the use and storage of lithium-ion batteries. During normal operation, lithium-ion batteries would not represent a risk of chemical release that may affect off-site receptors or involve hazardous emissions, and safety standards and features incorporated in the Project would prevent any reasonable possibility of a substantial adverse effect on the environment related to the lithium-ion batteries stored onsite. Nonetheless, transport, use, storage, and disposal of lithium-ion batteries during operation and maintenance of the Project are regulated by and would be subject to all applicable state and federal laws as discussed in detail in *Responses "a" and "b,"* above. Compliance with these regulations would ensure that schools in the vicinity of the Project Site would not be adversely affected by the proposed project during normal operations.

Potential haul routes identified for Project construction and operation would involve driving short distances via either Embarcadero or Quintana Road to SR 1 and would not be expected to include travel on any of the local roadways adjacent to nearby schools or the Rockies Teen Center. The risk of upset and accidental release of hazardous chemicals contained within the batteries (e.g., in the event of a fire) is addressed under *Responses "a" and "b,"* above, and would not present a substantial hazard to any nearby existing or proposed schools.

Therefore, the potential for operational hazardous material impacts to nearby schools would be less than significant.

d)	Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As described in Section 2.1, the Project Site is listed on the GeoTracker and EnviroStor databases as an open Cleanup Program Site (DTSC case #40490006, RWQCB case #SL203431377) and an active Corrective Action Site (DTSC case #100220 and #102365). DTSC is the lead agency for both cases. The DTSC has issued a "Corrective Action Complete Without Controls" determination for AOCs 2 through 4 and 6 at the Project Site, AOC 7 will be evaluated once the existing building is demolished, and the DTSC has issued "clean closure" for AOC 8. The DTSC has also determined that a LUC and a SMP are appropriate for the onsite portion of AOC 1 (i.e., BESS Site).

One adjacent property is identified on the EnviroStor database: the southwestern adjacent Morro Bay Amphibious Training Site, a FUDS case with oversight by the DTSC and an "inactive: needs evaluation" status as of July 1, 2005. Based on a FUDS Program Management Action Plan for the site, "no reports were found of ordnance left on this site" (United States Army Corps of Engineers 2019). Therefore, this adjacent site is not expected to impact the Project.

Demolition and Construction

Based on the results of the soil investigations conducted at the Project Site, there are known metals, TPH (undifferentiated, middle distillate, and residual [comparative to gasoline, diesel, and motor oil, respectively]), and PAHs in onsite soil at concentrations exceeding the SSLs calculated for the Project Site.

The DTSC has issued a No Further Action determination with unrestricted/residential land use for the majority of the Project Site (the offsite portion of AOC 1, and AOCs 2 through 6 and 8). Nevertheless, there is a potential for construction workers to be exposed to contaminants (e.g., metals, TPH, and PAHs) via dust or soil within the former tank farm portion of AOC 1 (i.e., BESS Site) and potentially from AOC 7 on the Project Site. Additionally, if offsite disposal of soils from the onsite portion of AOC 1 and potentially AOC 7 would occur during project construction, the soil may require special handling or disposal as a waste. Although diesel- and motor oil-range TPH have been detected in groundwater monitoring wells at the Project Site, the DTSC has issued a No Further Action determination for groundwater at the Project Site.

Consequently, the existing conditions within the onsite portion of AOC 1 and AOC 7 at this known release site (similar to a hazardous material site compiled pursuant to Government Code Section 65962.5) would result in a potentially significant hazard to the public or the environment during demolition and grading/construction at the onsite portion of AOC 1 and AOC 7. Implementation of Mitigation Measures HAZ-1 through HAZ-2, discussed in Section 4 of this HMTS, would reduce construction hazardous material impacts at the onsite portion of AOC 1 and AOC 7 below thresholds of significance.

Operation

Based on the results of the soil investigations conducted at the Project Site, there are known metals, TPH, and PAHs in onsite soil. Additionally, soil at AOC 7 has not yet been characterized. The DTSC has issued a No Further Action determination with unrestricted/residential land use for the majority of the Project Site (the offsite portion of AOC 1, and AOCs 2 through 6 and 8). Therefore, there is a potential for maintenance workers to be exposed to contaminants via dust and soil within the onsite portion of AOC 1 and within AOC 7 on the Project.

Therefore, operation in the portions of the Project within the onsite portion of AOC 1 and potentially AOC 7 may create a public health and environmental hazard at the Project Site which would be a potentially significant impact. Implementation of Mitigation Measures HAZ-1 and HAZ-2, discussed in Section 4 of this HMTS, would reduce operational hazardous material impacts at the onsite portion of AOC 1 and AOC 7 below thresholds of significance.

e)	For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The airport nearest to the Project Site, San Luis Obispo County Regional Airport, is located approximately 15 miles to the southeast. The Project also is not located within the vicinity of a private airstrip. Therefore, the proposed Project would not expose people in the Project area to excessive noise levels related to airport activity.

4 Recommendations

The Project Site is listed as an open DTSC Corrective Action case and an open RWQCB Cleanup Program case. The DTSC (lead cleanup oversight agency for both cases) will continue to provide agency oversight of assessment and remediation of the open cases through case closure.

AOCs 2 through 6 and 8 at the Project Site have been given a determination of No Further Action and unrestricted/residential land use by the DTSC. The onsite portion of AOC 1 (i.e., BESS Site) requires a LUC for commercial/industrial use only and an SMP, and the remainder of AOC 1 (outside of the Project Site) was issued No Further Action with unrestricted/residential land use by the DTSC. AOC 7 has not yet been assessed due to the presence of the power plant building. Therefore, impacted soil may be encountered during demolition and grading/construction related work at the onsite portion of AOC 1 and impacted soil has the potential to be encountered during demolition and grading/construction related work at AOC 7.

Implementation of Mitigation Measures HAZ-1 and HAZ-2 would identify hazards at the onsite portion of AOC 1 and AOC 7 and reduce potential hazardous material construction and operational impacts in these areas to less than significant, as discussed below.

4.1 Mitigation Measures

HAZ-1 DTSC Regulatory Agency Submittal and cleanup/Remediation

Prior to commencement of demolition and construction/grading activities at the Project Site, the Project Applicant shall submit the following documents to the California Department of Toxic Substances Control (DTSC) project manager of the open Corrective Action and Cleanup Program Site cases:

- Current development plan and any modifications to the development plan
- All environmental documents completed for the Project, including this Hazardous Materials Technical Study
- All future environmental documents completed for the Project

Upon submittal of the information above, the DTSC may require actions such as: development of subsurface investigation workplans; completion of soil, soil vapor, and/or groundwater subsurface investigations; installation of soil vapor or groundwater monitoring wells; soil excavation and offsite disposal; completion of human health risk assessments; and/or completion of remediation reports or case closure documents. Subsurface soil, soil vapor, and groundwater investigations, if required, shall be conducted in accordance with a sampling plan that shall be reviewed and approved by the DTSC.

The DTSC approval documents shall be submitted and reviewed by the Project Applicant prior to issuance of grading permits.

It should also be noted that the DTSC may determine that EHS or the RWQCB may be best suited to perform the cleanup oversight agency duties for the assessment and/or remediation of this project. Should the cleanup oversight agency be transferred from the DTSC to EHS or RWQCB, this and other mitigation measures will still apply.

HAZ-2 Soil Management Plan and Land Use Covenant

The Project Applicant shall retain a qualified environmental consultant (PG or PE) to update the existing May 2021 Soil Management Plan (SMP) for AOC 1 to include AOC 7 and the remainder of the Project Site. The SMP shall address:

1. On-site handling and management of impacted soils or other impacted wastes (e.g., stained soil, soil, or groundwater with solvent or chemical odors) if such soils or impacted wastes are encountered, and
2. Specific actions to reduce hazards to construction workers and offsite receptors during the construction phase.

The plan must establish remedial measures and soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the project alignment. These measures and practices shall include, but are not limited to:

- Stockpile management including stormwater pollution prevention and the installation of BMPs
- Proper disposal procedures of contaminated materials
- Monitoring and reporting
- A health and safety plan for contractors working at the site that addresses the safety and health hazards of each phase of site construction activities with the requirements and procedures for employee protection
- The health and safety plan will also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction.

The DTSC shall review and approve the SMP prior to construction (grading) activities at the Project Site. The City shall review and approve the SMP prior to issuance of grading permits. The Project Applicant shall implement the SMP during construction at the Project Site.

Additionally, based on the results of the assessment at AOC 7 and DTSC's review of the results, DTSC may require a new LUC for AOC 7 or an expansion of the existing AOC 1 LUC to include AOC 7.

4.2 Significance After Mitigation

Implementation of Mitigation Measures HAZ-1 and HAZ-2 during demolition, construction, and operation of the Project would reduce potential hazardous material impacts in the onsite portion of AOC 1 and AOC 7 below applicable thresholds of significance by ensuring additional investigation and remedial measures, transportation of impacted materials, and/or soil management practices ensure construction worker safety and the health of future workers and visitors.

5 References

California Department of Conservation, Geologic Energy Management Division (CalGEM). 2022. "Well Finder." Last modified: 2019. Available at: https://www.conservation.ca.gov/calgem/Pages/WellFinder.aspx. Accessed May 2022.

California Department of Education (CDE). 2022. "California School Directory." Available at: https://www.cde.ca.gov/schooldirectory/. Accessed May 2022.

California Department of Resources, Recycling, and Recovery (CalRecycle). 2022. "Solid Waste Information System (SWIS) Facility/Site Search." Last modified: 2019. Available at: https://www2.calrecycle.ca.gov/SolidWaste/Site/Search. Accessed May 2022.

California Department of Toxic Substances Control (DTSC). 2020a. Review and Approval of the Final Screening-Level Human Health Risk Assessment Report – Dynegy-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California. July 16, 2020.

_____. 2020b. Responsiveness Summary: Draft Statement of Basis – Areas of Concern 1 through 4 and 6, Morro Bay Power Plant, 1290 Embarcadero, Morro Bay, California. December 21, 2020.

_____. 2021a. Determination of Corrective Action Complete Without Controls Status for Soil at Areas of Concern 2, 3, 4, and 6, Morro Bay Power Plant, Morro Bay, California. April 26, 2021.

_____. 2021b. Review and Comments on the Draft Final Screening-Level Human Health Risk Assessment Report for Groundwater – Dynegy-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California. August 25, 2021.

_____. 2022a. "EnviroStor." Last modified: 2022. Available at: http://www.envirostor.dtsc.ca.gov/public/. Accessed May 2022.

_____. 2022b. Responsiveness Summary: Draft Revised Statement of Basis – Areas of Concern 1 through 4 and 6, Morro Bay Power Company Portion of the Morro Bay Power Plant, 1290 Embarcadero, Morro Bay, California. June 2022.

_____. 2022c. Approval and Transmittal of Final Remedy Selection and Final Statement of Basis – Morro Bay Power Plant, 1290 Embarcadero, Morro Bay, California. June 21, 2022.

_____. 2022d. "Land Use Covenant Quick Reference Guide." Available at: https://dtsc.ca.gov/brownfields/land-use-covenant-quick-reference-guide/. Accessed August 2022.

_____. 2022e. "Federal Post-Closure Rule State Regulations: FAQs." Available at: https://dtsc.ca.gov/federal-post-closure-rule-state-faqs/#:~:text=Clean%20closure%20means%20the%20owners,%2C%20structures%2C%20and%20contaminated%20soil. Accessed August 2022.

California Emergency Management Agency. 2009. SEMS Guidelines: Standardized Emergency Management System. Available at: http://www.caloes.ca.gov/PlanningPreparednessSite/Documents/12%20SEMS%20Guidelines%20Complete.pdf. Accessed September 2022.

_____. 2011. California Interoperability Field Operations Guide (Cal-IFOG). Available at: http://www.caloes.ca.gov/PublicSafetyCommunicationsSite/Documents/Cal-IFOG201185x11Final.pdf#search=mutual%20air%20%22region%20II%22. Accessed September 2022.

California State Water Resources Control Board (SWRCB). 2017. "Waste Discharge Requirements for the Morro Bay and Cayucos Wastewater Treatment Plant – Discharge to the Pacific Ocean." December 7, 2017. Available at: https://www.waterboards.ca.gov/rwqcb3/board_decisions/adopted_orders/2017/2017_0050_order.pdf. Accessed July 2022.

_____. 2021. "March 12, 2021 Bulk Fuel Terminal/Refinery Investigative Order." March 12, 2021. Available at: https://www.waterboards.ca.gov/pfas/docs/order_wq2021-0006-dwq_pfas.pdf. Accessed May 2022.

_____. 2022a. "GeoTracker." Last modified: 2022. Available at: http://geotracker.waterboards.ca.gov/. Accessed May 2022.

_____. 2022b. "California PFAS Investigations." Last modified: 2022. Available at: https://www.waterboards.ca.gov/pfas/. Accessed May 2022.

_____. 2022c. "GeoTracker PFAS Map." Last modified: 2022. Available at: https://geotracker.waterboards.ca.gov/map/pfas_map. Accessed May 2022.

Environmental Risk Information Services (ERIS). 2022. Aerial Photographs. May 20, 2022.

_____. 2022. Fire Insurance Maps. May 18, 2022.

_____. 2022. Topographic Maps. May 19, 2022.

Morro Bay, City of. 2019a. Multi Hazard Emergency Response Plan. Available at: https://www.morro-bay.ca.us/DocumentCenter/Home/View/793. Accessed September 2022.

_____. 2019b. Local Hazard Mitigation Plan. Available at: http://ca-morrobay.civicplus.com/DocumentCenter/View/780. Accessed September 2022.

San Luis Obispo County Air Pollution Control District (APCD). 2022. "Asbestos." Last modified: 2022. https://www.slocleanair.org/rules-regulations/asbestos.php. Accessed July 2022.

Terraphase Engineering Inc. 2020. Final Screening-Level Human Health Risk Assessment Report – Dynegy-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California. March 12, 2020.

_____. 2021a. Final Soil Management Plan – Former Tank Farm Area, MBPC-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California. May 2021.

_____. 2021b. Final Screening-Level Human Health Risk Assessment Report for Groundwater – Dynegy-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California. June 21, 2021.

TRC Environmental Corporation (TRC). 2014. Limited Supplemental Asbestos Survey Report at Dynegy Power Plant, 1290 Embarcadero Road, Morro Bay, California. July 8, 2014.

_____. 2019. Pre-Demolition Asbestos-Containing Materials Survey Revised Report, Morro Bay Power Plant – Units 1, 2, 3, and 4, Warehouse/Shipping and Receiving, Maintenance and Administration Buildings, 1290 Embarcadero Road, Morro Bay, California. November 1, 2019.

United States Army Corps of Engineers. 2019. "Amphibious Training Base – Formerly Used Defense Sites Program Management Action Plan." Available at: https://fudsportal.usace.army.mil/ems/inventory/map?id=61974. Accessed July 2022.

United States Department of Transportation (USDOT). 2021. Federal Hazmat Law: An Overview of Federal Laws for Hazardous Materials Transportation. Available at: https://www.phmsa.dot.gov/standards-rulemaking/hazmat/federal-hazardous-materials-transportation-law-overview. Accessed September 2022.

United States Department of Transportation (USDOT). 2022. Pipeline and Hazardous Materials Safety Administration (PHMSA), "National Pipeline Mapping System (NPMS) Public Map Viewer." Last modified: 2022. Available at: https://www.npms.phmsa.dot.gov/PublicViewer/. Accessed May 2022.

United States Environmental Protection Agency (USEPA). 2022. Asbestos National Emissions Standard for Hazardous Air Pollutants (NESHAP). Last modified: 2022. Available at: https://www.epa.gov/asbestos/asbestos-national-emissions-standard-hazardous-air-pollutants-neshap. Accessed September 2022.

Appendix A

Terraphase Engineering Inc. Soil and Groundwater Data Tables

Table 1

Screening Criteria and Site-Specific Soil Screening Levels

Dynegy-Owned Portion of the Former Morro Bay Power Plant

Morro Bay, California

Constituents of Concern	Generic Soil Screening Criteria				MBPP Site-Specific Ambient Thresholds	SSL	Basis
	DTSC-SL, Residential	EPA Residential Soil RSLs (Min CR/NCR)	Residential Soil ESLs (Min CR/NCR)	Construction Worker ESLs (Min CR/NCR)			
Petroleum Hydrocarbons							
TPH-md	--	--	2.6E+02	1.1E+03	--	2.6E+02	Residential Soil ESLs (Min CR/NCR)[1]
TPH-r	--	--	1.2E+04	5.4E+04	--	1.2E+04	Residential Soil ESLs (Min CR/NCR)[2]
TPH-u	--	--	2.6E+02	1.1E+03	--	2.6E+02	Residential Soil ESLs (Min CR/NCR)[1]
Metals							
Antimony	--	3.1E+01	1.1E+01	5.0E+01	6	1.1E+01	Residential Soil ESLs (Min CR/NCR)
Arsenic	1.1E-01	6.8E-01	6.7E-02	9.8E-01	7.54	7.5E+00	MBPP Site-Specific Ambient Thresholds
Barium	--	1.5E+04	1.5E+04	3.0E+03	207	3.0E+03	Construction Worker ESLs (Min CR/NCR)
Beryllium	1.6E+01	1.6E+02	1.6E+01	2.7E+01	0.55	1.6E+01	Residential Soil ESLs (Min CR/NCR)
Cadmium	--	7.1E+01	7.8E+01	5.1E+01	2	5.1E+01	Construction Worker ESLs (Min CR/NCR)
Chromium	--	1.2E+05	--	--	106	1.2E+05	EPA Residential Soil RSLs (Min CR/NCR)
Cobalt	--	2.3E+01	2.3E+01	2.8E+01	34.3	3.4E+01	MBPP Site-Specific Ambient Thresholds
Copper	--	3.1E+03	3.1E+03	1.4E+04	61.4	3.1E+03	EPA Residential Soil RSLs (Min CR/NCR)
Hexavalent Chromium	3.0E-01	3.0E-01	3.0E-01	2.8E+00	NA	3.0E-01	Residential Soil ESLs (Min CR/NCR)
Lead	8.0E+01	4.0E+02	8.0E+01	1.6E+02	12.2	8.0E+01	DTSC-SL, Residential
Mercury	1.0E+00	1.1E+01	1.3E+01	4.4E+01	0.067	1.0E+00	DTSC-SL, Residential
Molybdenum	--	3.9E+02	3.9E+02	1.8E+03	10	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Nickel	8.2E+02	1.5E+03	8.2E+02	8.6E+01	216	2.2E+02	MBPP Site-Specific Ambient Thresholds
Selenium	--	3.9E+02	3.9E+02	1.7E+03	1.207	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Silver	--	3.9E+02	3.9E+02	1.8E+03	2	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Thallium	--	7.8E-01	7.8E-01	3.5E+00	1	1.0E+00	MBPP Site-Specific Ambient Thresholds
Vanadium	--	3.9E+02	3.9E+02	4.7E+02	106	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Zinc	--	--	2.3E+04	1.1E+05	91.5	2.3E+04	Residential Soil ESLs (Min CR/NCR)
Polynuclear Aromatic Hydrocarbons							
1-Methylnaphthalene	9.9E+00	1.8E+01			--	9.9E+00	DTSC-SL, Residential
2-Methylnaphthalene	1.9E+02	2.4E+02	2.4E+02	6.7E+02	--	1.9E+02	DTSC-SL, Residential
Acenaphthene	3.3E+03	3.6E+03	3.6E+03	1.0E+04	--	3.3E+03	DTSC-SL, Residential
Acenaphthylene	--	--	--	--	--	--	--
Anthracene	1.7E+04	1.8E+04	1.8E+04	5.0E+04	--	1.7E+04	DTSC-SL, Residential
Azobenzene	--	5.6E+00	--	--	--	5.6E+00	EPA Residential Soil RSLs (Min CR/NCR)
Benzo(a)anthracene	1.1E+00	1.1E+00	1.1E+00	1.1E+02	--	1.1E+00	DTSC-SL, Residential
Benzo(a)pyrene	1.1E-01	1.1E-01	1.1E-01	1.0E+01	--	1.1E-01	DTSC-SL, Residential
Benzo(b)fluoranthene	1.1E+00	1.1E+00	1.1E+00	1.1E+02	--	1.1E+00	DTSC-SL, Residential
Benzo(g,h,i)perylene	--	--	--	--	--	--	--
Benzo(k)fluoranthene	1.1E+01	1.1E+01	1.1E+01	9.1E+02	--	1.1E+01	DTSC-SL, Residential
Chrysene	1.1E+02	1.1E+02	1.1E+02	9.1E+03	--	1.1E+02	DTSC-SL, Residential
Dibenz(a,h)anthracene	2.8E-02	1.1E-01	1.1E-01	1.1E+01	--	2.8E-02	DTSC-SL, Residential
Fluoranthene	2.4E+03	2.4E+03	2.4E+03	6.7E+03	--	2.4E+03	Residential Soil ESLs (Min CR/NCR)
Fluorene	2.3E+03	2.4E+03	2.4E+03	6.7E+03	--	2.3E+03	DTSC-SL, Residential
Indeno(1,2,3-c,d)pyrene	1.1E+00	1.1E+00	1.1E+00	1.1E+02	--	1.1E+00	DTSC-SL, Residential
Naphthalene	2.0E+00	3.8E+00	3.8E+00	4.0E+02	--	2.0E+00	DTSC-SL, Residential
Phenanthrene	--	--	--	--	--	--	--
Pyrene	1.8E+03	1.8E+03	1.8E+03	5.0E+03	--	1.8E+03	Residential Soil ESLs (Min CR/NCR)
Benzo(a)pyrene Equivalent Value	--	--	--	--	1.5	1.5E+00	MBPP Site-Specific Ambient Thresholds
Volatile Organic Compounds							
Ethylbenzene	--	5.8E+00	5.9E+00	5.4E+02	--	5.8E+00	EPA Residential Soil RSLs (Min CR/NCR)
Toluene	1.1E+03	4.9E+03	1.1E+03	4.7E+03	--	1.1E+03	DTSC-SL, Residential
m-Xylenes	--	5.5E+02	5.8E+02	2.4E+03	--	5.5E+02	EPA Residential Soil RSLs (Min CR/NCR)
o-Xylenes	--	6.5E+02	5.8E+02	2.4E+03	--	6.5E+02	EPA Residential Soil RSLs (Min CR/NCR)
p-Xylenes	--	5.6E+02	5.8E+02	2.4E+03	--	5.8E+02	Residential Soil ESLs (Min CR/NCR)
Pesticides							
Chlordane	1.7E+00	1.7E+00	4.8E-01	1.4E+01	--	4.8E-01	Residential Soil ESLs (Min CR/NCR)

Notes:
All concentrations in milligrams per kilogram
-- = not established
DTSC-SL = California Department of Toxic Substances, HERO Note 3 Screening Level: DTSC HERO Note 3 accessed on July 11, 2019
EPA = United States Environmental Protection Agency
HERO = Human and Ecological Risk Office of the DTSC
RSL = EPA Residential Soil Regional Screening Levels (EPA 2019)
ESL = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (SFBRWQCB 2019)
Min CR/NCR = the lower of cancer and non-cancer criteria
MBPP = Morro Bay Power Plant
SL = DTSC HERO Note 3 Screening Level
SSL = Site-Specific Soil Screening Level
TPH = total petroleum hydrocarbons
TPH-md = TPH in the middle distillate range
TPH-r = TPH in the residual range
TPH-u = undifferentiated TPH
1 = Residential soil ESL for petroleum in the diesel range
2 = Residential soil ESL for petroleum in the motor-oil range

Table 2
Summary Statistics and 95UCL Values for All Soil Samples
Dynegy-Owned Portion of the Former Morro Bay Power Plant
Morro Bay, California

Constituents of Concern	SSL	Number of Results	Number of Detects	Minimum Concentration (mg/kg)	Minimum Detect (mg/kg)	Maximum Concentration (mg/kg)	Maximum Detect (mg/kg)	Number of Detects Exceeding SSL	Maximum Detect > SSL?	95UCL (mg/kg)	95UCL > SSL?
Petroleum Hydrocarbons											
TPH-md	255	152	50	<5	5.4	18000	18000	12	Yes	804	Yes
TPH-r	12000	152	62	8	8	20000	20000	5	Yes	1698	No
TPH-u	255	370	59	<10	10	2593	2593	12	Yes	24.1	No
Metals											
Antimony	10.95	482	0	<0.04	ND	<8	ND	0	No	--	--
Arsenic	7.54	482	456	<0.04	0.32	24	24	5	Yes	4.52	No
Barium	3000	482	299	<0.02	1.31	220	220	0	No	--	--
Beryllium	16	482	28	<0.005	0.252	0.851	0.851	0	No	--	--
Cadmium	51	482	12	<0.04	0.544	13.5	13.5	0	No	--	--
Chromium (hexavalent)	0.3	101	101	0.02	0.02	0.86	0.86	24	Yes	0.297	No
Chromium (III+VI)	120000	482	480	2.9	2.9	218	218	0	No	--	--
Cobalt	34.3	482	292	<0.004	0.448	51	51	10	Yes	9.11	No
Copper	3100	482	395	<0.2	0.564	193	193	0	No	--	--
Lead	80	482	461	<0.4	0.5	120	120	4	Yes	6.74	No
Mercury	1	482	18	<0.005	0.05	0.8	0.8	0	No	--	--
Molybdenum	390	482	25	<0.01	0.256	<15	10.4	0	No	--	--
Nickel	216	485	478	0.38	0.38	320	320	10	Yes	58.7	No
Selenium	390	482	13	<0.1	1.09	2.87	2.87	0	No	--	--
Silver	390	482	0	<0.006	ND	<3	ND	0	No	--	--
Thallium	1	482	63	<0.02	0.02	2	2	1	Yes	0.125	No
Vanadium	390	482	478	1.33	1.33	270	270	0	No	--	--
Zinc	23000	482	479	1.7	1.7	530	530	0	No	--	--
Polynuclear Aromatic Hydrocarbons											
1-Methylnaphthalene	9.9	8	0	<0.02	ND	<0.02	ND	0	No	--	--
2-methylnaphthalene	190	14	0	<0.02	ND	<0.33	ND	0	No	--	--
Acenaphthene	3300	387	0	<0.02	ND	<5	ND	0	No	--	--
Acenaphthylene	NE	387	0	<0.02	ND	<10	ND	0	No	--	--
Anthracene	17000	387	1	<0.02	0.06	<5	0.06	0	No	--	--
Benz(a)anthracene	1.1	387	5	<0.02	0.1	<5	0.3	0	No	--	--
Benzo(a)pyrene	0.11	387	6	<0.02	0.07	<2.5	0.4	3	Yes	0.025*	No
Benzo(b)fluoranthene	1.1	387	5	<0.02	0.1	<5	0.6	0	No	--	--
Benzo(g,h,i)perylene	NE	387	3	<0.02	0.1	<5	0.1	0	No	--	--
Benzo(k)fluoranthene	11	387	3	<0.02	0.08	<5	0.2	0	No	--	--
Chrysene	110	387	6	<0.02	0.1	<5	0.5	0	No	--	--
Dibenz(a,h)anthracene	0.028	387	1	<0.02	0.06	<2.5	0.06	1	Yes	NC	NC
Fluoranthene	2400	387	10	<0.02	0.1	<5	0.9	0	No	--	--
Fluorene	2300	387	0	<0.02	ND	<5	ND	0	No	--	--
Indeno(1,2,3-c,d)pyrene	1.1	387	4	<0.02	0.1	<3	0.3	0	No	--	--
Phenanthrene	NE	387	7	<0.02	0.1	<5	0.7	0	No	--	--
Pyrene	1800	387	10	<0.02	0.1	<5	0.9	0	No	--	--
Pesticides											
Chlordane	0.48	4	1	<0.1	0.5	0.5	0.5	1	Yes	NC	NC

Notes:
95UCL calculations were performed using ProUCL v. 5.1
* = 95UCL calculations were performed, but number of detections is low (<10)
> = greater than
mg/kg = milligrams per kilogram
95UCL = 95-percent upper confidence level of the mean
SSL = site-specific soil screening level
TPH = total petroleum hydrocarbons
TPH-md = middle-distillate range TPH
TPH-r = residual-range TPH
TPH-u = undifferentiated TPH
NC = not calculated; too few detections to calculate 95UCL
NE = not established
-- = not calculated because maximum detect is not greater than SSL

Table 3
Summary Statistics and 95UCL Values for Soil Samples Outside of the Former Tank Farm
Dynegy-Owned Portion of the Former Morro Bay Power Plant
Morro Bay, California

Constituents of Concern	SSL	Number of Results	Number of Detects	Minimum Concentration (mg/kg)	Minimum Detect (mg/kg)	Maximum Concentration (mg/kg)	Maximum Detect (mg/kg)	Number of Detects Exceeding SSL	Maximum Detect > SSL?	95UCL (mg/kg)	95UCL > SSL?
Petroleum Hydrocarbons											
TPH-md	255	67	28	<5	5.7	1200	1200	5	Yes	68.2	No
TPH-r	12000	67	46	8	8	2700	2700	0	No	--	--
TPH-u	255	247	45	<10	10	1600	1600	9	Yes	93.3	No
Metals											
Arsenic	7.54	268	257	<0.04	0.32	24	24	5	Yes	4.62	No
Chromium (hexavalent)	0.3	32	32	0.02	0.02	0.74	0.74	3	Yes	0.294	No
Cobalt	34.3	268	148	<0.004	2.22	51	51	6	Yes	10.30	No
Lead	80	268	263	<0.5	0.5	120	120	3	Yes	8.54	No
Nickel	216	270	268	3	3	320	320	8	Yes	66.6	No
Thallium	1	268	59	<0.02	0.02	<1	0.37	0	No	--	--
Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	0.11	284	4	<0.02	0.08	<2.5	0.4	3	Yes	0.025*	No
Dibenz(a,h)anthracene	0.028	284	1	<0.02	0.06	<2.5	0.06	1	Yes	NC	NC
Pesticides											
Chlordane	0.48	4	1	<0.1	0.5	0.5	0.5	1	Yes	NC	NC

Notes:
95UCL calculations were performed using ProUCL v. 5.1
* = 95UCL calculations were performed, but number of detections is low (<10)
> = greater than
mg/kg = milligrams per kilogram
95UCL = 95-percent upper confidence level of the mean
SSL = site-specific soil screening level
TPH = total petroleum hydrocarbons
TPH-md = middle-distillate range TPH
TPH-r = residual-range TPH
TPH-u = undifferentiated TPH
NC = not calculated; too few detections to calculate 95UCL
-- = not calculated because maximum detect is not greater than SSL

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	-	-	**42**
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	-	-	<10
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	<10
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	**16**
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	**15**
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	**24**
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	**1200**
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	**17**
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	**85**
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	<10
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	-	-	**50**
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<10
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	<10
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	-	-	<10
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	<10
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	-	-	**46**
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	<10
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	-	-	<10
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	-	-	**250**
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	<10
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	<10
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	**10**
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	<10
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	<10
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	-	-	**74**
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	**110**
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	<10
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	-	-	<10
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	<10
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<10

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone			
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	-	-	<10
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	<10
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	-	-	<10
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**120**
BB01-011	BB01-011@12.0-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	<10
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	<10
BB01-012	BB01-012@0.5-1	0.5-1	1/1/1997	Tank_Farm	-	-	<10
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	-	-	<10
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	-	-	<10
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	-	-	<10
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	-	-	**170**
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	<10
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	-	-	**1600**
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	<10
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	-	-	<10
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	<10
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<10
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	**18**
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<10
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	<10
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	<10U
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	-	-	<10U
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	**1200**	**200**	-
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	**480**	**1600**	-
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	<10U

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	**TPH as Motor Oil**	**Total Petroleum Hydrocarbons**
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	<10U
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	<10U
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	-	-	<10U
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	-	-	<10U
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	-	-	**80**
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	-	-	<10
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	-	-	<10
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	-	-	<10
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	-	-	<10
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	-	-	<12
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	<11
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	-	-	**44**
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	-	-	<12
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	-	-	<11
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	-	-	<10U
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	-	-	<10U
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	-	-	<10U
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	-	-	<11
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	-	-	<11
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	-	-	<11
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	-	-	<10
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	-	-	<12
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	-	-	<11
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	-	-	<11
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	**1549**
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	-	-	<10
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	**26**

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	TPH: TPH as Diesel	TPH: TPH as Motor Oil	TPH: Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<12
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	-	-	<11
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	**22**
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	-	-	<11
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	**12**
BB03-004	BB03-004@0-05	0-5	12/18/1996	non_Tank_Farm	-	-	<10
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<11
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	<11
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	**19**
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<12
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	-	-	<11
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<10
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<11
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	**14**
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<11
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	-	-	<12
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	-	-	<11
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	-	-	**26**
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	-	-	<12
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	-	-	<10
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<10
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<12
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	<10
BB03-010	BB03-010 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	<10U
BB03-010	BB03-010 @ 5.5-6'	5.5-6	2/19/1997	non_Tank_Farm	-	-	<10U
BB03-010	BB03-010 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	<10U
BB03-011	BB03-011 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	<10U
BB03-011	BB03-011 @ 11-12.5'	11-12.5	2/20/1997	non_Tank_Farm	-	-	<10U
BB03-011	BB03-011 @ 5.5-6'	5.5-6	2/20/1997	non_Tank_Farm	-	-	<10U
BB03-012	BB03-012 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	<10U	**12**	-

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	**TPH as Motor Oil**	**Total Petroleum Hydrocarbons**
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB03-012	BB03-012 @ 11-11.5'	11-11.5	2/20/1997	non_Tank_Farm	-	-	<10U
BB03-012	BB03-012 @ 5-5.5'	5-5.5	2/20/1997	non_Tank_Farm	-	-	<10U
BB03-013	BB03-013 @ 10.5-11'	10.5-11	2/19/1997	non_Tank_Farm	-	-	<10U
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	-	-	<10U
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	-	-	<10U
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<10
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	-	-	<11
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	-	-	<11
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	**13**
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	-	-	<11
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	<10
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	**224**
BB04-003	BB04-003@5-5	5-5	12/17/1996	Tank_Farm	-	-	**91**
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	**983**
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	-	-	<10
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	-	-	<10
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	**2229**
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<11
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<10
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	**11**
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	-	-	<11
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	-	-	<11
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<10
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	-	-	<11
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	-	-	<11
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	<10
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	<11
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	-	-	<10
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	<10

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	**189**
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	-	-	<11
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<11
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<10
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<10
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<10
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<10
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<10
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<10
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<10
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<10
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	**2593**
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<10
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<11
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<10
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<11
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<10
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<10
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<10
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<10
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<10
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<11
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<10
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<11
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<10
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<11
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	-	-	**52**
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	-	-	<14
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	-	-	<11
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<11

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<12
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<11
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	<11
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	-	-	<12
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	-	-	<10
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	<11
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	-	-	**65**
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<11
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	-	-	<11
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	-	-	<11
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<11
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	-	-	<11
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	-	-	<12
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	**61**
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	-	-	**111**
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	-	-	<12
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<11
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<13
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<11
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<11
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<11
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<10
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	**32**
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	-	-	<11
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	<11
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	<12
BB04-029	BB04-029@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	<11
BB04-029	BB04-029@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	<12
BB04-031	BB04-031 @ 1-1.5'	1-1.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-031	BB04-031 @ 2-2.5'	2-2.5	2/17/1997	Tank_Farm	-	-	<10U

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB04-031	BB04-031 @ 3-3.5'	3-3.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-031	BB04-031 @ 4-4.5'	4-4.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-031	BB04-031 @ 5-5.5'	5-5.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-031	BB04-031 @ 6.5-7'	6.5-7	2/17/1997	Tank_Farm	-	-	<10U
BB04-031	BB04-031 @ 6-6.5'	6-6.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-032	BB04-032 @ 1'	1-1	2/18/1997	Tank_Farm	<10U	**30**	-
BB04-032	BB04-032 @ 2'	2-2	2/18/1997	Tank_Farm	-	-	<10U
BB04-032	BB04-032 @ 3'	3-3	2/18/1997	Tank_Farm	-	-	<10U
BB04-032	BB04-032 @ 4'	4-4	2/18/1997	Tank_Farm	-	-	<10U
BB04-032	BB04-032 @ 5'	5-5	2/18/1997	Tank_Farm	-	-	<10U
BB04-032	BB04-032 @ 6'	6-6	2/18/1997	Tank_Farm	-	-	<10U
BB04-032	BB04-032 @ 7'	7-7	2/18/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 1-1.5'	1-1.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 2-2.5'	2-2.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 3-3.5'	3-3.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 4-4.5'	4-4.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 5-5.5'	5-5.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 6.5-7'	6.5-7	2/17/1997	Tank_Farm	-	-	<10U
BB04-033	BB04-033 @ 6-6.5'	6-6.5	2/17/1997	Tank_Farm	-	-	<10U
BB04-036	BB04-036 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-036	BB04-036 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-036	BB04-036 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-037	BB04-037 @ 0-1'	0-1	2/17/1997	non_Tank_Farm	-	-	<10U
BB04-037	BB04-037 @ 10.5-12'	10.5-12	2/17/1997	non_Tank_Farm	-	-	<10U
BB04-037	BB04-037 @ 7.5-9'	7.5-9	2/17/1997	non_Tank_Farm	-	-	<10U
BB04-038	BB04-038 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-038	BB04-038 @ 12-12.5'	12-12.5	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-038	BB04-038 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	<10U
BB04-039	BB04-039 @ 10.5-12'	10.5-12	2/17/1997	Tank_Farm	-	-	<10U
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	**45**

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	**TPH as Motor Oil**	**Total Petroleum Hydrocarbons**
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	-	-	<12
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<10
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	-	-	<12
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	**298**
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	**580**
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	**93**
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	-	-	<13
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<10
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	**75**
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	-	-	<12
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<10
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	-	-	<11
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	-	-	<13
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	-	-	<10
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	-	-	<10U
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	<10
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	-	-	<11
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	-	-	<12
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	**303**
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	<12
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	**33**
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	-	-	<11
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	<10
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	<10
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	-	-	<11
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	-	-	<10
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	-	-	<12
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	<10
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	<10U
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**367**

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	**TPH as Motor Oil**	**Total Petroleum Hydrocarbons**
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	-	-	<13
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	<10
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	**44**
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	-	-	<12
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**136**
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	<12
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	<13
BB07-004	BB07-004@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	**761**
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	<11
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	-	-	<13
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<11
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	<10
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**15**
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	<13
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**62**
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<13
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<11
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	-	-	<12
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<11
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<13
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<11
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	<11
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<11
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	-	-	<12
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<11
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<12
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<11
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<12
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**276**
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<12

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<12
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<11
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<11
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<11
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	**211**
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	**43**
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	-	-	<11
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	-	-	<12
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<11
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	-	-	<11
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<11
BB09-006	BB09-006@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	<12
BB09-006	BB09-006@20-20.5	20-20.5	1/8/1997	non_Tank_Farm	-	-	<11
BB09-006	BB09-006@30-31	30-31	1/8/1997	non_Tank_Farm	-	-	<12
BB09-006	BB09-006@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	<11
BB09-007	BB09-007@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<57
BB09-007	BB09-007@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<11
BB09-007	BB09-007@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<11
BB09-008	BB09-008@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<11
BB09-008	BB09-008@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<11
BB09-008	BB09-008@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<11
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<11
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<11
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<10
BB09-010	BB09-010@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<11
BB09-010	BB09-010@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<11
BB09-011	BB09-011@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	**36**
BB09-011	BB09-011@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	<11
BB09-011	BB09-011@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<11
BB09-011	BB09-011@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	**42**

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB09-012	BB09-012@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	<11
BB09-012	BB09-012@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	<10
BB09-012	BB09-012@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	<11
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	<10U
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	-	-	<10U
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	-	-	<10U
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	-	-	<10U
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	-	-	<10U
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	-	-	**60**
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	-	-	<11
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	-	-	<11
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	**80**	**950**	-
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<10U	**19**	-
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<10U	**22**	-
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<10U	**13**	-
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<10U	**10**	-
BB17-006	BB17-006@4-4.5	4-4.5	3/20/1997	non_Tank_Farm	<10U	**57**	-
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<10U	**16**	-
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<10U	**12**	-
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	**14**	**77**	-
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					TPH		
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<10U	**27**	-
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<10U
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<10U	**23**	-
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	**21**	**8J**	-
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	**170**	**96**	-
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	**670**	**330**	-
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<10U	**19**	-
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	**55**	**96**	-
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	**460J**	**1600**	-
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	-	-	<10U
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	**51**	**63**	-
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<10U
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<10U	**34**	-
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<10U
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<10U	**22**	-
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	**21**	**140**	-
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	<10U	**29**	-
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	**11**	**39**	-

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	<10U
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<10U	**21**	-
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<10U
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	-	-	<10U
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<10U
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<10U	**31**	-
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<10U
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	**27**
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	-	-	<12
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	<11
SB-01	SB-SB-01-1-A	1-1	10/18/2011	Tank_Farm	<5	<25	-
SB-01	SB-SB-01-2.5-A	2.5-2.5	10/18/2011	Tank_Farm	<5	<25	-
SB-02	SB-SB-02-1-A	1-1	10/18/2011	Tank_Farm	<5	<25	-
SB-02	SB-SB-02-2.5-A	2.5-2.5	10/18/2011	Tank_Farm	<5	<25	-
SB-03	SB-SB-03-17-A	17-17	10/18/2011	Tank_Farm	<5	<25	-
SB-03	SB-SB-03-19.5-A	19.5-19.5	10/18/2011	Tank_Farm	<5	<25	-
SB-03	SB-SB-03-1-A	1-1	10/18/2011	Tank_Farm	<5	<25	-
SB-03	SB-SB-03-2.5-A	2.5-2.5	10/18/2011	Tank_Farm	<5	<25	-
SB-04	SB-SB-04-1-A	1-1	10/26/2011	Tank_Farm	**1400HD**	**14,000**	-
SB-04	SB-SB-04-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<5	<25	-
SB-05	SB-SB-05-1-A	1-1	10/26/2011	Tank_Farm	**1900HD**	**17,000**	-
SB-05	SB-SB-05-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<5	<25	-
SB-06	SB-SB-06-1-A	1-1	10/26/2011	Tank_Farm	**10HD**	**150**	-
SB-06	SB-SB-06-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<5	<25	-
SB-07A	SB-SB-07A-1-A	1-1	10/26/2011	Tank_Farm	**7.6HD**	**120**	-
SB-07A	SB-SB-07A-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<5	<25	-
SB-08	SB-SB-08-1-A	1-1	10/27/2011	Tank_Farm	<5	<25	-
SB-08	SB-SB-08-2.5-A	2.5-2.5	10/27/2011	Tank_Farm	<5	<25	-
SB-09	SB-SB-09-1-A	1-1	10/26/2011	Tank_Farm	**4200HD**	**12,000HD**	-
SB-09	SB-SB-09-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<5	<25	-

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
SB-10	SB-SB-10-1-A	1-1	10/19/2011	Tank_Farm	<5	<25	-
SB-10	SB-SB-10-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<5	<25	-
SB-11	SB-SB-11-16-A	16-16	10/19/2011	Tank_Farm	<5	<25	-
SB-11	SB-SB-11-1-A	1-1	10/19/2011	Tank_Farm	**5400HD**	**12,000**	-
SB-11	SB-SB-11-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	**11HD**	<25	-
SB-11	SB-SB-11-5-A	5-5	10/19/2011	Tank_Farm	**160HD**	**2200**	-
SB-12	SB-SB-12-1-A	1-1	10/19/2011	Tank_Farm	**380HD**	**4500**	-
SB-12	SB-SB-12-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<5	<25	-
SB-13	SB-SB-13-11.5-A	11.5-11.5	10/25/2011	Tank_Farm	<5	<25	-
SB-13	SB-SB-13-1-A	1-1	10/25/2011	Tank_Farm	**13HD**	<25	-
SB-13	SB-SB-13-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	**7.1HD**	<25	-
SB-13	SB-SB-13-5-A	5-5	10/25/2011	Tank_Farm	<5	<25	-
SB-14	SB-SB-14-1-A	1-1	10/19/2011	Tank_Farm	**91HD**	**420**	-
SB-14	SB-SB-14-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<5	<25	-
SB-15	SB-SB-15-1-A	1-1	10/19/2011	Tank_Farm	<5	<25	-
SB-15	SB-SB-15-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<5	<25	-
SB-16	SB-SB-16-1-A	1-1	10/20/2011	Tank_Farm	**29HD**	**410**	-
SB-16	SB-SB-16-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<5	<25	-
SB-17	SB-SB-17-1-A	1-1	10/20/2011	Tank_Farm	<5	<25	-
SB-17	SB-SB-17-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<5	<25	-
SB-18	SB-SB-18-1-A	1-1	10/20/2011	Tank_Farm	<5	<25	-
SB-18	SB-SB-18-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<5	<25	-
SB-19	SB-SB-19-1-A	1-1	10/26/2011	Tank_Farm	<5	<25	-
SB-19	SB-SB-19-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<5	<25	-
SB-20	SB-SB-20-1-A	1-1	10/25/2011	Tank_Farm	**9.7**	<25	-
SB-20	SB-SB-20-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	<5	<25	-
SB-21	SB-SB-21-1-A	1-1	10/24/2011	Tank_Farm	<5	<25	-
SB-21	SB-SB-21-2.5-A	2.5-2.5	10/24/2011	Tank_Farm	<5	<25	-
SB-22	SB-SB-22-10-A	10-10	10/27/2011	Tank_Farm	<5	<25	-
SB-22	SB-SB-22-1-A	1-1	10/27/2011	Tank_Farm	<5	<25	-

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	**TPH as Motor Oil**	**Total Petroleum Hydrocarbons**
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
SB-22	SB-SB-22-2.5-A	2.5-2.5	10/27/2011	Tank_Farm	**11HD**	**56**	-
SB-22	SB-SB-22-5-A	5-5	10/27/2011	Tank_Farm	<5	<25	-
SB-23	SB-SB-23-15-A	15-15	10/24/2011	Tank_Farm	<5	<25	-
SB-23	SB-SB-23-1-A	1-1	10/24/2011	Tank_Farm	**18,000HD**	**20,000**	-
SB-23	SB-SB-23-2.5-A	2.5-2.5	10/24/2011	Tank_Farm	**18**	<25	-
SB-23	SB-SB-23-5-A	5-5	10/24/2011	Tank_Farm	<5	<25	-
SB-24	SB-SB-24-1-A	1-1	10/20/2011	Tank_Farm	**610HD**	**5000**	-
SB-24	SB-SB-24-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<5	<25	-
SB-25	SB-SB-25-15-A	15-15	10/25/2011	Tank_Farm	<5	<25	-
SB-25	SB-SB-25-1-A	1-1	10/25/2011	Tank_Farm	<5	<25	-
SB-25	SB-SB-25-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	<5	<25	-
SB-25	SB-SB-25-5-A	5-5	10/25/2011	Tank_Farm	<5	<25	-
SB-26	SB-SB-26-15-A	15-15	10/25/2011	Tank_Farm	<5	<25	-
SB-26	SB-SB-26-1-A	1-1	10/25/2011	Tank_Farm	<5	<25	-
SB-26	SB-SB-26-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	**12**	<25	-
SB-26	SB-SB-26-5-A	5-5	10/25/2011	Tank_Farm	<5	<25	-
SB-27	SB-SB-27-15-A	15-15	10/25/2011	Tank_Farm	**11**	<25	-
SB-27	SB-SB-27-1-A	1-1	10/25/2011	Tank_Farm	<5	<25	-
SB-27	SB-SB-27-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	<5	<25	-
SB-27	SB-SB-27-5-A	5-5	10/25/2011	Tank_Farm	<5	<25	-
SB-28	SB-SB-28-1-A	1-1	10/27/2011	Tank_Farm	<5	<25	-
SB-28	SB-SB-28-2.5-A	2.5-2.5	10/27/2011	Tank_Farm	<5	<25	-
SB-29	SB-SB-29-10-A	10-10	10/20/2011	Tank_Farm	**5.4HD**	<25	-
SB-29	SB-SB-29-1-A	1-1	10/20/2011	Tank_Farm	<5	<25	-
SB-29	SB-SB-29-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<5	<25	-
SB-29	SB-SB-29-5-A	5-5	10/20/2011	Tank_Farm	<5	<25	-
SB-30	SB-SB-30-12-A	12-12	10/21/2011	Tank_Farm	<5	<25	-
SB-30	SB-SB-30-1-A	1-1	10/21/2011	Tank_Farm	<5	<25	-
SB-30	SB-SB-30-2.5-A	2.5-2.5	10/21/2011	Tank_Farm	<5	<25	-
SB-30	SB-SB-30-5-A	5-5	10/21/2011	Tank_Farm	<5	<25	-

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	**TPH as Motor Oil**	**Total Petroleum Hydrocarbons**
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
SB-31	SB-SB-31-10-A	10-10	10/21/2011	Tank_Farm	<5	<25	-
SB-31	SB-SB-31-1-A	1-1	10/21/2011	Tank_Farm	<5	**120**	-
SB-31	SB-SB-31-2.5-A	2.5-2.5	10/21/2011	Tank_Farm	<5	<25	-
SB-31	SB-SB-31-5-A	5-5	10/21/2011	Tank_Farm	**9.2HD**	**110**	-
SB-32	SB-SB-32-16-A	16-16	7/14/2011	non_Tank_Farm	<5	<25	-
SB-32	SB-SB-32-1-A	1-1	7/14/2011	non_Tank_Farm	**8.3**	**100**	-
SB-32	SB-SB-32-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-32	SB-SB-32-5-A	5-5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-33	SB-SB-33-14.5-A	14.5-14.5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-33	SB-SB-33-1-A	1-1	7/14/2011	non_Tank_Farm	<5	<25	-
SB-33	SB-SB-33-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-33	SB-SB-33-5-A	5-5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-34	SB-SB-34-14-A	14-14	7/12/2011	non_Tank_Farm	**590**	**650**	-
SB-34	SB-SB-34-1-A	1-1	7/12/2011	non_Tank_Farm	**240**	**2500**	-
SB-34	SB-SB-34-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	**28**	**220**	-
SB-34	SB-SB-34-5-A	5-5	7/12/2011	non_Tank_Farm	**27**	**160**	-
SB-35	SB-SB-35-12-A	12-12	7/12/2011	non_Tank_Farm	<5	<25	-
SB-35	SB-SB-35-1-A	1-1	7/12/2011	non_Tank_Farm	<5	<25	-
SB-35	SB-SB-35-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	**6.3**	**90**	-
SB-35	SB-SB-35-5-A	5-5	7/12/2011	non_Tank_Farm	**5.7**	**62**	-
SB-36	SB-SB-36-1-A	1-1	7/14/2011	non_Tank_Farm	**24**	**530**	-
SB-36	SB-SB-36-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	**120**	**2700**	-
SB-36	SB-SB-36-5-A	5-5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-37	SB-SB-37-1-A	1-1	7/14/2011	non_Tank_Farm	**39**	**1100**	-
SB-37	SB-SB-37-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	<5	**27**	-
SB-37	SB-SB-37-5-A	5-5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-37	SB-SB-37-6-A	6-6	7/14/2011	non_Tank_Farm	<5	<25	-
SB-38	SB-SB-38-1-A	1-1	7/14/2011	non_Tank_Farm	**120**	**2300**	-
SB-38	SB-SB-38-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	<5	**69**	-
SB-38	SB-SB-38-5-A	5-5	7/14/2011	non_Tank_Farm	**12**	**300**	-

Table A-1
Petroleum Hydrocarbons Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					TPH		
					TPH as Diesel	TPH as Motor Oil	Total Petroleum Hydrocarbons
					mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					255	12000	255
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**			
SB-38	SB-SB-38-9.5-A	9.5-9.5	7/14/2011	non_Tank_Farm	<5	<25	-
SB-42	SB-SB-42-1-A	1-1	7/13/2011	non_Tank_Farm	**9.8**	**110**	-
SB-42	SB-SB-42-2.5-A	2.5-2.5	7/13/2011	non_Tank_Farm	<5	<25	-
SB-42	SB-SB-42-5-A	5-5	7/13/2011	non_Tank_Farm	<5	<25	-
SB-42	SB-SB-42-6-A	6-6	7/13/2011	non_Tank_Farm	<5	<25	-
SB-45	SB-SB-45-14-A	14-14	7/12/2011	non_Tank_Farm	<5	<25	-
SB-45	SB-SB-45-1-A	1-1	7/12/2011	non_Tank_Farm	**200**	**1000**	-
SB-45	SB-SB-45-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	**32**	**270**	-
SB-45	SB-SB-45-5-A	5-5	7/12/2011	non_Tank_Farm	**11**	**110**	-
SB-46	SB-SB-46-10-A	10-10	7/12/2011	non_Tank_Farm	<5	<25	-
SB-46	SB-SB-46-1-A	1-1	7/12/2011	non_Tank_Farm	<5	<25	-
SB-46	SB-SB-46-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	<5	<25	-
SB-46	SB-SB-46-5-A	5-5	7/12/2011	non_Tank_Farm	<5	<25	-

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit
ft bgs = feet below ground surface

Table A-2
Metals Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone																			
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	<6	3.1	32	<0.5	<2	-	27	6.9	10	-	8.2	<0.05	<10	38	<1	<2	<1	34	37
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	<6	3.2	<20	<0.5	<2	-	30	<5	7.1	-	2.6	<0.05	<10	26	<1	<2	<1	21	14
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	<6	3	<20	<0.5	<2	-	30	<5	6.4	-	2.4	<0.05	<10	27	<1	<2	<1	26	16
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	<6	4.5	34	<0.5	<2	-	44	8.4	10	-	4.3	<0.05	<10	51	<1	<2	<1	30	20
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	<6	3.2	<20	<0.5	<2	-	28	<5	6	-	1.7	<0.05	<10	24	<1	<2	<1	22	14
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	<6	2.9	37	<0.5	<2	-	30	6.6	15	-	10	<0.05	<10	37	<1	<2	<1	41	45
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	<6	3.8	<20	<0.5	<2	-	29	<5	5	-	1.3	<0.05	<10	24	<1	<2	<1	17	8.6
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	<6	3.1	<20	<0.5	<2	-	31	5.3	6.7	-	1.8	<0.05	<10	56	<1	<2	<1	25	15
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	<6	3.3	39	<0.5	<2	-	34	8	15	-	31	0.05	<10	100	<1	<2	<1	190	31
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	<6	1.6	<20	<0.5	<2	-	27	<5	<2.5	-	1.4	<0.05	<10	11	<1	<2	<1	29	7.6
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	<6	2.5	42	<0.5	<2	-	40	12	21	-	6.4	<0.05	<10	44	<1	<2	<1	270	50
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<6	3.4	<20	<0.5	<2	-	28	<5	4.4	-	1.9	<0.05	<10	27	<1	<2	<1	17	11
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	<6	2.5	<20	<0.5	<2	-	92	<5	6	-	2	<0.05	<10	44	<1	<2	<1	20	15
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	<6	4.7	66	<0.5	<2	-	74	23	25	-	5.6	<0.05	<10	236	<1	<2	<1	49	47
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	<6	3.8	<20	<0.5	<2	-	24	<5	4.5	-	1.7	<0.05	<10	28	<1	<2	<1	16	12
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	<6	<0.5	57	<0.5	<2	-	82	26	51	-	1.5	<0.05	<10	67	<1	<2	<1	94	48
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	<6	3.8	<20	<0.5	<2	-	29	<5	3.8	-	1.5	<0.05	<10	30	<1	<2	<1	17	11
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	<6	2.8	62	<0.5	<2	-	17	<5	8.4	-	1.1	<0.05	<10	17	<1	<2	<1	24	10
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	<6	0.6	54	<0.5	<2	-	36	19	29	-	5.9	<0.05	<10	29	<1	<2	<1	120	53
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	<6	6.7	100	<0.5	<2	-	79	19	26	-	6.3	0.1	<10	180	<1	<2	<1	58	44
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	<6	3.3	<20	<0.5	<2	-	18	<5	<2.5	-	1	<0.05	<10	11	<1	<2	<1	11	7
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	<6	2.3	30	<0.5	<2	-	32	8.9	14	-	3	<0.05	<10	34	<1	<2	<1	40	28
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	<6	2.8	<20	<0.5	<2	-	22	<5	<2.5	-	1.1	<0.05	<10	13	<1	<2	<1	13	7.8
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	<6	5.2	73	<0.5	<2	-	67	22	37	-	5.8	<0.05	<10	210	<1	<2	<1	57	47
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	<6	3	<20	<0.5	<2	-	21	<5	15	-	4.4	<0.05	<10	20	<1	<2	<1	17	20
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	<6	3	33	<0.5	<2	-	35	10	21	-	1.4	<0.05	<10	41	<1	<2	<1	38	19
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	<6	2.2	<20	<0.5	<2	-	19	<5	3.7	-	1.1	<0.05	<10	20	<1	<2	<1	11	8.7
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	<6	3.5	62	<0.5	<2	-	44	12	18	-	6	<0.05	<10	88	<1	<2	<1	40	38
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	<6	5.1	<20	<0.5	<2	-	34	<5	4.7	-	1.1	<0.05	<10	27	<1	<2	<1	15	8.8
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<6	4.4	<20	<0.5	<2	-	36	<5	4.9	-	2.4	<0.05	<10	28	<1	<2	<1	26	15
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	<6	2.5	<20	<0.5	<2	-	22	<5	2.5	-	1.3	<0.05	<10	21	<1	<2	<1	15	8.5
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	<6	5	57	<0.5	<2	-	64	18	18	-	3.9	<0.05	<10	130	<1	<2	<1	46	37
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	<6	3.8	<20	<0.5	<2	-	27	<5	3.1	-	1.4	<0.05	<10	48	<1	<2	<1	14	9.6
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<6	4	36	<0.5	<2	-	53	13	19	-	1.8	<0.05	<10	59	<1	<2	<1	44	22
BB01-011	BB01-011@2-12.5	2-12.5	1/2/1997	non_Tank_Farm	<6	4.3	70	<0.5	<2	-	63	18	32	-	4.3	<0.05	<10	160	<1	<2	<1	52	39
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	<6	5.6	<20	<0.5	<2	-	26	<5	4.6	-	1.4	<0.05	<10	25	<1	<2	<1	18	9.4
BB01-012	BB01-012@0.5-1	0.5-1	1/2/1997	Tank_Farm	<6	<0.5	<20	<0.5	<2	-	3.7	<5	<2.5	-	1.7	<0.05	<10	<4	<1	<2	<1	<5	5.8
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	<6	3.5	67	<0.5	<2	-	44	10	17	-	3.8	<0.05	<10	80	<1	<2	<1	40	33
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	<6	2.4	<20	<0.5	<2	-	27	<5	3.1	-	1.2	<0.05	<10	29	<1	<2	<1	14	9.1
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	<6	2.9	<20	<0.5	<2	-	28	<5	<2.5	-	1.1	<0.05	<10	20	<1	<2	<1	15	9.2
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	<6	3.4	<20	<0.5	<2	-	32	<5	5.2	-	1.8	<0.05	<10	34	<1	<2	<1	22	13
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	<6	4.5	<20	<0.5	<2	-	25	<5	3.8	-	2.6	<0.05	<10	25	<1	<2	<1	15	11
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	<6	24	<20	<0.5	<2	-	<3	<5	<2.5	-	2	<0.05	<10	<4	<1	<2	<1	<5	12
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	<6	4.8	110	<0.5	<2	-	57	16	24	-	4.8	<0.05	<10	190	<1	<2	<1	61	37
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	<6	3.9	80	<0.5	<2	-	51	14	40	-	4.5	0.06	<10	140	<1	<2	<1	46	32
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	<6	3.2	<20	<0.5	<2	-	23	<5	<2.5	-	1.2	<0.05	<10	19	<1	<2	<1	14	7.3
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<6	3	25	<0.5	<2	-	29	7	13	-	10	<0.05	<10	51	<1	<2	<1	67	38
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<6	4.5	43	<0.5	<2	-	32	6	19	-	11	<0.05	<10	56	<1	<2	<1	75	27
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<6	3.5	22	<0.5	<2	-	43	7.3	12	-	10	<0.05	<10	62	<1	<2	<1	59	25
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<6	2.3	27	<0.5	<2	-	27	5.7	6.5	-	4.3	<0.05	<10	39	<1	<2	<1	24	20
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<0.04J	4.1	25	<0.005J	<0.04J	-	36	5.5	11	-	12	<0.005J	<0.01J	43	<0.1J	<0.006J	<0.02J	46	45
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	<0.04J	4.1	<0.02J	<0.005J	<0.04J	-	24	<0.004J	2.6	-	1.3	<0.005J	<0.01J	27	<0.1J	<0.006J	<0.02J	11	9.6
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	<6U	7.8	82	<0.005J	<0.04J	-	98	19	32	-	6.2	<0.05U	<0.01J	190	<0.1J	<2U	0.08J	69	47
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	<6U	3.6	<0.02J	<0.005J	<0.04J	-	35	<0.004J	3.3	-	2	<0.05U	<0.01J	30	<1U	<2U	0.09J	21	14
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	<6U	<0.5U	150	<0.005J	<0.04J	-	76	50	82	-	0.5	<0.05U	<0.01J	130	<0.1J	<2U	0.06J	170	54
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	<6U	3	<0.02J	<0.005J	<2U	-	27	<0.004J	<0.2J	-	1.3	<0.05U	<0.01J	23	<1U	<2U	0.05J	13	10
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	<6U	6.8	<0.02J	<0.005J	<0.04J	-	27	<0.004J	4	-	1.2	<0.05U	<0.01J	37	<1U	<2U	0.05J	19	10
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	<6U	2.3	48	<0.005J	<0.04J	-	52	15	39	-	40	<0.05U	<0.01J	38	<0.1J	<0.006J	0.08J	120	53
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	<6U	5.9	130	<0.005J	<0.04J	-	64	22	28	-	5.3	<0.005J	<0.01J	230	<0.1J	<2U	0.09J	66	46
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	<6U	3.6	37	<0.005J	<0.04J	-	31	6.7	13	-	2.7	<0.005J	<0.01J	41	<0.1J	<2U	0.07J	31	21
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	<6U	4.5	29	<0.005J	<0.04J	-	62	8.8	12	-	2.5	<0.05U	<0.01J	50	<1U	<2U	0.06J	45	22
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	<6U	4.5	<0.02J	<0.005J	<2U	-	30	<0.004J	<0.2J	-	1.2	<0.05U	<0.01J	20	<1U	<2U	<0.02J	13	9.2
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	<6U	3.3	<0.02J	<0.005J	<2U	-	24	<0.004J	<0.2J	-	1.3	<0.05U	<0.01J	21	<1U	<2U	0.04J	13	10
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	<6U	5.3	<0.02J	<0.005J	<0.04J	-	44	6.6	9.7	-	1.9	<0.05U	<0.01J	40	<0.1J	<2U	0.06J	29	16
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<0.04J	4.4	28	<0.005J	<0.04J	-	35	6.9	12	-	3.5	0.05	<0.01J	43	<0.1J	<0.006J	0.34J	31	23
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	<0.04J	6.2	110	<0.005J	<0.04J	-	130	22	43	-	5.6	0.23	<0.01J	220	<0.1J	<0.006J	<0.02J	58	51
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	<0.04J	4.6	<0.02J	<0.005J	<0.04J	-	58	<0.004J	6.4	-	1.6	<0.005J	<0.01J	32	<0.1J	<0.006J	0.31J	12	43
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	<6	1.5	72	<0.5	<2	-	74	25	47	-	3.9	<0.05	<10	62	<1	<2	<1	110	49
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	<6	4.9	<20	<0.5	<2	-	11	<5	39	-	0.8	<0.05	<10	<4	<1	<2	<1	5.5	<2
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	<6	1.8	<20	<0.5	<2	-	15	<5	65	-	0.7	<0.05	<10	<4	<1	<2	<1	5.9	<2
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	<6	2.1	<20	<0.5	<2	-	8	<5	34	-	0.7	<0.05	<10	<4	<1	<2	<1	<5	<2
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	<6	3.8	26	<0.5	<2	-	37	6.9	18	-	5.3	<0.05	<10	45	<1	<2	<1	49	23
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	<7	3.8	28	<0.6	<2	-	33	<6	9	-	2.7	<0.06	<12	33	<1	<2	<1	26	22

Table A-2
Metals Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone																			
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	<6	4	<21	<0.5	<2	-	41	<5	6.7	-	2.4	<0.05	<11	29	<1	<2	<1	26	16
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	<7	0.7	67	<0.5	<2	-	65	32	56	-	1.2	<0.05	<11	51	<1	<2	<1	121	53
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	<7	<24	<24	<0.6	<2	-	24	<6	<3	-	1.1	<0.06	<12	21	<1	<2	<1	12	8
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	<6	3	<21	<0.5	<2	-	29	<5	<2.6	-	1.2	0.06	<11	14	<1	<2	<1	16	13
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	<6	3.5	28	<0.5	<2	-	35	7	16	-	2.8	<0.05	<10	56	<1	<2	0.06	25	27
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	<6	3.3	<20	<0.5	<2	-	28	<5	2.7	-	1.2	<0.05	<10	15	<1	<2	0.06	12	11
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	<6	3.9	110	<0.5	<2	-	57	14	22	-	6.5	<0.05	<10	110	<1	<2	0.09	36	39
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	<7	5.3	75	<0.5	<2	-	77	15	22	-	4	0.07	<11	141	<1	<2	<1	53	35
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	<7	4.9	71	<0.6	<2	-	53	11	19	-	3.9	<0.06	<11	98	<1	<2	<1	45	34
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	<6	3.7	<21	<0.5	<2	-	14	<5	<2.6	-	0.9	<0.05	<11	11	<1	<2	<1	7.7	6.2
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	<6	4.1	23	<0.5	<2	-	31	<5	5.1	-	2	<0.05	<10	29	<1	<2	<1	22	14
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	<7	3.1	<25	<0.6	<2	-	21	<6	<3.1	-	1	<0.06	<12	17	<1	<2	<1	11.9	7.6
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	<7	4	25	<0.5	<2	-	33	<5	4.2	-	1.5	<0.05	<11	57	<1	<2	<1	17	12
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	<7	4.5	28	<0.5	<2	-	41	6	25	-	5.8	<0.05	<11	55	<1	<2	<1	36	24
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<7	3.2	27	<0.6	<2	-	27	<6	25	-	28	<0.06	<11	24	<1	<2	<1	41	132
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	<6	3.5	<20	<0.5	<2	-	35	<5	<2.5	-	1.4	<0.05	<10	13	<1	<2	<1	18	11
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<6	3.4	<21	<0.5	<2	-	21	<5	4.8	-	4	<0.05	<11	26	<1	<2	<1	26	24
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<7	4.3	<23	<0.6	<2	-	23	<6	<2.9	-	1	<0.06	<12	15	<1	<2	<1	14	8
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	<6	3.6	<21	<0.5	<2	-	24	<5	<2.6	-	1	<0.06	<11	13	<1	<2	<1	15	10
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<7	3.9	33	<0.5	<2	-	43	8.4	13	-	2.6	<0.05	<11	44	<1	<2	<1	46	25
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	<7	5	<23	<0.6	<2	-	33	<6	3.8	-	1.4	<0.06	<11	55	<1	<2	<1	16	11
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<6	6.2	36	<0.5	<2	-	40	8.3	14	-	10.5	<0.05	<11	40	<1	<2	<1	38	32
BB03-004	BB03-004@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<6	3.7	<21	<0.5	<2	-	26	<5	3	-	2.4	<0.05	<10	19	<1	<2	<1	16	10
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<7	4	<22	<0.5	<2	-	32	<5	5	-	2	<0.05	<11	25	<1	<2	<1	21	21
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<6	3.6	<21	<0.5	<2	-	14	<5	<2.6	-	0.8	<0.05	<11	12	<1	<2	<1	8.2	6.2
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<6	4.1	25	<0.5	<2	-	28	5.7	15	-	11	<0.05	<10	43	<1	<2	<1	47	33
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<7	4.5	<24	<0.6	<2	-	33	<6	<3	-	1.4	<0.06	<12	15	<1	<2	<1	18	9.8
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	<6	3.5	<21	<0.5	<2	-	26	<5	3	-	1.3	<0.05	<11	21	<1	<2	<1	16	9.1
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<6	1.9	22	<0.5	<2	-	19	<5	6.7	-	21	<0.05	<10	19	<1	<2	<1	24	24
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<7	3.4	<22	<0.6	<2	-	32	<6	2.8	-	1.7	<0.06	<11	17	<1	<2	<1	17	15
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<7	4	42	<0.5	<2	-	46	8.7	16	-	4.6	0.16	<11	65	<1	<2	<1	33	26
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<7	3.1	27	<0.5	<2	-	39	8	12	-	7.3	<0.05	<11	37	<1	<2	<1	55	58
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	<7	5	<24	<0.6	<2	-	34	<6	<3	-	1	<0.06	<12	16	<1	<2	<1	19	8.6
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	<6	2.7	<21	<0.5	<2	-	20	<5	<2.6	-	0.9	<0.05	<11	12	<1	<2	<1	12	6.4
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	<6	4	<21	<0.5	<2	-	29	<5	6.3	-	4	<0.05	<10	36	<1	<2	<1	37	18
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	<7	5	<23	<0.6	<2	-	43	<6	<2.9	-	1.4	<0.06	<12	17	<1	<2	<1	20	9.1
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	<6	3.8	<20	<0.5	<2	-	29	<5	<2.6	-	1.1	<0.05	<10	13	<1	<2	<1	15	8.2
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<6	3.5	<21	<0.5	<2	-	34	<5	<2.6	-	1.4	0.1	<10	16	<1	<2	<1	19	14
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<7	4	<20	<0.6	<2	-	28	<6	<3	-	1	<0.06	<12	15	<1	<2	<1	17	9.7
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<6	3.1	<20	<0.5	<2	-	18	<5	<2.5	-	1	0.8	<10	12	<1	<2	<1	10	9.5
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	<6U	4.8	61	<0.005J	<0.04J	-	57	15	30	-	5.8	<0.005J	<0.01J	120	<0.1J	<0.006J	<0.02J	40	43
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	<6U	4.6	<0.02J	<0.005J	<0.04J	-	48	<0.004J	<0.2J	-	1.5	<0.005J	<0.01J	16	<0.1J	<2U	0.05J	17	9.5
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	<6U	4.1	<0.02J	<0.005J	<0.04J	-	20	<0.004J	3.2	-	1.1	<0.005J	<0.01J	23	<0.1J	<0.006J	<1U	13	7.7
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	3.7	<21	<0.5	<2	-	33	<5	<2.6	-	2	<0.05	<10	17	<1	<2	<1	20	12
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	<6	3.6	<21	<0.5	<2	-	14	<5	<2.6	-	1.1	<0.05	<11	11	<1	<2	<1	8	6.1
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	<6	3.5	<21	<0.5	<2	-	30	<5	<2.7	-	1.8	<0.05	<11	13	<1	<2	<1	13	7.9
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	3.3	<21	<0.5	<2	-	26	<5	2.8	-	8.6	<0.05	<10	13	<1	<2	<1	17	60
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	<6	3	<21	<0.5	<2	-	30	<5	<2.7	-	1.3	<0.05	<11	14	<1	<2	<1	17	12
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	<6	4	<21	<0.5	<2	-	25	<5	<2.6	-	1.3	<0.05	<10	16	<1	<2	<1	14	8.7
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	3.6	<20	<0.5	<2	-	26	<5	<2.5	-	3	<0.05	<10	14	<1	<2	<1	16	14
BB04-003	BB04-003@5	5-5	12/17/1996	Tank_Farm	<6	3.9	<20	<0.5	<2	-	29	<5	<2.6	-	4.2	<0.05	<10	18	<1	<2	<1	20	24
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	2.9	45	<0.5	<2	-	35	<5	10.5	-	116	<0.05	<11	24	<1	<2	<1	31	72
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	<6	3.3	<21	<0.5	<2	-	16	<5	<2.6	-	0.9	<0.05	<10	11	<1	<2	<1	8	6.7
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	<6	3.6	<21	<0.5	<2	-	23	<5	<2.6	-	1.1	<0.05	<10	13	<1	<2	<1	13	8.4
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	3.3	<20	<0.5	<2	-	28	<5	<2.5	-	1.4	<0.05	<10	16	<1	<2	<1	18	11
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	<6	3.1	<22	<0.5	<2	-	28	<5	<2.7	-	1.3	<0.05	<11	14	<1	<2	<1	15	17
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	<6	3.5	<21	<0.5	<2	-	25	<5	<2.6	-	1	<0.05	<10	14	<1	<2	<1	14	7.7
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	<6	3.3	<21	<0.5	<2	-	23	<5	3.6	-	2.3	<0.05	<10	17	<1	<2	<1	14	23
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	<7	7	135	<0.6	<2	-	90	29	33	-	7.1	<0.06	<11	212	<1	<2	<1	65	56
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	<6	3.6	<21	<0.5	<2	-	18	<5	<2.6	-	1	<0.05	<11	13	<1	<2	<1	12	7
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	3.5	<20	<0.5	<2	-	23	<5	<2.5	-	1.5	<0.05	<10	13	<1	<2	<1	14	8.6
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	<6	4.1	<21	<0.5	<2	-	32	<5	<2.6	-	1.4	<0.05	<11	16	<1	<2	<1	18	9.1
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	<6	3.8	<21	<0.5	<2	-	32	<5	<2.6	-	1.3	<0.05	<11	15	<1	<2	<1	18	9.3
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	<6	3.4	<21	<0.5	<2	-	27	<5	3	-	15	<0.05	<10	18	<1	<2	<1	18	49
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	<6	4	<21	<0.5	<2	-	17	<5	<2.6	-	1	<0.05	<11	13	<1	<2	<1	11	7
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	<6	3.8	<21	<0.5	<2	-	21	<5	<2.6	-	1.4	<0.05	<10	13	<1	<2	<1	14	7.7
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	<6	3.5	<21	<0.5	<2	-	30	<5	2.9	-	5	<0.05	<10	17	<1	<2	<1	20	30
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	<6	6.7	<21	<0.5	<2	-	46	<5	6.9	-	1.7	<0.05	<10	48	<1	<2	<1	19	13
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	<7	4	55	<0.6	<2	-	48	9.7	17	-	3.7	<0.06	<11	86	<1	<2	<1	35	28
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	<7	3.8	<22	<0.6	<2	-	27	<6	<2.8	-	2.1	<0.06	<11	18	<1	<2	<1	18	11
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	<6	3.3	<21	<0.5	<2	-	19	<5	<2.6	-	0.9	<0.05	<10	11	<1	<2	<1	10	6.8
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	<6	3.5	<21	<0.5	<2	-	18	<5	<2.6	-	1	<0.05	<10	11	<1	<2	<1	10.2	7.3
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	3.5	<21	<0.5	<2	-	31	<5	<2.6	-	1.2	<0.05	<10	13	<1	<2	<1	17	8.3

Table A-2

Metals Concentrations in Site Soil

Screening-Level Human-Health Risk Assessment Report

Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																			
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	<6	**3.7**	<21	<0.5	<2	-	**28**	<5	<2.6	-	**1.3**	<0.05	<10	**14**	<1	<2	<1	**16**	**8.1**
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	<6	**3.7**	<21	<0.5	<2	-	**34**	<5	<2.6	-	**1.3**	<0.05	<11	**14**	<1	<2	<1	**17**	**8.9**
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	**3.6**	<21	<0.5	<2	-	**25**	<5	<2.6	-	**5**	<0.05	<10	**13**	<1	<2	<1	**16**	**31**
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	<6	**3.9**	<21	<0.5	<2	-	**29**	<5	<2.6	-	**1.3**	<0.05	<10	**15**	<1	<2	<1	**18**	**8**
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	<6	**4**	<21	<0.5	<2	-	**27**	<5	<2.6	-	**1.1**	<0.05	<10	**16**	<1	<2	<1	**18**	**9.3**
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	**2.3**	<21	<0.5	<2	-	**11**	<5	**7.3**	-	**73**	<0.05	<10	**13**	<1	<2	<1	**13**	**207**
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	<6	**3.6**	<21	<0.5	<2	-	**29**	<5	<2.6	-	**1.2**	<0.05	<10	**13**	<1	<2	<1	**19**	**9.6**
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	<6	**3.6**	<21	<0.5	<2	-	**19**	<5	<2.6	-	**1**	<0.05	<11	**13**	<1	<2	<1	**12**	**7.2**
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	<6	**3**	<21	<0.5	<2	-	**18**	<5	<2.6	-	**1**	<0.05	<10	**11**	<1	<2	<1	**12**	**7.3**
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	<6	**3.5**	<21	<0.5	<2	-	**21**	<5	<2.6	-	**1**	<0.05	<11	**13**	<1	<2	<1	**12**	**7.2**
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	<6	**3.6**	<21	<0.5	<2	-	**26**	<5	<2.6	-	**1.1**	<0.05	<10	**14**	<1	<2	<1	**17**	**8.2**
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	<6	**3.3**	<20	<0.5	<2	-	**24**	<5	<2.5	-	**1.2**	<0.05	<10	**13**	<1	<2	<1	**14**	**8.3**
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	<6	**4**	<21	<0.5	<2	-	**27**	<5	<2.6	-	**1.1**	<0.05	<10	**13**	<1	<2	<1	**18**	**8.5**
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	<6	**4**	<20	<0.5	<2	-	**43**	<5	<2.5	-	**1.5**	<0.05	<10	**16**	<1	<2	<1	**22**	**9.9**
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	<6	**3.6**	<21	<0.5	<2	-	**21**	<5	<2.6	-	**1.1**	<0.05	<10	**13**	<1	<2	<1	**13**	**8.2**
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	<6	**4.1**	<21	<0.5	<2	-	**18**	<5	<2.7	-	**1**	<0.05	<11	**13**	<1	<2	<1	**11**	**7**
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	<6	**3.8**	<21	<0.5	<2	-	**36**	<5	<2.6	-	**1.3**	<0.05	<10	**15**	<1	<2	<1	**19**	**8.8**
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	<7	**3.9**	<22	<0.6	<2	-	**27**	<6	**2.9**	-	**3.7**	<0.06	<11	**15**	<1	<2	<1	**15**	**27**
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	<6	**3.6**	<21	<0.5	<2	-	**31**	<5	<2.6	-	**1.2**	<0.05	<10	**15**	<1	<2	<1	**15**	**8.5**
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	<7	**0.7**	**143**	<0.6	<2	-	**104**	**39**	**75**	-	**0.9**	<0.06	<11	**110**	<1	<2	<1	**143**	**46**
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	<7	**4.1**	<22	<0.6	<2	-	**32**	<6	**7.5**	-	**2.5**	<0.05	<11	**32**	<1	<2	<1	**25**	**32**
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	<8	**1.9**	**180**	<0.7	<3	-	**72**	**19**	**47**	-	**7.4**	<0.07	<14	**180**	<1	<2	<1	**61**	**61**
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	<6	**3.1**	<21	<0.5	<2	-	**29**	<5	<2.7	-	**1.2**	<0.05	<11	**13**	<1	<2	<1	**15**	**8.2**
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	<7	**5.3**	**63**	<0.6	<2	-	**65**	**20**	**50**	-	**14**	<0.06	<11	**110**	<1	<2	<1	**50**	**43**
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	<7	**5.5**	**171**	<0.6	<2	-	**82**	**22**	**38**	-	**7.7**	<0.06	<12	**183**	<1	<2	<1	**65**	**59**
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	<6	**3.8**	<21	<0.5	<2	-	**30**	<5	**5.1**	-	**2.8**	<0.05	<11	**23**	<1	<2	<1	**25**	**16**
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	<7	**4.8**	**35**	<0.5	<2	-	**40**	**6.9**	**9.9**	-	**2.6**	<0.05	<11	**50**	<1	<2	<1	**30**	**22**
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	<7	**2**	<24	<0.6	<2	-	**31**	<6	<3	-	**1.4**	<0.06	<12	**16**	<1	<2	<1	**17**	**9.5**
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	<6	**3.2**	<21	<0.5	<2	-	**18**	<5	<2.6	-	**1**	<0.05	<10	**13**	<1	<2	<1	**13**	**7.5**
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	<6	**4.6**	**37**	<0.5	<2	-	**42**	**8.3**	**12**	-	**3.3**	<0.05	<11	**74**	<1	<2	<1	**34**	**23**
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	<7	**3.3**	**31**	<0.6	<2	-	**39**	**11**	**18**	-	**3.1**	<0.06	<11	**45**	<1	<2	<1	**67**	**31**
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	<7	**5**	**197**	<0.5	<2	-	**110**	**23**	**36**	-	**6.8**	<0.05	<11	**219**	<1	<2	<1	**64**	**51**
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	<7	**6.4**	**146**	<0.6	<2	-	**124**	**25**	**37**	-	**6.5**	**0.07**	<11	**247**	<1	<2	<1	**73**	**55**
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	<7	**6**	**126**	<0.5	<2	-	**71**	**14**	**25**	-	**5.4**	<0.05	<11	**158**	<1	<2	<1	**56**	**47**
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	<6	**2.8**	**71**	<0.5	<2	-	**61**	**19**	**35**	-	**5.4**	<0.05	<11	**161**	<1	<2	<1	**68**	**54**
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	<7	**5.7**	**122**	<0.6	<2	-	**134**	**20**	**31**	-	**12**	<0.06	<11	**156**	<1	<2	<1	**59**	**69**
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	<7	**4.2**	**112**	<0.6	<2	-	**68**	**17**	**28**	-	**15**	<0.06	<12	**134**	<1	<2	<1	**53**	**232**
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	<6	<0.5	<22	<0.5	<2	-	<3	<5	<2.7	-	**1.5**	<0.05	<11	<4	<1	<2	<1	<5	**4.7**
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	<7	**2.9**	**105**	<0.6	<2	-	**57**	**19**	**20**	-	**4.8**	**0.1**	<11	**191**	<1	<2	<1	**44**	**33**
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	<7	**2.8**	**127**	<0.6	<2	-	**59**	**16**	**28**	-	**5.5**	<0.06	<12	**140**	<1	<2	<1	**47**	**41**
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	<6	**3**	**50**	<0.5	<2	-	**28**	**9.5**	**119**	-	**26**	<0.05	<11	**25**	<1	<2	<1	**36**	**129**
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	<8	**4**	**167**	<0.6	<3	-	**87**	**19**	**36**	-	**7.1**	<0.06	<13	**193**	<1	<2	<1	**50**	**50**
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	<7	**4.3**	**39**	<0.6	<2	-	**36**	**7**	**10.2**	-	**2.6**	<0.06	<11	**56**	<1	<2	<1	**24**	**19**
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	<6	<0.5	**184**	<0.5	<2	-	**140**	**43**	**83**	-	<0.4	<0.05	<11	**140**	<1	<2	<1	**151**	**49**
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	<7	**3.8**	**123**	<0.6	<2	-	**94**	**27**	**37**	-	**6.1**	<0.06	<11	**168**	<1	<2	<1	**82**	**58**
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	<6	**5.3**	<21	<0.5	<2	-	**28**	<5	**3.6**	-	**1.6**	<0.05	<10	**26**	<1	<2	<1	**18**	**9.8**
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	<6	**2.3**	**47**	<0.5	<2	-	**38**	**12**	**25**	-	**90**	<0.05	<11	**57**	<1	<2	<1	**53**	**192**
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	<7	<5.8	**198**	<0.5	<2	-	**81**	**31**	**44**	-	**5.8**	<0.05	<11	**284**	<1	<2	<1	**72**	**56**
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	<7	**2.9**	**45**	<0.5	<2	-	**52**	**6.4**	**7.7**	-	**5.8**	<0.05	<11	**38**	<1	<2	<1	**34**	**17**
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	<7	**2.8**	<24	<0.6	<2	-	**18**	<6	<3	-	**1.1**	<0.06	<12	**11**	<1	<2	<1	**11.6**	**6.7**
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<7	**4.7**	<22	<0.6	<2	-	**52**	**6.4**	**12**	-	**2.1**	<0.06	<11	**57**	<1	<2	<1	**30**	**18**
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	<7	**3.2**	<25	<0.6	<2	-	**28**	<6	<3.1	-	**1**	<0.06	<12	**22**	<1	<2	<1	**12**	**9.1**
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<6	**4**	<21	<0.5	<2	-	**37**	**7.4**	**13**	-	**1.9**	<0.05	<10	**45**	<1	<2	<1	**32**	**17**
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	<7	**2**	<25	<0.6	<2	-	**20**	<6	<3.1	-	**1.1**	<0.06	<12	**15**	<1	<2	<1	**12**	**8.5**
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<6	**5**	<21	<0.5	<2	-	**31**	<5	**9.4**	-	**1.5**	<0.05	<11	**36**	<1	<2	<1	**31**	**44**
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	<7	<4.4	**115**	<0.8	<3	-	**81**	**23**	**32**	-	**8.1**	<0.08	<15	**198**	<1	<2	<1	**63**	**72**
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<7	**1.9**	**56**	<0.6	<2	-	**54**	**18**	**32**	-	**4.3**	<0.06	<11	**61**	<1	<2	<1	**59**	**89**
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	<8	**4.1**	<25	<0.6	<3	-	**29**	<6	**7.6**	-	**2**	<0.06	<13	**36**	<1	<3	<1	**20**	**16**
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<6	**6.2**	<20	<0.5	<2	-	**43**	<5	**6.3**	-	**1.7**	<0.05	<10	**47**	<1	<2	<1	**20**	**14**
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<7	**1.3**	**106**	<0.6	<2	-	**57**	**29**	**67**	-	**3**	<0.06	<11	**66**	<1	<2	<1	**143**	**121**
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	<7	<0.6	<24	<0.6	<2	-	**27**	<6	<3	-	**1**	<0.06	<12	**24**	<1	<2	<1	**15**	**9.5**
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<6	**4**	<21	<0.5	<2	-	**43**	**5.5**	**9.2**	-	**2.3**	<0.05	<10	**53**	<1	<2	<1	**26**	**18**
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	<6	**5.8**	**46**	<0.5	<2	-	**148**	**12**	**12**	-	**4.4**	<0.05	<11	**158**	<1	<2	<1	**40**	**24**
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	<8	**5.5**	**170**	<0.7	<3	-	**73**	**24**	**33**	-	**6.9**	<0.07	<13	**185**	<1	<3	<1	**63**	**53**
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	<6	**5**	<21	<0.5	<2	-	**30**	<5	**4.1**	-	**1.6**	<0.05	<10	**30**	<1	<2	<1	**19**	**11**
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	<0.04J	**3.9**	<0.02J	<0.005J	<0.04J	-	**39**	<0.004J	**2.7**	-	**1.4**	<0.005J	<0.01J	**22**	<0.1J	<0.006J	**0.25J**	**16**	**11**
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	<6	<0.5	**43**	<0.5	<2	-	**3.7**	**5.4**	**3.8**	-	**1.6**	<0.05	<10	<4	<1	<2	<1	**29**	**49**
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	<6	**3**	<21	<0.5	<2	-	**29**	<5	**2.8**	-	**1.3**	<0.05	<11	**20**	<1	<2	<1	**15**	**9.9**
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	<7	**3.1**	**38**	<0.6	<2	-	**30**	**6**	**7.8**	-	**2.2**	<0.06	<12	**36**	<1	<2	<1	**26**	**30**
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	<6	**4.3**	**36**	<0.5	<2	-	**46**	**12**	**20**	-	**7**	<0.05	<10	**48**	<1	<2	<1	**55**	**36**
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	<7	**3.5**	<24	<0.6	<2	-	**33**	<6	<3	-	**1**	<0.06	<12	**27**	<1	<2	<1	**14**	**9.2**
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	<7	<0.5	**207**	<0.5	<2	-	**56**	**46**	**88**	-	**4.1**	<0.05	<11	**103**	<1	<2	<1	**153**	**51**
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	<7	**4.5**	<23	<0.6	<2	-	**26**	<6	<2.9	-	**1.3**	<0.06	<11	**22**	<1	<2	<1	**14**	**9**

Table A-2
Metals Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone																			
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	<6	4.9	<20	<0.5	<2	-	38	<5	6.9	-	1.8	-	<10	34	<1	<2	<1	22	12
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	<6	4	<21	<0.5	<2	-	25	<5	3.3	-	1.3	-	<10	27	<1	<2	<1	13	10
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	<6	3	82	<0.5	<2	-	52	25	49	-	4.7	<0.06	<11	80	<1	<2	<1	99	48
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	<6	4.2	<21	<0.5	<2	-	31	<5	4	-	1.5	<0.05	<10	25	<1	<2	<1	21	11
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	<6	6.2	<24	<0.6	<2	-	37	6.2	9.5	-	2.7	<0.06	<12	76	<1	<2	<1	23	21
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	<6	1	41	<0.5	<2	-	7	5.6	7	-	6.4	<0.05	<10	7.6	<1	<2	<1	31	49
BB06-005	BB06-005@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-
BB06-005	BB06-005@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	<6U	3.2	<0.02J	<0.005J	<0.04J	-	22	<0.004J	2.5	-	1.5	<0.005J	<0.01J	24	<1U	<2U	0.12J	11	10
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<6	1	130	<0.5	<2	-	84	33	65	-	17	<0.05	<11	92	<1	<2	<1	119	55
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	<8	3.6	<25	<0.5	<2	-	26	<6	3.3	-	1.4	<0.06	<13	26	<1	<3	<1	13	9.8
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	<6	2.7	<21	<0.5	<2	-	23	<5	<2.6	-	1.2	0.05	<10	21	<1	<2	<1	12	8.7
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	<6	4.4	23	<0.5	<2	-	39	8.3	11	-	3.6	<0.05	<10	62	<1	<2	<1	39	22
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	<7	3.5	<24	<0.6	<2	-	25	<6	<3	-	1	<0.6	<12	22	<1	<2	<1	12	9.2
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<6	2.7	23	<0.5	<2	-	40	6	10	-	4.4	<0.05	<10	33	<1	<2	<1	33	20
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	<7	4	<24	<0.06	<2	-	32	<6	<3	-	2.2	<0.06	<12	21	<1	<2	<1	16	10.4
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	<8	7.7	<25	<0.6	<2	-	48	<6	9.7	-	3	<0.06	<13	58	<1	<3	<1	30	19
BB07-004	BB07-004@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	<6	3.1	<21	<0.5	<2	-	33	6.5	10	-	2.7	<0.05	<11	34	<1	<2	<1	30	17
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	<6	3.4	<21	<0.5	<2	-	34	<5	6.2	-	2.2	<0.05	<11	29	<1	<2	<1	20	15
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	<8	3.8	155	<0.6	<3	-	83	22	34	-	5.6	<0.06	<13	155	<1	<3	<1	66	49
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<7	<0.6	193	<0.6	<2	-	136	51	84	-	17	<0.06	<11	227	<1	<2	<1	170	93
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	<6	3.8	<20	<0.5	<2	-	23	<5	<2.6	-	1.3	<0.05	<10	20	<1	<2	<1	12	8
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<6	1.3	23	<0.5	<2	-	7.9	<5	3.8	-	3.3	<0.05	<11	7.6	<1	<2	<1	16	34
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	<8	2.3	47	<0.7	<3	-	15	<7	10.1	-	2.6	<0.07	<13	15	<1	<3	<1	17	23
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	3.3	46	<0.6	<2	-	46	11.1	26	-	81	<0.06	<11	50	<1	<2	<1	52	214
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<8	3.3	76	<0.6	<3	-	69	13	19	-	3.7	<0.06	<13	93	<1	<3	<1	48	26
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<7	1.2	199	<0.6	<2	-	82	40	53	-	6.2	<0.06	<11	76	<1	<2	<1	199	86
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	<7	3.8	<24	<0.6	<2	-	23	<6	3.1	-	1.3	<0.06	<12	24	<1	<2	<1	13	9.4
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	1	93	<0.6	<2	-	81	26	40	-	3.7	<0.06	<11	75	<1	<2	<1	144	65
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<8	3.2	<25	<0.6	<3	-	22	<6	<3.2	-	1.9	<0.06	<13	23	<1	<3	<1	10.8	9.4
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<7	4	<23	<0.6	<2	-	46	<6	4.2	-	1.5	<0.06	<11	29	<1	<2	<1	31	13
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<7	4.1	25	<0.6	<2	-	55	5.8	6.2	-	2.7	<0.06	<11	55	<1	<2	<1	31	19
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<7	3.9	131	<0.5	<2	-	218	23	24	-	13	<0.05	<11	294	<1	<2	<1	68	63
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	<7	3.4	<23	<0.6	<2	-	46	<6	4.9	-	1.8	<0.06	<12	41	<1	<2	<1	29	16
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	4.2	26	<0.6	<2	-	49	6.5	6.5	-	2	<0.06	<11	55	<1	<2	<1	37	19
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<7	3.9	<24	<0.6	<2	-	45	<6	5.6	-	1.9	<0.06	<12	42	<1	<2	<1	32	16
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	4.8	30	<0.6	<2	-	53	6.8	6	-	2.5	<0.06	<11	34	<1	<2	<1	39	18
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<7	3.7	<24	<0.6	<2	-	48	<6	5.4	-	1.7	<0.07	<12	40	<1	<2	<1	29	16
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	4	29	<0.6	<2	-	62	6.2	10.6	-	3.4	<0.06	<11	28	<1	<2	<1	36	28
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<7	3.7	41	<0.6	<2	-	66	10.8	8.4	-	2.8	<0.06	<12	77	<1	<2	<1	38	21
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	3	23	<0.6	<2	-	46	<6	5.9	-	1.8	<0.06	<12	28	<1	<2	<1	31	15
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<7	3.6	28	<0.6	<2	-	64	<6	6.4	-	2	<0.06	<11	43	<1	<2	<1	36	19
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<6	4.1	30	<0.5	<2	-	54	6.5	7.5	-	3.1	<0.05	<11	38	<1	<2	<1	44	17
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<7	3.5	32	<0.6	<2	-	77	<6	7.2	-	2.6	<0.06	<11	43	<1	<2	<1	40	22
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<7	3.2	72	<0.6	<2	-	58	12.4	24	-	19	<0.06	<12	46	<1	<2	<1	56	62
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<7	3.1	33	<0.6	<2	-	40	7	8.9	-	6.7	<0.06	<11	29	<1	<2	<1	33	40
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	<6	3.8	<21	<0.5	<2	-	38	<5	4.4	-	6.2	<0.05	<11	28	<1	<2	<1	19	33
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	<7	3.5	<24	<0.6	<2	-	29	<6	3.3	-	1.5	<0.06	<12	30	<1	<2	<1	15	10
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	<6	4.8	37	<0.5	<2	-	69	7.8	9.4	-	2.4	<0.05	<10	55	<1	<2	<1	50	22
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	<6	5.6	25	<0.5	<2	-	45	<5	5.1	-	2.1	<0.05	<10	25	<1	<2	<1	44	42
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	<6	5.1	25	<0.5	<2	-	74	6.8	7.8	-	2.1	<0.05	<10	39	<1	<2	<1	32	18
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	<6	5.1	<20	<0.5	<2	-	38	<5	4.4	-	1.9	<0.05	<10	19	<1	<2	<1	35	13
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	<6	4.3	<20	<0.5	<2	-	39	<5	3.3	-	1.2	<0.05	<10	22	<1	<2	<1	30	12
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	<6	4.1	25	<0.5	<2	-	50	6.4	6.7	-	1.8	<0.05	<10	36	<1	<2	<1	33	16
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<6U	4.2	28	<0.005J	<0.04J	-	60	11	12	17,000	2.8	<0.005J	<0.01J	95	<0.1J	<0.006J	0.3J	32	23
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	<6U	3.3	<0.02J	<0.005J	<0.04J	-	42	<0.004J	<0.2J	6700	1.2	<0.005J	<0.01J	18	<1U	<0.006J	0.36J	21	11
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	<6U	3.1	<0.02J	<0.005J	<0.04J	-	28	<0.004J	3.7	5700	2.1	0.05	<0.01J	20	<1U	<0.006J	<0.02J	16	13
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	<6U	3.3	<0.02J	<0.005J	<0.04J	-	34	<0.004J	3.9	-	2.3	<0.005J	<0.01J	22	<1U	<0.006J	0.18J	16	17
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	<6U	3.5	<0.02J	<0.005J	<0.04J	-	35	<0.004J	2.5	6400	1.3	<0.005J	<0.01J	21	<1U	<0.006J	0.37J	18	11
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	<6	2.4	183	<0.5	<2	-	33	10.1	31	-	41	<0.05	<11	70	1.4	<2	<1	88	291
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	<7	3.3	24	<0.6	<2	-	47	<6	4	-	1.5	<0.06	<11	27	<1	<2	<1	29	15
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	<7	3.9	27	<0.6	<2	-	65	<6	4.9	-	1.7	<0.06	<11	33	<1	<2	<1	34	16
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.04J	5.3	29	<0.005J	<0.04J	-	49	7.1	11	-	4.1	<0.005J	<0.01J	61	<0.1J	<0.006J	0.06J	35	30
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.04J	4.7	220	0.57	<0.04J	-	110	24	49	-	8.5	<0.005	<0.01J	210	<0.1J	<0.006J	0.11J	79	70
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	5.2	<0.02J	<0.005J	<0.04J	-	33	<0.004J	6.6	-	2.7	<0.005	<0.01J	22	<0.1J	<0.006J	0.02J	19	18
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	4.8	<0.02J	<0.005J	<0.04J	-	31	<0.004J	4.9	-	1.3	<0.005J	<0.01J	27	<0.1J	<0.006J	0.04J	16	10
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	3.6	<0.02J	<0.005J	<0.04J	-	31	<0.004J	2.6	-	1.4	<0.005	<0.01J	24	<1U	<2U	<1U	16	11
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	7.3	<0.02J	<0.005J	<0.04J	-	65	7.1	8.7	-	2.7	<0.005J	<0.01J	61	<0.1J	<0.006J	0.03J	25	20
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	4.6	78	<0.005J	<0.04J	-	54	23	47	-	6.3	<0.005J	<0.01J	110	<0.1J	<0.006J	0.03J	110	51
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	6.1	<0.02J	<0.005J	<0.04J	-	27	<0.004J	5.3	-	2.3	<0.005J	<0.01J	44	<1U	<0.006J	0.03J	20	17
BB17-006	BB17-006 @4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<6U	3.3	46	<0.005J	<0.04J	-	42	12	24	-	14	<0.005J	<0.01J	50	<0.1J	<0.006J	0.1J	63	48
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<6U	4.2	27	<0.005J	<0.04J	-	39	8.5	16	-	4.1	<0.005J	<0.01J	53	<0.1J	<0.006J	0.02J	39	32
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	5.5	34	<0.005J	<0.04J	-	56	9	18	-	3.4	<0.005J	<0.01J	48	<0.1J	<0.006J	0.03J	44	27

Table A-2
Metals Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																			
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	1.3	43	<0.005J	<0.04J	-	12	6.8	6.7	-	4.8	<0.005J	<0.01J	22	<0.1J	<0.006J	0.24J	39	84
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.04J	5.3	34	<0.005J	<0.04J	-	43	5.6	18	-	8.6	<0.005J	<0.01J	32	<0.1J	<0.006J	0.11J	36	77
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	8	<0.02J	<0.005J	<0.04J	-	40	5.1	6.6	-	1.7	<0.005J	<0.01J	41	<0.1J	<0.006J	0.05J	24	18
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.04J	4.6	36	<0.005J	<0.04J	-	48	12	20	-	4	<0.005J	<0.01J	60	<0.1J	<0.006J	0.04J	49	28
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.04J	5.1	26	<0.005J	<0.04J	-	38	8.7	16	-	3.3	<0.005J	<0.01J	42	<0.1J	<0.006J	0.04J	38	29
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.04J	4.5	48	<0.005J	<0.04J	-	36	11	24	-	9.5	<0.005	<0.01J	60	<0.1J	<0.006J	0.03J	44	51
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	6.3	<0.02J	<0.005J	<0.04J	-	49	<0.004J	6.8	-	2.1	<0.005J	<0.01J	47	<0.1J	<0.006J	0.04J	19	46
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.04J	7.1	53	<0.005J	<0.04J	-	120	11	21	-	6.3	<0.005J	<0.01J	58	<0.1J	<0.006J	0.03J	39	27
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.04J	4.1	27	<0.005J	<0.04J	-	37	7.5	15	-	3.8	<0.005J	<0.01J	41	<0.1J	<0.006J	0.03J	33	29
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	0.9	42	<0.005J	<0.04J	-	2.9J	5.8	5.7	-	2.6	<0.005J	<0.01J	3J	<0.1J	<0.006J	0.27J	39	58
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.04J	1.9	43	<0.005J	<0.04J	-	16	7	14	-	12	<0.005	<0.01J	29	<0.1J	<0.006J	0.2J	47	210
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	4.5	<0.02J	<0.005J	<0.04J	-	36	<0.004J	3.9	-	1.9	<0.005J	<0.01J	28	<0.1J	<0.006J	0.03J	15	12
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<6U	3.9	28	<0.005J	<0.04J	-	43	6.2	9.8	-	5.2	<0.005J	<0.01J	39	<0.1J	<0.006J	0.07J	32	41
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<6U	6.6	<0.02J	<0.005J	<0.04J	-	50	<0.004J	6.4	-	2.3	<0.005J	<0.01J	29	<0.1J	<0.006J	0.03J	20	26
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.04J	3.2	32	<0.005J	<0.04J	-	50	7.1	12	-	70	<0.005J	<0.01J	33	<0.1J	<0.006J	0.12J	34	89
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<6U	0.32J	130	<0.005J	<0.04J	-	100	48	89	-	3	<0.005J	<0.01J	130	<0.1J	<0.006J	<0.02J	160	61
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<6U	5.9	<0.02J	<0.005J	<0.04J	-	33	5.2	6.3	-	1.7	<0.05U	<0.01J	50	<0.1J	<0.006J	<0.02J	21	14
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.04J	<0.04J	120	<0.005J	<0.04J	-	41	41	72	-	0.9	<0.005J	<0.01J	98	<0.1J	<0.006J	<0.02J	140	45
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	<6U	3.8	<0.02J	<0.005J	<0.04J	-	28	<0.004J	4.7	-	1.2	<0.05U	<0.01J	44	<0.1J	<0.006J	<0.02J	13	10
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.04J	3	72	<0.005J	<0.04J	-	46	22	44	-	29	<0.005J	<0.01J	65	<0.1J	<0.006J	<0.02J	100	52
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	<6U	3.9	<0.02J	<0.005J	<0.04J	-	29	<0.004J	3.4	-	1.4	<0.05U	<0.01J	27	<1U	<0.006J	<0.02J	14	9.6
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<6U	3.1	66	<0.005J	<0.04J	-	48	20	40	-	9.4	<0.05U	<0.01J	67	<0.1J	<0.006J	<0.02J	83	45
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.04J	5.2	<0.02J	<0.005J	<0.04J	-	25	<0.004J	5.2	-	2.6	<0.05U	<0.01J	30	<0.1J	<0.006J	<0.02J	17	13
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<6U	2.4	88	<0.005J	<0.04J	-	47	27	55	-	15	<0.005J	<0.01J	73	<0.1J	<0.006J	0.04J	120	48
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.04J	3.6	110	<0.005J	<0.04J	-	31	23	53	-	120	<0.005	<0.01J	100	<0.1J	<0.006J	0.22J	110	530
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	<6U	4.7	<0.02J	<0.005J	<0.04J	-	40	<0.004J	3.3	-	1.8	0.06	<0.01J	30	<1U	<0.006J	0.037J	13	11
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<6U	1.4	93	<0.005J	<0.04J	-	49	32	62	-	12	<0.005J	<0.01J	78	<0.1J	<0.006J	0.11J	150	64
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<6U	4.5	<0.02J	<0.005J	<0.04J	-	30	<0.004J	3.2	-	1.5	<0.005J	<0.01J	24	<1U	<0.006J	0.04J	17	11
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.04J	1.5	130	<0.005J	<0.04J	-	71	31	48	-	11	<0.05U	<0.01J	59	<0.1J	<0.006J	0.04J	240	110
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<6U	5	<0.02J	<0.005J	<0.04J	-	32	<0.004J	3.2	-	1.2	<0.005J	<0.01J	20	<1U	<2U	<1U	12	9.5
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<6U	2.8	76	<0.005J	<0.04J	-	37	19	38	-	17	<0.005J	<0.01J	59	<0.1J	<0.006J	0.04J	81	55
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.04J	3.1	65	<0.005J	<0.04J	-	56	22	37	-	26	<0.005J	<0.01J	95	<0.1J	<0.006J	0.04J	92	180
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.04J	1.5	110	<0.005J	<0.04J	-	8.4	14	84	-	5	<0.05U	<0.01J	45	<0.1J	<0.006J	<0.02J	32	54
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	<6U	1.5	55	<0.005J	<0.04J	-	10	7.1	15	-	4.1	<0.005J	<0.01J	13	<0.1J	<0.006J	<0.02J	37	73
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<6U	4.6	200	<0.005J	<0.04J	-	39	8.2	15	-	2.2	<0.05U	<0.01J	38	<0.1J	<0.006J	<0.02J	39	20
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	<6U	7.2	<0.02J	<0.005J	<0.04J	-	70	<0.004J	8.6	-	2.1	<0.05U	<0.01J	71	<0.1J	<0.006J	<0.02J	19	15
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	<6U	3.6	<0.02J	<0.005J	<0.04J	-	23	<0.004J	2.6	-	1.4	<0.05U	<0.01J	21	<1U	<0.006J	0.03J	11	9
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<6U	2.4	61	<0.005J	<0.04J	-	44	20	35	-	5.1	<0.05U	<0.01J	43	<0.1J	<0.006J	<0.02J	140	62
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<6U	3.8	<0.02J	<0.005J	<0.04J	-	25	<0.004J	<0.2J	-	1.3	<0.05U	<0.01J	22	<1U	<0.006J	<0.02J	12	8.9
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<6U	2.9	45	<0.005J	<0.04J	-	39	14	23	-	4	<0.005J	<0.01J	42	<0.1J	<0.006J	0.03J	82	43
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<6U	5.2	<0.02J	<0.005J	<0.04J	-	41	<0.004J	2.9	-	1.5	<0.005J	<0.01J	21	<1U	<0.006J	<1U	13	9.1
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	<6U	3.2	52	<0.005J	<0.04J	-	26	6	9.2	-	8.7	<0.005J	<0.01J	31	<1U	<0.006J	0.02J	27	16
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<6U	4.4	<0.02J	<0.005J	<0.04J	-	24	<0.004J	3.4	-	1.4	<0.005J	<0.01J	23	<1U	<0.006J	0.03J	8.8	8.4
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<6U	3.2	46	<0.005J	<0.04J	-	33	11	27	-	9.2	<0.005J	<0.01J	40	<0.1J	<0.006J	0.05J	62	85
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<6U	3.1	36	<0.005J	<0.04J	-	18	<0.004J	9.4	-	2	<0.005J	<0.01J	26	<0.1J	<0.006J	0.09J	31	29
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	<6	3.5	<21	<0.5	<2	-	27	<5	<2.6	-	1.4	<0.05	<10	18	<1	<2	<1	15	13
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	<7	2.9	<24	<0.6	<2	-	16	<6	<2.5	-	0.9	<0.06	<12	12.1	<1	<2	<1	11	6
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	<6	3.5	<21	<0.5	<2	-	34	<5	<2.7	-	1.2	<0.05	<11	15	<1	<2	<1	17	9
SB-01	SB-SB-01-17-A	17-17	10/18/2011	Tank_Farm	<0.75	3.29	7.22	<0.25	<0.5	-	25.5	2.18	1.12	-	<0.5	<0.0835	0.449	12.9	<0.75	<0.25	<0.75	14.1	6.72
SB-01	SB-SB-01-1-A	1-1	10/18/2011	Tank_Farm	<0.75	2.3	5.05	<0.25	<0.5	0.02J	23.2	1.95	1.04	-	0.654	<0.0835	<0.25	13.1	<0.75	<0.25	<0.75	11.2	8.46
SB-01	SB-SB-01-2.5-A	2.5-2.5	10/18/2011	Tank_Farm	<0.75	2.27	4.78	<0.25	<0.5	0.07J	17	1.52	0.765	-	0.563	<0.0835	<0.25	10.9	<0.75	<0.25	<0.75	8.8	5.92
SB-01	SB-SB-01-5-A	5-5	10/18/2011	Tank_Farm	<0.75	3.47	6.39	<0.25	<0.5	-	23.8	2.14	1.07	-	0.673	<0.0835	<0.25	13.6	<0.75	<0.25	<0.75	12.8	7.15
SB-02	SB-SB-02-16-A	16-16	10/18/2011	Tank_Farm	<0.75	3.18	7.56	<0.25	<0.5	-	20.1	2.19	1.13	-	0.505	<0.0835	2.3	12.3	<0.75	<0.25	<0.75	12	6.53
SB-02	SB-SB-02-1-A	1-1	10/18/2011	Tank_Farm	<0.75	2.14	6.28	<0.25	<0.5	0.066J	23.6	2.03	1.1	-	0.772	<0.0835	<0.25	12.9	<0.75	<0.25	<0.75	11.9	7.54
SB-02	SB-SB-02-2.5-A	2.5-2.5	10/18/2011	Tank_Farm	<0.75	2.34	5.73	<0.25	<0.5	0.15J	19.7	1.89	0.911	-	0.685	<0.0835	<0.25	12.6	<0.75	<0.25	<0.75	10.9	6.82
SB-02	SB-SB-02-5-A	5-5	10/18/2011	Tank_Farm	<0.75	3.46	9.07	<0.25	<0.5	-	26.5	2.19	1.34	-	0.542	<0.0835	1.19	14	<0.75	<0.25	<0.75	12.4	7.06
SB-03	SB-SB-03-17-A	17-17	10/18/2011	Tank_Farm	<0.75	0.863	35.9	<0.25	<0.5	0.57	25.3	3.35	5.88	-	1.02	<0.0835	<0.25	22	<0.75	<0.25	<0.75	13.2	14.9
SB-03	SB-SB-03-19.5-A	19.5-19.5	10/18/2011	Tank_Farm	<0.75	1.88	25	<0.25	<0.5	0.11J	23.7	2.22	1.24	-	0.628	<0.0835	<0.25	14.3	<0.75	<0.25	<0.75	12	7.06
SB-03	SB-SB-03-1-A	1-1	10/18/2011	Tank_Farm	<0.75	1.92	5.66	<0.25	<0.5	0.16J	21.5	1.82	1.04	-	0.71	<0.0835	<0.25	11.8	<0.75	<0.25	<0.75	10.6	7.08
SB-03	SB-SB-03-2.5-A	2.5-2.5	10/18/2011	Tank_Farm	<0.75	2.27	5.42	<0.25	<0.5	0.19J	22.3	1.81	0.882	-	0.622	<0.0835	<0.25	11.9	<0.75	<0.25	<0.75	10.8	6.43
SB-03	SB-SB-03-5-A	5-5	10/18/2011	Tank_Farm	<0.75	3.02	6.16	<0.25	<0.5	-	16.2	1.7	0.917	-	0.562	<0.0835	<0.25	11.9	<0.75	<0.25	<0.75	8.84	6.16
SB-04	SB-SB-04-14.5-A	14.5-14.5	10/26/2011	Tank_Farm	<0.75	2.53	26.3	<0.25	<0.5	-	27.3	4.01	4.43	-	0.813	<0.0835	<0.25	24.6	<0.75	<0.25	<0.75	15.8	13.1
SB-04	SB-SB-04-1-A	1-1	10/26/2011	Tank_Farm	<0.75	3.56	7.32	<0.25	<0.5	0.2J	30.6	2.43	1.3	-	0.915	<0.0835	<0.25	14.9	<0.75	<0.25	<0.75	15	9.21
SB-04	SB-SB-04-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<0.75	3.49	6.39	<0.25	<0.5	0.15J	25.9	2.24	1.07	-	0.813	<0.0835	<0.25	13.9	<0.75	<0.25	<0.75	13.8	8.96
SB-04	SB-SB-04-5-A	5-5	10/26/2011	Tank_Farm	<0.75	3.72	28	<0.25	<0.5	-	31.4	2.67	2.97	-	1.53	<0.0835	1.67	16.8	<0.75	<0.25	<0.75	13.7	11.9
SB-05	SB-SB-05-15-A	15-15	10/26/2011	Tank_Farm	<0.75	3.84	68.5	0.256	<0.5	-	40	10.6	15.3	-	2.48	<0.0835	<0.25	81.4	<0.75	<0.25	<0.75	29.5	49.7
SB-05	SB-SB-05-1-A	1-1	10/26/2011	Tank_Farm	<0.75	3.55	7.86	<0.25	<0.5	0.34J	25.4	2.31	1.25	-	<0.5	<0.0835	<0.25	13.8	<0.75	<0.25	<0.75	14.8	12.4
SB-05	SB-SB-05-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<0.75	4.25	7.29	<0.25	<0.5	0.23J	27.7	2.36	0.692	-	0.608	<0.0835	<0.25	14.8	<0.75	<0.25	<0.75	14.4	8.21
SB-05	SB-SB-05-5-A	5-5	10/26/2011	Tank_Farm	<0.75	3.08	41.8	<0.25	<0.5	-	38.7	2.43	2.02	-	5.57	<0.0835	3.1	16	<0.75	<0.25	<0.75	14	10.3
SB-06	SB-SB-06-14.5-A	14.5-14.5	10/26/2011	Tank_Farm	<0.75	7.19	103	0.339	0.869	-	47	21.7	24.7	-	2.71	<0.0835	<0.25	147	<0.75	<0.25	<0.75	50.5	44.2
SB-06	SB-SB-06-1-A	1-1	10/26/2011	Tank_Farm	<0.75	2.66	8.87	<0.25	<0.5	0.31J	23.1	1.99	1.25	-	0.936	<0.0835	<0.25	12.6	<0.75	<0.25	<0.75	11.5	7.92
SB-06	SB-SB-06-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<0.75	3.01	7.21	<0.25	<0.5	0.19J	20.7	1.99	0.985	-	0.538	<0.0835	<0.25	12	<0.75	<0.25	<0.75	11.8	7.26
SB-06	SB-SB-06-5-A	5-5	10/26/2011	Tank_Farm	<0.75	2.97	5.87	<0.25	<0.5	-	19.1	1.75	0.882	-	<0.5	<0.0835	<0.25	11.5	<0.75	<0.25	<0.75	9.68	6.2

Table A-2

Metals Concentrations in Site Soil

Screening-Level Human-Health Risk Assessment Report

Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone																			
SB-07A	SB-SB-07A-10-A	10-10	10/26/2011	Tank_Farm	<0.75	4.1	11.8	<0.25	<0.5	-	29.6	2.46	1.68	-	<0.5	<0.0835	0.688	16.7	<0.75	<0.25	<0.75	14.6	11.4
SB-07A	SB-SB-07A-1-A	1-1	10/26/2011	Tank_Farm	<0.75	3.47	10.8	<0.25	<0.5	0.53	31	4.52	4.44	-	1.18	<0.0835	<0.25	34.7	<0.75	<0.25	<0.75	17	13.6
SB-07A	SB-SB-07A-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<0.75	4.65	13.7	<0.25	<0.5	0.22J	43.6	4.14	4.07	-	1.22	<0.0835	<0.25	38.2	<0.75	<0.25	<0.75	17.6	13.1
SB-07A	SB-SB-07A-5-A	5-5	10/26/2011	Tank_Farm	<0.75	3.83	19.7	<0.25	<0.5	-	34.7	3.96	4.99	-	0.875	<0.0835	1.98	28.6	<0.75	<0.25	<0.75	15.7	13.5
SB-08	SB-SB-08-10-A	10-10	10/27/2011	Tank_Farm	<0.75	6.6	174	0.54	0.928	-	77	18.4	42.7	-	3.9	<0.0835	<0.25	154	<0.75	<0.25	<0.75	49.2	55.1
SB-08	SB-SB-08-1-A	1-1	10/27/2011	Tank_Farm	<0.75	3.9	11.3	<0.25	<0.5	0.27J	29.8	3.78	4.31	-	1.02	<0.0835	<0.25	27	<0.75	<0.25	<0.75	17	12.2
SB-08	SB-SB-08-2.5-A	2.5-2.5	10/27/2011	Tank_Farm	<0.75	4.57	20.7	<0.25	<0.5	0.26J	43	7.12	10.4	-	1.66	<0.0835	<0.25	46.8	<0.75	<0.25	<0.75	23.7	17.7
SB-08	SB-SB-08-5-A	5-5	10/27/2011	Tank_Farm	<0.75	4.65	17	<0.25	<0.5	-	38.1	4.12	5.36	-	0.776	<0.0835	3.6	28.6	<0.75	<0.25	<0.75	18.1	14.1
SB-09	SB-SB-09-10-A	10-10	10/26/2011	Tank_Farm	<0.75	4.24	10.6	<0.25	<0.5	0.15J	21.7	2.11	1.14	-	0.503	<0.0835	<0.25	13.9	<0.75	<0.25	<0.75	11	8.39
SB-09	SB-SB-09-1-A	1-1	10/26/2011	Tank_Farm	<0.75	3.85	12.1	<0.25	<0.5	0.3J	35.3	4.31	5.2	-	1.18	<0.0835	<0.25	31.5	<0.75	<0.25	<0.75	17	13.1
SB-09	SB-SB-09-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<0.75	4.64	47.5	<0.25	<0.5	0.47	52	10.8	14.5	-	2.73	<0.0835	<0.25	102	<0.75	<0.25	<0.75	28.8	28.8
SB-09	SB-SB-09-5-A	5-5	10/26/2011	Tank_Farm	<0.75	3.44	13.6	<0.25	<0.5	0.16J	27.1	4.12	4.79	-	0.948	<0.0835	<0.25	25.9	<0.75	<0.25	<0.75	16.7	12.7
SB-10	SB-SB-10-19-A	19-19	10/19/2011	Tank_Farm	<0.75	6.04	8.2	<0.25	<0.5	-	19.4	1.99	0.593	-	0.507	<0.0835	0.566	13.5	<0.75	<0.25	<0.75	10.9	6.4
SB-10	SB-SB-10-1-A	1-1	10/19/2011	Tank_Farm	<0.75	2.68	4.89	<0.25	<0.5	0.13J	18.8	1.65	0.866	-	0.549	<0.0835	<0.25	11.7	<0.75	<0.25	<0.75	10.1	7.04
SB-10	SB-SB-10-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<0.75	2.29	5.56	<0.25	<0.5	0.14J	23.1	1.82	0.781	-	0.589	<0.0835	<0.25	11.4	<0.75	<0.25	<0.75	11.4	7.8
SB-10	SB-SB-10-5-A	5-5	10/19/2011	Tank_Farm	<0.75	2.56	5.52	<0.25	<0.5	-	16.4	1.51	0.782	-	0.668	<0.0835	0.394	10.3	<0.75	<0.25	<0.75	7.88	9.35
SB-11	SB-SB-11-16-A	16-16	10/19/2011	Tank_Farm	<0.75	2.75	6.07	<0.25	<0.5	-	19.7	1.91	0.924	-	0.531	<0.0835	<0.25	12.2	<0.75	<0.25	<0.75	10.8	6.15
SB-11	SB-SB-11-1-A	1-1	10/19/2011	Tank_Farm	<0.75	2.9	7.49	<0.25	<0.5	0.15J	28.7	2.57	1.09	-	0.583	<0.0835	<0.25	16.4	<0.75	<0.25	<0.75	16.3	8.78
SB-11	SB-SB-11-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<0.75	2.81	7.24	<0.25	<0.5	0.18J	23.4	2.13	1.04	-	0.679	<0.0835	<0.25	14.3	<0.75	<0.25	<0.75	12.4	8.04
SB-11	SB-SB-11-5-A	5-5	10/19/2011	Tank_Farm	<0.75	4.22	14.2	<0.25	<0.5	-	33.2	2.6	2.85	-	9.6	<0.0835	<0.25	15.3	<0.75	<0.25	<0.75	15.3	25.4
SB-12	SB-SB-12-19.5-A	19.5-19.5	10/19/2011	Tank_Farm	<0.75	4.34	7.07	<0.25	<0.5	-	29.4	2.46	1.09	-	0.572	<0.0835	<0.25	14.3	<0.75	<0.25	<0.75	14.6	6.98
SB-12	SB-SB-12-1-A	1-1	10/19/2011	Tank_Farm	<0.75	2.27	10.9	<0.25	<0.5	0.22J	28.1	2.79	1.68	-	1.04	<0.0835	<0.25	18.7	<0.75	<0.25	<0.75	13.6	10.2
SB-12	SB-SB-12-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<0.75	3.23	6.6	<0.25	<0.5	0.12J	32.4	2.48	1.11	-	0.696	<0.0835	<0.25	16.7	<0.75	<0.25	<0.75	15.1	7.93
SB-12	SB-SB-12-5-A	5-5	10/19/2011	Tank_Farm	<0.75	3.54	32.4	<0.25	<0.5	-	45.4	3.14	3.77	-	1.57	<0.0835	4.92	20.4	<0.75	<0.25	<0.75	16.7	12.8
SB-13	SB-SB-13-11.5-A	11.5-11.5	10/25/2011	Tank_Farm	<0.75	2.87	5.16	<0.25	<0.5	-	13.9	1.41	0.73	-	0.714	<0.0835	<0.25	10.6	<0.75	<0.25	<0.75	7.25	5.62
SB-13	SB-SB-13-1-A	1-1	10/25/2011	Tank_Farm	<0.75	3.61	8.24	<0.25	<0.5	0.69	33	2.65	1.55	-	1.27	<0.0835	<0.25	15.4	<0.75	<0.25	<0.75	17.2	9.38
SB-13	SB-SB-13-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	<0.75	3.37	7.78	<0.25	<0.5	0.36J	36.5	2.6	0.995	-	0.528	<0.0835	<0.25	14.6	<0.75	<0.25	<0.75	16.9	8.99
SB-13	SB-SB-13-5-A	5-5	10/25/2011	Tank_Farm	<0.75	3.88	8.72	<0.25	<0.5	-	37.8	2.84	1.61	-	0.979	<0.0835	0.335	17.4	<0.75	<0.25	<0.75	16.9	11.3
SB-14	SB-SB-14-17-A	17-17	10/19/2011	Tank_Farm	<0.75	6.36	102	<0.25	<0.5	-	55	16.2	26	-	3.94	<0.0835	<0.25	139	<0.75	<0.25	<0.75	44.3	42.7
SB-14	SB-SB-14-1-A	1-1	10/19/2011	Tank_Farm	<0.75	2.22	14.8	<0.25	<0.5	0.59	28.7	2.41	1.94	-	2.86	<0.0835	<0.25	14.2	<0.75	<0.25	<0.75	15.4	10.1
SB-14	SB-SB-14-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<0.75	2.2	8.88	<0.25	<0.5	0.16J	26.5	1.95	0.937	-	0.583	<0.0835	<0.25	11.9	<0.75	<0.25	<0.75	12.1	7.65
SB-14	SB-SB-14-5-A	5-5	10/19/2011	Tank_Farm	<0.75	2.89	7.12	<0.25	<0.5	-	20.2	1.99	2.25	-	1.32	<0.0835	<0.25	12.8	<0.75	<0.25	<0.75	11.1	7.94
SB-15	SB-SB-15-15-A	15-15	10/19/2011	Tank_Farm	<0.75	5.56	133	<0.25	<0.5	-	63	17.4	22.2	-	3.9	<0.0835	<0.25	153	<0.75	<0.25	<0.75	44.3	37.9
SB-15	SB-SB-15-1-A	1-1	10/19/2011	Tank_Farm	<0.75	2.19	7.31	<0.25	<0.5	0.21J	51.4	3.11	0.97	-	0.515	0.307	<0.25	14.6	<0.75	<0.25	<0.75	22.7	10.5
SB-15	SB-SB-15-2.5-A	2.5-2.5	10/19/2011	Tank_Farm	<0.75	2.55	8.27	<0.25	<0.5	0.31J	50.6	3.02	1.1	-	0.713	<0.0835	<0.25	15.7	<0.75	<0.25	<0.75	21.2	11.4
SB-15	SB-SB-15-5-A	5-5	10/19/2011	Tank_Farm	<0.75	3.33	8.81	<0.25	<0.5	-	24.3	2.13	0.84	-	0.734	<0.0835	<0.25	14	<0.75	<0.25	<0.75	12.4	9.24
SB-16	SB-SB-16-10-A	10-10	10/20/2011	Tank_Farm	<0.75	4.42	144	<0.25	<0.5	-	54.6	18.5	25.4	-	3.83	<0.0835	<0.25	134	<0.75	<0.25	<0.75	40	44.5
SB-16	SB-SB-16-1-A	1-1	10/20/2011	Tank_Farm	<0.75	<0.75	39	<0.25	13.5	0.062J	20.3	14.5	3.41	-	1.8	<0.0835	0.39	26.6	<0.75	<0.25	2	12.1	74.9
SB-16	SB-SB-16-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<0.75	<0.75	13.9	<0.25	<0.5	0.13J	3.2	1.11	0.575	-	1.66	<0.0835	<0.25	2.41	<0.75	<0.25	<0.75	3.25	5.24
SB-16	SB-SB-16-5-A	5-5	10/20/2011	Tank_Farm	<0.75	4.82	51.5	<0.25	<0.5	-	48	12.8	21.5	-	2.41	<0.0835	<0.25	64.4	<0.75	<0.25	<0.75	42.5	32.3
SB-17	SB-SB-17-10.5-A	10.5-10.5	10/20/2011	Tank_Farm	<0.75	3.96	147	<0.25	<0.5	-	59.7	16.3	24.7	-	3.49	<0.0835	<0.25	131	<0.75	<0.25	<0.75	44.6	40.2
SB-17	SB-SB-17-1-A	1-1	10/20/2011	Tank_Farm	<0.75	<0.75	13.6	<0.25	<0.5	0.086J	3.47	0.764	0.658	-	1.03	<0.0835	<0.25	2.74	<0.75	<0.25	<0.75	3.68	5.76
SB-17	SB-SB-17-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<0.75	<0.75	11.2	<0.25	<0.5	0.13J	3.86	0.862	0.663	-	1.15	<0.0835	<0.25	3	<0.75	<0.25	<0.75	4.68	6.23
SB-17	SB-SB-17-5-A	5-5	10/20/2011	Tank_Farm	<0.75	4.98	116	<0.25	1.08	-	82.7	34.5	70.7	-	<0.5	<0.0835	<0.25	98.6	<0.75	<0.25	<0.75	96.8	42.6
SB-18	SB-SB-18-10-A	10-10	10/20/2011	Tank_Farm	<0.75	4.72	73.4	<0.25	<0.5	-	46.5	14.2	33.7	-	2.89	<0.0835	<0.25	132	<0.75	<0.25	<0.75	38.2	32.3
SB-18	SB-SB-18-1-A	1-1	10/20/2011	Tank_Farm	<0.75	<0.75	15.5	0.252	<0.5	0.076J	2.93	0.969	0.726	-	1.2	<0.0835	<0.25	2.71	<0.75	<0.25	<0.75	3.21	5.6
SB-18	SB-SB-18-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<0.75	<0.75	11.3	<0.25	<0.5	0.1J	2.97	0.607	0.647	-	1.1	<0.0835	<0.25	2.22	<0.75	<0.25	<0.75	4.3	5.76
SB-18	SB-SB-18-5-A	5-5	10/20/2011	Tank_Farm	<0.75	3.97	78.1	<0.25	0.66	-	43.7	24.2	47.8	-	<0.5	<0.0835	<0.25	67.9	<0.75	<0.25	<0.75	64.8	30.6
SB-19	SB-SB-19-14.5-A	14.5-14.5	10/26/2011	Tank_Farm	<0.75	4.05	54.5	0.277	<0.5	-	44	10.2	14.8	-	2.02	<0.0835	<0.25	73.8	<0.75	<0.25	<0.75	35	30.2
SB-19	SB-SB-19-1-A	1-1	10/26/2011	Tank_Farm	<0.75	3.9	7.96	<0.25	<0.5	0.25J	31.7	2.6	0.8	-	0.578	<0.0835	<0.25	15.4	<0.75	<0.25	<0.75	16.4	9.18
SB-19	SB-SB-19-2.5-A	2.5-2.5	10/26/2011	Tank_Farm	<0.75	3.82	8.43	<0.25	<0.5	0.19J	30.9	2.57	0.812	-	<0.5	<0.0835	<0.25	15	<0.75	<0.25	<0.75	16.8	8.66
SB-19	SB-SB-19-5-A	5-5	10/26/2011	Tank_Farm	<0.75	3.44	8.19	<0.25	<0.5	-	29.7	2.53	0.913	-	0.934	<0.0835	<0.25	16.2	<0.75	<0.25	<0.75	14.5	9.82
SB-20	SB-SB-20-14-A	14-14	10/25/2011	Tank_Farm	<0.75	4.51	12.8	<0.25	<0.5	0.39J	17.1	1.58	0.564	-	0.814	<0.0835	<0.25	12	<0.75	<0.25	<0.75	8.28	5.99
SB-20	SB-SB-20-1-A	1-1	10/25/2011	Tank_Farm	<0.75	3.73	9.39	<0.25	<0.5	0.51	35.2	2.71	1.13	-	<0.5	<0.0835	<0.25	15.6	<0.75	<0.25	<0.75	17.6	8.8
SB-20	SB-SB-20-2.5-A	2.5-2.5	10/25/2011	Tank_Farm	<0.75	3.35	8.25	<0.25	<0.5	0.54	27.7	2.45	1.12	-	<0.5	<0.0835	<0.25	14.8	<0.75	<0.25	<0.75	15.5	11.6
SB-20	SB-SB-20-5-A	5-5	10/25/2011	Tank_Farm	<0.75	4.11	6.7	<0.25	<0.5	0.35J	26.4	2.25	0.798	-	0.799	<0.0835	<0.25	15.7	<0.75	<0.25	<0.75	12.8	8.25
SB-21	SB-SB-21-15-A	15-15	10/24/2011	Tank_Farm	<0.75	3.25	9.19	<0.25	<0.5	-	27	2.44	1.98	-	0.685	<0.0835	0.931	15.3	<0.75	<0.25	<0.75	13.1	13
SB-21	SB-SB-21-1-A	1-1	10/24/2011	Tank_Farm	<0.75	2.74	5.94	<0.25	<0.5	0.42	21.1	1.83	0.807	-	<0.5	<0.0835	<0.25	11.3	<0.75	<0.25	<0.75	10.7	6.95
SB-21	SB-SB-21-2.5-A	2.5-2.5	10/24/2011	Tank_Farm	<0.75	2.8	5.84	<0.25	<0.5	0.28J	21.1	1.82	0.888	-	0.537	<0.0835	<0.25	11.8	<0.75	<0.25	<0.75	10.6	6.66
SB-21	SB-SB-21-5-A	5-5	10/24/2011	Tank_Farm	<0.75	5.24	40.4	<0.25	<0.5	-	87.2	5.93	19	-	1.65	<0.0835	10.4	43.2	<0.75	<0.25	<0.75	19.1	27
SB-22	SB-SB-22-10-A	10-10	10/27/2011	Tank_Farm	<0.75	2.2	8.39	<0.25	<0.5	-	20	2	1.29	-	<0.5	<0.0835	<0.25	12.8	<0.75	<0.25	<0.75	11.4	8.19
SB-22	SB-SB-22-1-A	1-1	10/27/2011	Tank_Farm	<0.75	3.56	12.4	<0.25	<0.5	0.34J	32.2	5.55	7.37	-	1.38	<0.0835	<0.25	40.9	<0.75	<0.25	<0.75	20	17.3
SB-22	SB-SB-22-2.5-A	2.5-2.5	10/27/2011	Tank_Farm	<0.75	4.4	19.9	<0.25	<0.5	0.2J	34	7.41	9.72	-	1.71	<0.0835	<0.25	40.2	<0.75	<0.25	<0.75	26.2	27
SB-22	SB-SB-22-5-A	5-5	10/27/2011	Tank_Farm	<0.75	7.14	11.8	<0.25	<0.5	-	31.4	6.51	7.16	-	3.04	<0.0835	<0.25	54.9	<0.75	<0.25	<0.75	21.3	20.4
SB-23	SB-SB-23-15-A	15-15	10/24/2011	Tank_Farm	<0.75	2.77	6.47	<0.25	<0.5	-	22.4	2	0.724	-	0.643	<0.0835	<0.25	12.1	<0.75	<0.25	<0.75	10.5	6.33
SB-23	SB-SB-23-1-A	1-1	10/24/2011	Tank_Farm	<0.75	3.37	8.07	<0.25	<0.5	0.36J	28	2.58	1.39	-	0.906	<0.0835	<0.25	18.9	<0.75	<0.25	<0.75	23.4	13.4
SB-23	SB-SB-23-2.5-A	2.5-2.5	10/24/2011	Tank_Farm	<0.75	3.21	6.68	<0.25	<0.5	0.36J	30.3	2.44	0.944	-	<0.5	<0.0835	<0.25	13.6	<0.75	<0.25	<0.75	15.5	7.25
SB-23	SB-SB-23-5-A	5-5	10/24/2011	Tank_Farm	<0.75	2.87	5.23	<0.25	<0.5	-	17.9	1.76	0.678	-	4.57	<0.0835	<0.25	12.2	<0.75	<0.25	<0.75	9.53	6.32
SB-24	SB-SB-24-17-A	17-17	10/20/2011	Tank_Farm	<0.75	1.78	31.9	<0.25	<0.5	-	25.4	3.77	5.22	-	1.03	<0.0835	<0.25	27.9	<0.75	<0.25	<0.75	14.5	12.5
SB-24	SB-SB-24-1-A	1-1	10/20/2011	Tank_Farm	<0.75	<0.75	23.3	0.329	<0.5	0.095J	3.74	0.972	0.922	-	1.28	<0.0835	<0.25	3.39	<0.75	<0.25	<0.75	3.68	6.45
SB-24	SB-SB-24-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<0.75	<0.75	5.64	<0.25	<0.5	0.048J	3.06	0.448	<0.5	-	0.51	<0.0835	<0.25	1.58	<0.75	<0.25	<0.75	3.99	4.42
SB-24	SB-SB-24-5-A	5-5	10/20/2011	Tank_Farm	<0.75	4.09	132	<0.25	1.11	-	104	37.1	70.5	-	<0.5	<0.0835	<0.25	109	<0.75	<0.25	<0.75	94.9	42.5
SB-28	SB-SB-28-1-A	1-1	10/27/2011	Tank_Farm	<0.75	3.44	22.7	<0.25	<0.5	0.28J	33	4.7	6.16	-	1.83	<0.0835	<0.25	31.7	<0.75	<0.25	<0.75	20.3	20.6

Table A-2

Metals Concentrations in Site Soil

Screening-Level Human-Health Risk Assessment Report

Dynegy-Owned Portion of the Former Morro Bay Power Plant

					Metals																		
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					10.95	7.54	3000	16	51	0.3	120000	34.3	3100		80	1	390	216	390	390	1	390	23000
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																			
SB-28	SB-SB-28-2.5-A	2.5-2.5	10/27/2011	Tank_Farm	<0.75	**5.93**	**134**	**0.274**	<0.5	**0.47**	**62.4**	**21.3**	**24.5**	-	**4.21**	<0.0835	<0.25	**171**	<0.75	<0.25	<0.75	**46.2**	**48.9**
SB-28	SB-SB-28-5-A	5-5	10/27/2011	Tank_Farm	<0.75	**6.97**	**109**	**0.314**	**0.837**	**0.16J**	**60.9**	**14.8**	**27.7**	-	**1.78**	<0.0835	<0.25	**114**	<0.75	<0.25	<0.75	**48.2**	**54.9**
SB-29	SB-SB-29-10-A	10-10	10/20/2011	Tank_Farm	<0.75	**4.56**	**128**	<0.25	<0.5	**0.2J**	**62**	**18.8**	**24.3**	-	**2.46**	<0.0835	<0.25	**151**	<0.75	<0.25	<0.75	**49.1**	**37.4**
SB-29	SB-SB-29-1-A	1-1	10/20/2011	Tank_Farm	<0.75	<0.75	**116**	<0.25	**0.946**	**0.16J**	**105**	**31.8**	**67.1**	-	<0.5	<0.0835	<0.25	**109**	<0.75	<0.25	<0.75	**102**	**39.3**
SB-29	SB-SB-29-2.5-A	2.5-2.5	10/20/2011	Tank_Farm	<0.75	**2.76**	**18.9**	<0.25	<0.5	**0.12J**	**39.2**	**7.74**	**13.8**	-	**4.72**	<0.0835	**2.02**	**37.5**	<0.75	<0.25	<0.75	**30.9**	**16.5**
SB-29	SB-SB-29-5-A	5-5	10/20/2011	Tank_Farm	<0.75	**3.28**	**6.26**	<0.25	<0.5	**0.13J**	**29.1**	**2.81**	**2.13**	-	**0.742**	<0.0835	<0.25	**22.5**	<0.75	<0.25	<0.75	**13.2**	**8.96**
SB-30	SB-SB-30-12-A	12-12	10/21/2011	Tank_Farm	<0.75	**2.41**	**124**	<0.25	<0.5	**0.15J**	**53.6**	**16.6**	**22**	-	**3.2**	<0.0835	<0.25	**124**	<0.75	<0.25	<0.75	**42.3**	**40.5**
SB-30	SB-SB-30-1-A	1-1	10/21/2011	Tank_Farm	<0.75	**1.31**	**23.8**	<0.25	<0.5	**0.15J**	**28**	**5.77**	**28.2**	-	**8.19**	<0.0835	<0.25	**27.9**	<0.75	<0.25	<0.75	**24.9**	**63.9**
SB-30	SB-SB-30-2.5-A	2.5-2.5	10/21/2011	Tank_Farm	<0.75	**2.37**	**8.64**	<0.25	<0.5	**0.099J**	**29**	**3.34**	**2.49**	-	**0.735**	<0.0835	<0.25	**25.7**	<0.75	<0.25	<0.75	**15.7**	**11.4**
SB-30	SB-SB-30-5-A	5-5	10/21/2011	Tank_Farm	<0.75	**3.37**	**8.28**	<0.25	<0.5	**0.14J**	**23.9**	**3.21**	**2.68**	-	**0.696**	<0.0835	<0.25	**30.1**	<0.75	<0.25	<0.75	**13.2**	**8.94**
SB-31	SB-SB-31-10-A	10-10	10/21/2011	Tank_Farm	<0.75	<0.75	**1.31**	<0.25	<0.5	**0.094J**	**4.85**	<0.25	**14.7**	-	<0.5	<0.0835	<0.25	**0.38**	<0.75	<0.25	<0.75	**1.33**	**1.7**
SB-31	SB-SB-31-1-A	1-1	10/21/2011	Tank_Farm	<0.75	**1.85**	**36.9**	<0.25	<0.5	**0.56**	**41.9**	**12.6**	**29.6**	-	**9.46**	<0.0835	<0.25	**55.9**	<0.75	<0.25	<0.75	**40.5**	**34.5**
SB-31	SB-SB-31-2.5-A	2.5-2.5	10/21/2011	Tank_Farm	<0.75	<0.75	**69.2**	<0.25	**0.807**	**0.86**	**48.6**	**23.5**	**52.1**	-	**28.8**	<0.0835	**5.02**	**57.5**	<0.75	<0.25	<0.75	**79.9**	**91.1**
SB-31	SB-SB-31-5-A	5-5	10/21/2011	Tank_Farm	<0.75	**1.97**	**35.2**	<0.25	<0.5	**0.25J**	**24.8**	**5.47**	**193**	-	**5.85**	<0.0835	<0.25	**29.8**	<0.75	<0.25	<0.75	**23.3**	**38.2**
SB-34	SB-SB-34-14-A	14-14	7/12/2011	non_Tank_Farm	<0.75	**0.873**	**12.6**	<0.25	<0.5	**0.083J**	**34.4**	**3.83**	**3.77**	-	**0.77**	**0.0939**	**0.491**	**24**	<0.75	<0.25	<0.75	**20.2**	**11.8**
SB-34	SB-SB-34-1-A	1-1	7/12/2011	non_Tank_Farm	<0.75	<0.75	**53.3**	**0.472**	**0.544**	**0.38J**	**26.1**	**14.1**	**19**	-	**0.892**	<0.0835	**0.694**	**28.4**	<0.75	<0.25	<0.75	**79.4**	**33.6**
SB-34	SB-SB-34-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	<0.75	**1.07**	**41.2**	**0.359**	<0.5	**0.18J**	**34**	**13.4**	**20.6**	-	<0.5	<0.0835	<0.25	**34.7**	<0.75	<0.25	<0.75	**58.6**	**35.2**
SB-34	SB-SB-34-5-A	5-5	7/12/2011	non_Tank_Farm	<0.75	**2.09**	**56.1**	**0.404**	<0.5	**0.082J**	**46.5**	**18**	**31.8**	-	**0.671**	<0.0835	<0.25	**55.3**	<0.75	<0.25	<0.75	**68.2**	**33.2**
SB-35	SB-SB-35-12-A	12-12	7/12/2011	non_Tank_Farm	<0.75	**4.17**	**113**	**0.49**	<0.5	**0.11J**	**118**	**16.6**	**27.3**	-	**1.52**	<0.0835	<0.25	**171**	<0.75	<0.25	<0.75	**53.6**	**46.6**
SB-35	SB-SB-35-1-A	1-1	7/12/2011	non_Tank_Farm	<0.75	<0.75	**60.2**	**0.717**	**0.716**	**0.19J**	**53.2**	**31.7**	**39.2**	-	<0.5	<0.0835	<0.25	**34.5**	<0.75	<0.25	<0.75	**140**	**66.7**
SB-35	SB-SB-35-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	<0.75	**2.23**	**33.8**	**0.349**	<0.5	**0.17J**	**35.6**	**11.2**	**19.6**	-	**9.92**	<0.0835	<0.25	**43.3**	<0.75	<0.25	<0.75	**56.8**	**45.4**
SB-35	SB-SB-35-5-A	5-5	7/12/2011	non_Tank_Farm	<0.75	**2.11**	**42.9**	**0.349**	<0.5	**0.14J**	**32.7**	**15**	**33.2**	-	<0.5	<0.0835	<0.25	**57.9**	<0.75	<0.25	<0.75	**57.9**	**31.9**
SB-40	SB-SB-40-1-A	1-1	7/13/2011	non_Tank_Farm	<0.75	**1.76**	**23.4**	<0.25	<0.5	**0.17J**	**33.1**	**7.75**	**14**	-	**2.06**	<0.0835	<0.25	**43.4**	<0.75	<0.25	<0.75	**32.5**	**30.7**
SB-40	SB-SB-40-2.5-A	2.5-2.5	7/13/2011	non_Tank_Farm	<0.75	**3.8**	**7.68**	<0.25	<0.5	**0.02J**	**26.5**	**3.2**	**2.85**	-	**1.04**	<0.0835	<0.25	**42.4**	<0.75	<0.25	<0.75	**13.4**	**9.14**
SB-40	SB-SB-40-5-A	5-5	7/13/2011	non_Tank_Farm	<0.75	**3.74**	**9.53**	<0.25	<0.5	**0.11J**	**32.3**	**3.62**	**4.13**	-	**1.03**	<0.0835	<0.25	**33.5**	<0.75	<0.25	<0.75	**15.4**	**11.4**
SB-40	SB-SB-40-6-A	6-6	7/13/2011	non_Tank_Farm	<0.75	**2.5**	**6.21**	<0.25	<0.5	**0.1J**	**21.5**	**2.6**	**1.96**	-	**0.777**	<0.0835	<0.25	**24.6**	<0.75	<0.25	<0.75	**11.2**	**7.35**
SB-42	SB-SB-42-1-A	1-1	7/13/2011	non_Tank_Farm	<0.75	**2.08**	**47**	**0.354**	<0.5	**0.16J**	**29.4**	**11.7**	**21.3**	-	**8.53**	<0.0835	<0.25	**48.7**	**2.61**	<0.25	<0.75	**43.8**	**37.7**
SB-42	SB-SB-42-2.5-A	2.5-2.5	7/13/2011	non_Tank_Farm	<0.75	**1.93**	**54.5**	**0.364**	<0.5	**0.024J**	**26.1**	**19.4**	**40.3**	-	<0.5	<0.0835	<0.25	**57.3**	**2.87**	<0.25	<0.75	**56.9**	**25.9**
SB-42	SB-SB-42-5-A	5-5	7/13/2011	non_Tank_Farm	<0.75	**1.99**	**9.3**	<0.25	<0.5	**0.14J**	**39.1**	**3.98**	**3.85**	-	**1.02**	<0.0835	<0.25	**38.2**	**1.61**	<0.25	<0.75	**15.7**	**11.3**
SB-42	SB-SB-42-6-A	6-6	7/13/2011	non_Tank_Farm	<0.75	**1.31**	**5.13**	<0.25	<0.5	**0.02J**	**17.1**	**2.22**	**1.33**	-	**0.671**	**0.0835**	<0.25	**15**	**1.09**	<0.25	<0.75	**10.4**	**7.69**
SB-43	SB-SB-43-1-A	1-1	7/13/2011	non_Tank_Farm	<0.75	**1.9**	**24.1**	<0.25	<0.5	**0.14J**	**38.5**	**9.77**	**16.7**	-	<0.5	<0.0835	<0.25	**43.5**	**1.15**	<0.25	<0.75	**32.9**	**19.8**
SB-43	SB-SB-43-2.5-A	2.5-2.5	7/13/2011	non_Tank_Farm	<0.75	**2.22**	**19.6**	<0.25	<0.5	**0.14J**	**38.3**	**8**	**12.2**	-	**0.825**	<0.0835	<0.25	**43.8**	**1.97**	<0.25	<0.75	**28.1**	**16.2**
SB-43	SB-SB-43-5-A	5-5	7/13/2011	non_Tank_Farm	<0.75	**2.63**	**9.07**	<0.25	<0.5	**0.087J**	**27.5**	**4.36**	**9.89**	-	**0.72**	<0.0835	<0.25	**32.7**	**1.48**	<0.25	<0.75	**19.1**	**12.4**
SB-43	SB-SB-43-6-A	6-6	7/13/2011	non_Tank_Farm	<0.75	**1.61**	**6.85**	<0.25	<0.5	**0.082J**	**30.5**	**4.12**	**3.3**	-	**0.679**	<0.0835	**8.57**	**50.5**	**1.71**	<0.25	<0.75	**13.6**	**10**
SB-44	SB-SB-44-15-A	15-15	7/15/2011	non_Tank_Farm	<0.75	**5.21**	**31.8**	**0.351**	<0.5	**0.29J**	**128**	**8.08**	**14.2**	-	**0.891**	<0.0835	**0.835**	**107**	<0.75	<0.25	<0.75	**55.2**	**23.6**
SB-44	SB-SB-44-1-A	1-1	7/15/2011	non_Tank_Farm	<0.75	**3.23**	**40.3**	**0.392**	<0.5	**0.74**	**74.7**	**9.92**	**8.74**	-	**2.09**	<0.0835	<0.25	**49.7**	<0.75	<0.25	<0.75	**50.8**	**20**
SB-44	SB-SB-44-2.5-A	2.5-2.5	7/15/2011	non_Tank_Farm	<0.75	**2.33**	**28.5**	**0.379**	<0.5	**0.62**	**71.1**	**7.71**	**5.96**	-	**1.78**	<0.0835	<0.25	**57**	<0.75	<0.25	<0.75	**41.1**	**20.9**
SB-44	SB-SB-44-5-A	5-5	7/15/2011	non_Tank_Farm	<0.75	**2.61**	**20.1**	**0.277**	<0.5	**0.25J**	**49.1**	**6.65**	**3.92**	-	**1.14**	<0.0835	<0.25	**33**	<0.75	<0.25	<0.75	**30.6**	**14.5**
SB-45	SB-SB-45-14-A	14-14	7/12/2011	non_Tank_Farm	<0.75	**16.8**	**60.8**	**0.471**	<0.5	**0.063J**	**92.2**	**22.2**	**26**	-	**1.94**	<0.0835	**0.737**	**180**	<0.75	<0.25	<0.75	**51.6**	**40.2**
SB-45	SB-SB-45-1-A	1-1	7/12/2011	non_Tank_Farm	<0.75	**2.75**	**66.3**	**0.492**	**0.623**	**0.15J**	**41.6**	**18.9**	**30.1**	-	**1.65**	<0.0835	<0.25	**56.1**	<0.75	<0.25	<0.75	**86.8**	**40.1**
SB-45	SB-SB-45-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	<0.75	**4.62**	**26.7**	**0.325**	<0.5	**0.15J**	**47.2**	**11.4**	**14.8**	-	**0.675**	<0.0835	<0.25	**79.1**	<0.75	<0.25	<0.75	**45.6**	**22.3**
SB-45	SB-SB-45-5-A	5-5	7/12/2011	non_Tank_Farm	<0.75	**3.82**	**32.8**	<0.25	<0.5	**0.18J**	**40**	**7.91**	**11.9**	-	**2.09**	<0.0835	<0.25	**67.1**	<0.75	<0.25	<0.75	**24.8**	**17.4**
SB-46	SB-SB-46-10-A	10-10	7/12/2011	non_Tank_Farm	<0.75	**1.48**	**16.7**	**0.851**	<0.5	**0.18J**	**72.1**	**11.8**	**24.2**	-	**16.5**	<0.0835	**3.03**	**300**	**1.49**	<0.25	<0.75	**183**	**63.5**
SB-46	SB-SB-46-1-A	1-1	7/12/2011	non_Tank_Farm	<0.75	**1.71**	**26.2**	**0.318**	<0.5	**0.14J**	**27.9**	**9.11**	**19.5**	-	**10.8**	<0.0835	**0.256**	**43.3**	**1.56**	<0.25	<0.75	**49.3**	**24.7**
SB-46	SB-SB-46-2.5-A	2.5-2.5	7/12/2011	non_Tank_Farm	<0.75	**3.57**	**25.8**	**0.376**	<0.5	**0.25J**	**37.6**	**10**	**18.4**	-	**7.35**	<0.0835	**0.301**	**43.3**	**2.17**	<0.25	<0.75	**60.4**	**25.5**
SB-46	SB-SB-46-5-A	5-5	7/12/2011	non_Tank_Farm	<0.75	**1.76**	**17.1**	<0.25	<0.5	**0.066J**	**22.6**	**6.76**	**8.9**	-	**3.36**	<0.0835	<0.25	**35.1**	**1.87**	<0.25	<0.75	**36.2**	**17.7**
TW01-001	TW01-001 @ 10-10.5'	10-10.5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	**320**	-	-	-	-	-
TW04-001	TW04-001 @ 9-9.5'	9-9.5	2/17/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	**27**	-	-	-	-	-
TW05-001	TW05-001 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	**170**	-	-	-	-	-

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	<0.4	<0.8	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-011	BB01-011@12.0-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					PAH																		
					1-Methylnaphthalene	**2-methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benz(a)anthracene**	**Benzo(a) pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-c,d)pyrene**	**Phenanthrene**	**Pyrene**
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																	
BB01-012	BB01-012@0.5-1	0.5-1	1/2/1997	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	-	-	<0.4	<0.8	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	<0.4U	<0.8U	<0.4U	<0.4U	<0.2U	<0.4U	<0.4U	<0.4U	<0.4U	<0.2U	<0.4U	<0.4U	<0.24U	**0.25J**	<0.4U
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	<0.05	**0.2**	<0.1	**0.1**	**0.2**	**0.2**
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																	
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	-	<0.33	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	-	<0.33	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	-	<0.33	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.4	<0.9	<0.4	<0.4	**0.3**	<0.4	<0.4	<0.4	<0.4	<0.2	**0.7**	<0.4	<0.4	<0.4	**0.4**
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-004	BB03-004@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB03-010	BB03-010 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-010	BB03-010 @ 5.5-6'	5.5-6	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-010	BB03-010 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-011	BB03-011 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-011	BB03-011 @ 11-12.5'	11-12.5	2/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-011	BB03-011 @ 5.5-6'	5.5-6	2/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-012	BB03-012 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	**0.06J**	**0.1**	**0.16**	**0.2**	**0.1**	**0.08J**	**0.2**	<0.05U	**0.5**	<0.1U	**0.11**	**0.6**	**0.5**
BB03-012	BB03-012 @ 11-11.5'	11-11.5	2/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-012	BB03-012 @ 5-5.5'	5-5.5	2/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-013	BB03-013 @ 10.5-11'	10.5-11	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	-	<0.33	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	-	<0.33	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	-	<0.33	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	**0.1**	**0.07**	**0.1**	<0.1	<0.1	**0.2**	<0.05	**0.3**	<0.1	<0.1	**0.1**	**0.3**
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-003	BB04-003@5	5-5	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.4	<0.8	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.5	<1	<0.5	<0.5	<0.25	<0.5	<0.5	<0.5	<0.5	<0.25	<0.5	<0.5	<0.5	<0.5	<0.5
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.5	<1	<0.5	<0.5	<0.26	<0.5	<0.5	<0.5	<0.5	<0.26	<0.5	<0.5	<0.5	**0.7**	<0.5
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.07	<0.1	<0.1	<0.1	<0.1	<0.07	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	**0.2**	<0.05	**0.2**	**0.1**	<0.1	**0.2**	<0.05	**0.3**	<0.1	**0.1**	<0.1	**0.3**
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-029	BB04-029@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-029	BB04-029@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB04-036	BB04-036 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-036	BB04-036 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-036	BB04-036 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-037	BB04-037 @ 0-1'	0-1	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-037	BB04-037 @ 10.5-12'	10.5-12	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-037	BB04-037 @ 7.5-9'	7.5-9	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-038	BB04-038 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-038	BB04-038 @ 12-12.5'	12-12.5	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB04-038	BB04-038 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB04-039	BB04-039 @ 10.5-12'	10.5-12	2/17/1997	Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	<0.2	<0.3	<0.2	<0.2	<0.08	<0.2	<0.2	<0.2	<0.2	<0.08	<0.2	<0.2	<0.02	<0.2	<0.2
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	**0.2**	<0.1	<0.1	<0.1	**0.1**
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.07	<0.1	<0.1	<0.1	<0.1	<0.07	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3

PAH Concentrations in Site Soil

Screening-Level Human-Health Risk Assessment Report

Dynegy-Owned Portion of the Former Morro Bay Power Plant

					PAH																	
					1-Methylnaphthalene	**2-methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benz(a)anthracene**	**Benzo(a) pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-c,d)pyrene**	**Phenanthrene**	**Pyrene**
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																	
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-004	BB07-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.4	<0.9	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.07	<0.1	<0.1	<0.1	<0.1	<0.07	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	**0.08**	<0.1	<0.1	<0.1	**0.1**	<0.06	**0.2**	<0.1	<0.1	**0.1**	**0.2**
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.3	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	**0.1**	<0.1	<0.1	<0.1	**0.1**
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	**0.1**	<0.1	<0.1	<0.1	**0.1**
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																	
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-006	BB09-006@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-006	BB09-006@20-20.5	20-20.5	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-006	BB09-006@30-31	30-31	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-006	BB09-006@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-007	BB09-007@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-007	BB09-007@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-007	BB09-007@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-008	BB09-008@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-008	BB09-008@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-008	BB09-008@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-010	BB09-010@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-010	BB09-010@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-010	BB09-010@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-011	BB09-011@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-011	BB09-011@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-011	BB09-011@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-012	BB09-012@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-012	BB09-012@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-012	BB09-012@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	**0.3**	**0.4**	**0.6**	<0.1	**0.2**	**0.5**	**0.06**	**0.9**	<0.1	**0.3**	**0.5**	**0.9**
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.4U	<0.8U	<0.4U	<0.4U	<0.2U	<0.4U	<0.4U	<0.4U	<0.4U	<0.2U	<0.4U	<0.4U	<0.24U	<0.4U	<0.4U
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH 1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-006	BB17-006@4-4.5	4-4.5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<2U	<4U	<2U	<2U	<1U	<2U	<2U	<2U	<2U	<1U	<2U	<2U	<1.2U	<2U	<2U
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<5U	<10U	<5U	<5U	<2.5U	<5U	<5U	<5U	<5U	<2.5U	<5U	<5U	<3U	<5U	<5U
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	PAH																
					1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels					9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	<0.1U	<0.2U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.1U	<0.1U	<0.05U	<0.1U	<0.1U	<0.06U	<0.1U	<0.1U
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.06	<0.1	<0.1	<0.1	<0.1	<0.1
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	<0.1	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
SB-32	SB-SB-32-16-A	16-16	7/14/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-32	SB-SB-32-1-A	1-1	7/14/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-32	SB-SB-32-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-32	SB-SB-32-5-A	5-5	7/14/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-44	SB-SB-44-15-A	15-15	7/15/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-44	SB-SB-44-1-A	1-1	7/15/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-44	SB-SB-44-2.5-A	2.5-2.5	7/15/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
SB-44	SB-SB-44-5-A	5-5	7/15/2011	non_Tank_Farm	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit

Table A-3
PAH Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

	PAH																
	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels	9.9	190	3300		17000	1.1	0.11	1.1		11	110	0.028	2400	2300	1.1		1800

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone

ft bgs = feet below ground surface

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@12.0-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-012	BB01-012@0.5-1	0.5-1	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-004	BB03-004@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 5.5-6'	5.5-6	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 11-12.5'	11-12.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 5.5-6'	5.5-6	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-012	BB03-012 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB03-012	BB03-012 @ 11-11.5'	11-11.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-012	BB03-012 @ 5-5.5'	5-5.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-013	BB03-013 @ 10.5-11'	10.5-11	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-003	BB04-003@5	5-5	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-029	BB04-029@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-029	BB04-029@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 0-1'	0-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 10.5-12'	10.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 7.5-9'	7.5-9	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 12-12.5'	12-12.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-039	BB04-039 @ 10.5-12'	10.5-12	2/17/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.02	<0.008	<0.008
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.01	<0.007	<0.007
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.01	<0.007	<0.007
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@20-20.5	20-20.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@30-31	30-31	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-006	BB17-006@4-4.5	4-4.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-16-A	16-16	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-1-A	1-1	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-5-A	5-5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-15-A	15-15	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-1-A	1-1	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-2.5-A	2.5-2.5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-5-A	5-5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit
ft bgs = feet below ground surface

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dibromoethane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@12.0-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-012	BB01-012@0.5-1	0.5-1	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	VOCs															
					1,3,5-trimethylbenzene	**1,3-dichlorobenzene**	**1,3-dichloropropane**	**1,4-dichlorobenzene**	**2,2-dichloropropane**	**2-chlorotoluene**	**4-chlorotoluene**	**Benzene**	**Bromobenzene**	**Bromochloromethane**	**Bromodichloromethane**	**Bromoform**	**Bromomethane**	**Carbon tetrachloride**	**Chlorobenzene**	**Chlorodibromomethane**
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					VOCs															
					1,3,5-trimethylbenzene	**1,3-dichlorobenzene**	**1,3-dichloropropane**	**1,4-dichlorobenzene**	**2,2-dichloropropane**	**2-chlorotoluene**	**4-chlorotoluene**	**Benzene**	**Bromobenzene**	**Bromochloromethane**	**Bromodichloromethane**	**Bromoform**	**Bromomethane**	**Carbon tetrachloride**	**Chlorobenzene**	**Chlorodibromomethane**
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-004	BB03-004@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 5.5-6'	5.5-6	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 11-12.5'	11-12.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 5.5-6'	5.5-6	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-012	BB03-012 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

					VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																
BB03-012	BB03-012 @ 11-11.5'	11-11.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-012	BB03-012 @ 5-5.5'	5-5.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-013	BB03-013 @ 10.5-11'	10.5-11	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-003	BB04-003@5	5-5	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-029	BB04-029@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-029	BB04-029@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 0-1'	0-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 10.5-12'	10.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 7.5-9'	7.5-9	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 12-12.5'	12-12.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB04-039	BB04-039 @ 10.5-12'	10.5-12	2/17/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	<0.008	<0.02	<0.008	<0.02	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.02	<0.008	<0.008	<0.008
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	<0.007	<0.01	<0.007	<0.01	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.01	<0.007	<0.007	<0.007
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	<0.007	<0.01	<0.007	<0.01	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.01	<0.007	<0.007	<0.007
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.01	<0.006	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.01	<0.006	<0.006	<0.006
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@20-20.5	20-20.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@30-31	30-31	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

					VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-006	BB17-006@4-4.5	4-4.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone																
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.005U	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.01U	<0.005U	<0.005U	<0.005U
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-16-A	16-16	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-1-A	1-1	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-5-A	5-5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-15-A	15-15	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-1-A	1-1	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-2.5-A	2.5-2.5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-5-A	5-5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit
ft bgs = feet below ground surface

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					VOCs															
					1,3,5-trimethylbenzene	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																				
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**																

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.8	-	-	-	-	-
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-011	BB01-011@12.0-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-012	BB01-012@0.5-1	0.5-1	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	<0.005	-	-	<0.2	-	-	-	-	-
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	<0.005	-	-	<0.2	-	-	-	-	-
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	-	-	-	-	-	-	-	<0.005	-	-	<0.2	-	-	-	-	-
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.8	-	-	-	-	-
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.8U	-	-	-	-	-
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005U	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005U	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005U	<0.005	<0.005	<0.005	<0.005	<0.005

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.9	-	-	-	-	-
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-004	BB03-004@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB03-010	BB03-010 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-010	BB03-010 @ 5.5-6'	5.5-6	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-010	BB03-010 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-011	BB03-011 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-011	BB03-011 @ 11-12.5'	11-12.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-011	BB03-011 @ 5.5-6'	5.5-6	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-012	BB03-012 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB03-012	BB03-012 @ 11-11.5'	11-11.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-012	BB03-012 @ 5-5.5'	5-5.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-013	BB03-013 @ 10.5-11'	10.5-11	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-003	BB04-003@5	5-5	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.8	-	-	-	-	-
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-029	BB04-029@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-029	BB04-029@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB04-036	BB04-036 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-036	BB04-036 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-036	BB04-036 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-037	BB04-037 @ 0-1'	0-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-037	BB04-037 @ 10.5-12'	10.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-037	BB04-037 @ 7.5-9'	7.5-9	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-038	BB04-038 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-038	BB04-038 @ 12-12.5'	12-12.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-038	BB04-038 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB04-039	BB04-039 @ 10.5-12'	10.5-12	2/17/1997	Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	<0.02	<0.008	<0.02	<0.008	<0.008	<0.02	<0.02	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	<0.01	<0.007	<0.01	<0.007	<0.007	<0.01	<0.01	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-
BB07-004	BB07-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.9	-	-	-	-	-
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	<0.01	<0.007	<0.01	<0.007	<0.007	<0.01	<0.01	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.005	<0.01	<0.005	<0.005	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.01	<0.006	<0.01	<0.006	<0.006	<0.01	<0.01	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-006	BB09-006@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-006	BB09-006@20-20.5	20-20.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-006	BB09-006@30-31	30-31	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-006	BB09-006@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-007	BB09-007@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-007	BB09-007@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-007	BB09-007@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-008	BB09-008@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-008	BB09-008@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-008	BB09-008@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-010	BB09-010@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-010	BB09-010@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-010	BB09-010@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-011	BB09-011@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-011	BB09-011@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-011	BB09-011@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-012	BB09-012@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-012	BB09-012@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-012	BB09-012@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.8U	-	-	-	-	-
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-006	BB17-006@4-4.5	4-4.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<4U	-	-	-	-	-
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<10U	-	-	-	-	-
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels															2					
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2U	-	-	-	-	-
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.01U	<0.005U	<0.01U	<0.005U	<0.005U	<0.01U	<0.01U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-
SB-32	SB-SB-32-16-A	16-16	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-32	SB-SB-32-1-A	1-1	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-32	SB-SB-32-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-32	SB-SB-32-5-A	5-5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-44	SB-SB-44-15-A	15-15	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-44	SB-SB-44-1-A	1-1	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-44	SB-SB-44-2.5-A	2.5-2.5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
SB-44	SB-SB-44-5-A	5-5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit
ft bgs = feet below ground surface

	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Naphthalene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels											2					

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB01-001	BB01-001@0-0.5	0-0.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-001	BB01-001@10-10.5	10-10.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-002	BB01-002@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-003	BB01-003@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@0-0.5	0-0.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@11.5-12	11.5-12	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-004	BB01-004@6.5-7	6.5-7	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@17-18	17-18	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-005	BB01-005@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@0-0.5	0-0.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@12-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-006	BB01-006@6.5-7	6.5-7	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@0-0.5	0-0.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-007	BB01-007@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@11.5-12	11.5-12	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-008	BB01-008@7-7.5	7-7.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@1-1.5	1-1.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@12.5-13	12.5-13	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@14-14.5	14-14.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-009	BB01-009@6-6.5	6-6.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@12-12.5	12-12.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@14.5-15	14.5-15	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-010	BB01-010@5.5-6	5.5-6	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@12.0-12.5	12-12.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-011	BB01-011@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-012	BB01-012@0.5-1	0.5-1	1/2/1997	Tank_Farm	-	-	<0.005	-	-	-	-	<0.005	<0.005
BB01-012	BB01-012@11.0-11.5	11-11.5	1/2/1997	Tank_Farm	-	-	<0.005	-	-	-	-	<0.005	<0.005
BB01-012	BB01-012@6.5-7	6.5-7	1/2/1997	Tank_Farm	-	-	<0.005	-	-	-	-	<0.005	<0.005
BB01-013	BB01-013@10.5-11	10.5-11	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB01-013	BB01-013@1-1.5	1-1.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-013	BB01-013@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@0.5-1	0.5-1	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@12-12.5	12-12.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@14.5-15	14.5-15	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-014	BB01-014@6-6.5	6-6.5	12/31/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-015	BB01-015@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-015	BB01-015@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-016	BB01-016@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-016	BB01-016@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-018	BB01-018 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB01-018	BB01-018 @ 8-9'	8-9	2/18/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB01-020	BB01-020 @ 11-12'	11-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-020	BB01-020 @ 14-15'	14-15	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 10-11'	10-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-021	BB01-021 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 11.5-12'	11.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-022	BB01-022 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 0.5-1'	0.5-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11'	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 10.5-11' DUP	10.5-11	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-023	BB01-023 @ 4.5-5'	4.5-5	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 11.5-12.5'	11.5-12.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB01-024	BB01-024 @ 5-5.5'	5-5.5	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB02-001	BB02-001@0-1	0-1	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-001	BB02-001@13-14	13-14	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-001	BB02-001@15-16	15-16	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-001	BB02-001@9-10	9-10	12/16/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-002	BB02-002@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-002	BB02-002@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB02-002	BB02-002@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-003	BB02-003@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-003	BB02-003@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB02-003	BB02-003@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-004	BB02-004@0.5-1	0.5-1	2/20/1997	Tank_Farm	<0.005	<0.005	**0.066**	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-004	BB02-004@4-4.5	4-4.5	2/20/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-004	BB02-004@8-8.5	8-8.5	2/20/1997	Tank_Farm	<0.005	<0.005	**0.07**	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB02-005	BB02-005@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-005	BB02-005@13.5-14	13.5-14	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB02-005	BB02-005@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-006	BB02-006@0-1	0-1	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-006	BB02-006@14-15	14-15	12/17/1996	Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB02-006	BB02-006@8-9	8-9	12/17/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB02-007	BB02-007@0.5-1	0.5-1	12/20/1996	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-001	BB03-001@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-001	BB03-001@5-5.5	5-5.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-002	BB03-002@5.5-6	5.5-6	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@13.5-14	13.5-14	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-003	BB03-003@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-004	BB03-004@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-004	BB03-004@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-004	BB03-004@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-005	BB03-005@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-005	BB03-005@6.5-7	6.5-7	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-006	BB03-006@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-006	BB03-006@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB03-006	BB03-006@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-007	BB03-007@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	**0.056**	**0.028**
BB03-007	BB03-007@11.5-12	11.5-12	1/9/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB03-007	BB03-007@5.5-6	5.5-6	1/9/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-008	BB03-008@0.5-1	0.5-1	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-008	BB03-008@14.5-15	14.5-15	12/18/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB03-008	BB03-008@7-7.5	7-7.5	12/18/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-009	BB03-009@14-14.5	14-14.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-009	BB03-009@6-6.5	6-6.5	12/18/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 5.5-6'	5.5-6	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-010	BB03-010 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 11-12.5'	11-12.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-011	BB03-011 @ 5.5-6'	5.5-6	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-012	BB03-012 @ 0.5-1'	0.5-1	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB03-012	BB03-012 @ 11-11.5'	11-11.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-012	BB03-012 @ 5-5.5'	5-5.5	2/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-013	BB03-013 @ 10.5-11'	10.5-11	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB03-014	BB03-014@0-1	0-1	2/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB03-014	BB03-014@11.5-12	11.5-12	2/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB03-014	BB03-014@4.5-5	4.5-5	2/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB04-001	BB04-001@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-001	BB04-001@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-001	BB04-001@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-002	BB04-002@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-003	BB04-003@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-003	BB04-003@5	5-5	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@10-11	10-11	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-004	BB04-004@15-16	15-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-005	BB04-005@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@14-15	14-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-006	BB04-006@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@14.5-15	14.5-15	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-007	BB04-007@8-9	8-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-008	BB04-008@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@0.5-1	0.5-1	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@14.5-15	14.5-15	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-009	BB04-009@8-9	8-9	12/16/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-010	BB04-010@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-011	BB04-011@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-012	BB04-012@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-012	BB04-012@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB04-012	BB04-012@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-013	BB04-013@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@0.5-1	0.5-1	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@15.5-16	15.5-16	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-014	BB04-014@8.5-9	8.5-9	12/17/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-015	BB04-015@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-016	BB04-016@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-017	BB04-017@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@0-0.5	0-0.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@18-18.5	18-18.5	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-018	BB04-018@7.5-8	7.5-8	12/30/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-019	BB04-019@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@11.5-12	11.5-12	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-020	BB04-020@6-6.5	6-6.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-021	BB04-021@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-021	BB04-021@3-3.5	3-3.5	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@3-3.5	3-3.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-022	BB04-022@7-8	7-8	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@3.5-4	3.5-4	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-023	BB04-023@7-7.5	7-7.5	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@0.5-1	0.5-1	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@6-7	6-7	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-024	BB04-024@9-10	9-10	12/19/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-025	BB04-025@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-026	BB04-026@0.5-1	0.5-1	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB04-026	BB04-026@15.5-16	15.5-16	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-026	BB04-026@8.5-9	8.5-9	12/18/1996	Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-027	BB04-027@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-027	BB04-027@10.5-11	10.5-11	1/14/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-028	BB04-028@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-028	BB04-028@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-029	BB04-029@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-029	BB04-029@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-036	BB04-036 @ 9.5-10'	9.5-10	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 0-1'	0-1	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 10.5-12'	10.5-12	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-037	BB04-037 @ 7.5-9'	7.5-9	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 0.5-1'	0.5-1	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 12-12.5'	12-12.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-038	BB04-038 @ 5-5.5'	5-5.5	2/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB04-039	BB04-039 @ 10.5-12'	10.5-12	2/17/1997	Tank_Farm	-	-	-	-	-	-	-	-	-
BB05-001	BB05-001@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB05-001	BB05-001@7.5-8	7.5-8	1/8/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB05-002	BB05-002@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB05-002	BB05-002@7-7.5	7-7.5	1/8/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB05-003	BB05-003@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB05-003	BB05-003@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.005	<0.008	<0.008
BB05-004	BB05-004@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB05-004	BB05-004@5.5-6	5.5-6	12/31/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB05-005	BB05-005@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB05-013	BB05-013@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB05-013	BB05-013@6-6.5	6-6.5	1/9/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB05-014	BB05-014@0.5-1	0.5-1	12/30/1996	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB05-015	BB05-015@0-0.5	0-0.5	1/9/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB05-015	BB05-015@12-12.5	12-12.5	1/9/1997	Tank_Farm	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.004	<0.007	<0.007
BB05-015	BB05-015@6.5-7	6.5-7	1/9/1997	Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB05-016	BB05-016@5-6	5-6	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@7-7.5	7-7.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-001	BB06-001@9.5-10	9.5-10	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-002	BB06-002@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-002	BB06-002@6.5-7	6.5-7	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB06-003	BB06-003@10-10.5	10-10.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@5.5-6	5.5-6	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-003	BB06-003@6-6.5	6-6.5	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@0-0.5	0-0.5	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@6.5-7	6.5-7	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-004	BB06-004@7.5-8	7.5-8	12/20/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-005	BB06-005@0.5-1	0.5-1	12/17/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB06-007	BB06-007 @ 6.5-7'	6.5-7	2/17/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@11-11.5	11-11.5	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-001	BB07-001@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-002	BB07-002@0.5-1	0.5-1	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-002	BB07-002@7-7.5	7-7.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@5.5-6	5.5-6	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-003	BB07-003@7.5-8	7.5-8	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB07-004	BB07-004@9-9.5	9-9.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB08-002	BB08-002@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-002	BB08-002@6.5-7	6.5-7	1/1/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB08-004	BB08-004@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB08-004	BB08-004@5.5-6	5.5-6	1/8/1997	non_Tank_Farm	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.004	<0.007	<0.007
BB08-007	BB08-007@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-007	BB08-007@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-008	BB08-008@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-008	BB08-008@6-6.5	6-6.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-009	BB08-009@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-009	BB08-009@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-010	BB08-010@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-010	BB08-010@5-5.5	5-5.5	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-012	BB08-012@0.5-1	0.5-1	1/1/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB08-012	BB08-012@8.5-9	8.5-9	1/1/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-013	BB08-013@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-013	BB08-013@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-014	BB08-014@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-014	BB08-014@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-017	BB08-017@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-017	BB08-017@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-018	BB08-018@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB08-018	BB08-018@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-019	BB08-019@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.003	<0.005	<0.005
BB08-019	BB08-019@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-020	BB08-020@0.5-1	0.5-1	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.004	<0.006	<0.006
BB08-020	BB08-020@5-5.5	5-5.5	1/2/1997	non_Tank_Farm	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.003	<0.006	<0.006
BB08-021	BB08-021@1-1.5	1-1.5	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB08-021	BB08-021@6.5-7	6.5-7	1/3/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@10-11	10-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-005	BB09-005@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@20-20.5	20-20.5	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@30-31	30-31	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-006	BB09-006@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-007	BB09-007@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-008	BB09-008@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-009	BB09-009@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@0.5-1	0.5-1	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@10.5-11	10.5-11	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-010	BB09-010@19.5-20	19.5-20	1/9/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-011	BB09-011@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@0.5-1	0.5-1	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@19.5-20	19.5-20	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-012	BB09-012@9.5-10	9.5-10	1/8/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 0.5-1'	0.5-1	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 14.5-15'	14.5-15	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8'	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 7.5-8' DUP	7.5-8	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB09-014	BB09-014 @ 9.5-10'	9.5-10	2/18/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@0-0.5	0-0.5	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@3.5-4	3.5-4	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB10-010	BB10-010@7.5-8	7.5-8	12/19/1996	non_Tank_Farm	-	-	-	-	-	-	-	-	-

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB17-002	BB17-002@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-002	BB17-002@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-003	BB17-003@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-003	BB17-003@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-004	BB17-004@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-004	BB17-004@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-005	BB17-005@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-005	BB17-005@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-006	BB17-006@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-006	BB17-006@4-4.5	4-4.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-009	BB17-009@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-009	BB17-009@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-010	BB17-010@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-010	BB17-010@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-011	BB17-011@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-011	BB17-011@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-012	BB17-012@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-012	BB17-012@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-013	BB17-013@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-013	BB17-013@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-014	BB17-014@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-014	BB17-014@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-016	BB17-016@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-016	BB17-016@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-017	BB17-017@0.5-1	0.5-1	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-017	BB17-017@4.5-5	4.5-5	3/19/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-018	BB17-018@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-018	BB17-018@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-019	BB17-019@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-019	BB17-019@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-020	BB17-020@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-020	BB17-020@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-021	BB17-021@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-021	BB17-021@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-022	BB17-022@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-022	BB17-022@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-023	BB17-023 @ 4.5-5' DUP	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-023	BB17-023@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-

LocCode	Field_ID	Sample_Depth_Range (ft bgs)	Sampled_Date-Time	Monitoring_Zone	tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
BB17-023	BB17-023@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-024	BB17-024@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-024	BB17-024@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-025	BB17-025@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-025	BB17-025@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-026	BB17-026@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-026	BB17-026@4.5-5	4.5-5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-027	BB17-027@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-027	BB17-027@4-4.5	4-4.5	3/24/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-028	BB17-028 @ 5-5.5' DUP	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-028	BB17-028@0.5-1	0.5-1	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-028	BB17-028@5-5.5	5-5.5	3/24/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-029	BB17-029@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-029	BB17-029@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-030	BB17-030@1-1.5	1-1.5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-030	BB17-030@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BB17-031	BB17-031@0.5-1	0.5-1	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BB17-031	BB17-031@4.5-5	4.5-5	3/20/1997	non_Tank_Farm	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.003U	<0.005U	<0.005U
BBMP-001	BBMP-001@0.5-1	0.5-1	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BBMP-001	BBMP-001@12.5-13	12.5-13	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
BBMP-001	BBMP-001@7.5-8	7.5-8	1/7/1997	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-16-A	16-16	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-1-A	1-1	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-2.5-A	2.5-2.5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-32	SB-SB-32-5-A	5-5	7/14/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-15-A	15-15	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-1-A	1-1	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-2.5-A	2.5-2.5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-
SB-44	SB-SB-44-5-A	5-5	7/15/2011	non_Tank_Farm	-	-	-	-	-	-	-	-	-

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit
ft bgs = feet below ground surface

Table A-4
VOC Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

					tert-Butylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Xylene (m)	Xylene (o)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels													
LocCode	**Field_ID**	**Sample_Depth_Range (ft bgs)**	**Sampled_Date-Time**	**Monitoring_Zone**									

Table A-5
Pesticide Concentrations in Site Soil
Screening-Level Human-Health Risk Assessment Report
Dynegy-Owned Portion of the Former Morro Bay Power Plant

LocCode	Field_ID	Sample_Depth_Range	Sampled_Date-Time	Monitoring_Zone	Pesticides a-BHC	Aldrin	b-BHC	chlordane	d-BHC	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Site-Specific Soil Screening Levels																							
BB03-002	BB03-002@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.04	<0.1	<0.2
BB03-003	BB03-003@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.04	<0.1	<0.2
BB03-005	BB03-005@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.01	<0.01	**0.5**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.04	<0.1	<0.2
BB03-009	BB03-009@0-0.5	0-0.5	12/18/1996	non_Tank_Farm	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.04	<0.1	<0.2

Notes:
Detected concentrations are **bold-faced**
Concentrations exceeding Site-Sepecific Soil Screening Levels are highlighted
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
- = Not analyzed
< = analyte not detected at or above laboratory reporting limit
J = estimated below laboratory reporting limit
ft-bgs = feet below ground surface

Table 1
Most Recent TPH Concentrations in Groundwater
Screening-Level Risk Assesment Report for Groundwater
Dynegy-Owned Portion of the Former Morro Bay Power Plant
Morro Bay, California

Well	Sample Date	TPH-d (C12-C21)	TPH-mo (C21-C36)
85-P1R	5/9/2018	**1,400**	**1,100**
85-P2	7/13/2011	U (50)	U (250)
90-1	11/5/2013	U (50)	U (250)
90-2	11/5/2013	U (50)	U (250)
90-3	5/9/2018	**160**	**280**
90-4	7/12/2011	U (50)	U (250)
92-1	7/13/2011	U (50)	U (250)
92-2	7/13/2011	U (50)	U (250)
92-3	7/13/2011	U (50)	U (250)
96-1	7/13/2011	U (50)	U (250)
AT-1	7/13/2011	U (50)	U (250)
AT-2	7/13/2011	U (50)	U (250)
C-1-A	11/5/2013	U (50)	U (250)
C-1-B	7/13/2011	U (50)	U (250)
C-1-C	7/13/2011	U (50)	U (250)
MW-01	5/8/2018	U (15)	**58**
MW-02	5/8/2018	**27**	**150**
MW-03	5/8/2018	U (15)	U (50)
MW-04	5/8/2018	**22**	U (50)
MW-North	7/12/2011	U (50)	U (250)
P-1	7/13/2011	U (50)	U (250)
P-10	7/12/2011	U (50)	U (250)
P-3	7/12/2011	U (50)	U (250)
P-4	7/12/2011	U (50)	U (250)
P-6	7/12/2011	U (50)	U (250)
P-7	7/12/2011	U (50)	U (250)
P-8	7/12/2011	U (50)	U (250)
P-9	7/12/2011	U (50)	U (250)

Notes:
All concentrations in micrograms per liter (µg/L)
TPH = total petroleum hydrocarbons
TPH-d (C12-C21) = TPH in the diesel range (carbon range 12-21)
TPH-mo (C21-C36) = TPH in the motor-oil range (carbon range 21-36)
U = not detected below stated reporting limit
Bold font indicates detections
Shaded concentrations exceed the Environmental Screening Level for Direct Exposure Human Health Risk (410 µg/L)

Appendix J

Acoustical Analysis

ACOUSTICAL ANALYSIS

VISTRA ENERGY, 600 MW BATTERY ENERGY STORAGE SYSTEM
MORRO BAY, CALIFORNIA

WJVA Report No. 19-048

PREPARED FOR

EMC PLANNING GROUP, INC.
301 LIGHTHOUSE AVENUE, SUITE C
MONTEREY, CA 93940

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

wjv acoustics

JANUARY 28, 2021
(REVISED AUGUST 24, 2023)

1. INTRODUCTION

Project Description:

The project is being proposed by Morro Bay Power Company LLC (Vistra) (Project Applicant). The Project Applicant seeks a Coastal Development Permit (CDP) and a Conditional Use Permit (CUP) from the City of Morro Bay, California (City) to construct, operate, maintain, a Battery Energy Storage System (BESS) and associated infrastructure. The project would consist of batteries capable of storing 600 megawatts (MW) of electric energy and discharging this electricity to the grid for a minimum of 4 hours. The project is proposed at the site of the existing, but currently inactive Morro Bay Power Plant. The project would provide power to utility customers by interconnecting to the existing Pacific Gas and Electric Company (PG&E) substation located adjacent to and north of the power plant site.
Components of the project would include:

- Three enclosed buildings with fire protection systems to house the batteries. Each building would be 30 feet high, 350 feet long, and 260 feet wide for a total of 91,000 square feet. Each 30-foot building will have up to 10 feet of equipment on the roof. Such equipment, if required, would be screened;

- Each building would contain approximately 2,400 battery racks;

- Each building will be surrounded by approximately 60 Power Conversion Systems (PCS) composed of inverters and transformers to convert the direct current to alternating current would be located on concrete pads outside each of the buildings;

- Three substations with transformers; and

- Access roads, water supply system improvements, and infrastructure to support interconnection at the existing PG&E substation on site.

Construction of the facility is expected to begin in the 1st quarter of 2022. Construction could occur in phases and would take approximate 36 - 48 months. The project would operate year-round to store and discharge electricity to support the demand on the power grid and help ensure grid reliability.

Battery Storage Buildings
The batteries will be installed in three (3) buildings. Each building will house approximately 2,400 racks containing lithium-ion batteries. The battery modules (approximately 60,000 per building) will be housed in racks that are approximately 9- to 24-feet tall, depending on the use of stacked racking systems. The racks will be grouped into blocks with their own access, fire protection systems, and safety systems. A typical rack is presented in Figure 4-4, Battery Energy Storage System Components. The total storage in each building will have a capacity of approximately 200 MW.

Each of the three buildings will be approximately 350 feet by 260 with a height of 30 feet. The building area will be 91,000 square feet with two stories. There will be additional equipment installed on the roof of the buildings that may extend an additional 10 feet, and this equipment will be screened. The buildings will be located in the location of the previously-removed fuel oil tanks. Each building will require approximately 1,000 to 1,500 pilings will be driven to a cement depth of 75 feet as dictated by geotechnical conditions. The building exterior is proposed to have a steel frame with pre-cast concrete sides. Heating, ventilation and air conditioning (HVAC) units will be either side or roof mounted. Figure 4-5, Building Elevations, presents the elevation, the height, and general appearance of the buildings. Figure 4-6, Transmission Line Poles, presents the height and general appearance of the transmission line pole.

Power Conversion System
The Power Conversion Systems (PCS) will be located adjacent to each building, The PCS will be installed on the pavement or on gravel pads. Underground conduit, three- to five-feet deep, will connect the PCS to the batteries in the buildings. Each PCS skid or unit consists of an inverter and transformer, which changes the power from direct current (DC) to alternating current (AC) and vice versa. This is done because the electrical power grid operates in AC while the batteries store energy in DC. The transformer changes the voltage as required during charging and discharging. Each building will be surrounded by approximately 60 PCS units. Each PCS is approximately10 feet wide by 30 feet long. A picture of a typical PCS unit is presented in Figure 4-4, Battery Energy Storage System Components.

Substation
The project would include three substations as shown on Figure 2. The substations will include transformers to increase the voltage to the required level for interconnection to the grid, as well as associated switches, breakers and control systems. Each substation will have a transmission tie line to connect to the existing PG&E substation. The dimensions of each substation will be approximately 218 by 228 feet, and 95 feet high. Drilled piers, to a maximum depth of 75 feet, will be used to support the concrete pad for the transformers. A picture of a typical substation is presented in Figure 4-4, Battery Energy Storage System Components.

The substation areas would be graded and compacted to approximately level grade. Concrete pads would be constructed on site as foundations for substation equipment, and the remaining area would be graveled to a maximum depth of approximately six inches. Because each of the substation transformers would contain oil as an insulating fluid, the substations would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting. One control house is required for the three substations. The control house will be 15 feet high and 30 by 40 feet, for a total square footage of 1,200 square feet. The location of the control house is presented in Figure 4-3, Site Plan.

Hours of Operation
The project would be operated 24 hours a day, 365 days a year.

Employment

Permanent Employment
Up to fifteen permanent staff, in three (3) shifts, are expected to be employed for facility maintenance and repairs.

Construction Schedule and Workforce
Construction of the various project components discussed above could occur simultaneously, sequentially, or some combination thereof. Construction of the project would commence as early as the fourth quarter of 2021, and the last phase would be expected to be complete by the end of 2026. Total duration of construction is anticipated to be approximately 36 - 48 months.

Construction would generally occur in three phases, which will overlap. For example, Phase 2 will begin as Phase 1 winds down, but not before Phase 1 is complete. Phasing is anticipated as follows:

- Phase 1, Site Preparation, would extend for a duration of 12-18 months;
- Phase 2, Installation, would extend for a duration of 18-36 months; and
- Phase 3, Commissioning (Start-up and Testing), would extend for a duration of 12-18 months.

No more than 100 workers are planned to be on site during Phase 1 Site Preparation, no more than 300 during Phase 2, Installation, and no more than 100 during Phase 3 Commissioning The greatest number of workers present on-site at any given time would be 300 workers. The majority of the labor force is expected to come from San Luis Obispo County.

Construction would occur between the hours of 6:00 a.m. and 8:00 p.m. Monday through Friday. Weekend construction work is not expected to be required, but may occur on occasion, depending on schedule considerations. All construction work, including any weekend work, would comply with the policies and requirements established in the Noise Element of the Morro Bay General Plan.

Traffic, Access, and Parking
Access during construction will be provided via two routes: 1) from Quintana Road, and then along the northern boundary of the PG&E substation, and 2) at the main gate entrance on Embarcadero. Figure 4-7, Construction Access and Parking, presents the two routes. A traffic report was prepared to address construction traffic and its effect on the City's street system. The conclusions of the traffic report were reviewed by WJVA associated with the preparation of this analysis.

Demolition
Following construction of the BESS, the applicant would demolish and remediate the existing Morro Bay Power Plant building and stacks. The demolition activities would be expected to commence within six months after completion of the BESS. Of the 43 acres included in the Project site, approximately 19 acres (Demolition Site) would be used for demolition and remediation of the power plant building and stacks. The Project would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and

recycling of remaining equipment, waste management transport and disposal, and backfill of below grade voids. Demolition and remediation are anticipated to take up to two years to complete.

Environmental Noise Assessment:

This environmental noise assessment has been prepared to determine if significant noise impacts will be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The environmental noise assessment, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project site plan provided by the applicant, noise level data provided by the project applicant, and findings of noise level measurements conducted in the project vicinity on November 5, 2019. Revisions to the site plan or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides examples of sound levels for reference.

In terms of human perception, a 5 dB increase or decrease is considered to be a noticeable change in noise levels. Additionally, a 10 dB increase or decrease is perceived by the human ear as half as loud or twice as loud. In terms of perception, generally speaking the human ear cannot perceive an increase (or decrease) in noise levels less than 3 dB.

2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines apply the following questions for the assessment of significant noise impacts for a project:

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

a. Noise Level Standards

City of Morro Bay

The City of Morro Bay General Plan[1] (Plan Morro Bay) was adopted on May 25, 2021. The General Plan Noise Element provides noise standards and criteria applicable to the project. The noise element provides exterior noise level standards for both transportation and non-transportation (stationary) noise sources.

The Noise Element of the City of Morro Bay General Plan[1] establishes land use compatibility criteria in terms of the Day/Night Level (L_{dn}) or the Community Noise Equivalent Level (CNEL) to describe noise exposure for noise compatibility planning purposes. Both the L_{dn} and CNEL represent the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The CNEL includes an additional penalty of 5 dB (technically 4.77 dB) that is added to noise levels occurring during the evening hours between 7:00 p.m. and 10:00 p.m. The CNEL is utilized to describe aircraft noise exposure as required by the State of California. Both the L_{dn} and CNEL represent cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. The L_{dn} and CNEL are considered to be equivalent descriptors of the community noise environment for the purposes of this study.

The Noise Element provides ranges of noise exposure levels which are considered acceptable, conditionally acceptable, or unacceptable for various noise-sensitive land uses in the city. Table NOI-3 (provided below) of the Noise Element provides these land use noise compatibility criteria.

[1] City of Morro Bay General Plan (Plan Morro Bay), May 25, 2021.

Table NOI-3:
Community Exterior Noise Exposure Levels

Land Use Category	Community Noise Exposure (CNEL or Ldn dBA)		
	Acceptable[a]	Conditionally Acceptable[b]	Unacceptable[c]
Residential, Theatres, Auditoriums, Music Halls	<60	60–70	>70
Transient Lodging – Motels, Hotels	<60	60–75	>75
Schools, Libraries, Museums, Hospitals, Nursing Homes, Meeting Halls, Churches	<60	60–75	>75
Playgrounds, Parks	<70	70–75	>75
Offices	<60	60–75	>75

[a] *Specified land use is satisfactory. No noise mitigation measures are required.*

[b] *Use should be permitted only after careful study and inclusion of protective measures, as needed, to satisfy the policies of the Noise Element.*

[c] *Development is usually not permitted.*

For transportation noise sources, the noise element establishes an exterior noise exposure level of up to 60 dB L_{dn} as "acceptable" for residential land uses (including transient lodging). An exterior noise exposure level of up to 70 dB L_{dn} as for residential land uses and up to 75 dB L_{dn} for transient lodging is considered to be "conditionally acceptable". Table NOI-4 of the Morro Bay General Plan Noise Element (provided below) provides the acceptable noise exposure levels for transportation noise sources, for various land use types. The noise level standards are to be applied to outdoor activity areas. Outdoor activity areas generally include backyards of single-family residences, individual patios or decks of multi-family developments and common outdoor recreation areas of multi-family developments.

Table NOI-4:
Maximum Allowable Noise Exposure – Transportation Noise Sources

Land Use	Outdoor Activity Areas[a] CNEL or Ldn dBA	Interior Spaces	
		CNEL or Ldn dBA	Leq dBA[b]
Residential	60[c]	45	—
Transient Lodging	60[c]	45	—
Hospitals, Nursing Homes	60[c]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls, Office Buildings	60[c]	—	45
Schools, Libraries, Museums	—	—	45
Playgrounds, Neighborhood Parks	70	—	—

[a] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

[b] As determined for a typical worst-case hour during periods of use.

[c] Where it is not possible to reduce noise in outdoor activity areas to 60 dBA Ldn or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dBA Ldn may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Note: New development would result in a significant noise impact if the project would result in an exceedance of noise standards above, or if the existing noise environment exceeds an increase of 3 dBA Ldn.

The Morro Bay General Plan Noise Element also provides applicable noise level standards for non-transportation (stationary) noise sources. Noise levels associated with operational activities of the proposed project would be considered non-transportation noise sources. The Noise Element provides the non-transportation noise standards in terms of the hourly energy average (L_{eq}) and maximum (L_{max}) noise level metrics. The noise level standards become 5 dB more restrictive during the nighttime hours of 10:00 p.m. to 7:00 a.m. Table NOI-5 of the Morro Bay General Plan Noise Element (provided below) provides the acceptable noise exposure levels for non-transportation (stationary) noise sources.

Table NOI-5:
Maximum Allowable Exterior Noise Exposure – Stationary Noise Sources[a]

	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly Leq, dBA[b]	50	45
Maximum Level (Lmax), dBA[b]	70	65
Maximum Level, Impulse Noise (Lmax), dBA[c]	65	60

[a] As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barrier or other property line noise mitigation measures.

State of California

There are no state noise standards that are applicable to the project.

Federal Noise Standards

There are no federal noise standards that are applicable to the project.

b. Construction Noise and Vibration

Section 9.28.030 (I) (Description of representative offensive conduct) of the City of Morro Bay Municipal Code provides guidance regarding acceptable hours of construction activities within the City. The ordinance generally limits the hours of construction to occur between the hours of 7:00 a.m. to 7:00 p.m. on weekdays and between 8:00 a.m. to 7:00 p.m. on weekends.

> *"Construction or Repairing of Buildings. The erection (including excavating), demolition, alteration or repair of any building or general land grading and contour activity using equipment in such a manner as to be plainly audible at a distance of fifty feet from the building other than between the hours of seven a.m. and seven p.m. on weekdays and eight a.m. and seven p.m. on weekends except in case of urgent necessity in the interest of public health and safety, and then only with a permit from the community development department, which permit may be granted for a period not to exceed three days or less while the emergency continues and which permit may be renewed for a period of three days or less while the emergency continues. If the building inspector should determine that the public health and safety will not be impaired by the erection, demolition, alteration and repair of any building or the excavation of streets and highways within the hours of seven p.m. and seven a.m. on weekdays and seven p.m. and eight a.m. on weekends and if he further determines that loss or inconvenience would result to any party in interest, he may grant permission for such work to be done within the hours of seven p.m.*

and seven a.m. on weekdays and seven p.m. and eight a.m. on weekends upon application being made at the time the permit for the work is awarded or during the progress of the work."

The City of Morro Bay does not provide specific construction noise level standards applicable to the project. Some guidance can be found from various sources. The Federal Transit Administration[2]. (FTA) has identified a daytime noise level of 90 dB L_{eq} as a reasonable criterion for construction noise impact assessment. The FTA guidance states that adverse community reactions may result if such noise levels are exceeded during construction activities. Furthermore, The World Health Organization[3] (WHO) recommends that noise exposure levels should not exceed 70 dB over a 24-hour period, and 85 dB over a 1-hour period to avoid hearing impairment. The more conservative of these two noise levels, 85 dB L_{eq}, is applied within this analysis to assess potential construction-related noise levels that may result in noise impacts to off-site sensitive receptors in the project vicinity.

The City of Morro Bay does not provide any specific vibration guidelines. Some guidance is provided by the Caltrans Transportation and Construction Vibration Guidance Manual[4]. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table I and Table II, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec). For the purpose of this analysis, a threshold of significance for which a construction vibration impact is considered to occur is 0.1 PPV (in/sec).

TABLE I

GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4

Source: Caltrans

[2] Federal Transit Administration, *Transportation Noise and Vibration Impact Assessment,* May 2006.

[3] World Health Organization, *Compendium of WHO and UN Guidance on Health and Environment,* 2022.

[4] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* April 2020.

TABLE II

GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans

3. SETTING

The project site is located in San Luis Obispo County within the City of Morro Bay, California. The approximately 107-acre site has Assessor's Parcel Number (APN) 066-331-046 and has an address of 1290 Embarcadero. The proposed project will only require approximately 22 acres to develop. Figure 4-1, Regional Location, presents the regional and vicinity location of the property. Figure 4-2, Existing Conditions, present the current use of the property, as well as identification of the project site and surrounding uses.

The Morro Bay Power Plant has been operated on this site since the 1950's but has been idle since its retirement in 2014. The site is currently zoned M-2/PD/I-Coastal dependent Industrial-Planned Development Overlay-Interim Use Overlay.

The Morro Bay Power Plant is bordered by Morro Bay, (Pacific Ocean) to the west and California State Route 1 (SR 1) to the east. There are existing residential land uses located southeast of the project site as well as east of the project site (on the east side of SR 1). There is an R.V. Park (Morro Dunes R.V. Park) located to the northwest of the project site. Additionally, there are open space and recreational land uses (public beaches) located to the north and to the west of the project site. The project site plan is provided as Figure 1. The project site area and vicinity are provided as Figure 2.

a. Background Noise Level Measurements

Existing noise levels in the project vicinity are dominated by traffic noise along SR 1 and other local roadways and noise associated with nearby commercial and retail land uses, including activities occurring within the harbor area.

Measurements of existing ambient noise levels in the project vicinity were conducted between November 5-6, 2019. Long-term (24-hour) ambient noise level measurements were conducted at two (2) locations (sites LT-1 and LT-2). Site LT-1 was located near the closest residential land uses to the power plant, at the terminus of Surf Street, southeast of the Morro Bay Power Plant. Site LT-1 was exposed to vehicle noise associated with traffic along Surf Street, Embarcadero and other local roadways, as well as noise associated with nearby retail, commercial and harbor activities. Site LT-2 was located north of the Morro Bay Power Plant, near existing transient lodging land uses (Morro Dunes R.V. Park), and was exposed to noise associated with vehicle traffic on Embarcadero and within the R.V. Park and noise associated with the human recreational activities (human voices, barking dogs, fishing activities, etc.). The locations of the noise monitoring sites are shown on Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2" microphones. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured hourly energy average noise levels (L_{eq}) at site LT-1 ranged from a low of 38.4 dB between 4:00 a.m. and 5:00 a.m. to a high of 63.5 dBA between 3:00 p.m. and 4:00 p.m. Hourly maximum (L_{max}) noise levels at site LT-1 ranged from 51.4 to 77.7 dBA. Residual noise levels at the monitoring site, as defined by the L_{90}, ranged from 33.1 to 53.1 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured L_{dn} value at Site LT-1 over the 24-hour monitoring period was 54.7 dB L_{dn}. Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1 over the 24-hour monitoring period. Figure 4 provides a photograph of site LT-1.

Measured hourly energy average noise levels (L_{eq}) at site LT-2 ranged from a low of 35.1 dB between 2:00 a.m. and 3:00 a.m. to a high of 61.0 dBA between 10:00 a.m. and 11:00 a.m. Hourly maximum (L_{max}) noise levels at site LT2 ranged from 41.7 to 87.8 dBA. Residual noise levels at the monitoring site, as defined by the L_{90}, ranged from 62.7 to 46.8 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured L_{dn} value at Site LT-2 over the 24-hour monitoring period was 53.3 dB L_{dn}. Figure 5 graphically depicts hourly variations in ambient noise levels at site LT-2 over the 24-hour monitoring period. Figure 6 provides a photograph of site LT-2

4. PROJECT RELATED NOISE LEVELS

a. Project Noise Impacts from Operational On-Site Sources

According to the project applicant, operational noise associated with the implementation of the Vistra Energy Battery Energy Storage System (BESS) at the Morro Bay Power Plant would consist of noise associated with the Substation (specifically the Generator Step-Up Transformers (GSU) component) and Power Conversion System.

Substation/GSU:

The Morro Bay Vistra Energy BESS project would consist of three (3) individual battery storage system buildings. The BESS buildings would incorporate one substation located outside of each building, with two GSU units incorporated with each substation. According to the project applicant, each substation unit (specifically the GSU component) would be designed to the Industry Standard noise level of 85 dBA (or lower) at a distance of three (3) feet from the unit.

Power Conversion System (Two Transformers and One Inverter):

The BESS Project would incorporate approximately 60 individual power conversion system units at each of the three BESS buildings. According to the project applicant, each power conversion system unit (consisting of one transformer and two inverters) would produce noise levels of approximately 80 dBA at a distance of one (1) meter (3.28 feet) from the unit.

Combined Noise Levels:

The project site grading plans indicate that there will be an earthen berm located around the area where the battery storage buildings and Power Conversion System units will be located. This height of the berm would be approximately 10-12 feet above the project site grade, where the equipment will be located. This berm will provide acoustic shielding of project-related noise.

A proprietary software program based on the FHWA Traffic Noise Model was used to determine the noise level reduction that would be provided by the above-described berm. The model calculates insertion loss (noise reduction) based upon the distance from the source to the berm, the distance from berm to the receptor, and the relative heights of the sources and receptors. The calculations assumed a berm height of 10 feet, a receiver height of 5 feet and an effective source height of 5 feet was assumed for the for the power conversion units (per information provided by the applicant). Using the noise attenuation calculations, it was determined that the berm would provide approximately 8-9 dB of noise level reduction at the receptors. The project grading plan is provided as Figure 7.

In order to calculate project-related noise levels, the substations were measured from each proposed location (as shown on Figure 1) to the approximate distance of each of the two closest modeled receptors (vicinity of LT-1 and LT-2). For LT-1 these approximate distances from each substation to the residential property line were 1,000 feet, 1,100 feet and 1,400 feet. For LT-2 these approximate distances were 1,800 feet, 1,900 feet and 2,000 feet.

For each grouping of 60 power conversion system units, noise levels from all 60 sources were summed together and calculated from the approximate distance of the center of each BESS building to each of the modeled receivers. This provided a conservative noise level at the closest sensitive receptor locations. For receptors in the vicinity of LT-1, these calculated setback distances were 2,060 feet, 2,330 feet and 2,440 feet. For receptors in the vicinity of LT-2, these calculated setback distances were 660 feet, 980 feet and 1,050 feet.

Taking into account the above-described noise-producing equipment, the number of units of each equipment, the locations of each piece of equipment (as shown on Figure 1), the distances from the proposed equipment to the adjacent property lines, the noise reduction provided by the berm, and the standard rate of attenuation of noise with increased distance from a point source (-6dB/doubling of distance), WJVA calculated the expected project-related noise levels at the closest existing noise-sensitive receiver locations, residential land uses southeast of the project site (in the vicinity of LT-1) and the property line of the Morro Dunes R.V. Park northwest of the project site (in the vicinity of LT-2). Noise levels described below do not take into consideration acoustic shielding provided by existing buildings and intervening terrain (excluding the berm) and should therefore be considered a conservative assessment of project-related noise levels.

- Residential land uses southeast of project site (LT-1): 39 dB
- Morro Dunes R.V. Park (LT-2): 43 dB

The above-described represent the two closest sensitive receptor areas to the project site. Project-related sound levels was calculated based upon the above-described Substation/GSU and Power Conversion System noise levels (provided by the project applicant) and the equipment location and representative distances to the sensitive receptors. Additional sensitive receptors are located in proximity, but at greater distances to the project site than those represented by LT-1 and LT-2. The reported noise levels do not consider any acoustical shielding (with the exception of the above-described berm) provided by intervening buildings or topography and therefore represent a conservative assessment of operational noise levels at all sensitive receptor locations.

Noise levels associated with proposed project would not exceed the City's applicable daytime or nighttime noise level standard at nearby noise-sensitive receptors (residential land uses, R.V. Park, transient lodging, high school). Additionally, noise levels associated with the proposed project would generally be expected to be below existing ambient noise levels at all off-site locations. As previously stated, it is important to consider that the above-described calculated noise levels do not consider any acoustical shielding provided by existing structures or topography.

WJVA calculated project-related noise levels in terms of the L_{dn}. The General Plan Noise Element also states that new development would result in a significant noise impact if the project would result in noise levels to increase existing ambient noise levels by 3 dBA L_{dn} or more. The existing noise exposure levels (as measured during the ambient noise survey) at the closest sensitive receptors to the project site were measured to be 54.7 dB L_{dn} (LT-1) and 53.3 dB L_{dn} (LT-2). Project noise would be expected to be approximately 45 dB L_{dn} at site LT-1 and approximately 49 dB L_{dn} at site LT-2, with the resulting combined noise levels of 55.1 dB L_{dn} at site LT-1 and 54.7 dB L_{dn} at site LT-2, an increase of 0.4 dB and 1.4 dB, respectively. These increases do not result in a significant impact, as defined by the General Plan Noise Element.

b. Project-Related Increases in Traffic Noise

WJVA utilized the FHWA Traffic Noise Model to quantify expected project-related increases in traffic noise exposure along roadways in the project vicinity. The FHWA Model is a standard analytical method used by state and local agencies for roadway traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict L_{dn} values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic noise exposure for Existing and Existing Plus Project traffic conditions was calculated based upon the FHWA Model and traffic volumes provided by the project traffic engineer (Associated Transportation Engineers.) The project traffic conditions (project-related traffic volumes) analyzed represent those expected to occur during construction of the project. The posted vehicle speed limits on the analyzed roadways varied throughout the study area, and were determined during the project site visit. The Noise modeling assumptions used to calculate project traffic noise are provided as Appendix C. Table III provides the noise exposure levels at a reference distance of 100 feet from the center of each analyzed roadway segment, for Existing and Existing Plus Project traffic conditions.

TABLE III

VISTRA ENERGY BESS, MORRO BAY POWER PLANT
EXISTING CONDITIONS

Roadway Name (Description)	L_{dn}, dB[1]		Change	Significant Impact?
	No Project	Plus Project		
Main Street (n/o SR 1 NB Ramps)	58.3	58.3	0.0	No
Main Street (s/o SR 1 NB Ramps)	59.6	59.7	+0.1	No
Main Street (n/o SR 1 SB Ramps)	59.5	59.7	+0.2	No
Main Street (s/o SR 1 SB Ramps)	60.6	60.8	+0.2	No
Main Street (n/o Beach Street)	59.0	59.0	0.0	No
Main Street (s/o Beach Street)	57.0	57.0	0.0	No
Beach Street (w/o Main Street)	55.9	56.0	+0.1	No
Beach Street (e/o Main Street)	47.5	47.5	0.0	No

[1]At a typical residential setback (assumed to be 100 feet from the center of the roadway).

Source: WJV Acoustics, Inc.
Associated Transportation Engineers

Reference to Table III indicates that project-related increases in traffic noise exposure (during project construction phase) would be expected to increase by 0.2 dB or less along all analyzed roadway segments, as a result of the project, and will not result in any project-related significant impacts.

c. Noise from Construction

Construction noise could occur at various locations within the project site through the build-out period and would generally occur at distances of greater than 500 feet from nearby noise-sensitive land uses (transient lodging and residences). Table IV provides typical construction-related noise levels at reference distances of 500 feet, 1,000 feet, 2,000 feet, and 3,000 feet.

TABLE IV

TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA

Type of Equipment	500 Ft.	1,000 Ft.	2,000 Ft.	3,000 Ft.
Backhoe	58	52	46	42
Concrete Saw	70	64	58	54
Crane	61	55	49	45
Excavator	61	55	49	45
Front End Loader	59	53	47	43
Jackhammer	69	63	57	53
Paver	57	51	45	41
Pneumatic Tools	65	59	53	49
Dozer	62	56	50	46
Rollers	60	54	48	44
Trucks	66	60	54	50
Pumps	60	54	48	44
Scrapers	67	61	55	51
Portable Generators	60	54	48	44
Grader	66	60	54	50
Pile Driver	90	84	78	74

Source: FHWA
Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

Noise associated with construction is discussed in the Morro Bay General Plan and LCP Environmental Impact Report (EIR). The EIR provides the following goal and subsequent policies designed to reduce construction-related noise impacts:

Goal NOI-3 Noise from construction activities associated with maintenance vehicles, special events, and other nuisances is minimized in residential areas and near noise-sensitive land uses.

Policy NOI-3.1 Source Reduction. Reduce construction, maintenance, and nuisance noise at the source as the first and preferred strategy to reduce noise conflicts.

Policy NOI-3.3 Construction Shielding. Encourage shielding for construction activities to reduce noise levels and protect adjacent noise-sensitive land uses.

Policy NOI-3.4 Construction Hours. Limit allowable hours for construction activities and maintenance operations located adjacent to noise-sensitive land uses.

Construction activities are estimated to occur over an approximate 36-month time period. Construction equipment will vary over the course of the construction period. Construction of the project would include a wide range of equipment types over various phases of construction activities. Appendix D provides the preliminary list of construction equipment by phase, as provided by the project applicant.

WJVA used the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) to estimate project-related construction noise levels at nearby sensitive receptor locations. Construction noise levels were modeled at a total of six (6) receptor locations, including residential, transient lodging, park and school locations. The locations of the six receptors modeled for construction noise levels are provided as Figure 8. Table V provides the estimated construction-related noise levels at the six modeled receiver locations, for the various phases of project construction. The RCNM data output files are provided as Appendix E.

TABLE V

CONSTRUCTION NOISE LEVELS, L_{eq}, Dba
VISTRA ENGERY, MORRO BAY

		Month		
Receiver	**Distance, Ft**	**1**	**2-10**	**11-36**
R-1	2,000	55	62	51
R-2	900	62	69	58
R-3	1,400	58	65	54
R-4	1,800	56	63	52
R-5	2,600	52	60	49
R-6	2,200	54	61	50

Source: FHWA RCNM
WJVA
Note: Noise Levels assume a 5 dB reduction provided by berm

Noise levels provided in Table V indicate that project-related construction noise would result in an increase over existing ambient noise levels in the vicinity of nearby sensitive receptors. Noise levels at R-2 (Morro Dunes RV Park) were modeled to be as high as 69 dB L_{eq} during the periods of construction when pile driving activities would occur.

As described above, for the purpose of this analysis, a significant temporary construction noise impact is considered to occur if construction noise results in noise levels of 85 dB L_{eq} (or higher) at nearby sensitive receptor locations for a one-hour period. Noise levels associated with construction activities would not exceed 85 dB L_{eq} at any nearby sensitive receptor location for a one-hour period, during construction activities. Therefore, impacts are less than significant.

Best Management Practices:
Noise levels associated with construction activities may be effectively reduced by incorporating appropriate best management practices. The following best management practices should be applied during periods of project construction.

The following best management practices should be implemented during project construction:

- Per the City of Morro Bay Municipal Code, construction activities should not occur outside the hours of 7:00 a.m. to 7:00 p.m.
- All construction equipment shall be properly maintained and muffled as to minimize noise generation at the source.
- Noise-producing equipment shall not be operating, running, or idling while not in immediate use by a construction contractor.
- All noise-producing construction equipment shall be located and operated, to the extent possible, at the greatest possible distance from any noise-sensitive land uses.
- Locate construction staging areas, to the extent possible, at the greatest possible distances from any noise-sensitive land uses.
- Signs shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing the contact phone number of a designated noise disturbance coordinator.

d. Noise from Demolition

Following construction of the BESS, the applicant would demolish and remediate the existing Morro Bay Power Plant building and stacks. The demolition activities would be expected to commence after completion of the BESS. Of the 43 acres included in the Project site, approximately 19 acres (Demolition Site) would be used for demolition and remediation of the power plant building and stacks. The Project would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and recycling of remaining equipment, waste management transport and disposal, and backfill of below grade voids. Demolition and remediation are anticipated to take up to two years to complete.

Demolition Activities
Demolition activities are estimated to occur over an approximate 24-month time period. Demolition equipment will vary over the course of the demolition period. Demolition activities would include a wide range of equipment types over various phases of demolition activities. Appendix D provides the preliminary list of demolition equipment by phase, as provided by the project applicant.

WJVA used the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) to estimate demolition noise levels at nearby sensitive receptor locations. Demolition noise levels were modeled at the same above-described sensitive receptor locations. including residential, transient lodging, park, and school locations. Table VI provides the estimated demolition-related noise levels at the six modeled receiver locations, for the various phases of demolition activities. The RCNM data output files are provided as Appendix E.

TABLE VI

DEMOLITION NOISE LEVELS, L_{eq}, dBA
VISTRA ENGERY, MORRO BAY

		Month											
Receiver	Distance, Ft	1-3	4	5-6	7-9	10	11	12	13-17	18-21	22	23	24
R-1	1,000	44	47	50	51	52	53	54	54	54	54	52	47
R-2	2,000	38	41	44	45	46	47	48	48	48	48	46	41
R-3	2,200	37	40	43	44	45	46	47	47	48	47	45	40
R-4	2,700	36	39	41	42	43	44	46	45	46	45	43	39
R-5	3,400	34	37	39	40	41	42	44	43	44	43	41	37
R-6	1,400	41	44	47	48	49	50	51	51	52	51	49	44

Source: FHWA RCNM
WJVA
Note: Noise Levels assume a 5 dB reduction provided by berm

Noise levels provided in Table VI indicate that demolition-related construction noise would not be expected to result in noise levels exceeding 85 dB L_{eq} at any nearby sensitive receptor location, during the demolition period.

Demolition-Related Increases in Traffic Noise

Traffic noise exposure for Existing and Existing Plus Project (Demolition Phase) traffic conditions was calculated based upon the FHWA Model and traffic volumes provided by the project traffic engineer (Associated Transportation Engineers.) The project traffic conditions (project-related traffic volumes) analyzed represent those expected to occur during demolition phase of the project. The posted vehicle speed limits on the analyzed roadways varied throughout the study area, and were determined during the project site visit. The Noise modeling assumptions used to calculate project traffic noise are provided as Appendix C. Table VII provides the noise exposure levels at a reference distance of 100 feet from the center of each analyzed roadway segment, for Existing and Existing Plus Project (Demolition Phase) traffic conditions.

TABLE VII VISTRA ENERGY BESS, MORRO BAY POWER PLANT, DEMOLITION PHASE EXISTING CONDITIONS				
Roadway Name (Description)	L_{dn}, dB[1]		Change	Significant Impact?
	No Project	Plus Project		
Main Street (n/o SR 1 NB Ramps)	58.3	58.3	0.0	No
Main Street (s/o SR 1 NB Ramps)	59.6	59.7	+0.1	No
Main Street (n/o SR 1 SB Ramps)	59.5	59.6	+0.1	No
Main Street (s/o SR 1 SB Ramps)	60.6	60.8	+0.2	No
Main Street (n/o Beach Street)	59.0	59.0	0.0	No
Main Street (s/o Beach Street)	57.0	57.0	0.0	No
Beach Street (w/o Main Street)	55.9	55.9	0.0	No
Beach Street (e/o Main Street)	47.5	47.5	0.0	No

[1]At a typical residential setback (assumed to be 100 feet from the center of the roadway).

Source: WJV Acoustics, Inc.
Associated Transportation Engineers

Reference to Table VII indicates that project-related increases in traffic noise exposure (during demolition phase) would be expected to increase by 0.2 dB or less along all analyzed roadway segments, as a result of the project, and will not result in any project-related significant impacts.

e. Vibration Impacts (Less Than Significant)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. Typical vibration levels at distance of 300 feet are summarized by Table V.

TABLE V TYPICAL VIBRATION LEVELS DURING CONSTRUCTION	
Equipment	PPV (in/sec) @ 300´
Bulldozer (Large)	0.006
Bulldozer (Small)	0.00019
Loaded Truck	0.005
Jackhammer	0.002
Vibratory Roller	0.013
Caisson Drilling	0.006
Vibratory Pile Driver	0.042

Source: *Caltrans*

The vibration levels provided in Table V were derived from data provided in the Caltrans Transportation and Construction Vibration Guidance Manual. The Manual provides vibration levels for various pieces of construction equipment, normalized to a setback distance of 25 feet from the equipment source. Using these source levels provided at 25 feet, the Caltrans Manual also states that vibration from this equipment can be estimated for various setback distances by the following formula:

$$PPV_{Equipment} = PPV_{Ref}\ (25/D)^n\ (in/sec)$$

Where:

PPV_{Ref} = reference PPV at 25 ft.
D = distance from equipment to the receiver in ft.
n = 1.1 (the value related to the attenuation rate through ground)

The project would include pile driving activities. Reference to Table V indicates that vibration levels resulting from the use of vibratory pile driver are approximately 0.042 PPV at a distance of 300 feet from the activities. While all pile driving would occur at distances greater than 300 feet, reference to vibration levels provided in Table I and Table II indicate that a distance of 300 feet, pile driving activities would be considered to be "barely perceptible" and would be below the threshold for any potential structural damages.

Table V also indicates that the equipment with the highest potential vibration levels (excluding pile driving) would be a vibratory roller. While in use, a roller could produce vibration levels of approximately 0.013 PPV (in/sec) at a distance of 300 feet. Vibration producing activities will not occur at distances of closer than 300 feet from sensitive receptor locations.

As described above, the project will not produce any vibrations that are perceptible to nearby sensitive receptors or that exceed any thresholds for potential structural damages. Therefore, vibration impacts are less than significant for the proposed project.

5. IMPACT SUMMARY

- Project-related operational noise levels resulting from the proposed project, Vistra Energy Battery Energy Storage System (BESS) Expansion, are not expected to exceed any applicable City of Morro Bay daytime or nighttime noise level standards or produce noise levels that would exceed existing ambient noise levels at all off-site noise-sensitive locations. Additional mitigation is not required.

- Project construction-related noise levels are not expected to exceed 85 dB L_{eq} at any sensitive receptor location during project construction and demolition activities. However, the implementation of best management practices will assist in further reducing noise levels and annoyance associated with project construction noise levels.

The following best management practices should be implemented during project construction and demolition activities:

- Per the City of Morro Bay Municipal Code, construction activities should not occur outside the hours of 7:00 a.m. to 7:00 p.m.

- All construction equipment shall be properly maintained and muffled as to minimize noise generation at the source.

- Noise-producing equipment shall not be operating, running, or idling while not in immediate use by a construction contractor.

- All noise-producing construction equipment shall be located and operated, to the extent possible, at the greatest possible distance from any noise-sensitive land uses.

- Locate construction staging areas, to the extent possible, at the greatest possible distances from any noise-sensitive land uses.

- Signs shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing the contact phone number of a designated noise disturbance coordinator.

FIGURE 1: PROJECT SITE PLAN

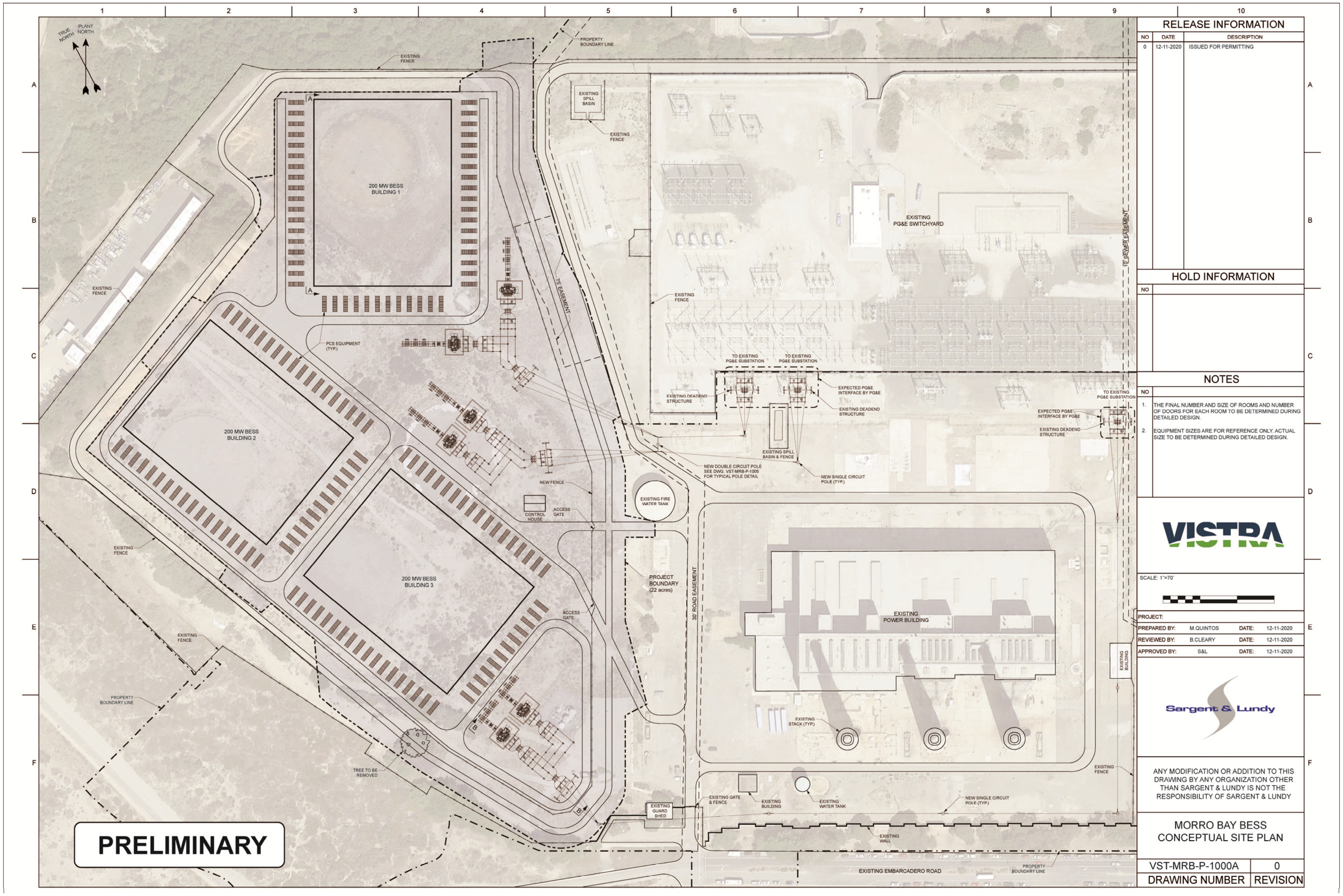


FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITES

FIGURE 3: HOURLY NOISE LEVELS AT SITE LT-1

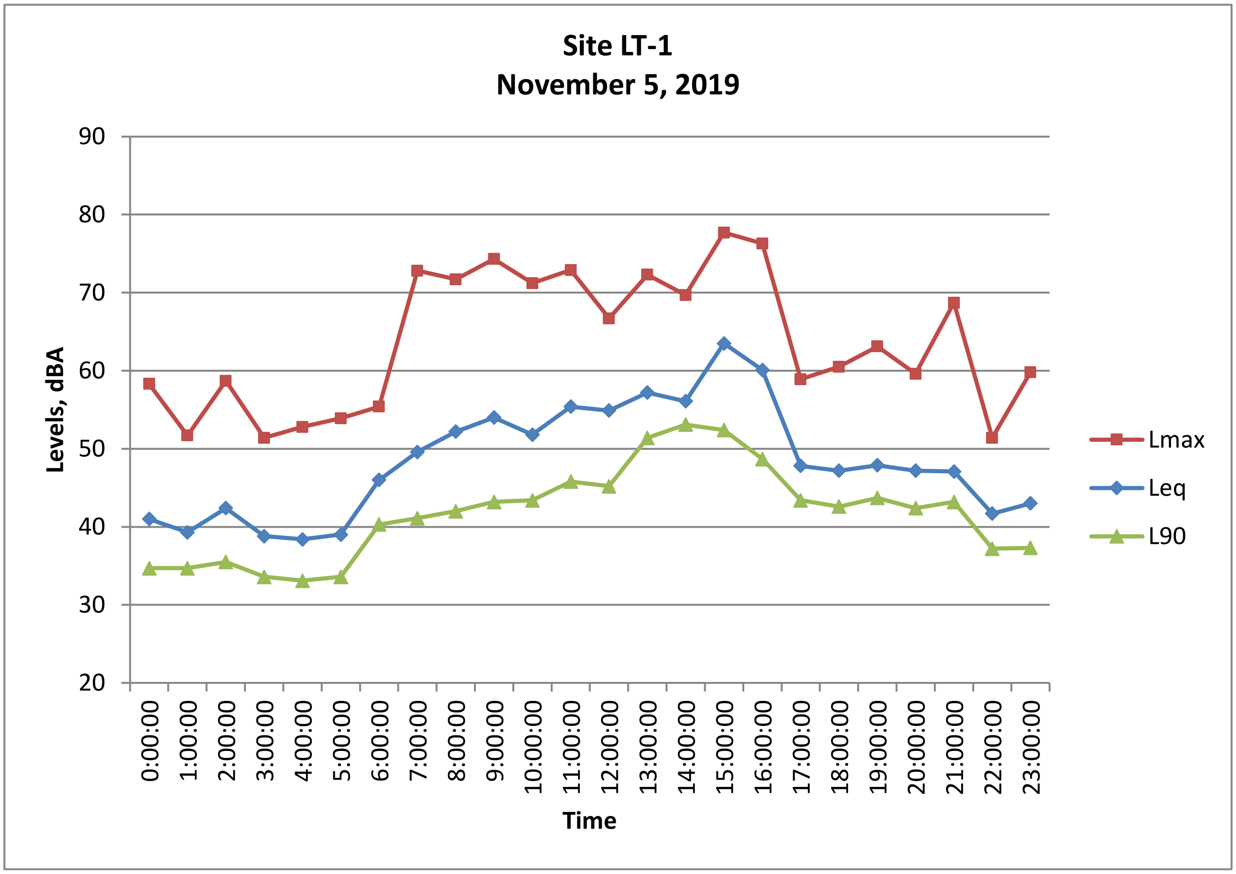


FIGURE 4: SITE LT-1

FIGURE 5: HOURLY NOISE LEVELS AT SITE LT-2

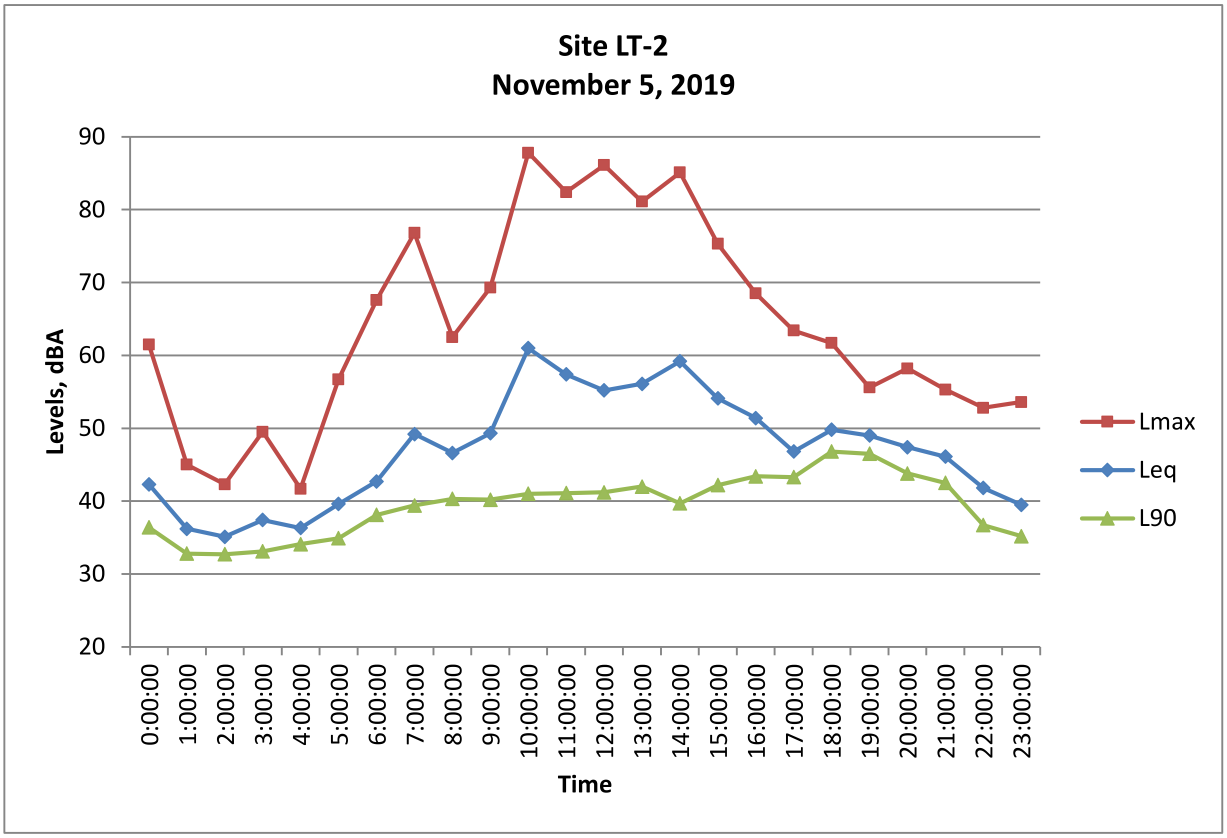


FIGURE 6: SITE LT-2

FIGURE 7: PROJECT SITE GRADING PLAN

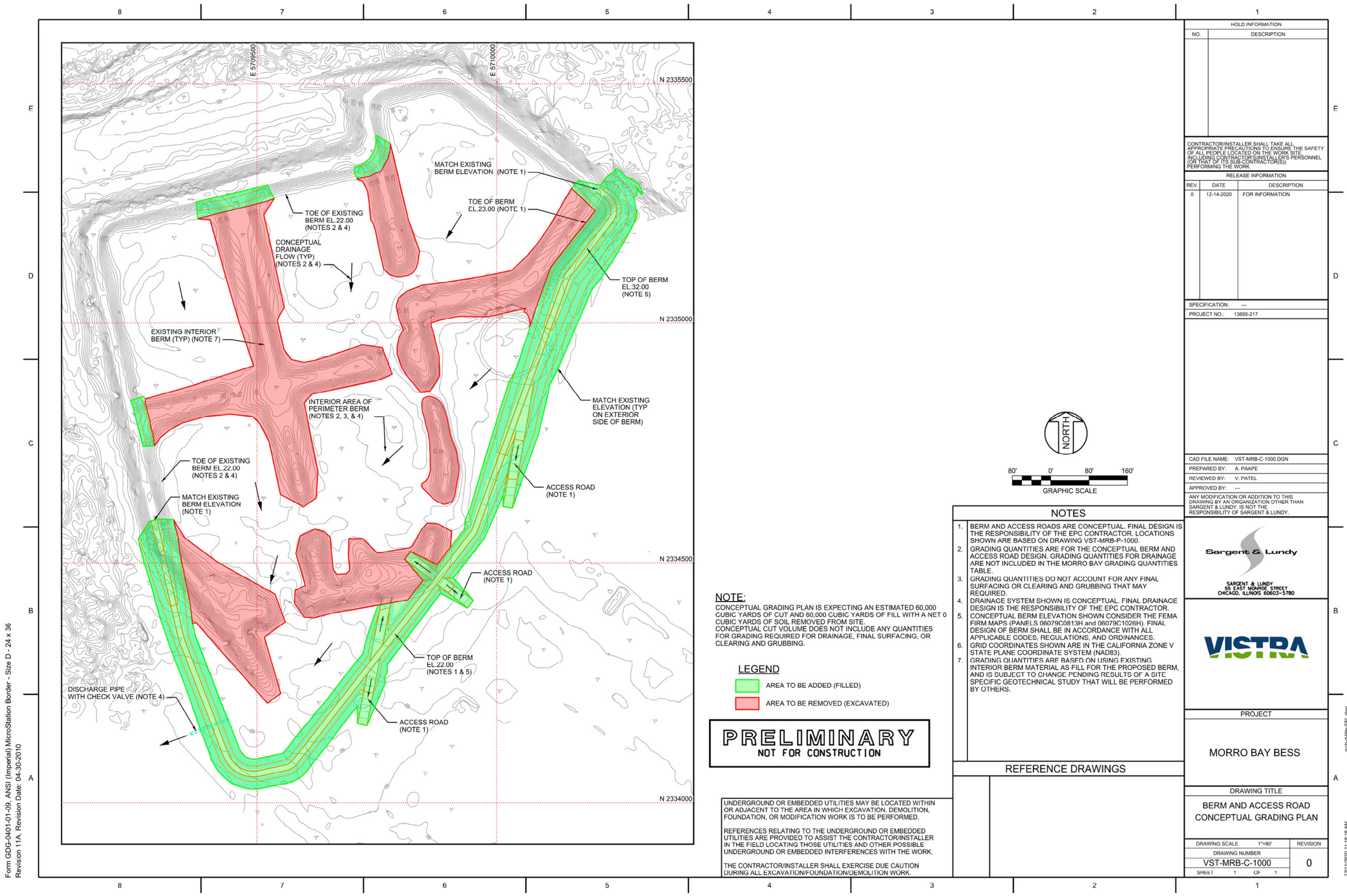
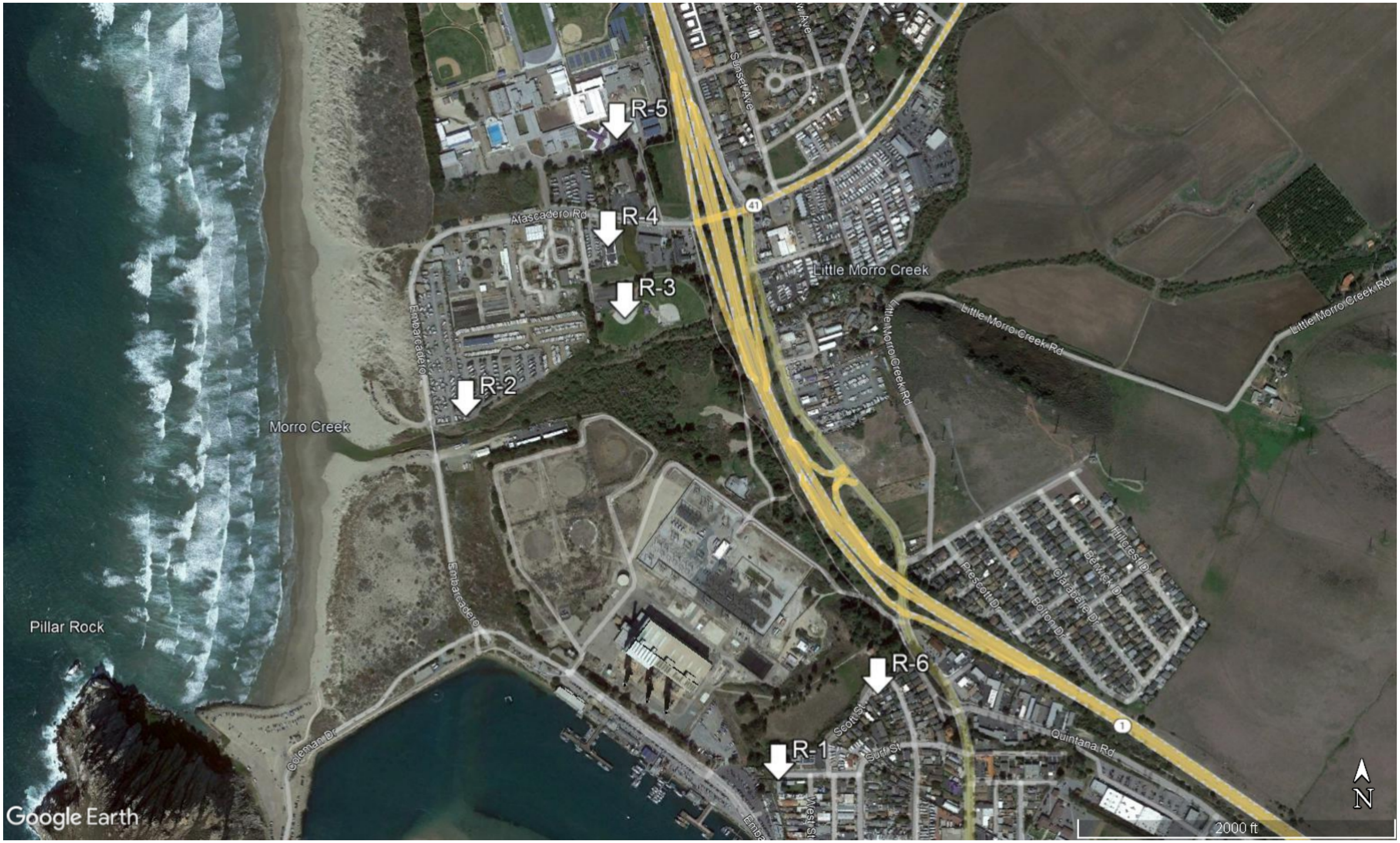


FIGURE 8: MODELED RECEIVER LOCATIONS, CONSTRUCTION AND DEMOLITION NOISE



APPENDIX A-1

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

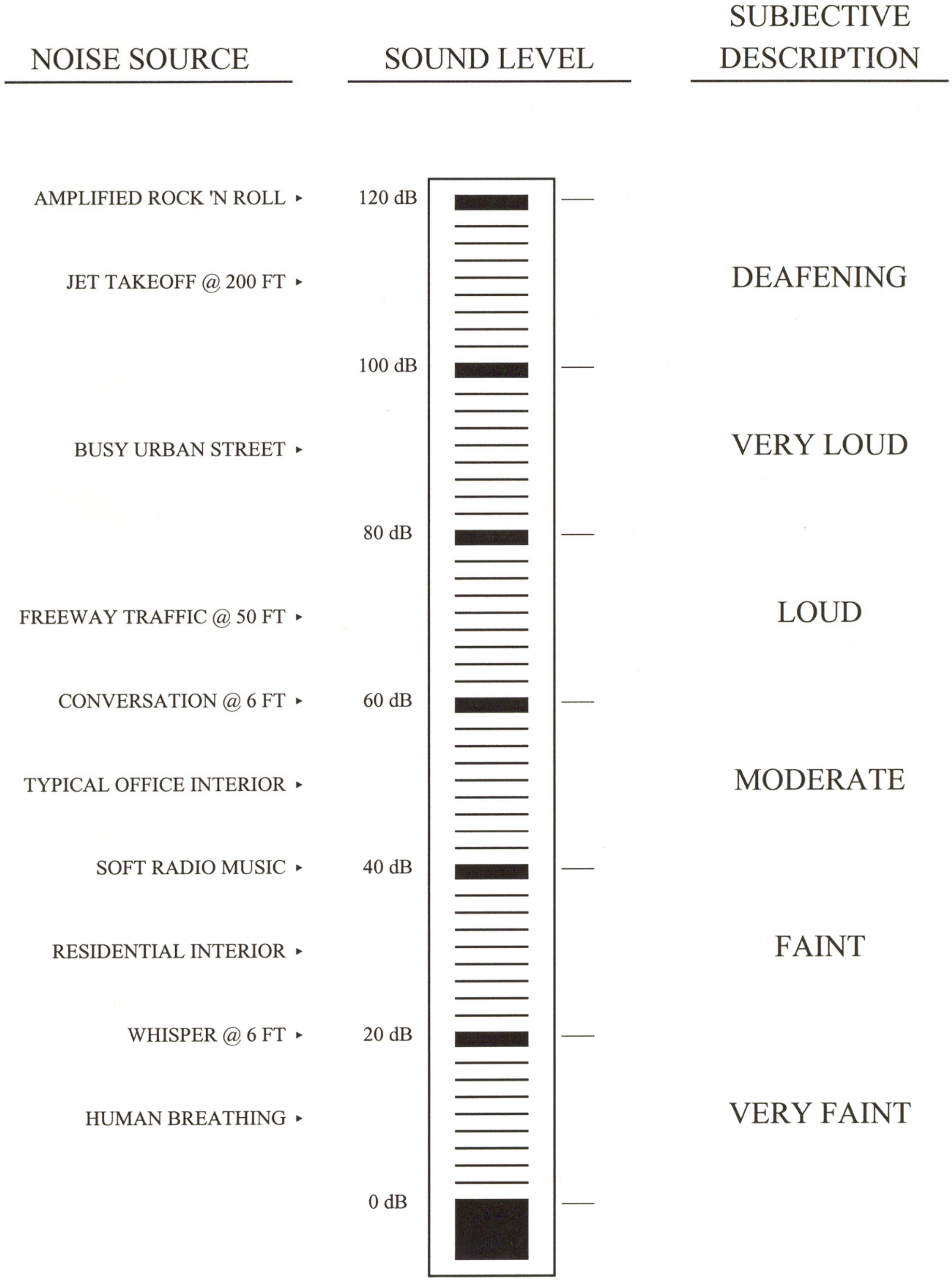
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Anoise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS



APPENDIX C

TRAFFIC NOISE MODELING ASSUMPTIONS

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
November 26, 2019

Project #:	19-048 Vistra MB	**Contour Levels (dB)**	60	65	70	75			
Description:	Existing								
Ldn/Cnel:	Ldn								
Site Type:	Soft								

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Main Street	n/o SR1 NB Ramps	8080	90		10	2	1	35	100	
2	Main Street	s/o SR1 NB Ramps	10990	90		10	2	1	35	100	
3	Main Street	n/o SR1 SB Ramps	10830	90		10	2	1	35	100	
4	Main Street	s/o SR1 SB Ramps	13780	90		10	2	1	35	100	
5	Main Street	n/o Beach Street	9470	90		10	2	1	35	100	
6	Main Street	s/o Beach Street	5990	90		10	2	1	35	100	
7	Beach Street	w/o Main Street	4700	90		10	2	1	35	100	
8	Beach Street	e/o Main Street	680	90		10	2	1	35	100	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
November 26, 2019

Project #:	19-048 Vistra MB	
Description:	Existing + project	
Ldn/Cnel:	Ldn	
Site Type:	Soft	

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Main Street	n/o SR1 NB Ramps	8080	90		10	2	1	35	100	
2	Main Street	s/o SR1 NB Ramps	11290	90		10	2	1	35	100	
3	Main Street	n/o SR1 SB Ramps	11130	90		10	2	1	35	100	
4	Main Street	s/o SR1 SB Ramps	14520	90		10	2	1	35	100	
5	Main Street	n/o Beach Street	9530	90		10	2	1	35	100	
6	Main Street	s/o Beach Street	5990	90		10	2	1	35	100	
7	Beach Street	w/o Main Street	4760	90		10	2	1	35	100	
8	Beach Street	e/o Main Street	680	90		10	2	1	35	100	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
November 20, 2022

Project #: 19-048 Vistra MB
Description: Existing + demo project
Ldn/Cnel: Ldn
Site Type: Soft

Contour Levels (dB)

60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Main Street	n/o SR1 NB Ramps	8080	90		10	2	1	35	100	
2	Main Street	s/o SR1 NB Ramps	11230	90		10	2	1	35	100	
3	Main Street	n/o SR1 SB Ramps	11070	90		10	2	1	35	100	
4	Main Street	s/o SR1 SB Ramps	14370	90		10	2	1	35	100	
5	Main Street	n/o Beach Street	9470	90		10	2	1	35	100	
6	Main Street	s/o Beach Street	5990	90		10	2	1	35	100	
7	Beach Street	w/o Main Street	4700	90		10	2	1	35	100	
8	Beach Street	e/o Main Street	680	90		10	2	1	35	100	

APPENDIX D

CONSTRUCTION AND DEMOLITION EQUIPMENT

Construction Schedule and Equipment List
BESS Construction

Key

	Please provide data
	Please confirm numbers

Construction Schedule						
Month	**Activity**	**CalEEMod Phase**	**Start Date**	**End Date**	**Number of Days per Week**	**Total Construction Days**
1	Fencing and Site Preparation	Site Preparation	1/1/2023	1/31/2023	5	22
2-10	Foundation and Pile Installation	Grading	2/1/2023	10/31/2023	5	195
11-36	BESS, substation, and Gen-tie installation	Building Construction	11/1/2023	10/31/2025	5	523
		Paving	11/1/2025	11/30/2025	5	20
		Architectural Coating	12/1/2025	12/31/2025	5	23

*Construction is assumed to have an arbitrary start date of 1/1/2023 and is expected to last 36 months. Construction information is based on information provided by the Project sponsor in September 2022.

Soil Transported for Construction			
Soil Quantity for Construction	Imported	[cubic yards]	
	Exported	[cubic yards]	
Total Acres Graded		[acres]	

Construction Schedule	
Days:	Monday through Friday
Hours:	7 a.m. to 7 p.m.

Off-Road Equipment List[1]									
Activity	**CalEEMod Phase**	**Equipment Type**	**Quantity**	**Avg. Usage Hours per Day**	**Total Usage Days[2]**	**Utilization Rate**	**Fuel (Diesel, Gasoline, CNG, Electric, etc)**	**Horsepower (hp)**	**Engine Tier, if known[3]**
Fencing and Site Preparation	Site Preparation	Scrapers	2	8	*(Ex. 50% of phase, 100% of phase)*	40%	Diesel	500	
		Bulldozers	6	8		40%	Diesel	300	
		Graders	6	8		50%	Diesel	250	
		Front End Loaders	2	8		50%	Diesel	300	
		Water Trucks	3	8		75%	Diesel	350	
		Backhoes	5	8		40%	Diesel	120	
Foundation and Pile Installation	Grading	Pile Drivers	10	8		75%	Diesel	600	
		Forklifts	4	8		75%	Diesel	150	
		Front End Loaders	2	8		50%	Diesel	300	
		Graders	6	8		50%	Diesel	250	
		Water Trucks	3	8		75%	Diesel	350	
		Bulldozers	6	8		40%	Diesel	300	
BESS, substation, and Gen-tie installation	Building Construction	Cranes	16	8		20%	Diesel	750	
		Trenchers	4	8		25%	Diesel	250	
		Backhoes	5	8		40%	Diesel	120	
		Forklifts	4	8		75%	Diesel	150	
		Water Trucks	3	8		75%	Diesel	350	
		Front End Loaders	2	8		50%	Diesel	300	
	Paving								
	Architectural Coating								
	[add additional phase if needed][4]	[add additional equipment if needed]							

[1]This equipment list is based on construction information provided by the Project sponsor in September 2022.

[2]Fill in this column only if the piece of equipment is not used for the total phase duration shown above.

[3]If equipment is known to have a certain engine tier level, emission factors associated with that tier level can be used instead of fleet averages. Ramboll will assume all Tier 4 for a mitigated scenario.

[4]Please add additional equipment as necessary.

Vehicle Trips and VMT							
Activity	**CalEEMod Phase**	**Worker Trip Number (trips/day)[1]**	**Vendor Trip Number (trips/day)[1]**	**Hauling Trip Number[2] (total trips)**	**Worker Trip Length[3] (miles/trip)**	**Vendor Trip Length[3] (miles/trip)**	**Hauling Trip Length[4] (miles/trip)**
Fencing and Site Preparation	Site Preparation	50			10.8	6.9	20
Foundation and Pile Installation	Grading	100	15		10.8	6.9	20
BESS, substation, and Gen-tie installation	Building Construction	300	20		10.8	6.9	20
	Architectural Coating	300			10.8	6.9	20
	Paving	300	5		10.8	6.9	20

[1]Worker and vendor trip numbers for each phase are based on information provided by the Project sponsor in September 2022. Vendor trips are calculated as the sum of material deliveries.

[2]Note that Hauling trip rates can be estimated using CalEEMod defaults once quantity of soil imported and/or exported is known. Hauling trip numbers for demolition were based on information provided by the project sponsor in September 2022 and was obtained by dividing the total trip numbers by the total number of days in the demolition phase.

[3]Worker and vendor trip lengths are CalEEMod defaults for San Luis Obispo county.

Construction Equipment List
Demolition of Power Plant and Stacks

Equipment Usage for Noise model - hours used per day (

diesel equipment	HP	number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Skid Steer loader	85	1	5	5	5	5	5	5	5	5	5	5	5	5												
Skid Steer loader	85	1					6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Skid Steer loader	85	1				6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Excavator with Shear	700	1												6	6	6	6	6	6	6	6	6	6			
Excavator with Shear	435	1										8	8	8	8	8	8	8	8	8	8	8	8	8		
Excavator with Shear	360	2											8	8	8	8	8	8	8	8	8	8	8	8		
Excavator with Concrete processor	355	1																		8	8	8	8	8	8	
Excavator with magnet	290	1												4	4	4	4	4	4	4	4	4	4	4	4	
Wheel Loader	225	1							8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Rough terrain crane	335	1					8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8		

diesel equipment	HP	Number	Hours/day	Months/used
Skid Steer loader	85	1	5	12
Skid Steer loader	85	2	6	20
Excavator with Shear	700	1	8	10
Excavator with Shear	435	1	8	12
Excavator with Shear	360	2	8	12
Excavator with Concrete processor	355	1	8	6
Excavator with magnet	290	1	4	12
Wheel Loader	225	1	4	18
Rough terrain crane	335	1	4	18

APPENDIX E

RCNM OUTPUT DATA

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Con1-A

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Scraper	No	40		83.6	2000.0	5.0
Scraper	No	40		83.6	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0

Front End Loader	No	40		79.1	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	46.5	42.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	46.5	42.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.0	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Scraper	No	40		83.6	900.0	5.0
Scraper	No	40		83.6	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0

Grader	No	40	85.0		900.0	5.0
Front End Loader	No	40		79.1	900.0	5.0
Front End Loader	No	40		79.1	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	53.5	49.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	53.5	49.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	49.0	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	49.0	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	54.9	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Scraper	No	40		83.6	1400.0	5.0
Scraper	No	40		83.6	1400.0	5.0
Dozer	No	40		81.7	1400.0	5.0
Dozer	No	40		81.7	1400.0	5.0
Dozer	No	40		81.7	1400.0	5.0
Dozer	No	40		81.7	1400.0	5.0
Dozer	No	40		81.7	1400.0	5.0
Dozer	No	40		81.7	1400.0	5.0
Grader	No	40	85.0		1400.0	5.0
Grader	No	40	85.0		1400.0	5.0
Grader	No	40	85.0		1400.0	5.0

Grader	No	40	85.0		1400.0	5.0
Grader	No	40	85.0		1400.0	5.0
Grader	No	40	85.0		1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Flat Bed Truck	No	40		74.3	1400.0	5.0
Flat Bed Truck	No	40		74.3	1400.0	5.0
Flat Bed Truck	No	40		74.3	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	49.6	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	49.6	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Grader	51.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	51.1	57.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Scraper	No	40		83.6	1800.0	5.0
Scraper	No	40		83.6	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Grader	No	40	85.0		1800.0	5.0

Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Front End Loader	No	40		79.1	1800.0	5.0
Front End Loader	No	40		79.1	1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Grader                    48.9    44.9        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Grader                    48.9    44.9        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Grader                    48.9    44.9        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Grader                    48.9    44.9        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Grader                    48.9    44.9        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          43.0    39.0        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          43.0    39.0        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Flat Bed Truck            38.1    34.1        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Flat Bed Truck            38.1    34.1        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Flat Bed Truck            38.1    34.1        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
               Total      48.9    55.3        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #5 ****

                                             Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    ---------       -------    -------    -----
R-5            Residential        45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Scraper                 No     40             83.6       2600.0
5.0
Scraper                 No     40             83.6       2600.0
5.0
Dozer                   No     40             81.7       2600.0
5.0
Dozer                   No     40             81.7       2600.0
5.0
Dozer                   No     40             81.7       2600.0
5.0
Dozer                   No     40             81.7       2600.0
5.0
Dozer                   No     40             81.7       2600.0
5.0
```

Dozer	No	40		81.7	2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Front End Loader	No	40		79.1	2600.0	5.0
Front End Loader	No	40		79.1	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	44.3	40.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	44.3	40.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Dozer                     42.3    38.4        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    45.7    41.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    45.7    41.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    45.7    41.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    45.7    41.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    45.7    41.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    45.7    41.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.8    35.8        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.8    35.8        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Flat Bed Truck            34.9    31.0        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Flat Bed Truck            34.9    31.0        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Flat Bed Truck            34.9    31.0        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      45.7    52.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #6 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-6            Residential        45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Scraper                 No     40              83.6      2200.0
5.0
Scraper                 No     40              83.6      2200.0
5.0
Dozer                   No     40              81.7      2200.0
5.0
Dozer                   No     40              81.7      2200.0
5.0
Dozer                   No     40              81.7      2200.0
5.0
```

```
Dozer                   No     40              81.7       2200.0
5.0
Dozer                   No     40              81.7       2200.0
5.0
Dozer                   No     40              81.7       2200.0
5.0
Grader                  No     40     85.0                2200.0
5.0
Grader                  No     40     85.0                2200.0
5.0
Grader                  No     40     85.0                2200.0
5.0
Grader                  No     40     85.0                2200.0
5.0
Grader                  No     40     85.0                2200.0
5.0
Grader                  No     40     85.0                2200.0
5.0
Front End Loader        No     40              79.1       2200.0
5.0
Front End Loader        No     40              79.1       2200.0
5.0
Flat Bed Truck          No     40              74.3       2200.0
5.0
Flat Bed Truck          No     40              74.3       2200.0
5.0
Flat Bed Truck          No     40              74.3       2200.0
5.0

                                     Results
                                     -------
                                                            Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night              Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq         Lmax    Leq     Lmax    Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Scraper                   45.7    41.7         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Scraper                   45.7    41.7         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Dozer                     43.8    39.8         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Dozer                     43.8    39.8         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Dozer                     43.8    39.8         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	47.1	53.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #7 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
		0.0	0.0	0.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Scraper	No	40		83.6	0.0	0.0
Scraper	No	40		83.6	0.0	0.0
Dozer	No	40		81.7	0.0	0.0

```
Dozer                   No     40            81.7          0.0
0.0
Dozer                   No     40            81.7          0.0
0.0
Dozer                   No     40            81.7          0.0
0.0
Dozer                   No     40            81.7          0.0
0.0
Dozer                   No     40            81.7          0.0
0.0
Grader                  No     40     85.0                 0.0
0.0
Grader                  No     40     85.0                 0.0
0.0
Grader                  No     40     85.0                 0.0
0.0
Grader                  No     40     85.0                 0.0
0.0
Grader                  No     40     85.0                 0.0
0.0
Grader                  No     40     85.0                 0.0
0.0
Front End Loader        No     40            79.1          0.0
0.0
Front End Loader        No     40            79.1          0.0
0.0
Flat Bed Truck          No     40            74.3          0.0
0.0
Flat Bed Truck          No     40            74.3          0.0
0.0
Flat Bed Truck          No     40            74.3          0.0
0.0

                                     Results
                                     -------
                                                            Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night              Day           Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq
Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Scraper                           -4.0        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Scraper                           -4.0        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Dozer                             -4.0        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

Dozer				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck				-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Total	0.0	8.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Con1-A

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	40.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	47.5	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

			Spec	Actual	Receptor	Estimated

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.6	46.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.4	44.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	38.2	41.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

```
Backhoe                      39.7     35.7         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                      39.7     35.7         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                      39.7     35.7         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                      39.7     35.7         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                      39.7     35.7         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
                 Total       39.7     42.7         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A

                                        **** Receptor #7 ****

                                                     Baselines (dBA)
Description      Land Use          Daytime     Evening     Night
-----------      --------          -------     -------     -----
                                       0.0         0.0       0.0

                                             Equipment
                                             ---------
                                      Spec     Actual      Receptor     Estimated
                 Impact    Usage      Lmax     Lmax        Distance     Shielding
Description      Device     (%)       (dBA)    (dBA)        (feet)        (dBA)
-----------      ------    -----      -----    -----       --------     ---------
Backhoe              No       40                77.6            0.0           0.0
Backhoe              No       40                77.6            0.0           0.0
Backhoe              No       40                77.6            0.0           0.0
Backhoe              No       40                77.6            0.0           0.0
Backhoe              No       40                77.6            0.0           0.0

                                             Results
                                             -------
                                                                  Noise Limits
(dBA)                              Noise Limit Exceedance (dBA)
                                                     -----------------------------
----------------    ----------------------------------------------
                           Calculated (dBA)          Day            Evening
Night                 Day            Evening          Night
                           ----------------     --------------    -------------
--------------    --------------   --------------   --------------
Equipment                       Lmax     Leq          Lmax     Leq      Lmax     Leq
Lmax     Leq         Lmax     Leq      Lmax     Leq      Lmax     Leq
----------------------     ------   ------      ------   ------   ------   ------
------   ------      ------   ------   ------   ------   ------   ------
Backhoe                               -4.0         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                               -4.0         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                               -4.0         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
Backhoe                               -4.0         N/A      N/A      N/A      N/A
N/A      N/A         N/A      N/A      N/A      N/A      N/A      N/A
```

Backhoe			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	0.0	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Con2-10-A

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Impact Pile Driver	Yes	20	95.0		2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0

Front End Loader	No	40	79.1	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.0	51.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.0	61.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Impact Pile Driver	Yes	20	95.0		900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Front End Loader	No	40		79.1	900.0	5.0
Front End Loader	No	40		79.1	900.0	5.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	64.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	49.0	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	49.0	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.9	68.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Spec Actual Receptor Estimated

Description	Impact Device	Usage (%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Impact Pile Driver	Yes	20	95.0		1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	61.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	61.1	64.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Impact Pile Driver	Yes	20	95.0		1800.0	5.0

Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Impact Pile Driver	Yes	20	95.0		1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Front End Loader	No	40		79.1	1800.0	5.0
Front End Loader	No	40		79.1	1800.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	58.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	43.0	39.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	43.0	39.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.9	61.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0

Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Impact Pile Driver	Yes	20	95.0		2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Front End Loader	No	40		79.1	2600.0	5.0
Front End Loader	No	40		79.1	2600.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	55.7	48.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Impact Pile Driver        55.7    48.7        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Impact Pile Driver        55.7    48.7        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Man Lift                  35.4    28.4        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Man Lift                  35.4    28.4        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Man Lift                  35.4    28.4        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Man Lift                  35.4    28.4        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.8    35.8        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.8    35.8        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
               Total      55.7    58.8        N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A

                                    **** Receptor #6 ****

                                                Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-6            Residential        45.0       40.0     35.0

                                          Equipment
                                          ---------
                                            Spec     Actual    Receptor
Estimated
                      Impact  Usage         Lmax     Lmax      Distance
Shielding
Description           Device   (%)          (dBA)    (dBA)      (feet)
(dBA)
-----------           ------  -----         -----    -----     --------    ----
-----
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
Impact Pile Driver       Yes     20          95.0                 2200.0
5.0
```

Impact Pile Driver	Yes	20	95.0		2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	57.1	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.1	60.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #7 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
		0.0	0.0	0.0

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Impact Pile Driver	Yes	20	95.0		0.0	0.0
Man Lift	No	20		74.7	0.0	0.0
Man Lift	No	20		74.7	0.0	0.0
Man Lift	No	20		74.7	0.0	0.0

Man Lift	No	20	74.7	0.0	0.0
Front End Loader	No	40	79.1	0.0	0.0
Front End Loader	No	40	79.1	0.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total	0.0	5.6	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Con1-A

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Grader	No	40	85.0		2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0
Dozer	No	40		81.7	2000.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	44.6	40.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.0	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Grader	No	40	85.0		900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0
Dozer	No	40		81.7	900.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq

Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	51.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	54.9	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1400.0	5.0
Grader	No	40	85.0		1400.0	5.0

```
Grader                  No      40      85.0                1400.0
5.0
Grader                  No      40      85.0                1400.0
5.0
Grader                  No      40      85.0                1400.0
5.0
Grader                  No      40      85.0                1400.0
5.0
Flat Bed Truck          No      40              74.3        1400.0
5.0
Flat Bed Truck          No      40              74.3        1400.0
5.0
Flat Bed Truck          No      40              74.3        1400.0
5.0
Dozer                   No      40              81.7        1400.0
5.0
Dozer                   No      40              81.7        1400.0
5.0
Dozer                   No      40              81.7        1400.0
5.0
Dozer                   No      40              81.7        1400.0
5.0
Dozer                   No      40              81.7        1400.0
5.0
Dozer                   No      40              81.7        1400.0
5.0

                                         Results
                                         -------
                                                           Noise Limits
(dBA)                               Noise Limit Exceedance (dBA)
                                              ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day            Evening
Night                  Day            Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                    Lmax     Leq        Lmax     Leq      Lmax     Leq
Lmax    Leq        Lmax    Leq      Lmax     Leq      Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Grader                      51.1    47.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                      51.1    47.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                      51.1    47.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                      51.1    47.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                      51.1    47.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                      51.1    47.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	51.1	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Equipment Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Grader	No	40	85.0		1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0

Flat Bed Truck	No	40		74.3	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0
Dozer	No	40		81.7	1800.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	48.9	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	38.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	38.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	38.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.9	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Grader	No	40	85.0		2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0
Dozer	No	40		81.7	2600.0	5.0
Dozer	No	40		81.7	2600.0	5.0
Dozer	No	40		81.7	2600.0	5.0
Dozer	No	40		81.7	2600.0	5.0
Dozer	No	40		81.7	2600.0	5.0

Dozer	No	40		81.7	2600.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	45.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	45.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	45.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	45.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	45.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	45.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	34.9	31.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	34.9	31.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	34.9	31.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	42.3	38.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.7	51.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night

R-6	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		2200.0	5.0
Grader	No	40	85.0		2200.0	5.0
Grader	No	40	85.0		2200.0	5.0
Grader	No	40	85.0		2200.0	5.0
Grader	No	40	85.0		2200.0	5.0
Grader	No	40	85.0		2200.0	5.0
Flat Bed Truck	No	40		74.3	2200.0	5.0
Flat Bed Truck	No	40		74.3	2200.0	5.0
Flat Bed Truck	No	40		74.3	2200.0	5.0
Dozer	No	40		81.7	2200.0	5.0
Dozer	No	40		81.7	2200.0	5.0
Dozer	No	40		81.7	2200.0	5.0
Dozer	No	40		81.7	2200.0	5.0
Dozer	No	40		81.7	2200.0	5.0
Dozer	No	40		81.7	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	47.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	43.8	39.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	47.1	52.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #7 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
		0.0	0.0	0.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Grader	No	40	85.0		0.0	0.0
Grader	No	40	85.0		0.0	0.0
Grader	No	40	85.0		0.0	0.0
Grader	No	40	85.0		0.0	0.0
Grader	No	40	85.0		0.0	0.0
Grader	No	40	85.0		0.0	0.0
Flat Bed Truck	No	40		74.3	0.0	0.0
Flat Bed Truck	No	40		74.3	0.0	0.0
Flat Bed Truck	No	40		74.3	0.0	0.0
Dozer	No	40		81.7	0.0	0.0
Dozer	No	40		81.7	0.0	0.0
Dozer	No	40		81.7	0.0	0.0
Dozer	No	40		81.7	0.0	0.0
Dozer	No	40		81.7	0.0	0.0
Dozer	No	40		81.7	0.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Grader			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer			-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	0.0	7.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Con11-36-A

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.5	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0
Crane	No	16		80.6	900.0	5.0

Crane	No	16	80.6	900.0	5.0
Crane	No	16	80.6	900.0	5.0
Crane	No	16	80.6	900.0	5.0
Crane	No	16	80.6	900.0	5.0
Crane	No	16	80.6	900.0	5.0
Crane	No	16	80.6	900.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	50.4	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total	50.4	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.6	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0
Crane	No	16		80.6	1800.0	5.0

Crane	No	16	80.6	1800.0	5.0
Crane	No	16	80.6	1800.0	5.0
Crane	No	16	80.6	1800.0	5.0
Crane	No	16	80.6	1800.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	44.4	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	44.4	48.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0
Crane	No	16		80.6	2600.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	41.2	33.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.2	45.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.7	46.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #7 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night

-----------	--------	-------	-------	-----
		0.0	0.0	0.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0
Crane	No	16		80.6	0.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane		-8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane				-8.0	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
		Total	0.0	4.1	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Con11-36-B

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Backhoe	No	40		77.6	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Man Lift	No	20		74.7	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0
Flat Bed Truck	No	40		74.3	2000.0	5.0

Flat Bed Truck	No	40		74.3	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	40.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	37.7	30.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	37.2	33.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.1	48.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Backhoe	No	40		77.6	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Man Lift	No	20		74.7	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0
Flat Bed Truck	No	40		74.3	900.0	5.0

Flat Bed Truck	No	40		74.3	900.0	5.0
Front End Loader	No	40		79.1	900.0	5.0
Front End Loader	No	40		79.1	900.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	44.6	37.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	44.1	40.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	49.0	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	49.0	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.0	55.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Backhoe	No	40		77.6	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Man Lift	No	20		74.7	1400.0	5.0
Flat Bed Truck	No	40		74.3	1400.0	5.0
Flat Bed Truck	No	40		74.3	1400.0	5.0

Flat Bed Truck	No	40		74.3	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.8	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	40.3	36.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.2	51.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Backhoe	No	40		77.6	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Man Lift	No	20		74.7	1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0
Flat Bed Truck	No	40		74.3	1800.0	5.0

Flat Bed Truck	No	40		74.3	1800.0	5.0
Front End Loader	No	40		79.1	1800.0	5.0
Front End Loader	No	40		79.1	1800.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	41.4	37.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	38.6	31.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	38.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	38.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	38.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	43.0	39.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	43.0	39.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.0	49.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Backhoe	No	40		77.6	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Man Lift	No	20		74.7	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0
Flat Bed Truck	No	40		74.3	2600.0	5.0

Flat Bed Truck	No	40		74.3	2600.0	5.0
Front End Loader	No	40		79.1	2600.0	5.0
Front End Loader	No	40		79.1	2600.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	38.2	34.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	35.4	28.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	35.4	28.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	35.4	28.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	35.4	28.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	34.9	31.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	34.9	31.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	34.9	31.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	39.8	35.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.8	35.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.8	45.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Backhoe	No	40		77.6	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Man Lift	No	20		74.7	2200.0	5.0
Flat Bed Truck	No	40		74.3	2200.0	5.0
Flat Bed Truck	No	40		74.3	2200.0	5.0

Flat Bed Truck	No	40		74.3	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	39.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	36.8	29.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck	36.4	32.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.2	47.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #7 ****

Description	Land Use	Daytime	Evening	Night
		Baselines (dBA)		
		0.0	0.0	0.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Equipment Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Backhoe	No	40		77.6	0.0	0.0
Man Lift	No	20		74.7	0.0	0.0
Man Lift	No	20		74.7	0.0	0.0
Man Lift	No	20		74.7	0.0	0.0
Man Lift	No	20		74.7	0.0	0.0
Flat Bed Truck	No	40		74.3	0.0	0.0
Flat Bed Truck	No	40		74.3	0.0	0.0

Flat Bed Truck	No	40	74.3	0.0	0.0
Front End Loader	No	40	79.1	0.0	0.0
Front End Loader	No	40	79.1	0.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift		-7.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Flat Bed Truck		-4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader			-4.0	N/A	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Front End Loader			-4.0	N/A	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	Total	0.0	8.1	N/A	N/A	N/A	N/A		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 1-3

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

```
                                     Spec     Actual     Receptor
Estimated
                    Impact  Usage    Lmax     Lmax       Distance
Shielding
Description         Device   (%)     (dBA)    (dBA)       (feet)
(dBA)
-----------         ------  -----    -----    -----      --------    ------
---
Front End Loader        No     40              79.1        2000.0
5.0

                                     Results
                                     -------
                                                              Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night               Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax     Leq           Lmax     Leq     Lmax     Leq
Lmax    Leq        Lmax     Leq     Lmax     Leq      Lmax     Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader           42.1     38.1          N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A
               Total       42.1     38.1          N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A

                                **** Receptor #3 ****

                                           Baselines (dBA)
Description    Land Use          Daytime     Evening     Night
-----------    --------          -------     -------     -----
R-3            Residential          45.0        40.0      35.0

                                     Equipment
                                     ---------
                                     Spec     Actual     Receptor
Estimated
                    Impact  Usage    Lmax     Lmax       Distance
Shielding
Description         Device   (%)     (dBA)    (dBA)       (feet)
(dBA)
-----------         ------  -----    -----    -----      --------    ------
---
Front End Loader        No     40              79.1        2200.0
5.0

                                     Results
                                     -------
                                                              Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
```

```
                                            ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)        Day            Evening
Night                Day            Evening        Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax     Leq         Lmax     Leq      Lmax     Leq
Lmax    Leq        Lmax    Leq      Lmax     Leq      Lmax     Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader           41.2     37.3        N/A      N/A      N/A      N/A
N/A     N/A        N/A     N/A      N/A      N/A      N/A      N/A
               Total       41.2     37.3        N/A      N/A      N/A      N/A
N/A     N/A        N/A     N/A      N/A      N/A      N/A      N/A

                              **** Receptor #4 ****

                                           Baselines (dBA)
Description     Land Use         Daytime     Evening    Night
-----------     ---------        -------     -------    -----
R-4             Residential         45.0        40.0     35.0

                                    Equipment
                                    ---------
                                    Spec     Actual    Receptor
Estimated
                     Impact   Usage     Lmax     Lmax      Distance
Shielding
Description          Device    (%)      (dBA)   (dBA)      (feet)
(dBA)
-----------          ------   -----     -----   -----      --------     ------
---
Front End Loader         No     40               79.1       2700.0
5.0

                                    Results
                                    -------
                                                           Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                            ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)        Day            Evening
Night                Day            Evening        Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax     Leq         Lmax     Leq      Lmax     Leq
Lmax    Leq        Lmax    Leq      Lmax     Leq      Lmax     Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader           39.5     35.5        N/A      N/A      N/A      N/A
N/A     N/A        N/A     N/A      N/A      N/A      N/A      N/A
               Total       39.5     35.5        N/A      N/A      N/A      N/A
N/A     N/A        N/A     N/A      N/A      N/A      N/A      N/A
```

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Front End Loader	No	40		79.1	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 1-3

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night

Description	Land Use	Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.2	40.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

```
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)       Day           Evening
Night                  Day           Evening        Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader          39.5    35.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.5    35.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      39.5    38.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                            **** Receptor #5 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-5            Residential        45.0       40.0     35.0

                                  Equipment
                                  ---------
                                  Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40             79.1       3400.0
5.0
Front End Loader        No     40             79.1       3400.0
5.0

                                  Results
                                  -------
                                                        Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)       Day           Evening
Night                  Day           Evening        Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
```

```
Front End Loader          37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      37.5    36.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

**** Receptor #6 ****

```
                                                Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-6            Commercial         45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40             79.1       1400.0
5.0
Front End Loader        No     40             79.1       1400.0
5.0

                                     Results
                                     -------
                                                          Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)        Day           Evening
Night                  Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax     Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader          45.2    41.2        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          45.2    41.2        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      45.2    44.2        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 5-6

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total	49.5	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.5	43.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.7	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Crane	No	16		80.6	2700.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	40.9	41.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Crane	No	16		80.6	3400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	38.9	39.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.6	46.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 7-9

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.5	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.5	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.7	43.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Crane	No	16		80.6	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

```
Front End Loader          39.5    35.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.5    35.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.5    35.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Crane                     40.9    32.9        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          39.5    35.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      40.9    42.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #5 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-5            Residential        45.0       40.0     35.0

                                    Equipment
                                    ---------
                                    Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40             79.1      3400.0
5.0
Front End Loader        No     40             79.1      3400.0
5.0
Front End Loader        No     40             79.1      3400.0
5.0
Crane                   No     16             80.6      3400.0
5.0
Front End Loader        No     40             79.1      3400.0
5.0

                                    Results
                                    -------
                                                        Noise Limits
(dBA)                             Noise Limit Exceedance (dBA)
                                          ------------------------------
----------------    ----------------------------------------------
                    Calculated (dBA)         Day          Evening
Night                 Day          Evening          Night
                        ----------------   -------------   -------------
--------------    --------------  -------------  --------------
Equipment                  Lmax    Leq         Lmax    Leq     Lmax    Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
```

```
---------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader          37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Crane                     38.9    30.9        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      38.9    40.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #6 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    ---------       -------    -------    -----
R-6            Commercial         45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40             79.1       1400.0
5.0
Front End Loader        No     40             79.1       1400.0
5.0
Front End Loader        No     40             79.1       1400.0
5.0
Crane                   No     16             80.6       1400.0
5.0
Front End Loader        No     40             79.1       1400.0
5.0

                                     Results
                                     -------
                                                                Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ----------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)        Day           Evening
Night                  Day          Evening         Night
                        ----------------   --------------   -------------
-------------    -------------  -------------  -------------
```

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.6	47.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 10

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.7	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.7	45.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.8	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Equipment Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Crane	No	16		80.6	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.1	43.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Crane	No	16		80.6	3400.0	5.0

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.1	41.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1400.0	5.0

Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.8	49.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 11

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.7	52.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

Noise Limits (dBA)　Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.7	46.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Equipment Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.8	46.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0

Front End Loader	No	40	79.1	2700.0	5.0
Front End Loader	No	40	79.1	2700.0	5.0
Crane	No	16	80.6	2700.0	5.0
Front End Loader	No	40	79.1	2700.0	5.0
Excavator	No	40	80.7	2700.0	5.0
Excavator	No	40	80.7	2700.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)							
			Day		Evening		Night		Day		Evening		Night			
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Total	41.1	44.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

**** Receptor #5 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Crane	No	16		80.6	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.1	42.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.8	49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 12

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq

```
--------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader          48.1    44.1         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          48.1    44.1         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          48.1    44.1         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Crane                     49.5    41.6         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          48.1    44.1         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 49.7    45.7         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 49.7    45.7         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 49.7    45.7         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 49.7    45.7         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      49.7    54.3         N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #2 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    ---------       -------    -------    -----
R-2            Residential        45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40             79.1       2000.0
5.0
Front End Loader        No     40             79.1       2000.0
5.0
Front End Loader        No     40             79.1       2000.0
5.0
Crane                   No     16             80.6       2000.0
5.0
Front End Loader        No     40             79.1       2000.0
5.0
Excavator               No     40             80.7       2000.0
5.0
Excavator               No     40             80.7       2000.0
5.0
```

Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.7	48.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

	Impact	Usage	Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding

Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Excavator                     42.8     38.9          N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A
                 Total        42.8     47.4          N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A

                                            **** Receptor #4 ****

                                                 Baselines (dBA)
Description      Land Use           Daytime     Evening     Night
-----------      ---------          -------     -------     -----
R-4              Residential           45.0        40.0      35.0

                                          Equipment
                                          ---------
                                          Spec     Actual     Receptor
Estimated
                     Impact   Usage       Lmax     Lmax       Distance
Shielding
Description          Device    (%)        (dBA)    (dBA)       (feet)
(dBA)
-----------          ------   -----       -----    -----      --------     ------
---
Front End Loader         No      40                 79.1        2700.0
5.0
Front End Loader         No      40                 79.1        2700.0
5.0
Front End Loader         No      40                 79.1        2700.0
5.0
Crane                    No      16                 80.6        2700.0
5.0
Front End Loader         No      40                 79.1        2700.0
5.0
Excavator                No      40                 80.7        2700.0
5.0
Excavator                No      40                 80.7        2700.0
5.0
Excavator                No      40                 80.7        2700.0
5.0
Excavator                No      40                 80.7        2700.0
5.0

                                          Results
                                          -------
                                                               Noise Limits
(dBA)                               Noise Limit Exceedance (dBA)
                                                 ------------------------------
----------------    ----------------------------------------------
                         Calculated (dBA)         Day            Evening
Night                  Day            Evening          Night
                         ----------------    --------------   -------------
--------------    --------------  --------------  --------------
Equipment                   Lmax     Leq          Lmax     Leq      Lmax     Leq
Lmax     Leq        Lmax     Leq      Lmax     Leq      Lmax     Leq
```

Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.1	45.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Crane	No	16		80.6	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.1	43.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

			Spec	Actual	Receptor	Estimated
Description	Impact Device	Usage	Lmax	Lmax	Distance	Shielding

Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Excavator		46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	46.8	51.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 13-17

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.7	53.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.7	47.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0

Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.8	47.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Crane	No	16		80.6	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Equipment	Calculated Lmax (dBA)	Calculated Leq (dBA)	Noise Limits Day Lmax	Noise Limits Day Leq	Noise Limits Evening Lmax	Noise Limits Evening Leq	Noise Limits Night Lmax	Noise Limits Night Leq	Exceedance Day Lmax	Exceedance Day Leq	Exceedance Evening Lmax	Exceedance Evening Leq	Exceedance Night Lmax	Exceedance Night Leq
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.1	45.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Crane	No	16		80.6	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq

Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.8	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 18-21

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.7	54.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.7	48.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Equipment

			Spec	Actual	Receptor	Estimated
	Impact	Usage	Lmax	Lmax	Distance	Shielding

Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Excavator                   42.8    38.9        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total        42.8    47.6        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                    **** Receptor #4 ****

                                             Baselines (dBA)
Description     Land Use         Daytime    Evening    Night
-----------     --------         -------    -------    -----
R-4             Residential         45.0       40.0     35.0

                                         Equipment
                                         ---------
                                         Spec    Actual    Receptor
Estimated
                     Impact  Usage       Lmax    Lmax      Distance
Shielding
Description          Device   (%)       (dBA)   (dBA)      (feet)
(dBA)
-----------          ------  -----       -----   -----     --------    ------
---
Front End Loader         No     40               79.1       2700.0
5.0
Front End Loader         No     40               79.1       2700.0
5.0
Crane                    No     16               80.6       2700.0
5.0
Front End Loader         No     40               79.1       2700.0
5.0
Excavator                No     40               80.7       2700.0
5.0
Excavator                No     40               80.7       2700.0
5.0
Excavator                No     40               80.7       2700.0
5.0
Excavator                No     40               80.7       2700.0
5.0
Excavator                No     40               80.7       2700.0
5.0

                                         Results
                                         -------
                                                           Noise Limits
(dBA)                                Noise Limit Exceedance (dBA)
                                              ------------------------------
----------------     ----------------------------------------------
                   Calculated (dBA)       Day          Evening
Night                  Day          Evening        Night
                   ----------------   --------------   -------------
--------------   --------------  --------------  --------------
Equipment                 Lmax    Leq        Lmax    Leq     Lmax    Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
```

Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.1	45.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Crane	No	16		80.6	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.1	43.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

Description	Impact	Usage	Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding

Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Excavator		46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	46.8	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 22

**** Receptor #1 ****

Description	Land Use	Daytime	Evening	Night
		Baselines (dBA)		
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Crane	No	16		80.6	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq

Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	49.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.7	53.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Crane	No	16		80.6	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	43.5	35.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	43.7	47.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #3 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-3	Residential	45.0	40.0	35.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0

Crane	No	16		80.6	2200.0	5.0
Front End Loader	No	40		79.1	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0
Excavator	No	40		80.7	2200.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.7	34.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.8	47.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Crane	No	16		80.6	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	40.9	32.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Excavator                   41.1    37.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total        41.1    45.2        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                   **** Receptor #5 ****

                                             Baselines (dBA)
Description     Land Use         Daytime    Evening    Night
-----------     --------         -------    -------    -----
R-5             Residential        45.0       40.0     35.0

                                       Equipment
                                       ---------
                                       Spec    Actual    Receptor
Estimated
                     Impact  Usage     Lmax    Lmax      Distance
Shielding
Description          Device   (%)      (dBA)   (dBA)      (feet)
(dBA)
-----------          ------  -----     -----   -----     --------    ------
---
Front End Loader         No     40               79.1      3400.0
5.0
Front End Loader         No     40               79.1      3400.0
5.0
Crane                    No     16               80.6      3400.0
5.0
Front End Loader         No     40               79.1      3400.0
5.0
Excavator                No     40               80.7      3400.0
5.0
Excavator                No     40               80.7      3400.0
5.0
Excavator                No     40               80.7      3400.0
5.0
Excavator                No     40               80.7      3400.0
5.0

                                       Results
                                       -------
                                                            Noise Limits
(dBA)                            Noise Limit Exceedance (dBA)
                                            ----------------------------
----------------    ---------------------------------------------
                        Calculated (dBA)         Day          Evening
Night                  Day            Evening         Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                      Lmax    Leq        Lmax    Leq     Lmax    Leq
Lmax    Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
```

Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	38.9	30.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	39.1	35.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	39.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

			Equipment			
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Crane	No	16		80.6	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0
Excavator	No	40		80.7	1400.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.8	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 23

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0
Excavator	No	40		80.7	1000.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Equipment	Calculated Lmax	Calculated Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Exceedance Day Lmax	Exceedance Day Leq	Exceedance Evening Lmax	Exceedance Evening Leq	Exceedance Night Lmax	Exceedance Night Leq
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	49.7	45.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	49.7	51.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-2	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Front End Loader	No	40		79.1	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0
Excavator	No	40		80.7	2000.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	42.1	38.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Front End Loader          42.1    38.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 43.7    39.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 43.7    39.7        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      43.7    45.8        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #3 ****

                                            Baselines (dBA)
Description     Land Use         Daytime    Evening    Night
-----------     --------         -------    -------    -----
R-3             Residential         45.0       40.0     35.0

                                      Equipment
                                      ---------
                                      Spec    Actual    Receptor
Estimated
                    Impact  Usage     Lmax    Lmax      Distance
Shielding
Description         Device   (%)      (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----     -----   -----     --------    ------
---
Front End Loader        No     40              79.1       2200.0
5.0
Front End Loader        No     40              79.1       2200.0
5.0
Front End Loader        No     40              79.1       2200.0
5.0
Excavator               No     40              80.7       2200.0
5.0
Excavator               No     40              80.7       2200.0
5.0

                                      Results
                                      -------
                                                               Noise Limits
(dBA)                            Noise Limit Exceedance (dBA)
                                            ----------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day          Evening
Night                  Day           Evening         Night
                        ----------------    --------------   -------------
--------------    --------------  --------------  --------------
Equipment                    Lmax     Leq         Lmax     Leq     Lmax     Leq
Lmax     Leq       Lmax     Leq     Lmax     Leq      Lmax     Leq
----------------------    ------  ------      ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader          41.2    37.3        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	41.2	37.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.8	38.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.8	45.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #4 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R-4	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Front End Loader	No	40		79.1	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0
Excavator	No	40		80.7	2700.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

Equipment	Calculated Lmax (dBA)	Calculated Leq (dBA)	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	39.5	35.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	41.1	37.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	41.1	43.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #5 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-5	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Front End Loader	No	40		79.1	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0
Excavator	No	40		80.7	3400.0	5.0

Results

			Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq

```
---------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader           37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader           37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader           37.5    33.5        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                  39.1    35.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                  39.1    35.1        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total       39.1    41.2        N/A     N/A     N/A     N/A
N/A     N/A       N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #6 ****

                                          Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-6            Commercial         45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40              79.1       1400.0
5.0
Front End Loader        No     40              79.1       1400.0
5.0
Front End Loader        No     40              79.1       1400.0
5.0
Excavator               No     40              80.7       1400.0
5.0
Excavator               No     40              80.7       1400.0
5.0

                                     Results
                                     -------
                                                          Noise Limits
(dBA)                           Noise Limit Exceedance (dBA)
                                          ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night                  Day           Evening        Night
                        ----------------   --------------   -------------
-------------    -------------  -------------  -------------
```

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.8	42.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.8	48.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 07/14/2023
Case Description: Demo 24

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-1	Residential	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1000.0	5.0
Front End Loader	No	40		79.1	1000.0	5.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	48.1	44.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	48.1	47.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night

```
R-2            Residential        45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------         ------  -----    -----   -----     --------    ------
---
Front End Loader        No     40              79.1       2000.0
5.0
Front End Loader        No     40              79.1       2000.0
5.0

                                     Results
                                     -------
                                                                Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                           ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)        Day           Evening
Night                 Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax     Leq         Lmax     Leq     Lmax     Leq
Lmax    Leq        Lmax     Leq     Lmax     Leq      Lmax     Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------    ------  ------  ------  ------  ------  ------
Front End Loader           42.1    38.1         N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader           42.1    38.1         N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
               Total       42.1    41.1         N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #3 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-3            Residential        45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                    Impact  Usage    Lmax    Lmax      Distance
Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
```

```
-----------          ------  -----    -----   -----     --------    ------
---
Front End Loader         No     40             79.1       2200.0
5.0
Front End Loader         No     40             79.1       2200.0
5.0

                                     Results
                                     -------
                                                            Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
                                                  -----------------------------
----------------    ---------------------------------------------
                        Calculated (dBA)         Day           Evening
Night                Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq         Lmax    Leq     Lmax    Leq
Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------
------  ------     ------  ------  ------  ------  ------  ------
Front End Loader          41.2    37.3         N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          41.2    37.3         N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A
               Total      41.2    40.3         N/A     N/A     N/A     N/A
N/A     N/A        N/A     N/A     N/A     N/A     N/A     N/A

                                **** Receptor #4 ****

                                                  Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
R-4            Residential        45.0       40.0     35.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor
Estimated
                     Impact  Usage    Lmax    Lmax      Distance
Shielding
Description          Device   (%)     (dBA)   (dBA)      (feet)
(dBA)
-----------          ------  -----    -----   -----     --------    ------
---
Front End Loader         No     40             79.1       2700.0
5.0
Front End Loader         No     40             79.1       2700.0
5.0

                                     Results
                                     -------
                                                            Noise Limits
(dBA)                          Noise Limit Exceedance (dBA)
```

```
                                             ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night                   Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------   --------------   --------------
Equipment                      Lmax     Leq         Lmax     Leq      Lmax     Leq
Lmax     Leq        Lmax     Leq      Lmax     Leq      Lmax     Leq
----------------------   ------   ------     ------   ------   ------   ------
------   ------     ------   ------   ------   ------   ------   ------
Front End Loader              39.5     35.5         N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A
Front End Loader              39.5     35.5         N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A
               Total          39.5     38.5         N/A      N/A      N/A      N/A
N/A      N/A        N/A      N/A      N/A      N/A      N/A      N/A

                                    **** Receptor #5 ****

                                                 Baselines (dBA)
Description     Land Use         Daytime     Evening    Night
-----------     --------         -------     -------    -----
R-5             Residential         45.0        40.0     35.0

                                         Equipment
                                         ---------
                                         Spec     Actual    Receptor
Estimated
                    Impact  Usage        Lmax     Lmax      Distance
Shielding
Description         Device   (%)         (dBA)    (dBA)      (feet)
(dBA)
-----------         ------  -----        -----    -----     --------    ------
---
Front End Loader        No     40                  79.1       3400.0
5.0
Front End Loader        No     40                  79.1       3400.0
5.0

                                         Results
                                         -------
                                                                Noise Limits
(dBA)                                Noise Limit Exceedance (dBA)
                                             ------------------------------
----------------    ----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night                   Day           Evening         Night
                        ----------------   --------------   -------------
--------------    --------------   --------------   --------------
Equipment                      Lmax     Leq         Lmax     Leq      Lmax     Leq
Lmax     Leq        Lmax     Leq      Lmax     Leq      Lmax     Leq
----------------------   ------   ------     ------   ------   ------   ------
------   ------     ------   ------   ------   ------   ------   ------
```

Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	37.5	33.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	37.5	36.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #6 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
R-6	Commercial	45.0	40.0	35.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	1400.0	5.0
Front End Loader	No	40		79.1	1400.0	5.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.2	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.2	44.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix K

Traffic and Parking Study

ASSOCIATED TRANSPORTATION ENGINEERS
100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110 • (805)687-4418 • FAX (805)682-8509 • main@atesb.com

Since 1978

Richard L. Pool, P.E.
Scott A. Schell

January 26, 2023 19057.02.L05

EMC Planning Group
Attn: Teri Wissler Adam
601 Abrego Street
Monterey, CA 93940

TRAFFIC AND PARKING STUDY FOR THE CONSTRUCTION , DEMOLITION AND OPERATIONAL PHASES OF THE VISTRA ENERGY 600 MW BATTERY ENERGY STORAGE SYSTEM PROJECT – MORRO BAY

Associated Transportation Engineers (ATE) has prepared the following traffic and parking study for the Construction and Demolition Phases of the Vistra Energy 600 MW Battery Energy Storage System Project (the "Project") proposed in the City of Morro Bay. The study focuses on the potential traffic and parking effects of the Project during the Construction Phase of the Project when the battery storage system is built, the Demolition Phase of the Project when the existing Morro Bay Power Plant will be removed, and the Operational Phase of the Project when the system is up and running.

PROJECT DESCRIPTION

The Project is proposing to construct and operate a 600-megawatt Battery Energy Storage System (BESS) to be located entirely within the existing Morro Bay Power Plant site. Figure 1 shows the location of the Project site within the Morro Bay area. Figure 2 illustrates the Project Site Plan. The BESS would be comprised of battery modules within three enclosed buildings. Each building would be surrounded by approximately 60 power conversion systems that convert direct current to alternating current. Three substations with transformers are also part of the Project.

The Construction Phase is anticipated to last approximately 36-48 months. Construction is anticipated to occur in three phases that will overlap:

- Phase 1 - Site Preparation: duration of 12-18 months.
- Phase 2 – Installation: duration of 18-36 months.
- Phase 3 – Commissioning (Start-up and Testing): duration of 12-18 months.

Following construction of the BESS, Vistra would demolish and remediate the existing Morro Bay Power Plant building and stacks. These activities would be expected to commence within six months after completion of the BESS. Of the 43 acres included in the Project site, approximately 19 acres (Demolition Site) would be used for demolition and remediation of the power plant building and stacks. Figure 3 shows the approximate limits of the demolition activities. The Demolition Phase would include the removal of equipment, removal of remaining regulated materials, dismantling of plant facilities and infrastructure, salvage and recycling of remaining equipment, waste management transport and disposal, and backfill of below grade voids. The Demolition Phase is anticipated to take up to two years to complete.

Figure 4 illustrates the travel routes that will be used during the Construction and Demolition Phases. As shown, access to the site for employee vehicles and delivery/waste hauling trucks would be provided via the existing driveway that connects to Quintana Road.

EXISTING CONDITIONS

Existing Street Network

As shown in Figure 5, regional access for the Project is provided by State Route 1 and local access is provided by a network of arterial and collector streets within the City of Morro Bay. The following text provides a brief description of the study-area street network.

State Route 1 (SR 1) is a regional State Highway that extends north through the City of Morro Bay towards the Cambria area and southeast towards San Luis Obispo. SR 1 is a divided four-lane highway within the Morro Bay area. SR 1 would provide regional access to the Project site via the SR 1/Main Street interchange.

Main Street, designated as a Minor Arterial by the City, is a two-lane roadway that extends north and south of SR 1. North of the SR 1/Main Street interchange, Main Street parallels the east side of SR 1 and serves commercial uses and residential neighborhoods. South of the SR 1/Main Street interchange, Main Street extends through the downtown area to the Morro Bay State Park area. Project traffic would use the segment of Main Street south of SR 1, which is a designated truck route.

Quintana Road is a two-lane roadway that extends east and west of Main Street. The segment west of Main Street provides access to the Project site and segment east of Main Street serves commercial uses.

Beach Street is a two-lane roadway that extends east and west of Main Street. The segment between Main Street and Embarcadero, which is designated as a Minor Arterial, serves the adjacent commercial uses. This segment, which would be used by Project traffic, is a designated truck route.

Embarcadero, designated as a Minor Arterial, is a two-lane roadway that extends north and south of Beach Street. Embarcadero provides access to visitor-serving and marine uses along its reach. There is a driveway providing access to the Project site on the Embarcadero, however this driveway would not be used for vehicular access during the Construction and Demolition Phases of the Project due to the staging activities that would occur in this area of the site.

Existing Traffic Operations

Because traffic flow on street networks is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions at key intersections during peak travel periods. Peak travel periods occur most often during the AM peak commuter period (7-9 AM) and PM peak commuter period (4-6 PM).

"Levels of Service" (LOS) A through F are used to rate intersection operations, with LOS A indicating very good operation and LOS F indicating poor operation. Table 1 provides brief definitions for the level of service grading system. The City does not have a formal LOS threshold defining acceptable operations, but historically has applied the Caltrans target of LOS C or better.

Table 1
Level of Service Definitions

LOS	Definition
A	Conditions of free unobstructed flow, no delays, and all signal phases sufficient in duration to clear all approaching vehicles.
B	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
C	Conditions of stable flow, delays are low to moderate, full use of peak direction signal phases is experienced.
D	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal.

Source: Highway Capacity Manual, 2016.

Existing traffic volumes were collected at the key intersections in the study area in September 2019 (count data attached) and from the City's Circulation Element.[1] Figure 6 illustrates the Existing peak hour traffic volumes during the AM peak commuter period (7-9 AM) and PM peak commuter period (4-6 PM). Levels of service were calculated for the study-area intersections using the operations methods outlined in the Highway Capacity Manual (HCM).[2] Table 2 lists the Existing AM and PM peak hour levels of service for the key study-area intersections along the Project's proposed traffic route.

Table 2
Existing Levels of Service

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.4 Sec.	LOS B	10.5 Sec.	LOS B
SR 1 NB Ramps/Main Street	1-Way Stop	12.5 Sec.	LOS B	13.5 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	NA(b)	NA(b)	13.4 Sec.	LOS B

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operation method.
(b) AM peak hour data not available.

The data presented in Table 2 show that the key intersections currently operate at LOS B during the AM and PM peak commuter periods, which indicate good operations.

CONSTRUCTION PHASE ANALYSIS

The following section evaluates the Project's traffic effects during Construction Phase 2, which is forecast to generate the highest levels of traffic (see Table 3). Phases 1 & 3 would generate less traffic, are of shorter duration, and would therefore have a lesser effect on the study-area street network.

Construction Phase Trip Generation

Trip generation estimates were developed for each construction phase based on the anticipated number of construction employees and truck deliveries. The trip generation estimates are based on the number of employees, the proposed work schedule (7:00 AM-7:00 PM), and the number of deliveries per day (up to 60 per day for Phases 1 & 2; and up to 5 per day for Phase 3). The analysis assumes carpooling for employees with an average vehicle occupancy of 2.0 employees per vehicle. Table 3 presents the Project trip generation forecasts for each Construction Phase.

1 Morro Bay Circulation Element Update Draft Technical Report, Central Coast Transportation Consulting, 2018.

2 Highway Capacity Manual, Transportation Research Board, 2016.

As shown in Table 3, Phase 2 would generate the highest volume of traffic during the construction period. Phase 2 is forecast to generate 420 average daily trips (ADT) with 87 trips occurring during the AM peak hour and 12 trips occurring during the PM peak hour. The other construction phases would generate less traffic and are of shorter duration.

Table 3
Project Trip Generation – Construction

Project Phase	Number per Day	Shift Schedule	Trip Generation ADT	AM Peak	PM Peak
Phase 1: Site Preparation (12-18 Months)					
Employees(a)	100	7:00 AM - 7:00 PM	100	25	0
Misc. Deliveries(b)	60	NA	120	12	12
Totals:			320	37	2
Phase 2: Installation (18-36 Months)					
Employees(a)	300	7:00 AM - 7:00 PM	300	75	0
Misc. Deliveries(b)	60	NA	120	12	12
Totals:			420	87	12
Phase 3: Commissioning (12-18 Months)					
Employees(a)	100	7:00 AM - 7:00 PM	100	25	0
Misc. Deliveries(b)	5	NA	10	1	1
Totals:			110	26	1

(a) Maximum number of employees on site. ADT assumes average vehicle occupancy of 2.0 employees per vehicle, 1 inbound + 1 outbound trip per employee. Peak hour trips assume 25% of employees arrive during the AM peak hour and no trips during the PM peak hour.
(b) Maximum number of deliveries per day. ADT assumes 1 inbound + 1 outbound trip per delivery. Peak hour trips assume 10% of trips occur during the AM and PM peak hours.

Construction Phase Access Route

As noted in the Project description, access to the site for employee vehicles and delivery trucks would be provided via the existing driveway that connects to Quintana Road (see Figure 4). The driveway on Embarcadero would not be used for vehicular traffic but would be open for employees walking to local retail/restaurant facilities during the lunch break period. Figure 7 shows the distribution and assignment of construction traffic on the study-area street network.

Existing + Construction Phase Intersection Operations

Levels of service were calculated for the study-area intersections assuming the Existing + Project traffic volumes shown on Figure 8. Tables 4 and 5 compare the Existing and Existing + Project levels of service for the AM and PM peak hour periods for Access Scenario 1.

Table 4
Existing + Construction Phase Levels of Service – AM Peak Hour

Intersection	Control	Existing		Existing + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.4 Sec.	LOS B	10.6 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	12.5 Sec.	LOS B	14.1 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	NA(b)	NA(b)	NA(b)	NA(b)

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operation method.
(b) AM peak hour data not available.

Table 5
Existing + Construction Phase Levels of Service – PM Peak Hour

Intersection	Control	Existing		Existing + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.5 Sec.	LOS B	10.5 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	13.5 Sec.	LOS B	13.5 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	13.4 Sec.	LOS B	13.4 Sec.	LOS B

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operation method.

As shown in Tables 4 and 5, the key intersections along the Project's traffic route are forecast to continue to operate at LOS B during the AM and PM peak hours with Existing + Construction Phase traffic – which indicate relatively good operations. While the City does not have a formal LOS threshold defining acceptable operations, it has historically applied the Caltrans LOS C standard. The Project would increase delays by less than 1 second per vehicle at the study-area intersections – which are considered less than significant impacts since the intersections are forecast to operate at LOS C or better.

Cumulative Analysis

Cumulative Traffic Volumes

Cumulative traffic volumes were forecast for the study-area intersections assuming development of the approved and pending projects located in the City (list of cumulative projects attached). Traffic generated by the cumulative projects was added to the Existing volumes to produce the Cumulative traffic forecasts. Figure 9 shows the Cumulative traffic volumes and Figure 10 shows the Cumulative + Project volumes.

Cumulative + Construction Phase Intersection Operations

Tables 6 and 7 compare the Cumulative and Cumulative + Construction Phase levels of service forecasts for the study-area intersections.

Table 6
Cumulative + Construction Phase Levels of Service – AM Peak Hour

Intersection	Control	Cumulative		Cumulative + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.5 Sec.	LOS B	10.7 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	13.3 Sec.	LOS B	15.2 Sec.	LOS C
Main Street/Beach Street	All-Way Stop	NA(b)	NA(b)	NA(b)	NA(b)

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operations method.
(b) AM peak hour data not available.

Table 7
Cumulative + Construction Phase Levels of Service – PM Peak Hour

Intersection	Control	Cumulative		Cumulative + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.7 Sec.	LOS B	10.7 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	14.2 Sec.	LOS B	14.3 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	15.0 Sec.	LOS B	15.0 Sec.	LOS B

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operation method.

As shown in Tables 6 and 7, the key intersections along the Project's traffic route are forecast to continue to operate in the LOS B – C range during the AM and PM peak hours with Cumulative and Cumulative + Project traffic – which indicate relatively good operations. The Project's traffic contributions are considered less than significant impacts since the intersections are forecast to operate at LOS C or better.

Construction Phase Parking

Figure 11 shows the designated employee parking area on the Project site. The parking area encompasses about 66,500 SF. Parking lots typically require between 300 SF to 350 SF per parking space (which includes the area needed for drive aisles, maneuver areas, etc.). Since this is an irregular shape area, assuming a conservative estimate of 350 SF per parking space yields about 190 parking spaces. During the peak Phase 2 construction period, the Project would generate a parking demand of 150 employee vehicles. Thus, the 190 parking spaces would accommodate the parking demand during the construction phase.

DEMOLITION PHASE ANALYSIS

Demolition activities would occur Monday through Friday (weekend demolition work is not expected, but may occur on occasion, depending on schedule considerations). Demolition would occur between the hours of 7:00 AM and 5:00 PM. During average periods, the Demolition Phase, there would be an average of 100 employees onsite and 5 export trucks per day. During the peak demolition activity periods, there would be a maximum of 107 employees onsite and a maximum of 25 trucks per day. The majority of the labor force is expected to come from the local area within San Luis Obispo County.

Demolition Phase Trip Generation

Trip generation estimates were developed for peak activity period of the demolition phase. As mentioned previously, the demolition phase would consist of an average of 100 workers and 5 trucks per day. As a worst case analysis, the trip generation estimates are based on the peak number of workers (107) and the peak number of export truck trips per day (maximum of 25 per day) with the work schedule of 7:00 AM-5:00 PM. Table 8 presents the trip generation forecasts for the demolition phase.

Table 8
Project Trip Generation – Demolition Phase

Project Phase	Number per Day	Shift Schedule	Trip Generation ADT	AM Peak	PM Peak
Employees(a)	107	7:00 AM – 5:00 PM	107	13	54
Trucks(b)	25	7:00 AM – 5:00 PM	50	5	5
Total			157	18	59

(a) Maximum of 107 employees per day. ADT assumes an average vehicle occupancy of 2.0 employees per vehicle, 1 inbound + 1 outbound trip per employee. Peak hour trips assume 25% of employees arrive during the AM peak hour and 100% of employees depart during the PM peak hour.
(b) Maximum of 25 trucks per day. ADT assuming 1 inbound + 1 outbound trip per truck. Peak hour trips assume 10% of trips occur during the AM, Mid-day, and PM peak hours.

As shown in Table 8, the demolition phase of the Project would generate 157 ADT, 18 AM peak hour trips, and 59 PM peak hour trips.

Demolition Phase Access Route

The traffic route for traffic generated during the demolition phase is shown previously on Figure 4. Demolition employees and truck traffic would use SR 1 and the Main Street interchange and then then use the Quintana Road access driveway. Figure 12 shows the distribution and assignment of demolition traffic on the study-area street network.

Existing + Demolition Phase Intersection Operations

Levels of service were calculated for the study-area intersections assuming the Existing + Project traffic volumes shown on Figure 13. Tables 9 and 10 compare the Existing and Existing + Project levels of service for the AM and PM peak hour periods for the demolition phase of the Project.

Table 9
Existing + Demolition Phase Levels of Service – AM Peak Hour

Intersection	Control	Existing		Existing + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.4 Sec.	LOS B	10.4 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	12.5 Sec.	LOS B	12.7 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	NA(b)	NA(b)	NA(b)	NA(b)

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operations method.
(b) AM peak hour data not available.

Table 10
Existing + Demolition Phase Levels of Service – PM Peak Hour

Intersection	Control	Existing		Existing + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.5 Sec.	LOS B	10.6 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	13.5 Sec.	LOS B	13.5 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	13.4 Sec.	LOS B	13.4 Sec.	LOS B

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operation method.

As shown in Tables 9 and 10, the key intersections along the Project's traffic route are forecast to continue to operate at LOS B during the AM and PM peak hours with Existing + Project traffic – which indicate relatively good operations. The Project's traffic contributions are considered less than significant impacts since the intersections are forecast to operate at LOS C or better.

Cumulative Analysis

Cumulative Traffic Volumes

Cumulative traffic volumes were forecast for the study-area intersections assuming development of the approved and pending projects located in the City (list of cumulative projects attached). Traffic generated by the cumulative projects was added to the Existing volumes to produce the Cumulative traffic forecasts. Figure 14 shows the Cumulative traffic volumes and Figure 15 shows the Cumulative + Project volumes.

Cumulative + Demolition Phase Intersection Operations

Tables 11 and 12 compare the Cumulative and Cumulative + Project levels of service forecasts for the study-area intersections.

Table 11
Cumulative + Demolition Phase Levels of Service – AM Peak Hour

Intersection	Control	Cumulative		Cumulative + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.5 Sec.	LOS B	10.5 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	13.3 Sec.	LOS B	13.6 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	NA(b)	NA(b)	NA(b)	NA(b)

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operations method.
(b) AM peak hour data not available.

Table 12
Cumulative + Demolition Phase Levels of Service – PM Peak Hour

Intersection	Control	Cumulative		Cumulative + Project	
		Delay	LOS(a)	Delay	LOS(a)
SR 1 NB Ramps/Main Street	1-Way Stop	10.7 Sec.	LOS B	10.7 Sec.	LOS B
SR 1 SB Ramps/Main Street	1-Way Stop	14.2 Sec.	LOS B	14.3 Sec.	LOS B
Main Street/Beach Street	All-Way Stop	15.0 Sec.	LOS B	15.0 Sec.	LOS B

(a) LOS based on average delay per vehicle in seconds pursuant to HCM operation method.

As shown in Tables 11 and 12, the key intersections along the Project's traffic route are forecast to continue to operate in the LOS B range during the AM and PM peak hours with Cumulative and Cumulative + Project traffic – which indicate relatively good operations. The Project's traffic contributions are considered less than significant impacts since the intersections are forecast to operate at LOS C or better.

Demolition Phase Parking

Parking for the employee vehicles would be provided within the demolition site. During the peak demolition periods, the Project would generate a parking demand of 54 employee vehicles. These vehicles would be accommodated on the demolition site.

OPERATIONAL PHASE ANALYSIS

The BESS site would be operated and maintained by 15 new employees for on-going operations working three shifts (8:00 AM-4:00 PM, 4:00 PM-12:00 AM, and 12:00 AM-8:00 AM). The Project would require only nominal long-term maintenance. Periodically, it may be necessary to test and/or replace individual battery modules. The BESS would be continuously monitored to determine if and when testing and possible replacement of individual battery modules is necessary. Table 13 shows the trip generation forecasts for on-going operations.

Table 13
Project Trip Generation – On-Going Operations

On-Going Operations	Number per Day	Shift Schedule	Trip Generation ADT	AM Peak	PM Peak
Employees(a)					
1st Shift	5	8:00 AM – 4:00 PM	15	5	5
2nd Shift	5	4:00 PM – 12:00 AM	15	0	5
3rd Shift	5	12:00 AM – 8:00 AM	15	5	0
Subtotals:			45	10	10
Deliveries	1	NA	2	0	0
Totals:			**47**	**10**	**10**

(a) ADT assumes 1 inbound + 1 outbound trip per employee and 50% of employees leave for lunch break. Peak hour trips assume employee arrived during the AM peak hour and depart during the PM peak hour.

As shown in Table 13, the on-going operations of the Project would generate 47 ADT, 10 AM peak hour trips, and 10 PM peak hour trips. This relatively minor amount of daily and peak hour traffic would not affect the operation of the study-area roadways and intersections.

EMBARCADERO SAFETY ASSESSMENT

The following section reviews the Project's effects on the operation of the segment of the Embarcadero adjacent to the Project site.

Non-Tourist Season Operations

The Embarcadero is a two-lane arterial roadway that extends north and south of Beach Street. As outlined in the Morro Bay Circulation Element Draft Technical Report, the segment of the Embarcadero between Beach Street and the Project's access driveway currently operates at LOS C and is forecast to operate at LOS C under General Plan Buildout conditions. It is noted that these existing levels of service are for typical weekdays and Saturdays based on traffic volumes collected in 2016 for the Circulation Element.

Peak Spring-Summer Operations

Traffic volumes are higher on the Embarcadero during the Spring-Summer tourist season. In addition, pedestrian and bicycle activity is higher during peak tourist seasons. Table 14 shows the hourly traffic volumes on the Embarcadero on weekdays and Saturdays during the peak Spring-Summer tourist season (see attached count data).

Table 14
Spring-Summer Hourly Traffic Volumes
Embarcadero north of Beach Street

Time Period	Spring-Summer Hourly Volumes	
	Weekdays	Saturdays
8:00-9:00 AM	255	352
9:00-10:00 AM	302	481
10:00-11:00 AM	390	626
11:00 AM-12:00 PM	420	658
12:00-1:00 PM	531	731
1:00-2:00 PM	511	806
2:00-3:00 PM	499	711
3:00-4:00 PM	474	679
4:00-5:00 PM	448	674
5:00-6:00 PM	402	666
6:00-7:00 PM	384	623
7:00-8:00 PM	274	353
8:00-9:00 PM	94	126

Safety Analysis

Pedestrians

As shown in Table 14, the hourly traffic volumes on the Embarcadero are highest during the afternoon period between 12:00 PM and 5:00 PM during the peak Spring-Summer period. The roadway carries about 500 vehicles per hour during the weekday afternoon period. The by the Construction and Demolition phases of the Project would not generate any new vehicular traffic on the Embarcadero. The Project could , however, result in some employees walking out of the main gate along Embarcadero during the mid-day period to access local restaurant/retail facilities on the south side of the Embarcadero. As shown on Figure 16, there is an existing crosswalk for employees to cross the Embarcadero to access the local facilities for lunch. Sidewalks are provided on the east side of the Project site driveway and on the south of the Embarcadero to accommodate pedestrians. There is 40 feet of red curb along the north side of Embarcadero adjacent to the Project driveway, providing visibility to the east. It is recommended that landscaping vegetation at the northeast corner of the intersection be kept at a height of 3.5 feet or less to maintain visibility between vehicles and pedestrians crossing the street. Given the existing pedestrian facilities provided, no significant safety issues are anticipated. It is also noted that the Project will include frontage improvements along the Embarcadero that will enhance the pedestrian facilities in this area.

Bicycles

The City of Morro Bay Bike Map (attached for reference) shows that there are Class II bike lanes on Embarcadero adjacent to the Project site; and Class I bike paths extending north of the site to the Morro Bay High School and west of the site to the Morro Rock. As noted above, the Construction and Demolition phases of the Project would not generate any new vehicular traffic on the Embarcadero. It is not anticipated that there would be any new bicycle traffic generated by the Construction and Demolition phases as the majority of workers would drive to the site. There will be some additional mid-day pedestrian activity generated by the Project at the Embarcadero entrance, however it is not anticipated that this additional pedestrian activity would impact the existing bike facilities in the study area. It is also noted that the Project will include frontage improvements along the Embarcadero that will enhance the pedestrian facilities in this area.

VEHICLE MILES TRAVELED

The following section evaluates the potential VMT impacts of the Construction, Demolition, and Operational Phases of the Project. Per the State's Natural Resource Agency Updated Guidelines for the Implementation of the CEQA adopted in 2018, VMT has been designated as the most appropriate measure of transportation impacts. "Vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. For land use projects, vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.

VMT CEQA Thresholds

The City of Morro Bay has not yet developed VMT criteria and thresholds for evaluating potential VMT impacts. The VMT thresholds and calculation methodologies presented in the San Luis Obispo County Transportation Impact Analysis Guidelines[3] were therefore used for this evaluation. The County's VMT thresholds for employment-based projects are reviewed below.

> Employment VMT Threshold
> Project VMT exceeds a level of 15 percent below existing county VMT for home-based work VMT per employee.

The County's guidelines indicate that the Countywide Home-Based Work VMT per employee is 30.2, and the significance threshold is 25.7 Home-Based Work VMT per employee (15 percent less than 30.2).

3 Transportation Impact Analysis Guidelines, Department of Public Works, 2021.

VMT Analysis – Construction and Demolition Phases

The potential VMT impacts associated with the Construction and Demolition Phases of the Project are reviewed below.

It is anticipated that the majority of the employees utilized during the construction and demolition phases would reside in San Luis Obispo County. There would also be some employees that travel from outside the County to work at the site for certain portions of the Construction Phase who would stay at local lodging facilities for extended periods of time.

As part of the County's transportation impact analysis guidelines, a sketch planning tool was developed to estimate project level VMT. The sketch planning tool was developed based on the SLOCOG Regional Transportation Demand Model and is the approved tool for evaluation of VMT within the County. The VMT Sketch-Planning Tool is an excel-based tool that has user inputs for project type, location, and number of units or employees; and produces VMT results based on the SLOCOG model that was used to establish baseline VMT.

The San Luis Obispo County VMT Sketch Planning Tool was used to develop VMT estimates for the Project. The Project is located within the City limits, therefore a neighboring parcel located outside the City in proximity to the Project site was analyzed with this tool (parcel number 073-051-059, see attached map). The neighboring parcel located outside of the City is estimated at 22.0 VMT per home-based employee, which is less than the County's threshold of 25.7 VMT (VMT Sketch Planning Tool worksheet attached). The calculations show that work-based Projects in the Morro Bay area generate home-base-employee VMT that are less than the County threshold level.

It is also noted that the Project proposes to implement an employee carpool program for both the Construction and Demolition Phases of the Project, with anticipated average vehicle occupancy of 2 employees per vehicle. In comparison, travel mode survey data published as part of the American Community Survey indicate that 11.2 percent of the workers in San Luis Obispo County participate in carpooling. The Project would therefore generate approximately 44% less VMT per worker when compared to the County average with the implementation of the carpool program. Based on these considerations, the Construction and Demolition Phases of the Project would have a less than significant VMT impact.

VMT Analysis – Operational Phase

The potential VMT impacts associated with the Operational Phase of the Project are reviewed below.

Screening Criteria

Section 3.2 of the San Luis Obispo County Transportation Impact Analysis Guidelines establishes screening criteria for certain projects that would not be required to determine or evaluate the Project VMT. If any of the screening criteria are met, a project's level of impact related to VMT would be considered less than significant. Section 3.2 states that:

> "Small projects that are consistent with the SLOCOG SCS or San Luis Obispo County General Plan and generate fewer than 110 daily trips, consistent with trip generation associated with projects eligible for a Categorical Exemption under CEQA, are considered to have a less than significant VMT impact."

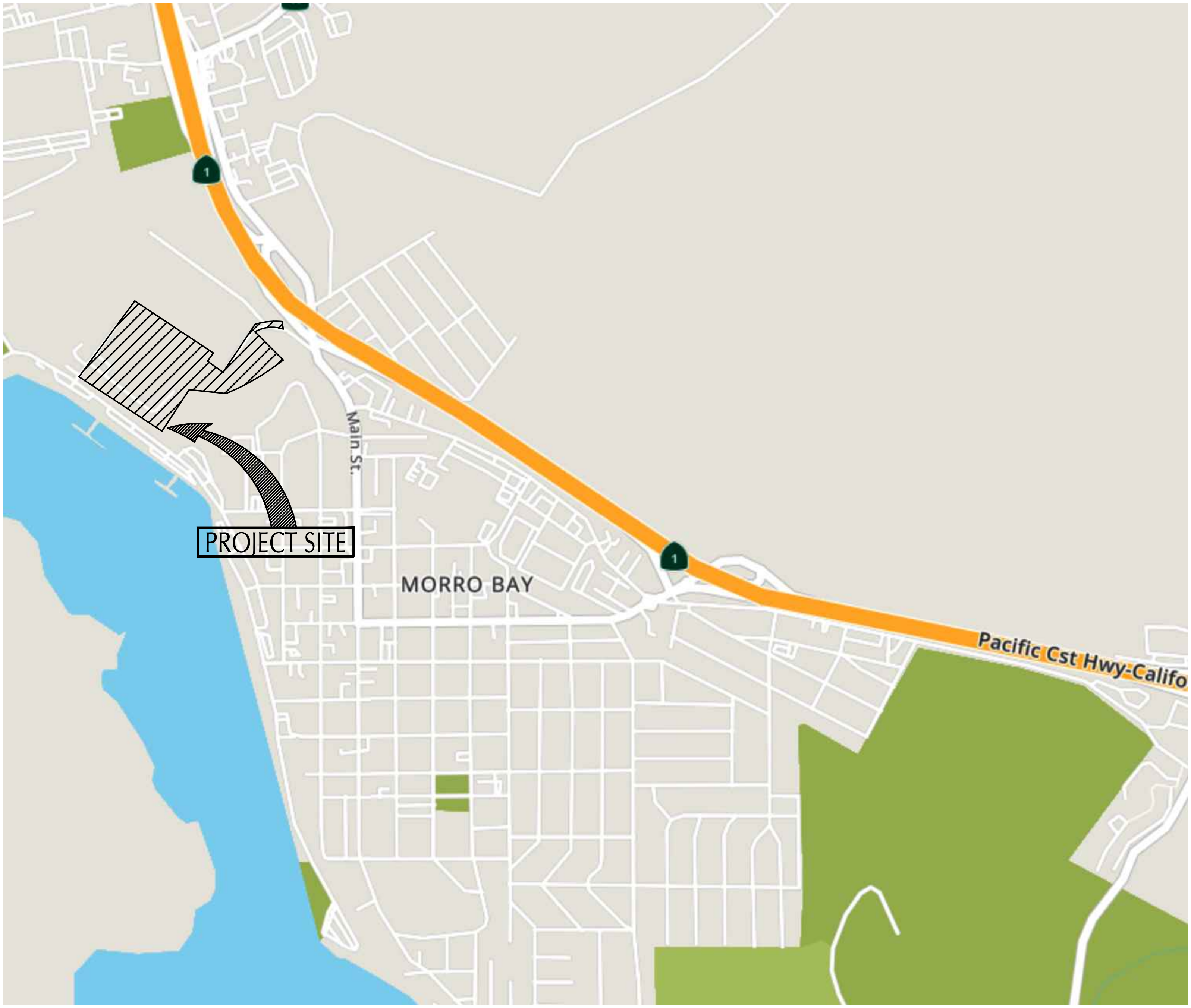
The Vistra Energy BESS Project would be operated and maintained by 15 new employees after the Project is constructed. As shown in Table 13, the Operational Phase of the Project is forecast to generate 47 ADT, well below the screening criteria – indicating that the Project's VMT impacts for this phase would be "less than significant".

This concludes ATE's traffic and parking study for the Construction, Demolition and Operational Phases of the Vistra Energy 600 MW Battery Energy Storage System Project.

Associated Transportation Engineers

Scott A. Schell,
Principal Transportation Planner

Attachments

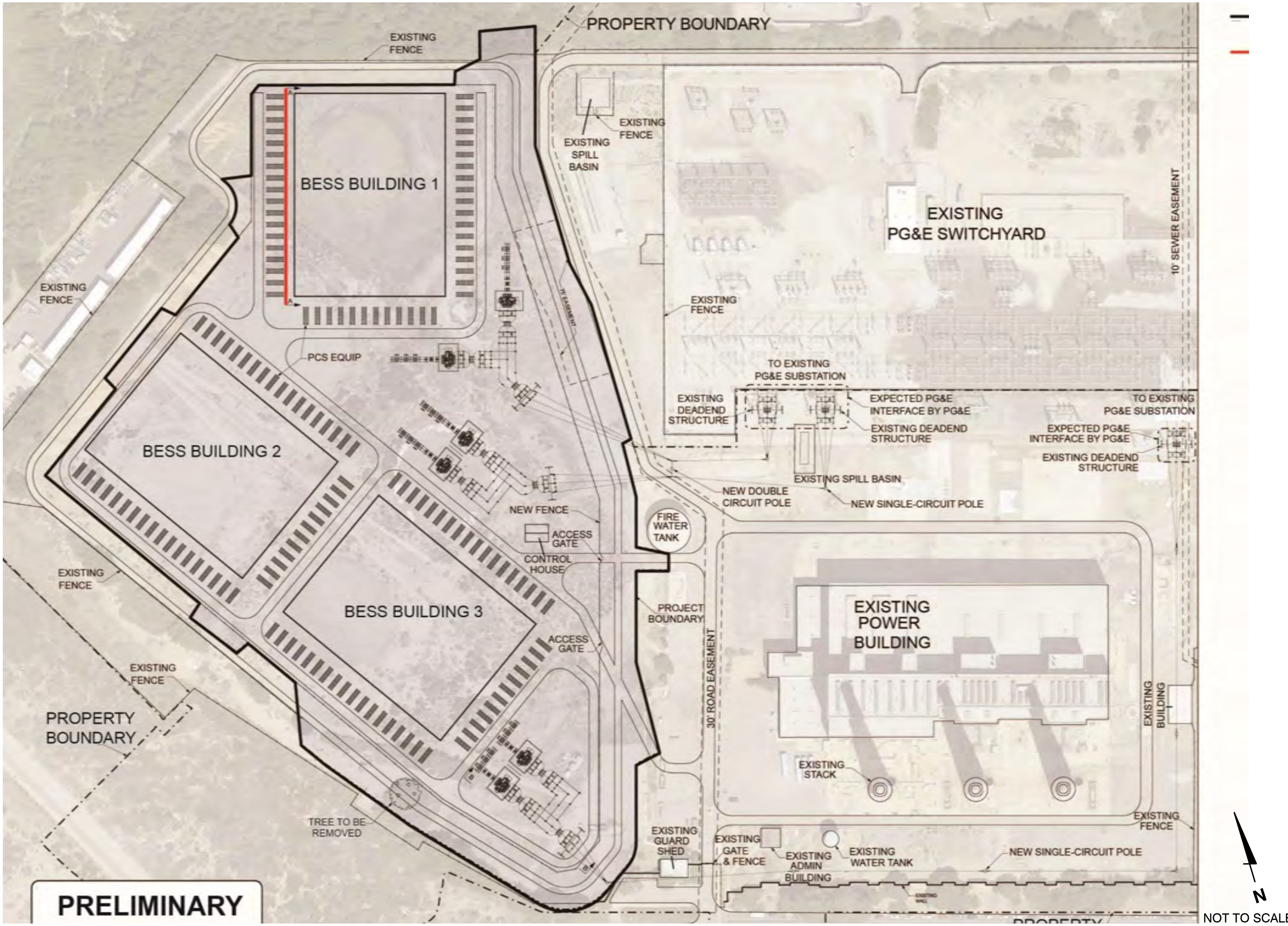


ASSOCIATED
TRANSPORTATION
ENGINEERS

PROJECT SITE LOCATION

FIGURE 1

JH - ATE#19057.02



Associated Transportation Engineers

PROJECT SITE PLAN - CONSTRUCTION

FIGURE 2

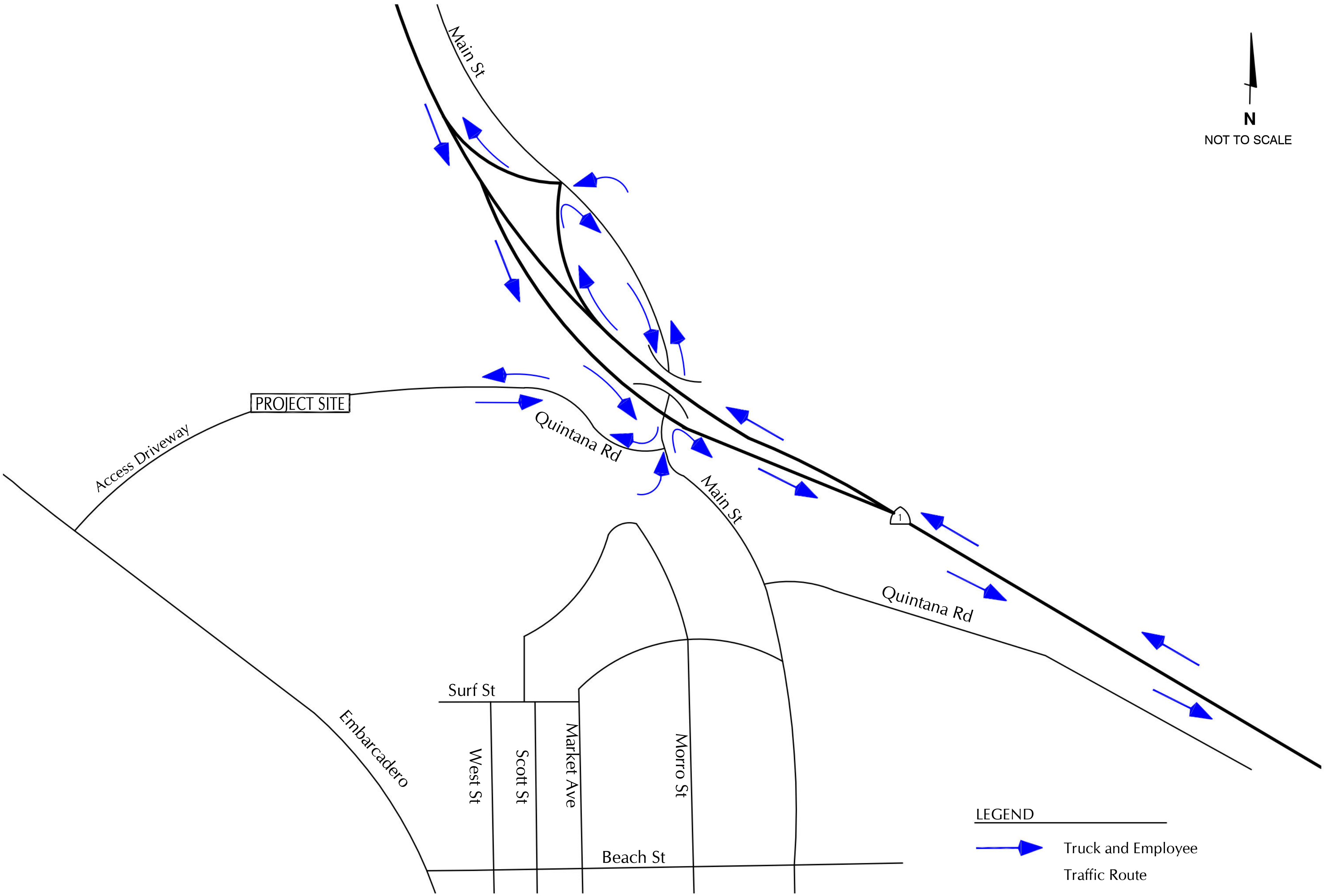
JH - ATE#19057.02

ASSOCIATED TRANSPORTATION ENGINEERS

PROJECT SITE PLAN - DEMOLITION

FIGURE 3

JH - ATE#19057.02

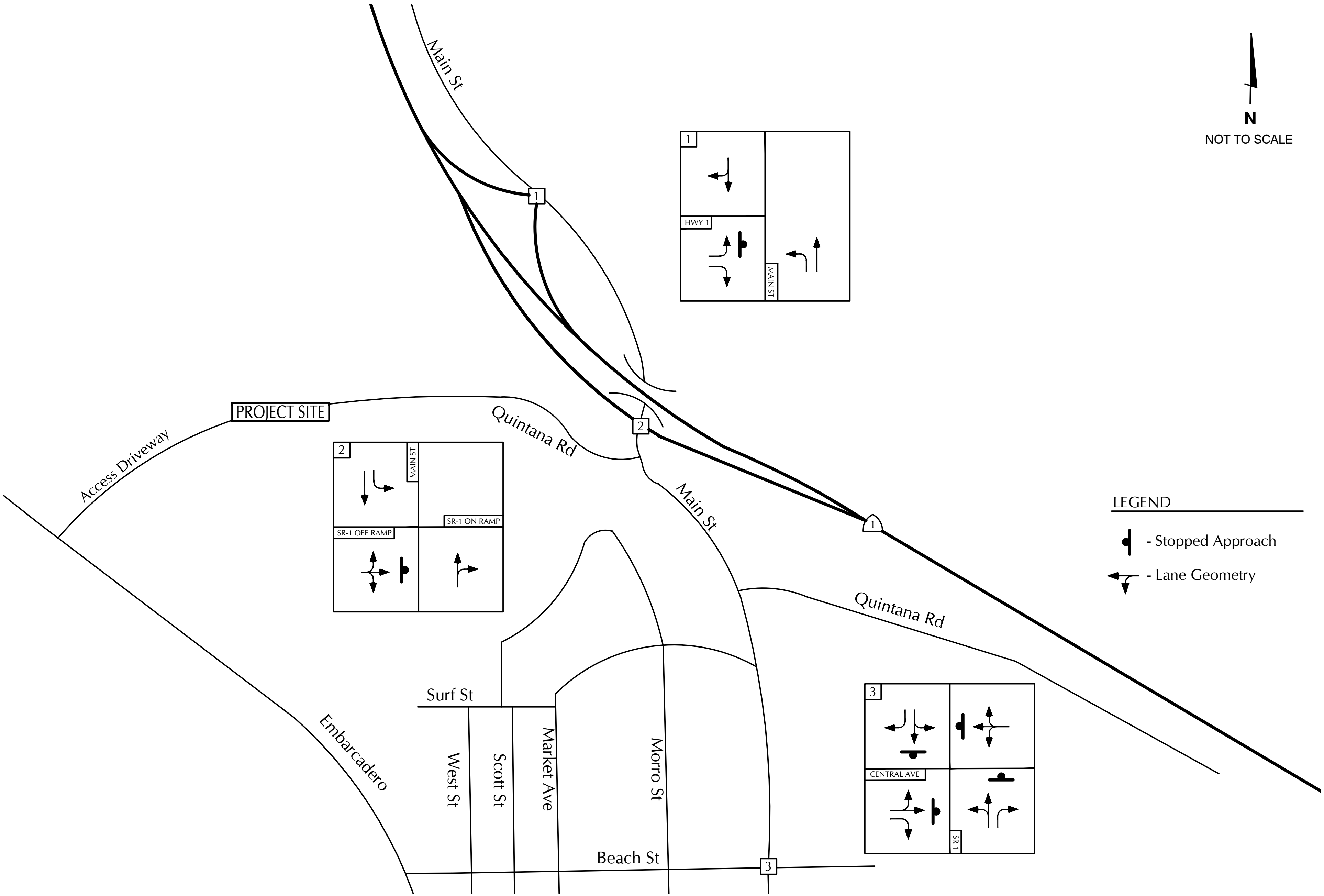


ASSOCIATED
TRANSPORTATION
ENGINEERS

TRAFFIC ROUTES - CONSTRUCTION AND DEMOLITION PHASES

FIGURE 4

JH - ATE#19057.02

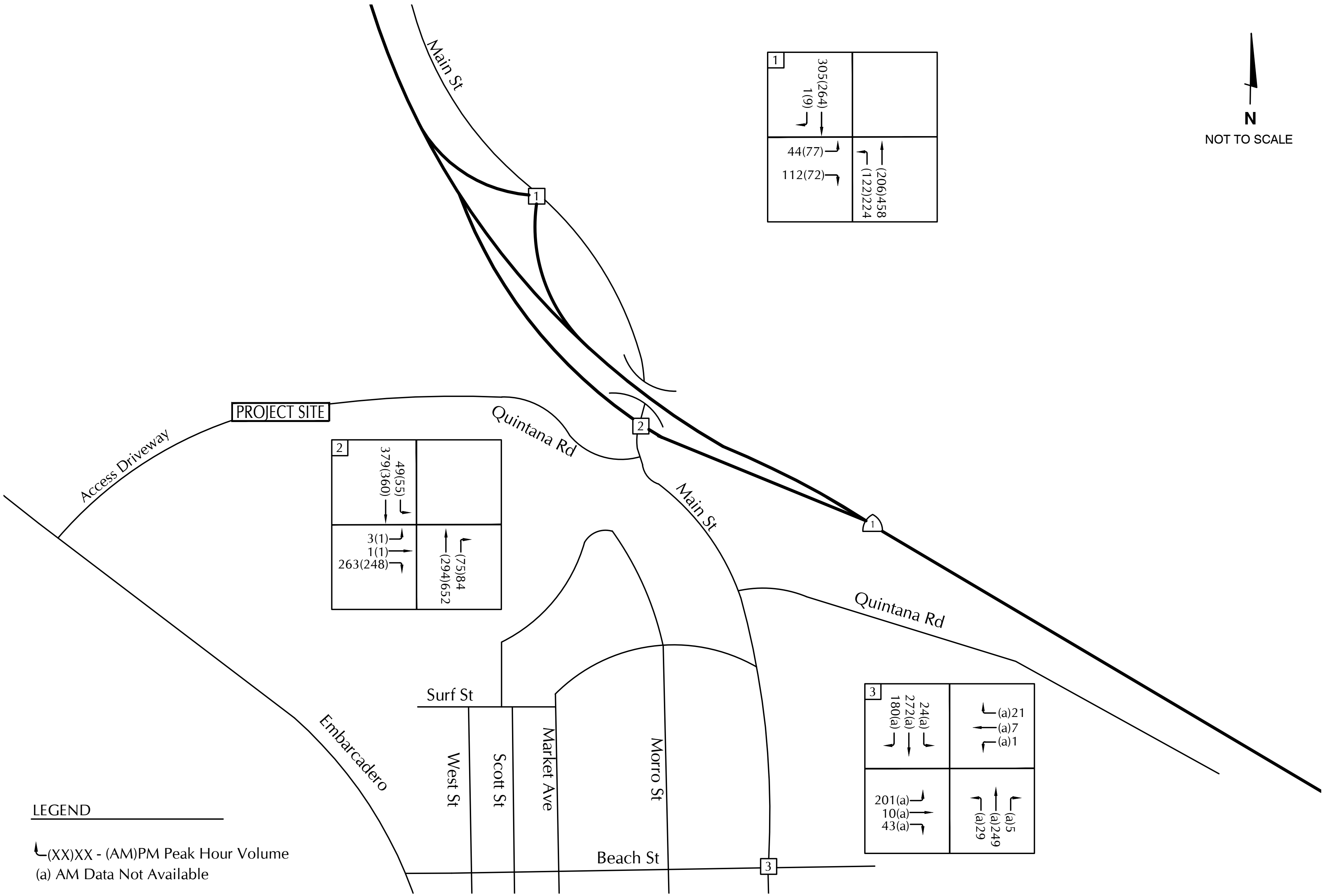


ASSOCIATED
TRANSPORTATION
ENGINEERS

EXISTING STREET NETWORK

FIGURE 5

JH - ATE#19057.02

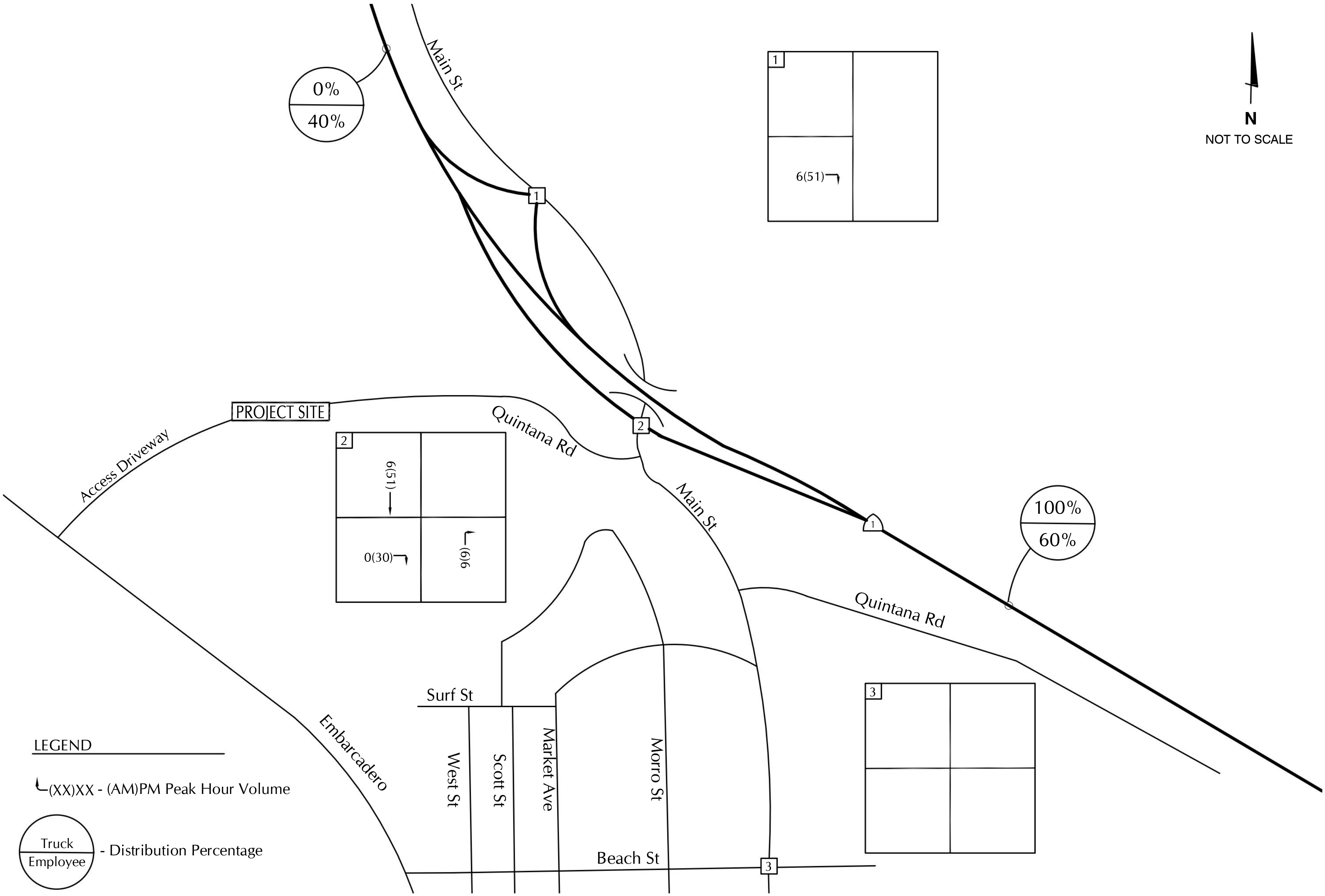


ASSOCIATED
TRANSPORTATION
ENGINEERS

FIGURE 6

EXISTING TRAFFIC VOLUMES

JH - ATE#19057.02

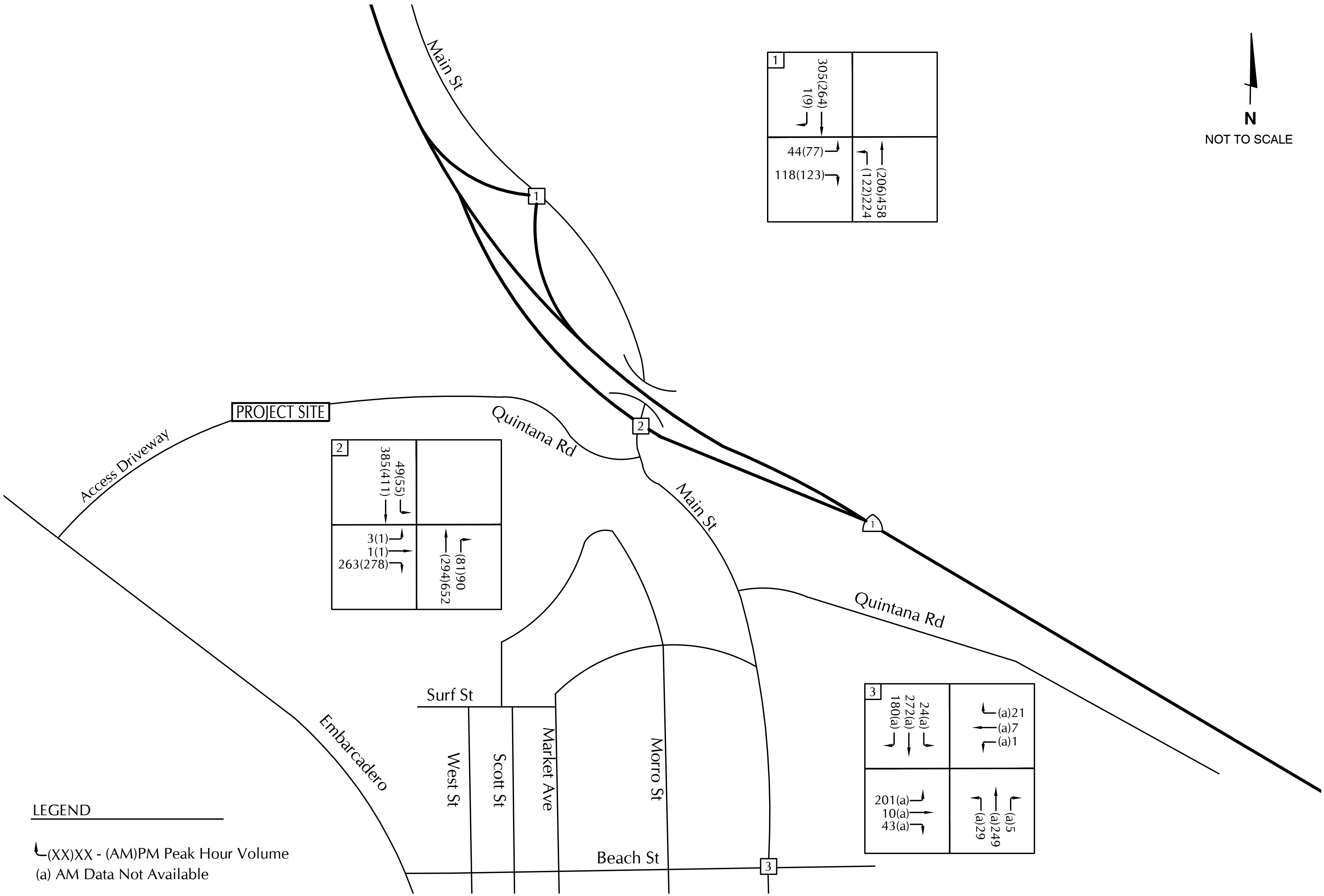


ASSOCIATED
TRANSPORTATION
ENGINEERS

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT - CONSTRUCTION PHASE

FIGURE 7

JH - ATE#19057.02

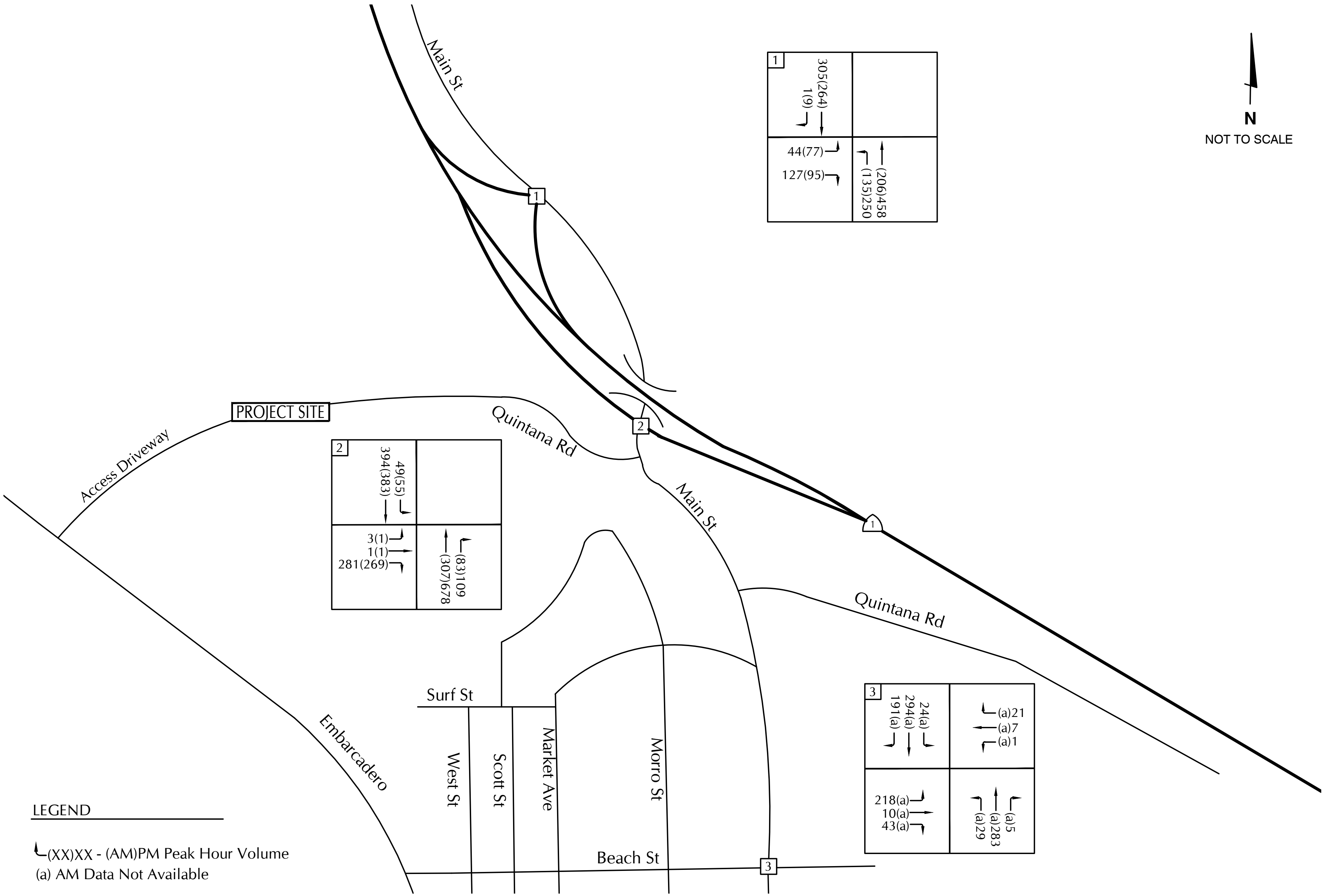


ASSOCIATED TRANSPORTATION ENGINEERS

EXISTING + PROJECT TRAFFIC VOLUMES - CONSTRUCTION PHASE

FIGURE 8

JH - ATE#19057.02

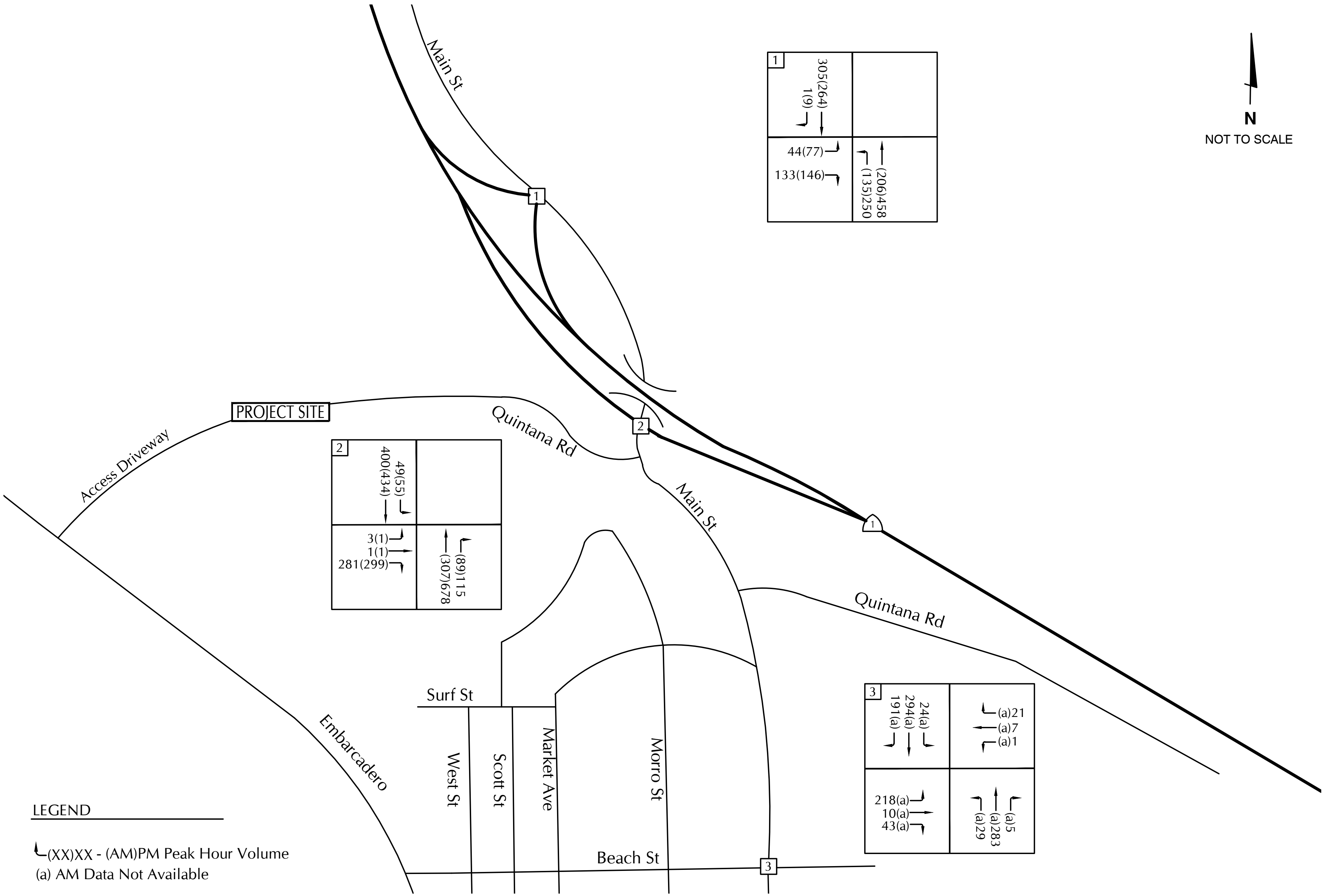


ASSOCIATED
TRANSPORTATION
ENGINEERS

CUMULATIVE TRAFFIC VOLUMES

FIGURE 9

JH - ATE#19057.02



ASSOCIATED
TRANSPORTATION
ENGINEERS

CUMULATIVE + PROJECT TRAFFIC VOLUMES - CONSTRUCTION PHASE

FIGURE 10

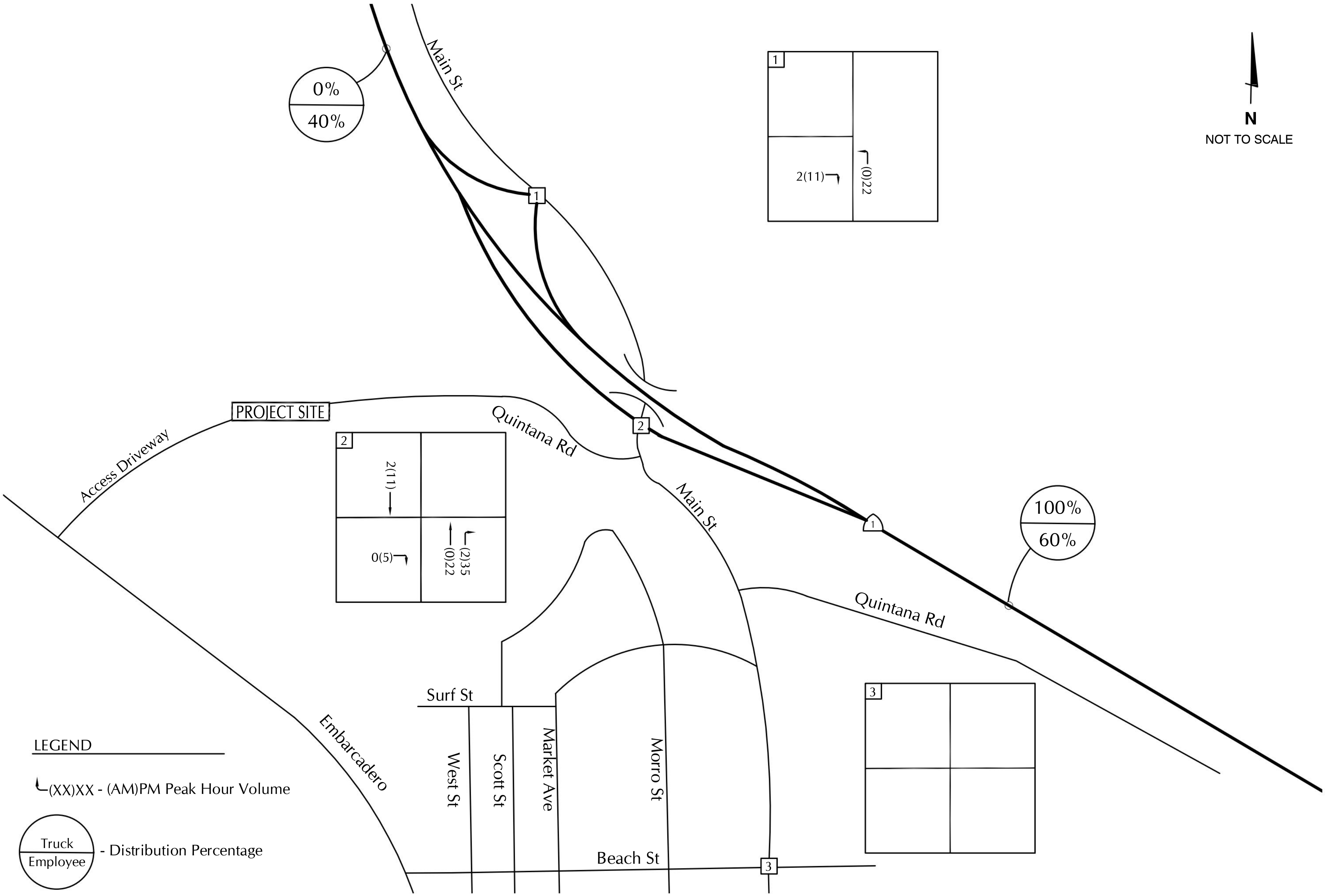
JH - ATE#19057.02

Associated Transportation Engineers

EMPLOYEE PARKING AREA - CONSTRUCTION PHASE

FIGURE 11

JH - ATE#19057.02

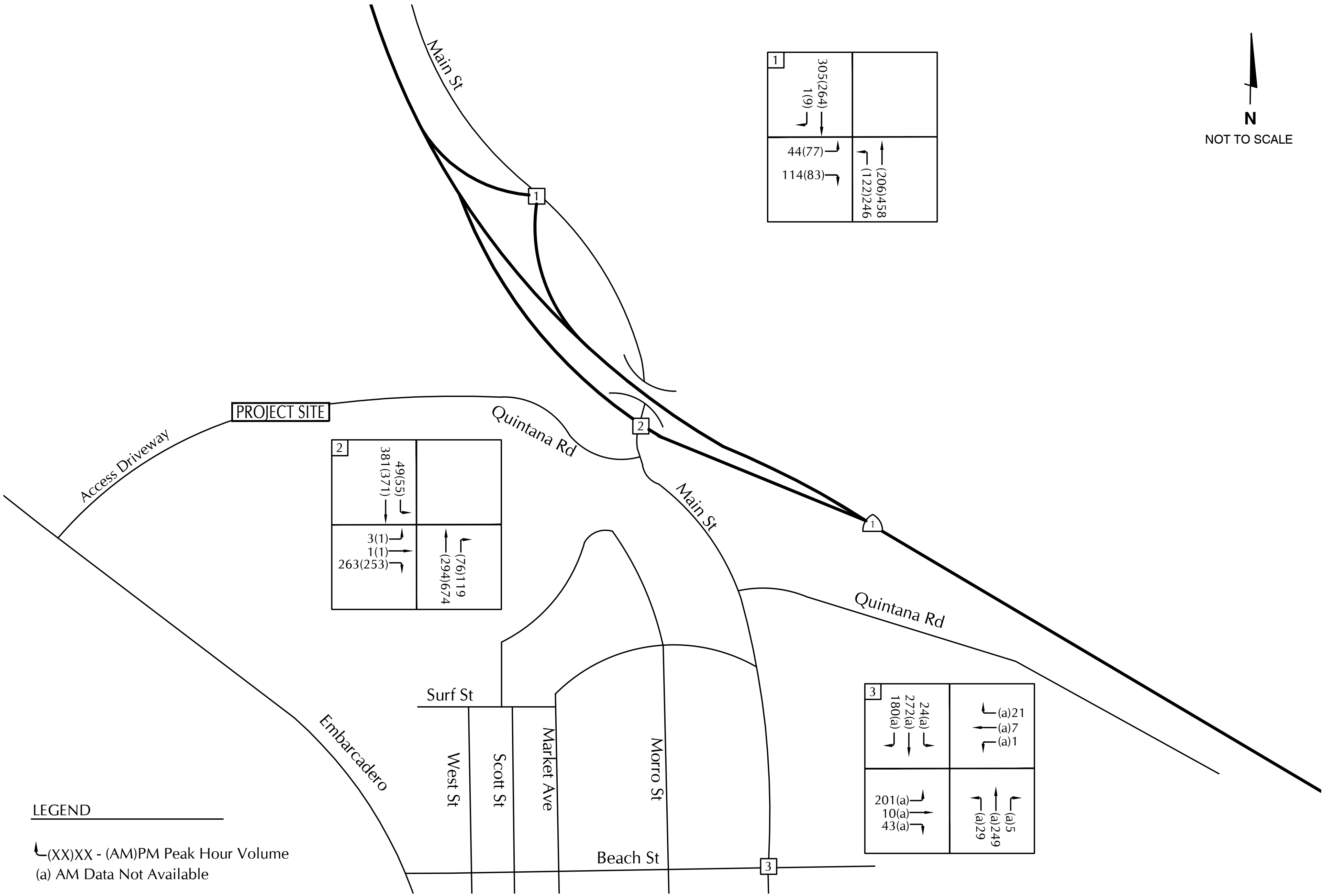


ASSOCIATED TRANSPORTATION ENGINEERS

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT - DEMOLITION PHASE

FIGURE 12

JH - ATE#19057.02

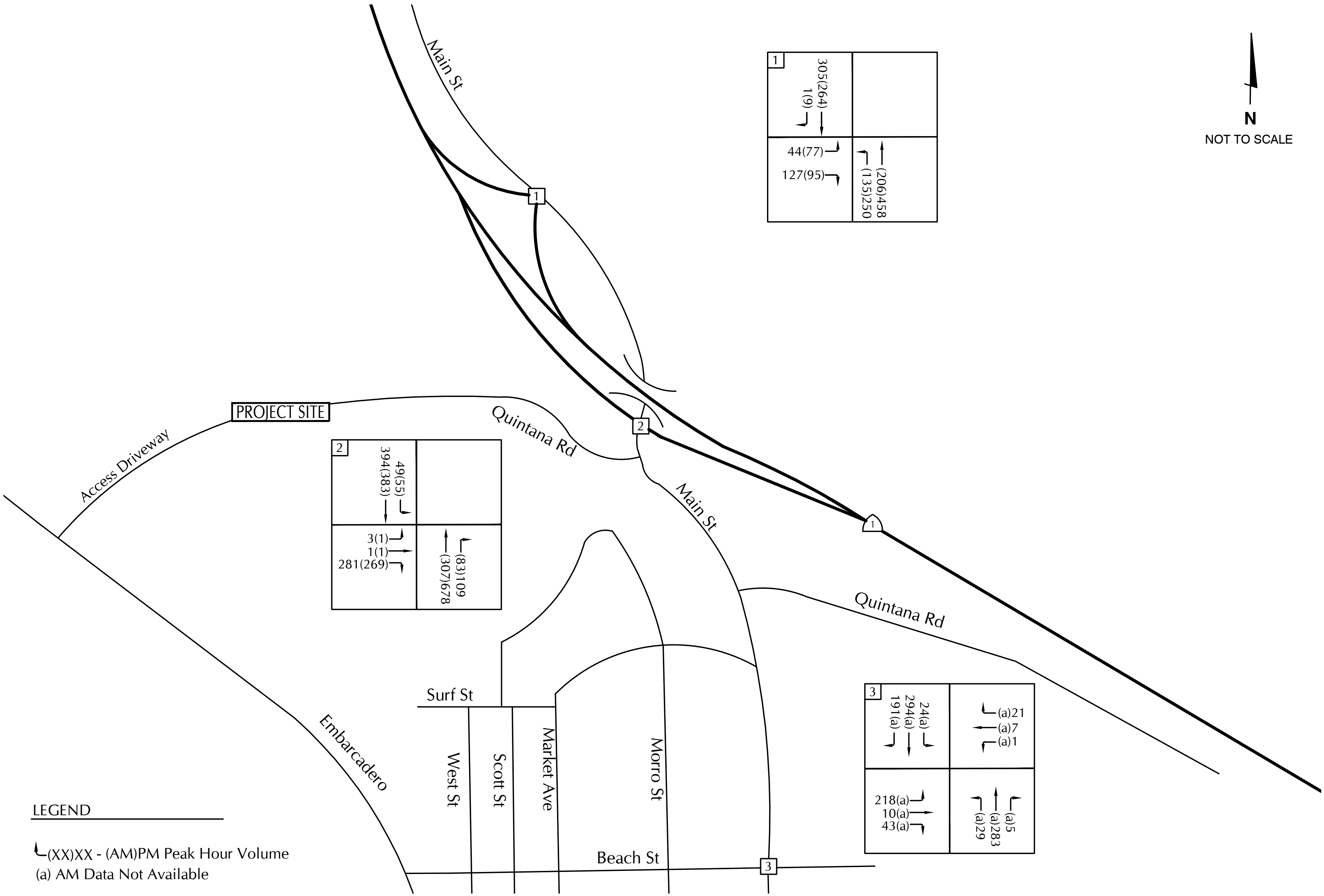


ASSOCIATED
TRANSPORTATION
ENGINEERS

EXISTING + PROJECT TRAFFIC VOLUMES - DEMOLITION PHASE

FIGURE 13

JH - ATE#19057.02

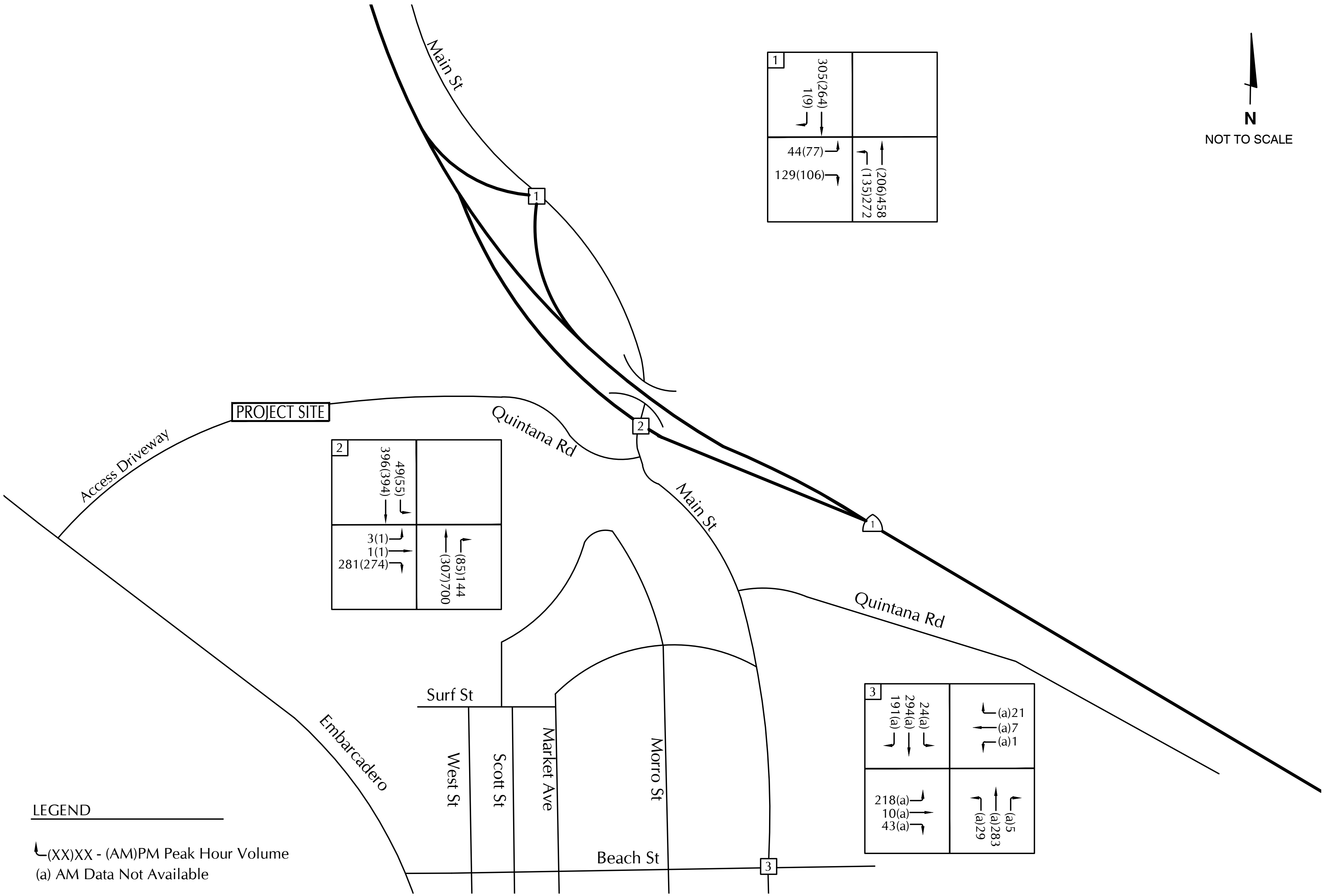


ASSOCIATED TRANSPORTATION ENGINEERS

CUMULATIVE TRAFFIC VOLUMES

FIGURE 14

JH - ATE#19057.02

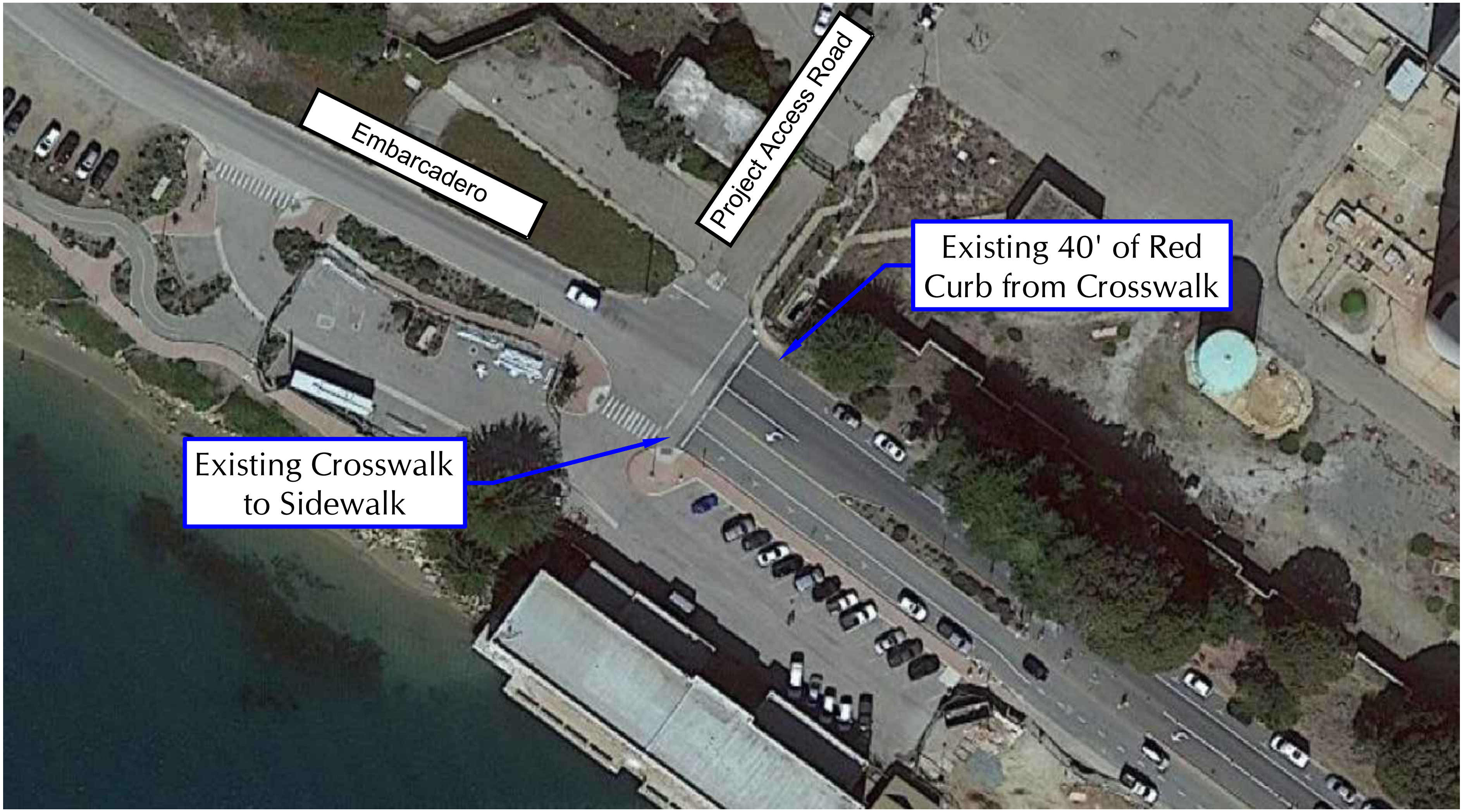


ASSOCIATED
TRANSPORTATION
ENGINEERS

CUMULATIVE + PROJECT TRAFFIC VOLUMES - DEMOLITION PHASE

FIGURE 15

JH - ATE#19057.02



N
NOT TO SCALE

ASSOCIATED TRANSPORTATION ENGINEERS

EMBARCADERO / PROJECT ACCESS ROAD INTERSECTION

FIGURE 16

JH - ATE#19057.02

Turning Movement Report

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Prepared For:
Associated Transportation Engineers
100 N. Hope Avenue, Suite 4
Santa Barbara, CA 93110

LOCATION SR1 NB Ramps @ Main St | **LATITUDE** 35.3756

COUNTY San Luis Obispo | **LONGITUDE** -120.8527

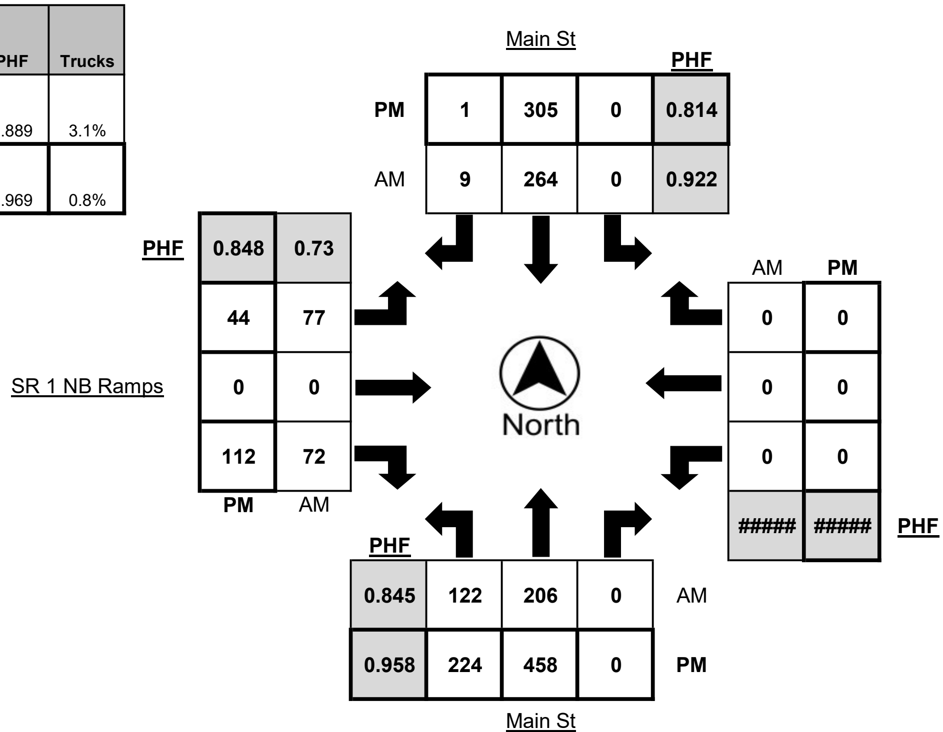
COLLECTION DATE Wednesday, September 25, 2019 | **WEATHER** Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	12	30	0	2	0	36	0	1	3	0	9	2	0	0	0	0
7:15 AM - 7:30 AM	18	27	0	2	0	47	0	4	7	0	11	1	0	0	0	0
7:30 AM - 7:45 AM	20	35	0	1	0	50	1	1	10	0	10	1	0	0	0	0
7:45 AM - 8:00 AM	29	68	0	3	0	64	0	3	39	0	11	1	0	0	0	0
8:00 AM - 8:15 AM	35	41	0	1	0	73	1	2	29	0	22	1	0	0	0	0
8:15 AM - 8:30 AM	30	58	0	3	0	62	8	1	7	0	23	0	0	0	0	0
8:30 AM - 8:45 AM	28	39	0	5	0	65	0	3	2	0	16	0	0	0	0	0
8:45 AM - 9:00 AM	30	51	0	4	0	64	1	1	3	0	11	0	0	0	0	0
TOTAL	**202**	**349**	**0**	**21**	**0**	**461**	**11**	**16**	**100**	**0**	**113**	**6**	**0**	**0**	**0**	**0**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	36	109	0	3	0	90	0	1	13	0	27	1	0	0	0	0
4:15 PM - 4:30 PM	53	95	0	1	0	80	0	0	14	0	25	0	0	0	0	0
4:30 PM - 4:45 PM	60	95	0	3	0	93	1	2	16	0	30	0	0	0	0	0
4:45 PM - 5:00 PM	51	122	0	1	0	71	0	0	13	0	30	1	0	0	0	0
5:00 PM - 5:15 PM	55	123	0	0	0	75	0	0	5	0	28	0	0	0	0	0
5:15 PM - 5:30 PM	58	118	0	2	0	66	0	0	10	0	24	0	0	0	0	0
5:30 PM - 5:45 PM	40	107	0	0	0	67	0	1	11	0	23	0	0	0	0	0
5:45 PM - 6:00 PM	44	85	0	2	0	53	0	0	8	0	19	0	0	0	0	0
TOTAL	**397**	**854**	**0**	**12**	**0**	**595**	**1**	**4**	**90**	**0**	**206**	**2**	**0**	**0**	**0**	**0**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:45 AM - 8:45 AM	122	206	0	12	0	264	9	9	77	0	72	2	0	0	0	0
4:30 PM - 5:30 PM	224	458	0	6	0	305	1	2	44	0	112	1	0	0	0	0

	PHF	**Trucks**
AM	0.889	3.1%
PM	0.969	0.8%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Associated Transportation Engineers
100 N. Hope Avenue, Suite 4
Santa Barbara, CA 93110

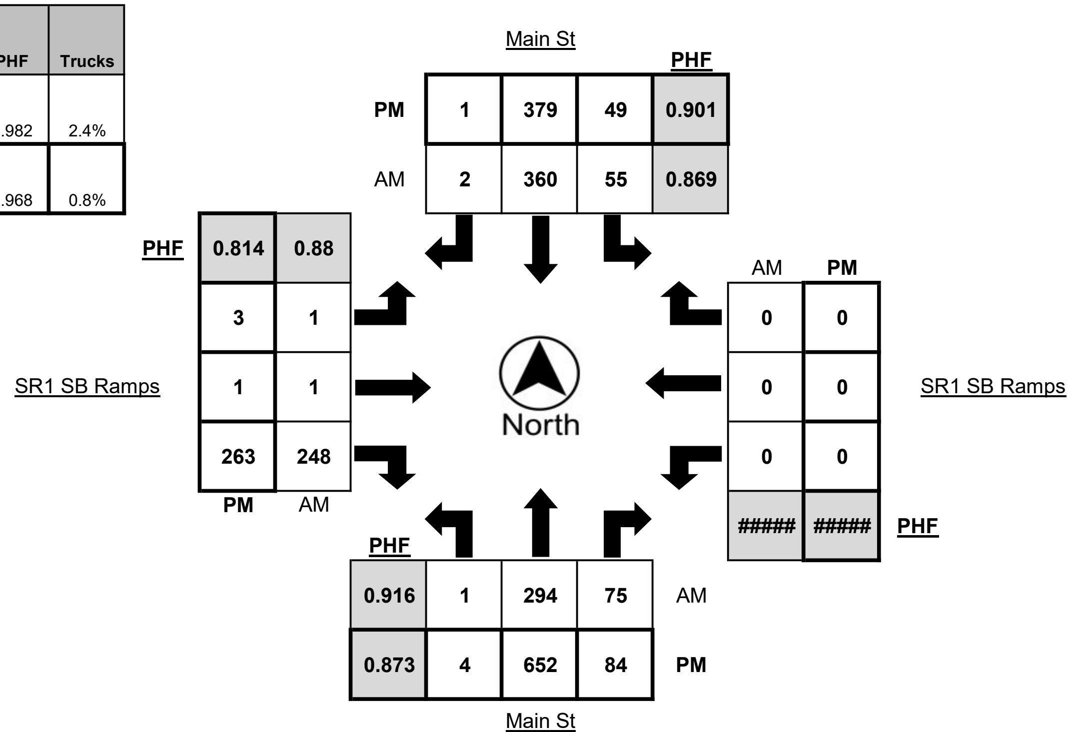
LOCATION SR1 SB Ramps @ Main St
LATITUDE 35.3731
COUNTY San Luis Obispo
LONGITUDE -120.8514
COLLECTION DATE Wednesday, September 25, 2019
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	40	14	0	10	44	2	5	1	0	25	1	0	0	0	0
7:15 AM - 7:30 AM	0	42	10	2	16	53	0	3	1	0	34	3	0	0	0	0
7:30 AM - 7:45 AM	0	52	14	1	23	59	1	1	0	0	26	0	0	0	0	0
7:45 AM - 8:00 AM	0	84	14	1	21	62	1	3	1	0	61	0	0	0	0	0
8:00 AM - 8:15 AM	0	67	14	0	22	79	1	3	1	0	66	0	0	0	0	0
8:15 AM - 8:30 AM	1	79	21	6	7	84	1	0	0	0	71	1	0	0	0	0
8:30 AM - 8:45 AM	0	64	27	7	18	102	0	2	0	0	51	0	0	0	0	0
8:45 AM - 9:00 AM	0	84	13	4	8	95	0	0	0	1	60	2	0	0	0	0
TOTAL	**1**	**512**	**127**	**21**	**125**	**578**	**6**	**17**	**4**	**1**	**394**	**7**	**0**	**0**	**0**	**0**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	148	22	0	8	96	2	1	2	0	60	1	0	0	0	0
4:15 PM - 4:30 PM	1	142	20	2	13	99	0	0	0	0	82	1	0	0	0	0
4:30 PM - 4:45 PM	2	157	10	1	18	101	0	1	2	0	60	1	0	0	0	0
4:45 PM - 5:00 PM	1	170	25	2	8	95	0	0	0	0	59	1	0	0	0	0
5:00 PM - 5:15 PM	0	183	29	2	10	84	1	0	1	1	62	0	0	0	0	0
5:15 PM - 5:30 PM	1	181	23	0	8	72	0	0	0	0	59	1	0	0	0	0
5:30 PM - 5:45 PM	0	152	31	0	6	77	1	0	1	0	60	0	0	0	0	0
5:45 PM - 6:00 PM	1	132	23	4	7	63	1	0	0	0	55	0	0	0	0	0
TOTAL	**6**	**1265**	**183**	**11**	**78**	**687**	**5**	**2**	**6**	**1**	**497**	**5**	**0**	**0**	**0**	**0**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
8:00 AM - 9:00 AM	1	294	75	17	55	360	2	5	1	1	248	3	0	0	0	0
4:15 PM - 5:15 PM	4	652	84	7	49	379	1	1	3	1	263	3	0	0	0	0

	PHF	**Trucks**
AM	0.982	2.4%
PM	0.968	0.8%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

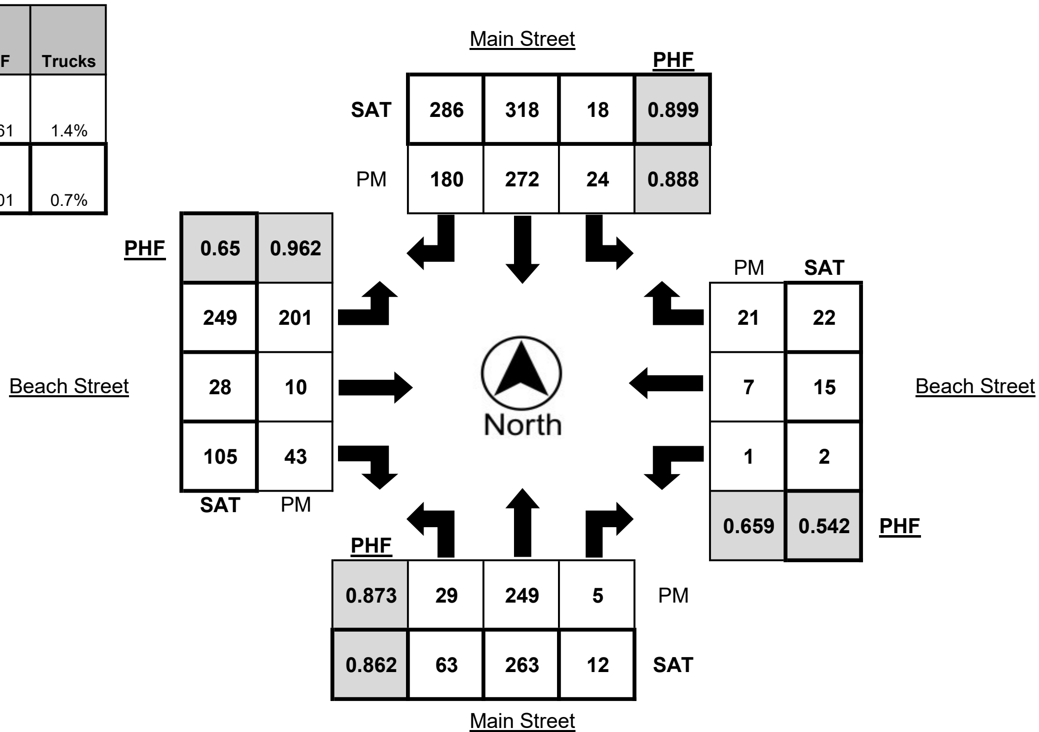
LOCATION Main Street @ Beach Street
LATITUDE 35.368778°
COUNTY San Luis Obispo
LONGITUDE -120.850038°
COLLECTION DATE Thursday 3/17/16 & Saturday 3/19/16
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time (Weekday)	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	7	52	0	2	14	71	49	1	56	1	9	2	0	2	1	0
4:15 PM - 4:30 PM	5	74	1	2	5	67	43	0	50	3	12	0	1	1	9	0
4:30 PM - 4:45 PM	7	55	1	1	2	66	41	2	45	2	15	1	0	3	4	0
4:45 PM - 5:00 PM	10	68	3	2	3	68	47	0	50	4	7	2	0	1	7	0
5:00 PM - 5:15 PM	14	64	1	0	2	49	32	2	45	5	10	1	1	4	7	0
5:15 PM - 5:30 PM	15	54	1	0	7	52	40	0	38	3	9	0	0	1	4	0
5:30 PM - 5:45 PM	13	45	0	0	4	62	31	0	45	3	17	3	0	2	5	0
5:45 PM - 6:00 PM	10	39	0	0	3	51	35	1	35	3	12	0	0	0	4	0
TOTAL	**81**	**451**	**7**	**7**	**40**	**486**	**318**	**6**	**364**	**24**	**91**	**9**	**2**	**14**	**41**	**0**

	Northbound				Southbound				Eastbound				Westbound			
Time (Saturday)	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
11:00 AM - 11:15 AM	18	48	4	1	4	71	73	3	52	5	21	0	1	5	9	0
11:15 AM - 11:30 AM	15	56	4	2	6	73	59	3	56	0	11	1	2	3	7	0
11:30 AM - 11:45 AM	13	60	0	2	4	72	61	0	57	5	22	1	1	0	3	0
11:45 AM - 12:00 PM	14	63	2	0	4	85	82	0	46	5	26	0	1	6	6	0
12:00 PM - 12:15 PM	17	78	3	0	3	73	67	2	55	6	22	0	0	1	4	0
12:15 PM - 12:30 PM	18	61	4	2	2	74	59	1	98	9	40	3	1	8	9	0
12:30 PM - 12:45 PM	14	61	3	1	9	86	78	0	50	8	17	1	0	0	3	0
12:45 PM - 1:00 PM	9	66	1	0	3	78	80	4	63	10	14	0	2	1	5	0
TOTAL	**118**	**493**	**21**	**8**	**35**	**612**	**559**	**13**	**477**	**48**	**173**	**6**	**8**	**24**	**46**	**0**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 5:00 PM	29	249	5	7	24	272	180	3	201	10	43	5	1	7	21	0
11:45 AM - 12:45 PM	63	263	12	3	18	318	286	3	249	28	105	4	2	15	22	0

	PHF	**Trucks**
PM (Weekday)	0.961	1.4%
MID (Saturday)	0.901	0.7%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

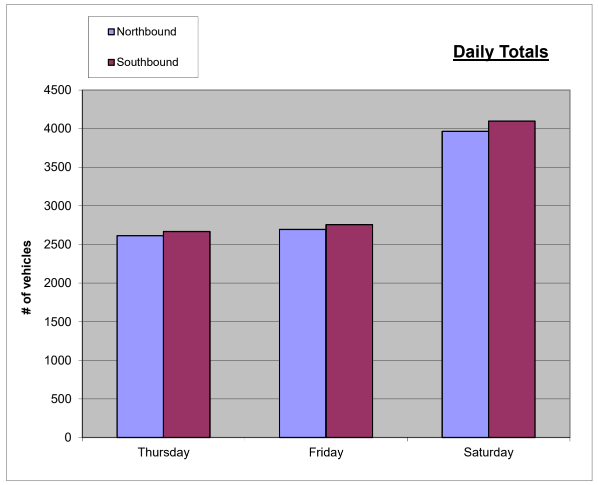
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Report Prepared For:

Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

3 Day Volume Count Report

Location No.	1
Road Name	Embarcadero
Nearest Cross St	North of Beach
Survey Date	3/17/16 thru 3/19/16
Latitude	35.369308°
Longitude	-120.854688°
Peak Day	Thursday
Number of Lanes	2
Comments	



SUMMARY

Hour	17-Thu	18-Fri	19-Sat	Total	ADT
12:00 AM	2	1	13	**16**	**5**
1:00 AM	2	2	6	**10**	**3**
2:00 AM	1	2	2	**5**	**2**
3:00 AM	2	0	5	**7**	**2**
4:00 AM	3	6	10	**19**	**6**
5:00 AM	8	19	25	**52**	**17**
6:00 AM	78	88	112	**278**	**93**
7:00 AM	125	162	221	**508**	**169**
8:00 AM	255	247	352	**854**	**285**
9:00 AM	302	338	481	**1121**	**374**
10:00 AM	390	410	626	**1426**	**475**
11:00 AM	420	499	658	**1577**	**526**
12:00 PM	531	488	731	**1750**	**583**
1:00 PM	511	524	806	**1841**	**614**
2:00 PM	499	465	711	**1675**	**558**
3:00 PM	474	492	679	**1645**	**548**
4:00 PM	448	471	674	**1593**	**531**
5:00 PM	402	432	666	**1500**	**500**
6:00 PM	384	353	623	**1360**	**453**
7:00 PM	274	220	353	**847**	**282**
8:00 PM	94	122	125	**341**	**114**
9:00 PM	59	57	79	**195**	**65**
10:00 PM	14	27	39	**80**	**27**
11:00 PM	4	26	65	**95**	**32**
Total	**5282**	**5451**	**8062**	**18795**	**6265**
Percentages	**28.10%**	**29.00%**	**42.89%**	**100.00%**	**33.33%**

Thursday

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	1	0	0	0	**1**	0	1	0	0	**1**	**2**
1:00 AM	0	0	1	0	**1**	0	0	1	0	**1**	**2**
2:00 AM	0	0	1	0	**1**	0	0	0	0	**0**	**1**
3:00 AM	0	0	0	0	**0**	1	0	0	1	**2**	**2**
4:00 AM	1	1	0	0	**2**	0	1	0	0	**1**	**3**
5:00 AM	1	0	1	3	**5**	0	0	1	2	**3**	**8**
6:00 AM	6	6	22	25	**59**	2	1	3	13	**19**	**78**
7:00 AM	16	23	19	13	**71**	7	14	17	16	**54**	**125**
8:00 AM	36	38	36	46	**156**	20	14	36	29	**99**	**255**
9:00 AM	31	38	50	54	**173**	29	21	31	48	**129**	**302**
10:00 AM	46	53	49	54	**202**	50	46	47	45	**188**	**390**
11:00 AM	58	67	38	57	**220**	55	45	46	54	**200**	**420**
12:00 PM	66	78	68	71	**283**	49	62	72	65	**248**	**531**
1:00 PM	68	52	50	59	**229**	73	64	73	72	**282**	**511**
2:00 PM	66	53	53	64	**236**	74	60	65	64	**263**	**499**
3:00 PM	61	62	49	64	**236**	68	69	51	50	**238**	**474**
4:00 PM	50	45	61	62	**218**	69	62	46	53	**230**	**448**
5:00 PM	55	57	53	46	**211**	48	50	55	38	**191**	**402**
6:00 PM	45	56	42	34	**177**	51	55	44	57	**207**	**384**
7:00 PM	27	21	19	10	**77**	53	66	50	28	**197**	**274**
8:00 PM	11	10	3	9	**33**	19	13	17	12	**61**	**94**
9:00 PM	7	4	2	1	**14**	22	7	10	6	**45**	**59**
10:00 PM	2	0	2	2	**6**	4	0	1	3	**8**	**14**
11:00 PM	0	1	2	0	**3**	0	0	1	0	**1**	**4**
12:00 AM	**49.5%**				**2614**	**50.5%**				**2668**	
	5282										

AM Peak Hr 11:00 am to 12:00 pm **AM Peak** **420** **AM PHF 0.929204**
PM Peak Hr 12:15 pm to 1:15 pm **PM Peak** **557** **PM PHF 0.987589**

Friday

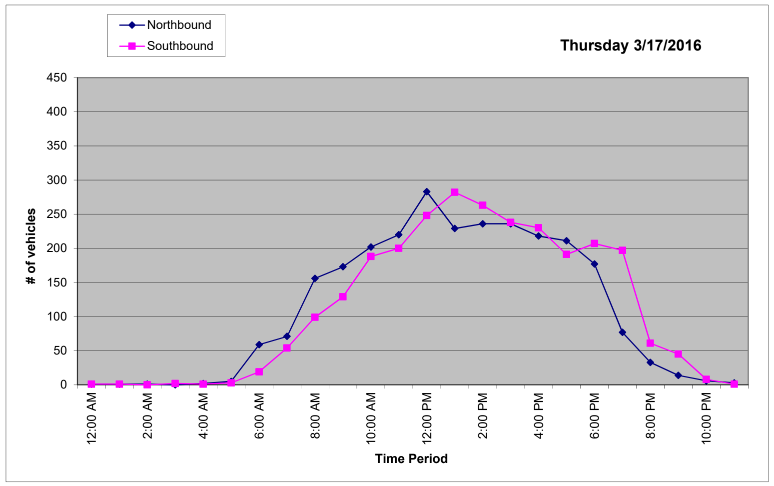
	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	1	0	0	0	**1**	0	0	0	0	**0**	**1**
1:00 AM	0	0	1	0	**1**	0	0	0	1	**1**	**2**
2:00 AM	1	0	0	0	**1**	0	1	0	0	**1**	**2**
3:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
4:00 AM	0	1	3	0	**4**	0	1	1	0	**2**	**6**
5:00 AM	0	1	4	10	**15**	1	0	1	2	**4**	**19**
6:00 AM	10	20	17	22	**69**	2	6	6	5	**19**	**88**
7:00 AM	12	20	27	30	**89**	15	14	13	31	**73**	**162**
8:00 AM	36	19	47	36	**138**	15	33	20	41	**109**	**247**
9:00 AM	44	47	40	55	**186**	31	50	36	35	**152**	**338**
10:00 AM	48	53	54	63	**218**	36	34	67	55	**192**	**410**
11:00 AM	58	54	68	65	**245**	70	51	64	69	**254**	**499**
12:00 PM	77	55	60	60	**252**	45	62	57	72	**236**	**488**
1:00 PM	54	64	60	76	**254**	67	66	69	68	**270**	**524**
2:00 PM	51	54	58	44	**207**	70	60	67	61	**258**	**465**
3:00 PM	64	58	57	63	**242**	55	72	62	61	**250**	**492**
4:00 PM	69	57	60	52	**238**	80	58	52	43	**233**	**471**
5:00 PM	52	55	55	45	**207**	63	48	61	53	**225**	**432**
6:00 PM	42	42	37	34	**155**	48	56	48	46	**198**	**353**
7:00 PM	26	22	19	16	**83**	41	34	32	30	**137**	**220**
8:00 PM	11	13	16	6	**46**	31	14	19	12	**76**	**122**
9:00 PM	5	5	3	4	**17**	16	9	8	7	**40**	**57**
10:00 PM	6	3	2	1	**12**	6	6	1	2	**15**	**27**
11:00 PM	3	5	5	1	**14**	6	1	4	1	**12**	**26**
Total	**49.4%**				**2694**	**50.6%**				**2757**	
	5451										

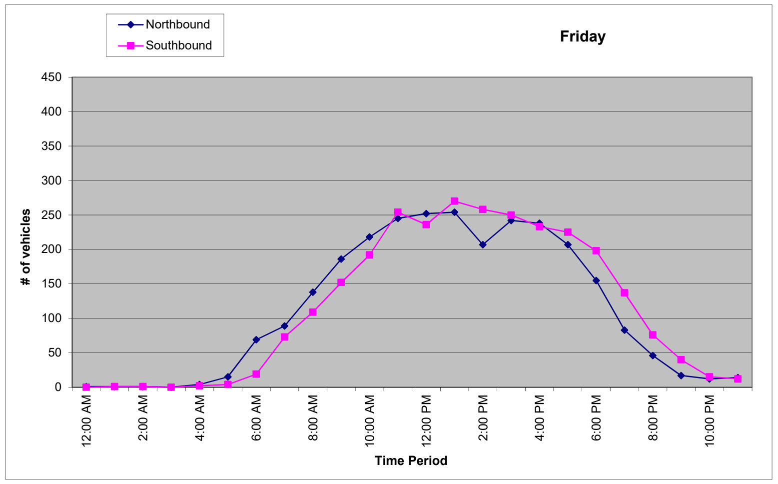
AM Peak Hr 11:00 am to 12:00 pm **AM Peak** **499** **AM PHF 0.93097**
PM Peak Hr 1:15 pm to 2:15 pm **PM Peak** **524** **PM PHF 0.909722**

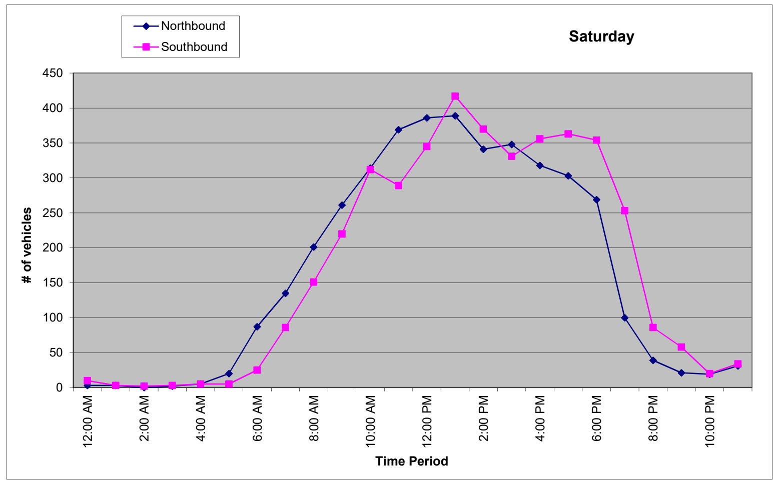
Saturday

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	1	1	1	0	**3**	3	3	3	1	**10**	**13**
1:00 AM	0	0	2	1	**3**	0	1	0	2	**3**	**6**
2:00 AM	0	0	0	0	**0**	0	0	1	1	**2**	**2**
3:00 AM	1	1	0	0	**2**	0	1	0	2	**3**	**5**
4:00 AM	1	2	0	2	**5**	1	0	1	3	**5**	**10**
5:00 AM	4	4	7	5	**20**	4	0	1	0	**5**	**25**
6:00 AM	12	19	26	30	**87**	3	11	3	8	**25**	**112**
7:00 AM	37	29	32	37	**135**	20	19	29	18	**86**	**221**
8:00 AM	46	36	69	50	**201**	33	33	32	53	**151**	**352**
9:00 AM	63	53	66	79	**261**	42	48	73	57	**220**	**481**
10:00 AM	71	79	92	72	**314**	84	87	76	65	**312**	**626**
11:00 AM	75	104	99	91	**369**	65	80	69	75	**289**	**658**
12:00 PM	109	91	92	94	**386**	72	76	102	95	**345**	**731**
1:00 PM	86	116	92	95	**389**	102	108	103	104	**417**	**806**
2:00 PM	94	85	83	79	**341**	78	95	106	91	**370**	**711**
3:00 PM	85	104	77	82	**348**	88	98	70	75	**331**	**679**
4:00 PM	75	76	86	81	**318**	84	94	81	97	**356**	**674**
5:00 PM	75	75	70	83	**303**	98	83	89	93	**363**	**666**
6:00 PM	94	64	67	44	**269**	77	95	86	96	**354**	**623**
7:00 PM	36	23	25	16	**100**	82	65	59	47	**253**	**353**
8:00 PM	9	12	11	7	**39**	33	22	18	13	**86**	**125**
9:00 PM	6	7	1	7	**21**	21	15	14	8	**58**	**79**
10:00 PM	2	10	3	4	**19**	7	4	6	3	**20**	**39**
11:00 PM	1	2	14	14	**31**	3	3	14	14	**34**	**65**
Total	**49.2%**				**3964**	**50.8%**				**4098**	
	8062										

AM Peak Hr 11:00 am to 12:00 pm **AM Peak** **658** **AM PHF 0.894022**
PM Peak Hr 1:00 pm to 2:00 pm **PM Peak** **806** **PM PHF 0.899554**







Associated Transportation Engineers #22024
Cumulative Trip Generation Worksheet #19057.02

Vistra Energy 600 MW Battery Energy Storage System Project

Use	Size		Internal-Trip Factor	ADT		AM PEAK HOUR						PM PEAK HOUR					
				Rate	Trips	Rate	Trips	In %	Trips	Out %	Trips	Rate	Trips	In %	Trips	Out %	Trips
295 Atascadero (a)	85	Rooms	1.00	7.99	679	0.46	39	56%	22	44%	17	0.59	50	51%	26	49%	24
405 Atascadero (b)	35	DU	1.00	4.81	168	0.36	13	29%	4	71%	9	0.46	16	59%	9	41%	7
833 Embarcadero (c)	1,320	SF	1.00	10.84	14	1.52	2	88%	2	12%	0	1.44	2	17%	0	83%	2
2790 Main (a)	8	Rooms	1.00	7.99	64	0.46	4	56%	2	44%	2	0.59	5	51%	3	49%	2
205 Harbor Street (a)	6	Rooms	1.00	7.99	48	0.46	3	56%	2	44%	1	0.59	4	51%	2	49%	2
2900 Alder (a)	6	Rooms	1.00	7.99	48	0.46	3	56%	2	44%	1	0.59	4	51%	2	49%	2
2783 Coral (d)	5	DU	1.00	9.30	47	0.70	4	26%	1	74%	3	0.94	5	63%	3	37%	2
801 Embarcadero (e)	5,206	SF	1.00	83.84	436	0.73	4	50%	2	50%	2	7.80	41	67%	27	33%	14
3300 Panorama (d)	61	DU	1.00	9.30	567	0.70	43	26%	11	74%	32	0.94	57	63%	36	37%	21
1140 Allesandro Ave (f)	4	DU	1.00	6.74	27	0.40	2	24%	0	76%	2	0.51	2	63%	1	37%	1
1140 Allesandro Ave (c)	10,000	SF	1.00	10.84	108	1.52	15	88%	13	12%	2	1.44	14	17%	2	83%	12
541 Atascadero Road (f)	4	DU	1.00	6.74	27	0.40	2	24%	0	76%	2	0.51	2	63%	1	37%	1
1175 Scott Street (a)	4	Rooms	1.00	7.99	32	0.46	2	56%	1	44%	1	0.59	2	51%	1	49%	1
545 Atascadero (f)	15	DU	1.00	6.74	101	0.40	6	24%	1	76%	5	0.51	8	63%	5	37%	3
301-390 Seashell Cove (f)	70	DU	1.00	6.74	472	0.40	28	24%	7	76%	21	0.51	36	63%	23	37%	13
Theresa Road (f)	180	DU	1.00	6.74	1,213	0.40	72	24%	17	76%	55	0.51	92	63%	58	37%	34
Totals					**4,051**		**242**		**87**		**155**		**340**		**199**		**141**

(a) Trip generation based on ITE rates for Hotel (ITE #310).
(b) Trip generation based on ITE rates for Affordable Housing (ITE #223).
(c) Trip generation based on ITE rates for General Office Building (ITE #710).
(d) Trip generation based on ITE rates for Single-Family Detached Housing (ITE #210).
(e) Trip generation based on ITE rates for Fine Dining Restaurant (ITE #931).
(f) Trip generation based on ITE rates for Multifamily Housing (ITE #220).

City of Morro Bay - Bike Map

City of Goleta SB743 Sketch VMT Tool

1/25/2023

Work Only Land Use Projects

Work Only uses appropriate for this category include those where the primary source of trips is made by employees.
The analysis computes the VMT per employee and compares against the County thresholds

Project Information

Project Name: Vistra Energy Project - Phase II
Address: LITTLE MORRO CREEK CAYUCOS 00000
APN: 73051059
SLOCOG TAZ: 2081

VMT District: 70 Unincorp 5 Mile
Geographic Screening: Not eligible for geographic screening for this location

Employment Project Inputs

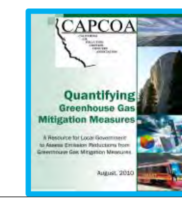
Jobs	<--- Choose type of input (Jobs, Sq.Ft., Daily Trips)
300	<--- Enter Number of Jobs

Mitigation:

If needed, Mitigation Analysis must be conducted separately, entered here, and approved by County of San Luis Obispo

None	<--- Choose type of Mitigation
0.0%	<-- Mitigation Percent
	<--- Slider for Mitigation Reduction

Click for CAPCOA Reference



Notes:

1) Trip generation takes user input in units of Jobs
2) Default parameters used for VMT analysis
3) Mitigation Type = None; for a total reduction of 0%

Results

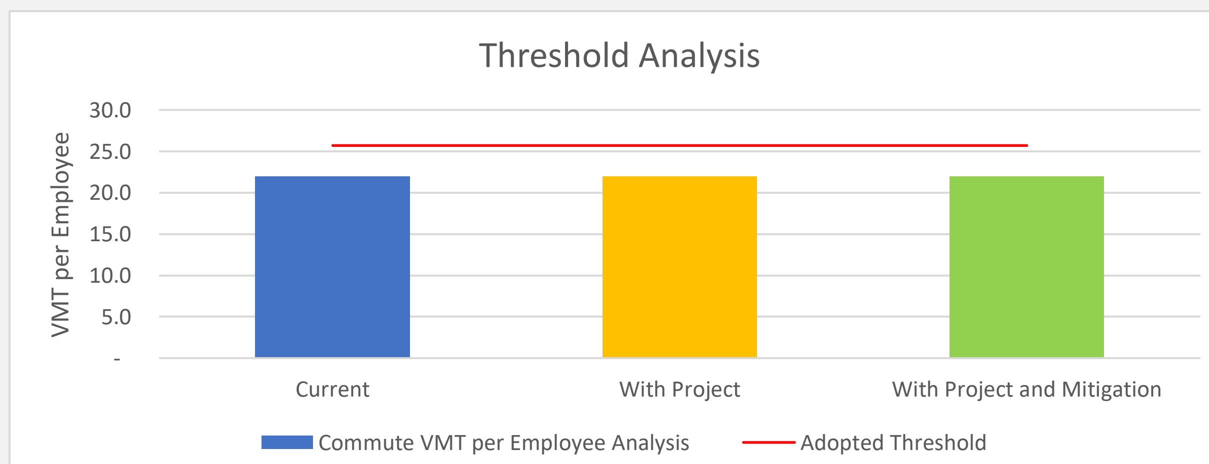
Not eligible for geographic screening for this location

Growth Assuptions

VMT District: Unincorp 5 Mile	Employment
Current	387
Added	300
New Total	687

Commute VMT per Employee Analysis

VMT District: Unincorp 5 Mile	VMT per Employee	Adopted Threshold
Current	21.9	25.7
With Project	22.0	25.7



Final Result:

Project Meets VMT per Employee Threshold

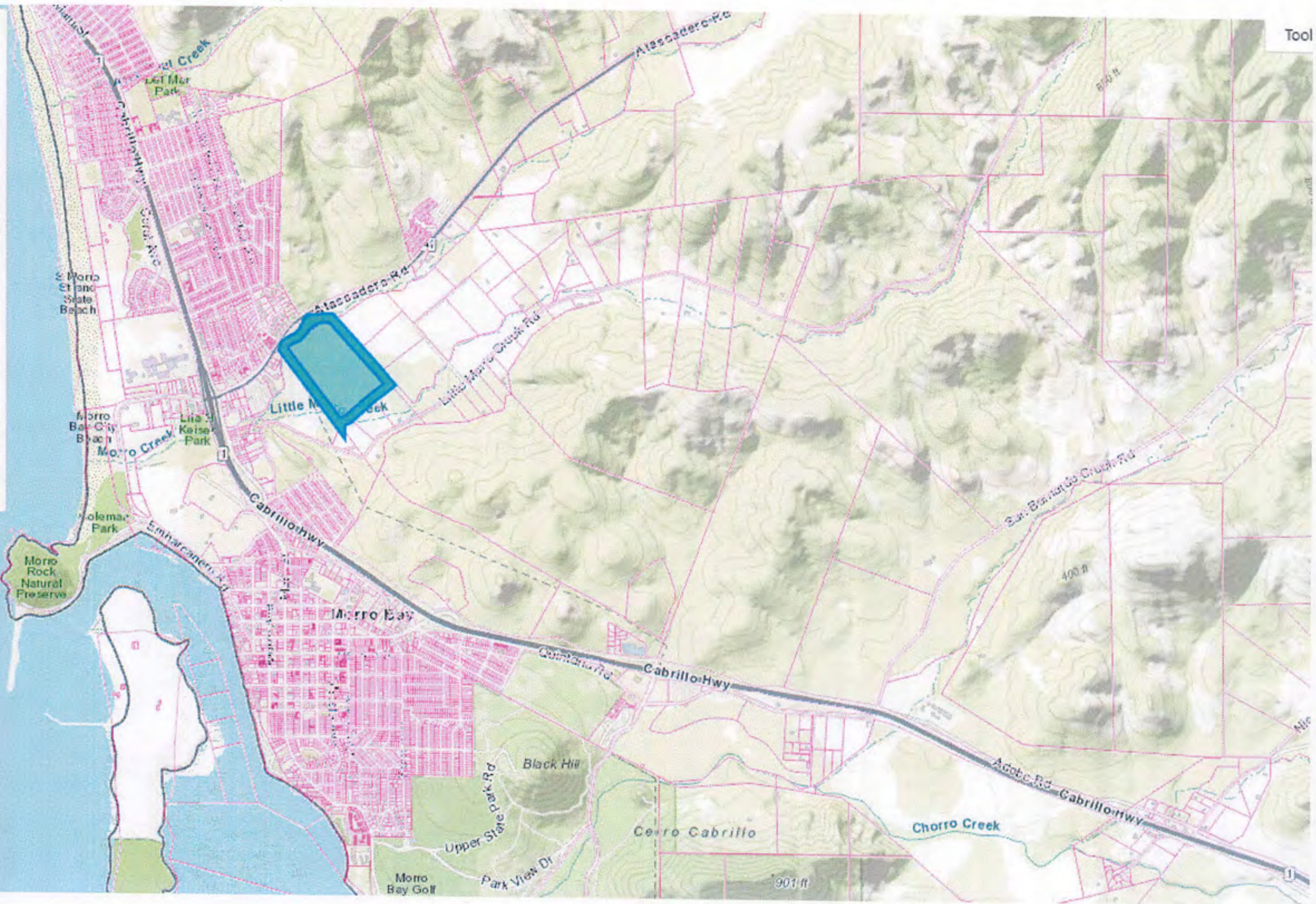
☆ **073-051-059** ×

Link to [Assessment Information and Assessor Map]

Owner Address:
2460 GRACIA WAY
ARROYO GRANDE, CA
93420-5302
Assessor Street Address:00000 LITTLE MORRO CREEK RD
Planning Property Addresses: click 'View Additional Details' below

Estimated Acres: 62.04* (survey required for accurate ac.)
Average Slope: 3%
Description: PM 18-58 PTN PAR 1
Land Value: 896285
Improvement Value: 8650
Supervisor District: 2

[Add to Results] | [View Additional Details] | [Run a Report]



INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

- Existing
- Cumulative
- Construction Phase
- Demolition Phase

EXISTING LEVEL OF SERVICE CALCULATION WORKSHEETS

HCS Two-Way Stop-Control Report

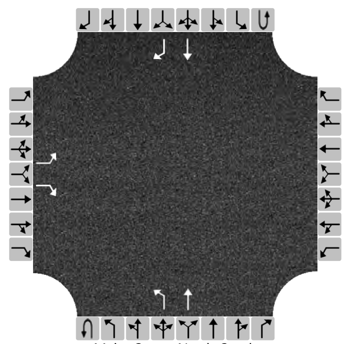
General Information

Analyst	DLD
Agency/Co.	ATE
Date Performed	1/13/2021
Analysis Year	
Time Analyzed	AM PEAK HOUR
Intersection Orientation	North-South
Project Description	EXISTING CONDITIONS

Site Information

Intersection	SR 1 NB/MAIN ST
Jurisdiction	MORRO BAY
East/West Street	SR 1 NB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		77		72						122	206				264	9
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		87		81						137						
Capacity, c (veh/h)		504		740						1248						
v/c Ratio		0.17		0.11						0.11						
95% Queue Length, Q_{95} (veh)		0.6		0.4						0.4						
Control Delay (s/veh)		13.6		10.5						8.2						
Level of Service (LOS)		B		B						A						
Approach Delay (s/veh)	12.1								3.1							
Approach LOS	B								A							

AWD = 10.4 SEC = LOS B

HCS Two-Way Stop-Control Report

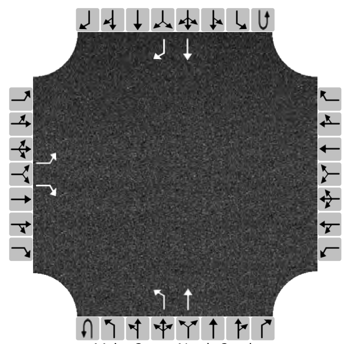
General Information

Analyst	DLD
Agency/Co.	ATE
Date Performed	1/13/2021
Analysis Year	
Time Analyzed	PM PEAK HOUR
Intersection Orientation	North-South
Project Description	EXISTING CONDITIONS

Site Information

Intersection	SR 1 NB/MAIN ST
Jurisdiction	MORRO BAY
East/West Street	SR 1 NB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		44		112						224	458				305	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

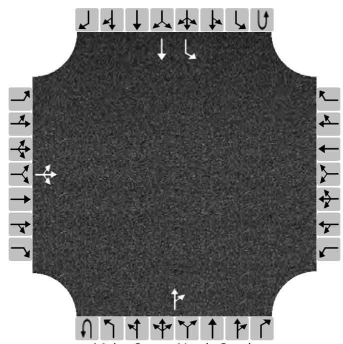
Flow Rate, v (veh/h)		45		115						231						
Capacity, c (veh/h)		297		724						1239						
v/c Ratio		0.15		0.16						0.19						
95% Queue Length, Q_{95} (veh)		0.5		0.6						0.7						
Control Delay (s/veh)		19.3		10.9						8.6						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)	13.3								2.8							
Approach LOS	B								A							

AWD = 10.5 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	DLD	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.98
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING CONDITIONS		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		1	1	248							294	75		55	360	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Approach	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

Approach	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)			255											56		
Capacity, c (veh/h)			681											1176		
v/c Ratio			0.37											0.05		
95% Queue Length, Q_{95} (veh)			1.7											0.2		
Control Delay (s/veh)			13.4											8.2		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	13.4												1.1			
Approach LOS	B												A			

HCS™ TWSC Version 2023
02 EX AM.xtw

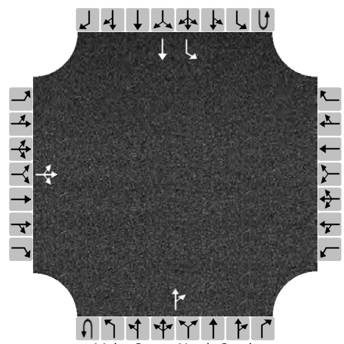
Generated: 1/17/2023 3:31:38 PM

AWD = 12.5 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	DLD	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING CONDITIONS		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		3	1	263							652	84		49	379	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

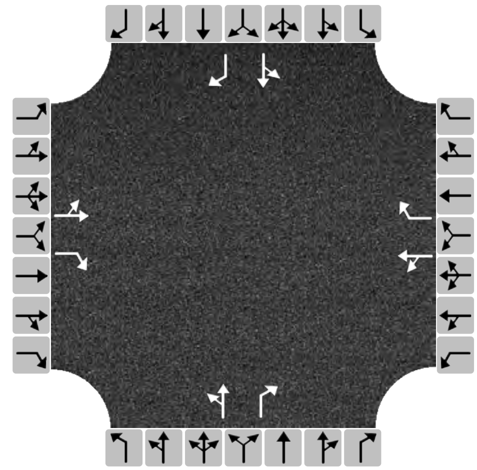
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			275											51		
Capacity, c (veh/h)			666											848		
v/c Ratio			0.41											0.06		
95% Queue Length, Q_{95} (veh)			2.0											0.2		
Control Delay (s/veh)			14.2											9.5		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	14.2												1.1			
Approach LOS	B												A			

AWD = 13.5 SEC = LOS B

HCS All-Way Stop Control Report

General and Site Information	
Analyst	DLD
Agency/Co.	ATE
Date Performed	1/13/2021
Analysis Year	
Analysis Time Period (hrs)	0.25
Time Analyzed	PM PEAK HOUR
Project Description	EXISTING CONDITIONS
Intersection	MAIN ST/BEACH ST
Jurisdiction	MORRO BAY
East/West Street	BEACH STREET
North/South Street	MAIN STREET
Peak Hour Factor	0.96

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	201	10	43	1	7	21	29	249	5	24	272	180
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		LT	R		LT	R		LT	R	
Flow Rate, v (veh/h)	220	45		8	22		290	5		308	188	
Percent Heavy Vehicles	2	2		2	2		2	2		2	2	
Initial Departure Headway, h_d (s)	3.20	3.20		3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.195	0.040		0.007	0.019		0.257	0.005		0.274	0.167	
Final Departure Headway, h_d (s)	7.00	5.82		7.07	6.31		6.15	5.40		5.93	5.19	
Final Degree of Utilization, x	0.427	0.072		0.016	0.038		0.495	0.008		0.508	0.270	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, t_s (s)	4.70	3.52		4.77	4.01		3.85	3.10		3.63	2.89	

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		LT	R		LT	R		LT	R	
Flow Rate, v (veh/h)	220	45		8	22		290	5		308	188	
Capacity (veh/h)	515	619		509	570		585	667		607	693	
95% Queue Length, Q_{95} (veh)	2.1	0.2		0.0	0.1		2.7	0.0		2.9	1.1	
Control Delay (s/veh)	14.8	9.0		9.9	9.3		14.7	8.1		14.6	9.8	
Level of Service, LOS	B	A		A	A		B	A		B	A	
Approach Delay (s/veh) | LOS	13.8		B	9.4		A	14.6		B	12.8		B
Intersection Delay (s/veh) | LOS	13.4						B					

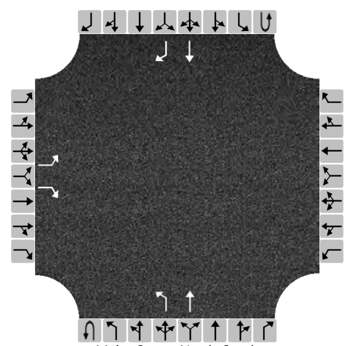
HCS™ AWSC Version 2023
03 PM EXISTING.xaw
Generated: 1/20/2023 11:54:15 AM

CUMULATIVE LEVEL OF SERVICE CALCULATION WORKSHEETS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE CONDITIONS		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		77		95						135	206				264	9
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)		87		107						152						
Capacity, c (veh/h)		484		740						1248						
v/c Ratio		0.18		0.14						0.12						
95% Queue Length, Q_{95} (veh)		0.6		0.5						0.4						
Control Delay (s/veh)		14.0		10.7						8.3						
Level of Service (LOS)		B		B						A						
Approach Delay (s/veh)	12.2								3.3							
Approach LOS	B								A							

AWD = 10.5 SEC = LOS B

HCS Two-Way Stop-Control Report

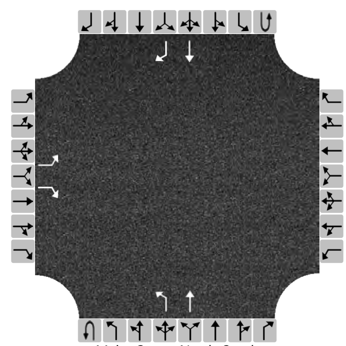
General Information

Analyst	GOM
Agency/Co.	ATE
Date Performed	10/17/2022
Analysis Year	
Time Analyzed	PM PEAK HOUR
Intersection Orientation	North-South
Project Description	CUMULATIVE CONDITIONS

Site Information

Intersection	SR 1 NB/MAIN ST
Jurisdiction	MORRO BAY
East/West Street	SR 1 NB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		44		127						250	458				305	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

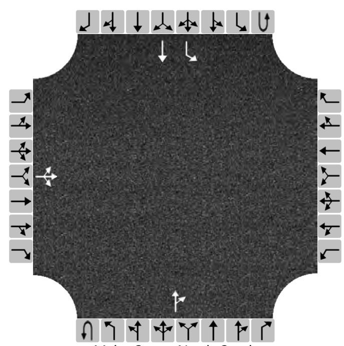
	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)		45		131						258						
Capacity, c (veh/h)		273		724						1239						
v/c Ratio		0.17		0.18						0.21						
95% Queue Length, Q_{95} (veh)		0.6		0.7						0.8						
Control Delay (s/veh)		20.8		11.1						8.7						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)	13.6								3.1							
Approach LOS	B								A							

AWD = 10.7 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.98
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE CONDITIONS		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		1	1	269							307	83		55	383	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Movement	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

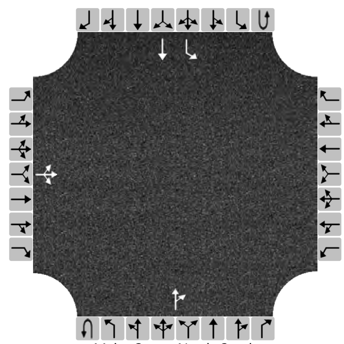
Movement	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)			277											56		
Capacity, c (veh/h)			660											1155		
v/c Ratio			0.42											0.05		
95% Queue Length, Q_{95} (veh)			2.1											0.2		
Control Delay (s/veh)			14.3											8.3		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	14.3												1.0			
Approach LOS	B												A			

AWD = 13.3 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE CONDITIONS		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		3	1	281							678	109		49	394	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			294											51		
Capacity, c (veh/h)			652											811		
v/c Ratio			0.45											0.06		
95% Queue Length, Q_{95} (veh)			2.3											0.2		
Control Delay (s/veh)			15.0											9.7		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	15.0												1.1			
Approach LOS	B												A			

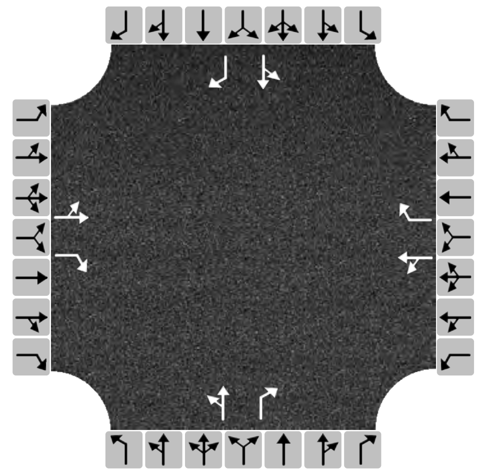
AWD = 14.2 SEC = LOS B

HCS All-Way Stop Control Report

General and Site Information

Analyst	GOM
Agency/Co.	ATE
Date Performed	10/17/2022
Analysis Year	
Analysis Time Period (hrs)	0.25
Time Analyzed	PM PEAK HOUR
Project Description	CUMULATIVE CONDITIONS
Intersection	MAIN ST/BEACH ST
Jurisdiction	MORRO BAY
East/West Street	BEACH STREET
North/South Street	MAIN STREET
Peak Hour Factor	0.96

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	218	10	43	1	7	21	29	283	5	24	294	191
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		LT	R		LT	R		LT	R	
Flow Rate, v (veh/h)	238	45		8	22		325	5		331	199	
Percent Heavy Vehicles	2	2		2	2		2	2		2	2	
Initial Departure Headway, h_d (s)	3.20	3.20		3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.211	0.040		0.007	0.019		0.289	0.005		0.294	0.177	
Final Departure Headway, h_d (s)	7.18	6.00		7.34	6.57		6.30	5.55		6.09	5.35	
Final Degree of Utilization, x	0.474	0.075		0.017	0.040		0.569	0.008		0.560	0.296	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, t_s (s)	4.88	3.70		5.04	4.27		4.00	3.25		3.79	3.05	

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		LT	R		LT	R		LT	R	
Flow Rate, v (veh/h)	238	45		8	22		325	5		331	199	
Capacity (veh/h)	501	600		491	548		571	648		592	673	
95% Queue Length, Q_{95} (veh)	2.5	0.2		0.1	0.1		3.5	0.0		3.5	1.2	
Control Delay (s/veh)	16.2	9.2		10.2	9.5		17.0	8.3		16.3	10.3	
Level of Service, LOS	C	A		B	A		C	A		C	B	
Approach Delay (s/veh) | LOS	15.1		C	9.7		A	16.8		C	14.0		B
Intersection Delay (s/veh) | LOS	15.0						B					

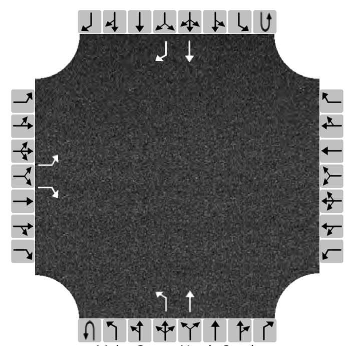
HCS™ AWSC Version 2023
03 PM CUM.xaw
Generated: 1/20/2023 3:25:09 PM

CONSTRUCTION PHASE LEVEL OF SERVICE CALCULATION WORKSHEETS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - CONSTRUCTION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		77		123						122	206				264	9
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		87		138						137						
Capacity, c (veh/h)		504		740						1248						
v/c Ratio		0.17		0.19						0.11						
95% Queue Length, Q_{95} (veh)		0.6		0.7						0.4						
Control Delay (s/veh)		13.6		11.0						8.2						
Level of Service (LOS)		B		B						A						
Approach Delay (s/veh)	12.0								3.1							
Approach LOS	B								A							

AWD = 10.6 SEC = LOS B

HCS Two-Way Stop-Control Report

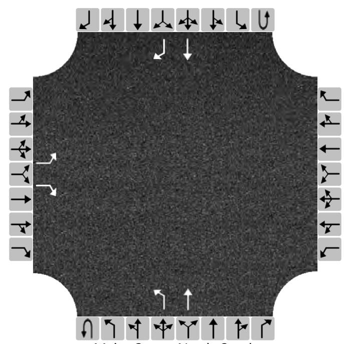
General Information

Analyst	GOM
Agency/Co.	ATE
Date Performed	10/17/2022
Analysis Year	
Time Analyzed	AM PEAK HOUR
Intersection Orientation	North-South
Project Description	CUMULATIVE + PROJECT - CONSTRUCTION PHASE

Site Information

Intersection	SR 1 NB/MAIN ST
Jurisdiction	MORRO BAY
East/West Street	SR 1 NB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		77		146						135	206				264	9
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

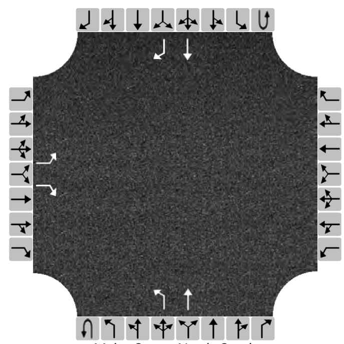
	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)		87		164						152						
Capacity, c (veh/h)		484		740						1248						
v/c Ratio		0.18		0.22						0.12						
95% Queue Length, Q_{95} (veh)		0.6		0.8						0.4						
Control Delay (s/veh)		14.0		11.2						8.3						
Level of Service (LOS)		B		B						A						
Approach Delay (s/veh)	12.2								3.3							
Approach LOS	B								A							

AWD = 10.7 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - CONSTRUCTION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		44		118						224	458				305	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		45		122						231						
Capacity, c (veh/h)		297		724						1239						
v/c Ratio		0.15		0.17						0.19						
95% Queue Length, Q_{95} (veh)		0.5		0.6						0.7						
Control Delay (s/veh)		19.3		11.0						8.6						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)	13.2								2.8							
Approach LOS	B								A							

AWD = 10.5 SEC = LOS B

HCS Two-Way Stop-Control Report

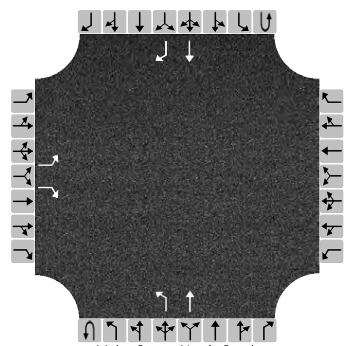
General Information

Analyst	GOM
Agency/Co.	ATE
Date Performed	10/17/2022
Analysis Year	
Time Analyzed	PM PEAK HOUR
Intersection Orientation	North-South
Project Description	CUMULATIVE + PROJECT - CONSTRUCTION PHASE

Site Information

Intersection	SR 1 NB/MAIN ST
Jurisdiction	MORRO BAY
East/West Street	SR 1 NB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		44		133						250	458				305	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Approach	Eastbound				Westbound				Northbound				Southbound			
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

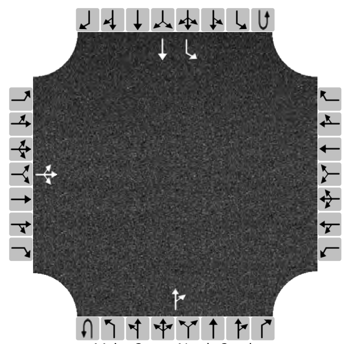
Approach	Eastbound				Westbound				Northbound				Southbound			
Flow Rate, v (veh/h)		45		137						258						
Capacity, c (veh/h)		273		724						1239						
v/c Ratio		0.17		0.19						0.21						
95% Queue Length, Q_{95} (veh)		0.6		0.7						0.8						
Control Delay (s/veh)		20.8		11.1						8.7						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)	13.5								3.1							
Approach LOS	B								A							

AWD = 10.7 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.98
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - CONSTRUCTION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		1	1	278							294	81		55	411	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

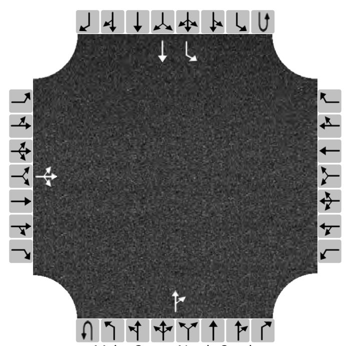
Flow Rate, v (veh/h)			286											56		
Capacity, c (veh/h)			636											1170		
v/c Ratio			0.45											0.05		
95% Queue Length, Q_{95} (veh)			2.3											0.2		
Control Delay (s/veh)			15.2											8.2		
Level of Service (LOS)			C											A		
Approach Delay (s/veh)	15.2												1.0			
Approach LOS	C												A			

AWD = 14.1 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.98
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE + PROJECT - CONSTRUCTION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		1	1	299							307	89		55	434	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

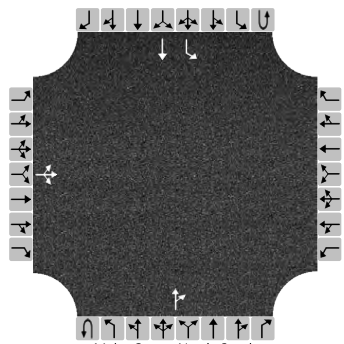
	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)			307											56		
Capacity, c (veh/h)			617											1149		
v/c Ratio			0.50											0.05		
95% Queue Length, Q_{95} (veh)			2.8											0.2		
Control Delay (s/veh)			16.5											8.3		
Level of Service (LOS)			C											A		
Approach Delay (s/veh)	16.5												0.9			
Approach LOS	C												A			

AWD = 15.2 SEC = LOS C

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - CONSTRUCTION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		3	1	263							652	90		49	385	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

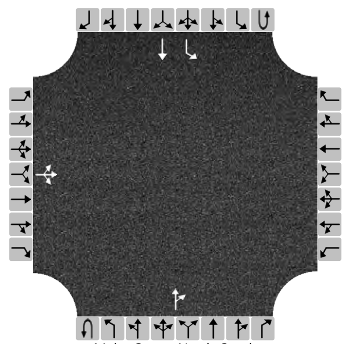
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			275											51		
Capacity, c (veh/h)			660											844		
v/c Ratio			0.42											0.06		
95% Queue Length, Q_{95} (veh)			2.1											0.2		
Control Delay (s/veh)			14.3											9.5		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	14.3												1.1			
Approach LOS	B												A			

AWD = 13.5 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE + PROJECT - CONSTRUCTION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		3	1	281							678	115		49	400	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			294											51		
Capacity, c (veh/h)			647											806		
v/c Ratio			0.45											0.06		
95% Queue Length, Q_{95} (veh)			2.4											0.2		
Control Delay (s/veh)			15.1											9.8		
Level of Service (LOS)			C											A		
Approach Delay (s/veh)	15.1												1.1			
Approach LOS	C												A			

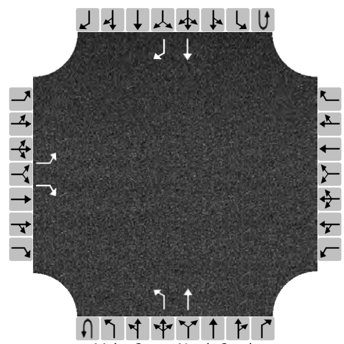
AWD = 14.3 SEC = LOS B

DEMOLITION PHASE LEVEL OF SERVICE CALCULATION WORKSHEETS

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - DEMOLITION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		77		83						122	206				264	9
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

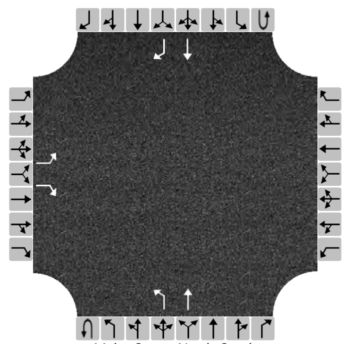
Flow Rate, v (veh/h)		87		93						137						
Capacity, c (veh/h)		504		740						1248						
v/c Ratio		0.17		0.13						0.11						
95% Queue Length, Q_{95} (veh)		0.6		0.4						0.4						
Control Delay (s/veh)		13.6		10.6						8.2						
Level of Service (LOS)		B		B						A						
Approach Delay (s/veh)	12.0								3.1							
Approach LOS	B								A							

AWD = 10.4 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE + PROJECT CONDITIONS - DEMOLITION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		77		106						135	206				264	9
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)		87		119						152						
Capacity, c (veh/h)		484		740						1248						
v/c Ratio		0.18		0.16						0.12						
95% Queue Length, Q_{95} (veh)		0.6		0.6						0.4						
Control Delay (s/veh)		14.0		10.8						8.3						
Level of Service (LOS)		B		B						A						
Approach Delay (s/veh)	12.2								3.3							
Approach LOS	B								A							

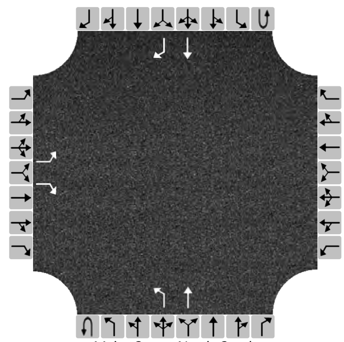
AWD = 10.5 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information / Site Information

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - DEMOLITION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		44		114						246	458				305	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

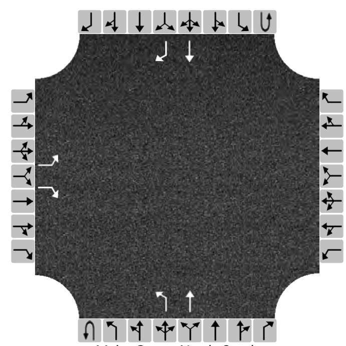
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)		45		118						254						
Capacity, c (veh/h)		277		724						1239						
v/c Ratio		0.16		0.16						0.20						
95% Queue Length, Q_{95} (veh)		0.6		0.6						0.8						
Control Delay (s/veh)		20.5		10.9						8.7						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)	13.6								3.0							
Approach LOS	B								A							

AWD = 10.6 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 NB/MAIN ST
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 NB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE + PROJECT CONDITIONS - DEMOLITION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	T				T	R
Volume (veh/h)		44		129						272	458				305	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No												No			
Median Type | Storage	Left Only								3							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

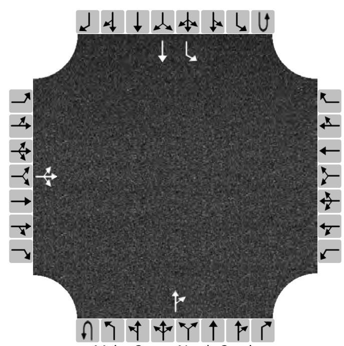
Flow Rate, v (veh/h)		45		133						280						
Capacity, c (veh/h)		254		724						1239						
v/c Ratio		0.18		0.18						0.23						
95% Queue Length, Q_{95} (veh)		0.6		0.7						0.9						
Control Delay (s/veh)		22.2		11.1						8.8						
Level of Service (LOS)		C		B						A						
Approach Delay (s/veh)	13.9								3.3							
Approach LOS	B								A							

AWD = 10.7 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	1/13/2021	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	AM PEAK HOUR	Peak Hour Factor	0.98
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	EXISTING + PROJECT - DEMOLITION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		1	1	253							294	76		55	371	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			260											56		
Capacity, c (veh/h)			671											1175		
v/c Ratio			0.39											0.05		
95% Queue Length, Q_{95} (veh)			1.8											0.2		
Control Delay (s/veh)			13.7											8.2		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	13.7												1.1			
Approach LOS	B												A			

AWD = 12.7 SEC = LOS B

HCS Two-Way Stop-Control Report

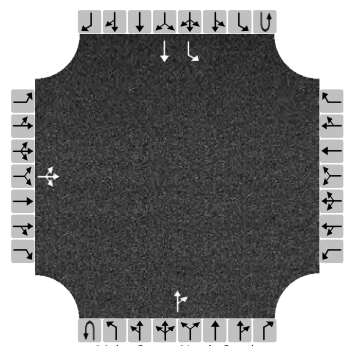
General Information

Analyst	GOM
Agency/Co.	ATE
Date Performed	10/17/2022
Analysis Year	
Time Analyzed	AM PEAK HOUR
Intersection Orientation	North-South
Project Description	CUMULATIVE + PROJECT CONDITIONS - DEMOLITION PHASE

Site Information

Intersection	SR 1 SB/MAIN STREET
Jurisdiction	MORRO BAY
East/West Street	SR 1 SB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.98
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		1	1	274							307	85		55	394	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			282											56		
Capacity, c (veh/h)			651											1153		
v/c Ratio			0.43											0.05		
95% Queue Length, Q_{95} (veh)			2.2											0.2		
Control Delay (s/veh)			14.7											8.3		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	14.7												1.0			
Approach LOS	B												A			

HCS™ TWSC Version 2023
02 CUM + PROJ AM.xtw

Generated: 10/17/2022 2:42:07 PM

AWD = 13.6 SEC = LOS B

HCS Two-Way Stop-Control Report

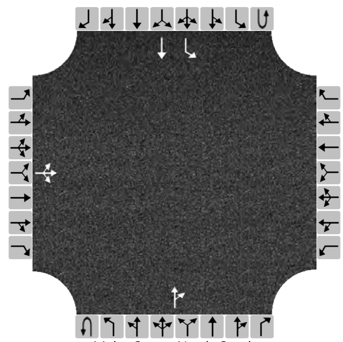
General Information

Analyst	GOM
Agency/Co.	ATE
Date Performed	1/13/2021
Analysis Year	
Time Analyzed	PM PEAK HOUR
Intersection Orientation	North-South
Project Description	EXISTING + PROJECT - DEMOLITION PHASE

Site Information

Intersection	SR 1 SB/MAIN STREET
Jurisdiction	MORRO BAY
East/West Street	SR 1 SB RAMPS
North/South Street	MAIN STREET
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		3	1	263							674	119		49	381	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Approach	Eastbound				Westbound				Northbound				Southbound			
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

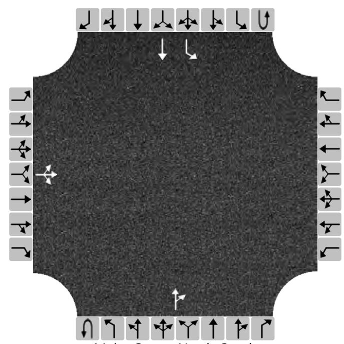
Approach	Eastbound				Westbound				Northbound				Southbound			
Flow Rate, v (veh/h)			275											51		
Capacity, c (veh/h)			664											806		
v/c Ratio			0.41											0.06		
95% Queue Length, Q_{95} (veh)			2.0											0.2		
Control Delay (s/veh)			14.2											9.8		
Level of Service (LOS)			B											A		
Approach Delay (s/veh)	14.2												1.1			
Approach LOS	B												A			

AWD = 13.5 SEC = LOS B

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	GOM	Intersection	SR 1 SB/MAIN STREET
Agency/Co.	ATE	Jurisdiction	MORRO BAY
Date Performed	10/17/2022	East/West Street	SR 1 SB RAMPS
Analysis Year		North/South Street	MAIN STREET
Time Analyzed	PM PEAK HOUR	Peak Hour Factor	0.97
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	CUMULATIVE + PROJECT CONDITIONS - DEMOLITION PHASE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	1	1	0
Configuration			LTR									TR		L	T	
Volume (veh/h)		3	1	281							700	144		49	396	
Percent Heavy Vehicles (%)		3	3	3										3		
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.13	6.53	6.23										4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33										2.23		

Delay, Queue Length, and Level of Service

Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)			294											51		
Capacity, c (veh/h)			650											770		
v/c Ratio			0.45											0.07		
95% Queue Length, Q_{95} (veh)			2.4											0.2		
Control Delay (s/veh)			15.0											10.0		
Level of Service (LOS)			C											B		
Approach Delay (s/veh)	15.0												1.1			
Approach LOS	C												A			

AWD = 14.3 SEC = LOS B

Appendix L

Energy Analysis Technical Report

Prepared by
Ramboll US Consulting, Inc
San Francisco, California

Project Number
1690027676

Date
February 2023

ENERGY ANALYSIS TECHNICAL REPORT

MORRO BAY BATTERY ENERGY STORAGE SYSTEM PROJECT

MORRO BAY, CALIFORNIA

CONTENTS

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APCD	San Luis Obispo County Air Pollution Control District
ATCM	Airborne Toxics Control Measure
BESS	Battery Energy Storage System
BOE	Board of Equalization
Btu	British Thermal Units
CAFE	Corporate Average Fuel Economy
CalEEMod®	California Emission Estimator Model
CALGreen	California Green Building Standards Code
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO_2	Carbon Dioxide
CPUC	California Public Utilities Commission
EIA	Energy Information Administration
EMFAC	EMission FACtor Model
EO	Executive Order
EV	Electric Vehicle
gal/hp-hr	Gallon per Horsepower-hour
GHG	Greenhouse Gas
GWh	Gigawatt-hours
hp	Horsepower
HVAC	Heating, Ventilation, and Air Conditioning
IEPR	Integrated Energy Policy Report
IOUs	Investor-owned Utilities
kWh	Kilowatt-hours
LCFS	Low Carbon Fuel Standard
LED	Light-Emitting Diode
LEV	Low-Emissions Vehicle
LPG	Liquified Petroleum Gas

MMBtu	Million British Thermal Units
MMcf	Million Cubic Feet
MW	Megawatt
MWELO	Model Water Efficient Landscape Ordinance
MWh	Megawatt-Hour
NHTSA	National Highway Traffic Safety Administration
OPR	Office of Planning and Research
PG&E	Pacific Gas and Electric
PHEV	Plug-in Hybrid Electric Vehicles
POU	Publicly Owned Utilities
PV	Photovoltaic
RPS	Renewables Portfolio Standard
SB	Senate Bill
SLO	San Luis Obispo
US	United States
USEPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
ZEV	Zero-Emission Vehicle
ZNE	Zero Net Energy

1. INTRODUCTION

Morro Bay Power Company LLC ("Vistra") proposes to develop a battery energy storage system (BESS) on a 107-acre property in the City of Morro Bay, California. The project includes three components: (1) Construction and operation of a 600-MW Battery Energy Storage System, (2) demolition and removal of the existing Morro Bay Power Plant building and stacks, and (3) adoption of a Master Plan. The BESS Facility would be constructed on a 24-acre portion of the Project Site and would consist of three two-story buildings with a total building area of 91,000 sq ft. Supporting infrastructure, including power conversion systems, substations, and tie-ins to the existing Pacific Gas and Electric substation adjacent to the project site, would also be included. The project also includes demolition of the existing Morro Bay Power Plant building and stacks and backfill and restoration of the site. A Master Plan would be developed in accordance with the requirements of Plan Morro Bay Policy LU-5.4 to change the land use designation of the 24-acre BESS portion of the Project Site from Visitor Serving Commercial to General (Light) Industrial.

This report discusses the Proposed Project's energy usage characteristics, describes the California energy profile (i.e., mix of energy resources and consumption characteristics), describes the energy production and transmission profile of Pacific Gas & Electric Company (PG&E; the regional purveyor of natural gas and electricity throughout the Bay Area and much of central and northern California), identifies the regulatory and policy framework that governs the production and consumption of energy resources and determines whether the Proposed Project could result in any significant energy-related environmental impacts during its construction or operation activities. This report also includes a cumulative energy analysis. The Proposed Project's emissions of greenhouse gases (GHGs) and potential impacts on climate change are discussed in the Greenhouse Gas Technical Report. The Proposed Project's air quality impacts are discussed in the Air Quality Technical Report to determine if the Proposed Project could result in any significant air quality related environmental impacts during its construction or operational activities.

The analysis determines whether the Proposed Project could result in a significant effect on the environment, including effects from the wasteful, inefficient, and unnecessary consumption of energy, and to identify mitigation measures to minimize any such significant effects, if required. The goal of this assessment is to evaluate whether the Proposed Project would ensure the wise and efficient use of energy. The analysis is based on a review of existing energy regulations and projections set by the United States Environmental Protection Agency (USEPA), the California Energy Commission (CEC), the San Luis Obispo County Air Pollution Control District (SLO County APCD) and the City of Morro Bay.

Calculations were prepared to quantitatively assess the energy usage of the Proposed Project. The energy impact methodologies and approaches to the analysis (described under "Approach to Analysis") assume that the Project is built out in a single phase from 2023 to 2028. The Project construction would consist of two components: 1) construction between 2023 and 2026 and subsequent operation of the BESS on approximately 24 acres of the 107-acre project site, and 2) demolition and removal of the existing Power Plant building and stack beginning in 2026 with completion in 2028. Operational impacts are analyzed assuming full occupancy immediately after the end of BESS construction in 2026. Further details on the air quality impact methodologies and approaches to the analyses are presented below.

2. ENVIRONMENTAL SETTING

2.1 State Setting

2.1.1 Energy Profile

Total energy usage in California was 6,923 trillion British Thermal Units (Btu) in 2020 (the most recent year for which this specific data is available), which equates to an average of 175 million Btu per capita. These figures place California second among the nation's 50 states in total energy use and 48th in per capita consumption. Of California's total energy usage, the breakdown by sector is roughly 34% transportation, 24.6% industrial, 19.6% commercial, and 21.8% residential. Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum-based fuel consumption is generally accounted for by transportation-related energy use.[1]

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Approximately 70% of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 30%, is imported from the Pacific Northwest and the Southwest. In 2021, California's in-state electricity use was derived from natural gas (50%), coal (0.2%), large hydroelectric resources (6.2%), nuclear sources (8.5%), and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (34.8%).[2]

2.1.2 Electricity

In 2021, total system electric generation for California was 277,764 gigawatt-hours (GWh), up 2% from 2020's total generation of 272,576 GWh.[3] Electricity from non-carbon dioxide (CO_2) emitting electric generation categories (i.e., nuclear, large hydroelectric, and renewable generation) accounted for 49% of total in-state generation for 2021, compared to 51% in 2020. California's in-state electric generation increased by 1.7% in 2021 compared to 2020, while net imports increased by 2.4%. The overall slight increase observed in California's total system electric generation for 2021 is consistent with the recently published California Energy Demand 2018 – 2030 Revised Forecast and may have also been influenced by the global pandemic.[4]

As the total system electric generation for California was slightly up in 2021, it is predicted to further increase in coming years. Factors contributing to the increase in total system electric generation include growth in the number of light duty electric vehicles registered in the state, increased manufacturing electricity consumption, and decreases in savings from energy efficiency programs, as population increases. With regard to total consumption, Californians consumed 247,250 GWh of electricity in 2021.[5]

---

[1] US Energy Information Administration (EIA), 2022. California State Energy Profile, updated August 18, 2022. https://www.eia.gov/state/print.php?sid=CA, accessed August 2022.

[2] CEC, 2022a. 2021 Total System Electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation, accessed August 2022.

[3] Ibid.

[4] CEC, 2018a. California Energy Demand 2018-2030 Revised Forecast. https://efiling.energy.ca.gov/getdocument.aspx?tn=223244, docketed April 2018, accessed August 2022.

[5] US EIA, 2022. California Electricity Profile 2021, updated November 10, 2022. https://www.eia.gov/electricity/state/california/, accessed December 2022.

Increasingly, electricity is used in multiple transportation modes, including light-duty vehicles, transit buses, and light and heavy rail. In California, electricity use is forecast to emerge in battery-electric medium-duty trucks, battery-electric buses, and high-speed rail. The CEC forecasts the statewide annual electricity demand for electricity-powered transportation modes will increase from its current level of 2,000 GWh to between 12,000 and 18,000 GWh by 2030, depending on technology development and market penetration of the various vehicle types.[6]

2.1.3 Natural Gas

In 2021, natural gas consumption comprised approximately 38% of total energy consumed in California (2,144 of 6,923 trillion Btu).[7] Although natural gas is the most common energy source for electricity generation in California, 90% of the state's natural gas is imported from the Rocky Mountain region, the Southwest, and Canadian basins.[8] Californians consumed 11,923 million therms of natural gas in 2021, which is equal to approximately 1,192 trillion Btu (MMBtu).[9] The natural gas market continues to evolve and service options expand, but its use falls mainly into the following four sectors: residential, commercial, industrial, and electric power generation. In addition, natural gas is a viable alternative to petroleum fuels for use in cars, trucks, and buses. Nearly 45% of the natural gas burned in California is used for electricity generation, and most of the remainder is consumed in the residential (21%), industrial (25%), and commercial (9%) sectors. Natural gas has become an increasingly important source of energy since most of the state's power plants rely on this fuel.[10]

2.1.4 Transportation Fuels

The energy consumed by the transportation sector accounts for roughly 82% of California's liquid petroleum products demand.[11] Gasoline and diesel, both derived from petroleum (also known as crude oil), are the two most common fuels used for vehicular travel. According to the CEC, the state relies on petroleum-based fuels for 98% of its transportation needs.[12,13] The transportation sector, including on-road and rail transportation (but excluding aviation), accounts for more than 95% of all motor gasoline use in the United States, at roughly 2,819 million barrels consumed in 2020.[14] California's transportation sector has the second

---

6 CEC, 2018b. Revised Transportation Energy Demand Forecast, 2018-2030. https://efiling.energy.ca.gov/GetDocument.aspx?tn=223241&DocumentContentId=28845, docketed April 2018, accessed August 2022.

7 US EIA, 2022. California State Energy Profile. https://www.eia.gov/state/print.php?sid=CA, accessed August 2022.

8 CEC, 2022b. Supply and Demand of Natural Gas in California. https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california, accessed August 2022.

9 CEC, 2022c. 2020 Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed August 2022.

10 CEC, 2022b. Supply and Demand of Natural Gas in California. https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california, accessed August 2022.

11 US EIA, 2022a. Table F16: Total Petroleum Consumption Estimates, 2020. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA, accessed August 2022.

12 Ibid.

13 US EIA, 2022. California State Energy Profile. https://www.eia.gov/state/print.php?sid=CA, accessed August 2022.

14 US EIA, 2022c. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2020. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=US, accessed November 2022.

highest petroleum fuel consumption rate of any state and the second highest motor gasoline consumption rate.[15,16] In 2021, approximately 29% of California's crude oil was produced within the state, about 15% was produced in Alaska, and the remaining 56% was produced in foreign lands.[17]

In 2021, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 13.8 billion gallons of gasoline,[18] and taxable diesel fuel sales accounted for approximately 3.1 billion gallons of diesel fuel.[19]

The CEC forecasts that demand for gasoline in California will range from 12.1 billion to 12.6 billion gallons in 2030, with most of the demand generated by light-duty vehicles. While the models show an increase in light-duty vehicles along with population and income growth over the forecast horizon, total gasoline consumption is expected to decline, primarily due to increasing fuel economy (stemming from federal and state regulations) and gasoline displacement from the increasing market penetration of zero emission vehicles (ZEVs). For diesel, demand is forecast to increase modestly by 2030, following the growth of California's economy, but would be tempered by an increase in fleet fuel economy and market penetration of alternative fuels, most prominently by natural gas in the medium- and heavy-duty vehicle sectors.[20]

As of 2021, California's oil fields make it the 7th-largest petroleum-producing state in the United States (federal off-shore excluded), behind Texas, New Mexico, North Dakota, Alaska, Colorado, and Oklahoma.[21] Crude oil is moved from area to area within California through a network of pipelines that carry it from both onshore and offshore oil wells to the refineries that are located in the San Francisco Bay Area, the Los Angeles area, and the Central Valley. As of January 1, 2022, 13 petroleum refineries operate[22] in California, processing approximately 1.7 million barrels per day of crude oil.[23]

Other transportation fuel sources used in California include alternative fuels, such as methanol and denatured ethanol (alcohol mixtures that contain no less than 70% alcohol), natural gas (compressed or liquefied), liquefied petroleum gas (LPG), hydrogen, and fuels derived from biological materials (i.e., biomass).

---

15 Ibid.

16 US EIA, 2022a. Table F16: Total Petroleum Consumption Estimates, 2020. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA, accessed November 2022.

17 CEC, 2022d. Oil Supply Sources to California Refineries. https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries, accessed November 2022.

18 California Department of Tax and Fee Administration (CDTFA), 2022a. Net Taxable Gasoline Gallons, Including Aviation Gasoline. November 2021 – Motor Vehicle Fuel 10 Year Reports. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm, accessed November 2022.

19 CDTFA, 2022b. Taxable Diesel Gallons 10 Year Report. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm, accessed November 2022.

20 CEC, 2018b. Revised Transportation Energy Demand Forecast, 2018-2030. https://efiling.energy.ca.gov/GetDocument.aspx?tn=223241&DocumentContentId=28845, docketed April 2018, accessed August 2022.

21 US EIA, 2022d. Crude Oil Production, Annual – Thousand Barrels. https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_a.htm, accessed August 2022.

22 US EIA, 2022e. Refinery Capacity Report June 2022, Table 1. https://www.eia.gov/petroleum/refinerycapacity/table1.pdf, accessed August 2022.

23 Ibid.

2.2 Regional Setting

Morro Bay and the greater San Luis Obispo County is served by PG&E, an investor-owned utility company that provides electricity and natural gas supplies and services throughout a 70,000-square-mile service area that extends from Eureka in the north, to Bakersfield in the south, and from the Pacific Ocean on the west to the Sierra Nevada on the east. Operating characteristics of PG&E's electricity and natural gas supply and distribution systems are provided below. Also discussed is regional consumption of transportation fuels.

2.2.1 Electric Utility Operations

PG&E provides "bundled" services (i.e., electricity, transmission, and distribution services) to most of the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. Some customers can also obtain electricity from alternative providers such as municipalities, or community choice aggregators as allowed under Assembly Bill (AB)117 (passed in 2002), as well as from self-generation distributed resources, such as rooftop solar installations. In San Luis Obispo County alone, electricity consumption in 2021 was 1,719 GWh.[24]

In December 2014, the California Public Utilities Commission (CPUC) issued Decision D.14-12-079 that permits the California investor-owned electric utilities to own electric vehicle (EV) retail charging equipment in their respective service territories to help meet the state's goal of reducing GHG emissions by promoting cleaner transportation. On February 9, 2015, PG&E filed an application to request that the CPUC approve their proposal to develop, maintain, and operate an EV-charging infrastructure in their service territory. In 2016, the CPUC issued Decision D.16-12-065 establishing a three-year EV program of $130 million to deploy up to 7,500 charging ports.[25] Further deployment of light-duty EV infrastructure was considered and approved in a second phase of the program with a total PG&E budget of over $236 million per CPUC Decision D.18-05-040.[26]

In 2021, PG&E generated and/or procured a total of 33,149 GWh of electricity. [27] **Table 1** shows the percent of bundled retail sales by power generation facility type, reported consistent with the CEC's guidelines.

Table 1: 2021 PG&E Power Mix Delivered to Retail Customers

Facility Type	Percent of Bundled Retail Sales (Estimated Procurement)	Percent of Bundled Retail Sales (Power Content Label)
Eligible Renewable1	50%	48%

[24] CEC, 2022e. 2020 Electricity Consumption by County. http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed August 2022.

[25] Pacific Gas & Electric (PG&E), 2022a. EV Charge Network Quarterly Report. https://www.pge.com/pge_global/common/pdfs/solar-and-vehicles/your-options/clean-vehicles/charging-stations/program-participants/EV-Charge-Network-2022-Q1-Report.pdf, accessed August 2022.

[26] The EPIC Energy Blog (EPIC), 2018. Update on Electric Vehicle CPUC Decision and Other Related Legislation. https://epicenergyblog.com/2018/06/01/update-on-electric-vehicle-cpuc-decision-and-other-related-legislation/, accessed August 2022.

[27] PG&E, 2022a. 2021 Joint Annual Report to Shareholders. https://www.pgecorp.com/investors/financial_reports/annual_report_proxy_statement/ar_pdf/2021/2021_Annual_Report.pdf, accessed August 2022.

Facility Type	Percent of Bundled Retail Sales (Estimated Procurement)	Percent of Bundled Retail Sales (Power Content Label)
Fossil Fuel-Fired	34%	9%
Nuclear	39%	39%
Large Hydroelectric	4%	4%
Others, Net[1,2]	(27)%	0.0%
Total	100%	100%

NOTES:

[1] Because SB 350 requires utilities to deliver 50% of their annual retail sales as renewable energy, PG&E had to purchase renewable energy to meet this requirement. Excess generation produced by fossil fuel-fired facilities was subsequently sold, hence the net reduction. Total reported generation and procurement volumes equate to actual electric retail sales.

[2] Amount is mainly comprised of net California Independent System Operator open market (sales)/purchases.

SOURCE: PG&E, 2022. Corporate Sustainability Report 2022. [28]

2.2.2 Renewable Energy Resources

California law requires load-serving entities, such as PG&E, to gradually increase the amount of renewable energy they deliver to their customers to at least 33% of their total annual retail sales by 2020, 44% by 2024, 52% by 2027, 60% by 2030, 95% by 2036, and 100% by 2046. This program, known as the Renewables Portfolio Standard (RPS), became effective in December 2011, and has since been enhanced with the passage of Senate Bill (SB) 350, SB 100, and SB 1020 (see Sections 3.2.11 and 3.2.12 for more information). Renewable generation resources, for purposes of the RPS program, include bioenergy such as biogas and biomass, small hydroelectric facilities (30 Megawatt [MW] or less), wind, solar, and geothermal energy.[29] As shown in **Table 2**, in 2021 approximately 50% of PG&E's energy procurement were from qualifying renewable energy sources. PG&E offers customers rate plans that include higher levels of renewable or carbon-free sources.[30]

Table 2: PG&E Renewable Energy Sources in 2020

Source	Percent of Total Energy Portfolio
Biopower	4

[28] PG&E, 2022. Corporate Sustainability Report 2022. https://www.pgecorp.com/corp_responsibility/reports/2022/pf03_renewable_energy_storage.html, accessed August 2022.

[29] PG&E, 2022. Corporate Sustainability Report 2022. https://www.pgecorp.com/corp_responsibility/reports/2022/pf03_renewable_energy_storage.html, accessed August 2022.

[30] PG&E, 2022. Solar & Renewable Energy Plans. https://www.pge.com/en_US/residential/rate-plans/rate-plan-options/solar-and-renewable-energy-plans/solar-and-renewable-energy-plans.page, accessed August 2022.

Source	Percent of Total Energy Portfolio
Geothermal	5
Wind	11
RPS-Eligible Hydroelectric	2
Solar	28
Total	**50**

SOURCE: PG&E, 2021 Joint Annual Report to Shareholders.[31]

2.2.3 Natural Gas Operations

PG&E receives natural gas from all the major natural gas basins in western North America, including basins in western Canada, the Rocky Mountains, and the southwestern United States. PG&E also is supplied by natural gas fields in California. PG&E provides natural gas transportation services to "core" customers and to "non-core" customers (i.e., industrial, large commercial, and natural gas-fired electric generation facilities) that are connected to the gas system in its service territory. During 2020, PG&E purchased approximately 282,000 million cubic feet (MMcf) of natural gas (net of the sale of excess supply of gas), or the equivalent of approximately 291,306,000 MMBtu or 2,913 million therms. In 2020, the total consumption of natural gas in San Luis Obispo County was 80 million therms, or 8,063,913 MMBtu.[32]

2.2.4 Transportation Fuels

Gasoline and diesel fuel are by far the largest transportation fuels used by volume in San Luis Obispo County. According to the CEC, the total estimated 2021 sales of gasoline in San Luis Obispo County were 125 million gallons and the total estimated 2021 sales of diesel fuel in San Luis Obispo County were 22 million gallons.[33] Note that the CEC only tracks fuel sales at the retail level which allows for data to be collected on a county-by-county basis. This is in contrast to the Board of Equalization (BOE) which tracks all fuel sales, retail and non-retail, but only at the statewide level (see Section 2.1.4). Thus, the Project impact calculations presented in Section 4.5.2 rely on separate data sets for comparison to San Luis Obispo County and statewide transportation fuel consumption rates.

[31] PG&E, 2022a. 2021 Joint Annual Report to Shareholders. https://www.pgecorp.com/investors/financial_reports/annual_report_proxy_statement/ar_pdf/2021/2021_Annual_Report.pdf, accessed August 2022.

[32] CEC, 2022c. 2020 Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed August 2022.

[33] CEC, 2020a. 2020 California Annual Retail Fuel Outlet Report Results (CEC-A15), Energy Assessment Division, July 1, 2019. https://www.energy.ca.gov/media/3874, accessed August 2022.

3. REGULATORY SETTING

3.1 Federal

Federal policies and regulations set broad energy efficiency standards and incentives for consumer products, automobile and fuel efficiency, etc. Such requirements, as those listed below, tend to be applicable to the manufacturing sector and not directly applicable to the Proposed Project, but are listed here for informational purposes.

3.1.1 National Energy Policy Act of 2005

The National Energy Policy Act of 2005 sets equipment energy efficiency standards and seeks to reduce reliance on nonrenewable energy resources and provide incentives to reduce current demand on these resources. For example, under the act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products (including hybrid vehicles), constructing energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

Executive Order (EO) 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), signed in 2007, strengthens the key energy management goals for the federal government and sets more challenging goals than the Energy Policy Act of 2005. The energy reduction and environmental performance requirements of EO 13423 were expanded upon in EO 13514 (Federal Leadership in Environmental, Energy, and Economic Performance), which was signed in 2009.

3.1.2 Corporate Average Fuel Economy (CAFE) Standards

Established by the US Congress in 1975, the CAFE standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and USEPA jointly administer the Corporate Average Fuel Economy standards. The US Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[34]

3.2 State

3.2.1 Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the CEC. The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

3.2.2 State of California Integrated Energy Policy

In 2002, the Legislature passed SB 1389 which requires the CEC to prepare a biennial Integrated Energy Policy Report (IEPR) that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and

[34] For more information on the Corporate Average Fuel Economy standards. https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy, accessed August 2022.

safety (Public Resources Code Section 25301[a]). The IEPR is now the state's chief program intended to provide a comprehensive statewide energy strategy to guide energy investments, energy-related regulatory efforts and GHG reduction measures.

The most recent update to the IEPR (2021) examines how California's energy system must be transformed to meet the state's 2045 GHG reduction goal set by EO B-55-18 to achieve economy-wide carbon neutrality by 2045. This includes implementation of SB 350 (De Leon, Chapter 547, Statutes of 2015) to double the energy efficiency of existing buildings and SB 100's target of achieving 60% renewables in the electricity supply by 2030. The report also covers policies and trends in integrated resource planning, building decarbonization, energy efficiency, distributed energy resources, transportation electrification, barriers faced by disadvantaged communities, demand response, the California Energy Demand Forecast, the transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), decarbonizing California's gas system, and solutions to increase resiliency in the electricity sector. The key strategies identified in the 2021 IEPR Update are summarized below.[35] CEC staff are currently conducting public workshops for the 2022 IEPR Update, which is expected to be finalized in January 2023, and adopted in February 2023.[36]

3.2.3 IEPR Strategy: Decarbonizing the Electricity Sector

Decarbonizing the electricity sector is part of an integrated approach to reducing emissions from energy use. Since 2015, solar has increased from 7.7% of in-state electric generation to 17.1% in 2021. Wind has also made strides from 6.2% in 2015 to 7.8% in 2021.[37] In 2020, about 35% of the electricity used to serve California was produced from renewable resources such as solar and wind.[38] In fact, the electricity sector is leading the state's efforts to reduce GHG emissions. Although the AB 32 and SB 32 GHG reduction goals are economy-wide, in 2017, the electricity sector surpassed AB 32's 2020 goal and met SB 32's 2030 goal. Over the last 10 years, GHG emissions from imported electricity have declined by more than 60%, and emissions from in-state generation have declined by nearly 30%[39]. These gains are largely attributable to advancements in energy efficiency, increased use of renewable energy resources, and reduced use of coal-fired electricity. To further reduce GHG emissions, California is increasingly using renewable resources to produce electricity while planning for increased demand from transportation electrification and other opportunities for electrification.

In 2019, solar accounted for 42% of the state's renewable generation.[40] The increase in solar and other renewables is a California success story in reducing GHG emissions, but also

[35] CEC, 2022f. ADOPTED FINAL 2021 IEPR, VOLUMES I - IV AND APPENDIX. February 22, 2022. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report/2021-iepr, accessed September 2022.

[36] CEC, 2022g. 2022 Integrated Energy Policy Report Update. https://efiling.energy.ca.gov/GetDocument.aspx?tn=242747&DocumentContentId=76300, accessed September 2022.

[37] CEC, 2022a. 2021 Total System Electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation, accessed August 2022.

[38] CEC, 2022h, New Data Indicates California Remains Ahead of Clean Electricity Goals. February 2022. https://www.energy.ca.gov/news/2022-02/new-data-indicates-california-remains-ahead-clean-electricity-goals, accessed September 2022.

[39] CEC, 2020b, Tracking Progress – Renewable Energy. February 2020. https://www.energy.ca.gov/sites/default/files/2019-12/renewable_ada.pdf, accessed September 2022.

[40] Ibid.

creates operational challenges. Grid operators must manage the ramp-up of solar generation as it peaks midday and then ramps down at sunset while electricity demand remains high.

The 2021 IEPR emphasizes the current challenge the state faces in increasing the state's ability to integrate more renewable energy into the grid. There is an increasing need for energy storage that can balance supply and demand by absorbing excess energy and reinjecting it into the grid when demand increases. There is also a need for transmission investments to link our extensive renewable resources to load centers throughout the grid. The challenges are compounded by increasing numbers of Californians who are generating, and in some cases, storing their own electricity or purchasing electricity from local providers called community choice aggregators.

3.2.4 IEPR Strategy: Energy Efficiency and Building Decarbonization

In 2017, as required in SB 350, the CEC established ambitious annual targets to achieve a statewide doubling of cumulative energy efficiency savings in electricity and natural gas end uses by 2030. The CEC developed the doubling targets in collaboration with the CPUC, investor-owned utilities (IOUs), publicly owned utilities (POUs), and other stakeholders through a public process. Achieving these efficiency targets is one of the primary ways the energy sector can help achieve the state's climate goal of reducing GHG emissions to 40% below 1990 levels by 2030. However, the state will need additional efforts to decarbonize homes and businesses to meet California's goals for 2030 and 2050.

Electrification of space and water heating is one of the state's key strategies to reduce or eliminate GHG emissions from buildings, including the methane emissions associated with natural gas use. Building emissions account for 24% of California's GHG emissions when accounting for fuel and energy used for building functions.[41] GHG reductions will accelerate as the electricity system becomes cleaner with large increases in renewable resources.

As spelled out in the California Energy Efficiency Strategic Plan, the CPUC has set a goal of achieving zero net energy (ZNE) performance for all new low-rise homes constructed in or after 2020, and for all new commercial buildings constructed in or after 2030. While this was not achieved in the most recent Building Energy Efficiency Standards that took effect August 11, 2021, the CPUC, CEC, and California Air Resources Board (CARB) continue to focus on improved energy efficiency and integration of renewable electricity and demand response for new construction with each code update.

3.2.5 IEPR Strategy: Transportation Electrification

California is working to transform the transportation sector away from petroleum to near-zero emission vehicles operating with low-carbon fuels and ZEVs that run on electricity from batteries or hydrogen fuel cells. Including emissions from refineries, the transportation sector accounted for more than 50% of the state's GHG emissions as of 2016. The state is advancing goals, policies, and plans to support the proliferation of zero-emission and near-zero-emission vehicles. As described in more detail below, then-Governor Brown's EOs have set goals of reaching 1.5 million ZEVs on California's roadways by 2025 and 5 million by 2030, while Governor Newsom's September 2020 EO N-79-20 increased this target to include 100% ZEV sales for new light- and medium-duty automobiles by 2035 and all new medium- and

[41] CEC, 2022c. 2021 IEPR Volume I - Building Decarbonization. February 2022. https://efiling.energy.ca.gov/GetDocument.aspx?tn=241599, accessed September 2022.

heavy-duty vehicles to be zero-emissions by 2045. As usage grows, ZEVs will have an increasing role in grid management and the integration of renewables in particular.

3.2.6 California Energy Efficiency Standards (Title 24, Part 6)

The Energy Efficiency Standards for residential and nonresidential buildings specified in Title 24, Part 6 of the California Code of Regulations were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated approximately every three years to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The current standards (2022) became effective on January 1, 2023. These standards introduce electric heat pump and electric-ready requirements, expand solar photovoltaic (PV) system and battery storage standards, and strengthen ventilation standards to improve indoor air quality.[42]

3.2.7 California Green Building Standards Code (CALGreen, or Title 24 Part 11)

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. Since 2011, the CALGreen Code is mandatory for all new residential and non-residential buildings constructed in the state. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was updated in 2016 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2017.[43] Most changes are related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. The 2019 CALGreen Code updates, which took effect on January 1, 2020, incorporate amendments to electric vehicle charging spaces, outdoor water use provisions, and clarifications.[44] The 2022 CALGreen standards took effect on January 1, 2023. The 2022 standards require new multifamily development projects with 20 or more dwelling units to have 10% of parking spaces be EV capable, 25% with low power Level 2 EV charging receptacles, and 5% of parking spaces with Level 2 chargers (see Sections 4.106.4.2.1 and 4.106.4.2.2).[45]

3.2.8 Renewables Portfolio Standard (Senate Bills 1078 and 1020)

The State of California adopted standards to increase the percentage of energy from renewable resources that retail sellers of electricity, including IOUs and community choice aggregators, must provide in their portfolio. The RPS was established in 2002 under SB 1078 and most recently expanded and accelerated in 2022 under SB 1020. Qualifying renewables under the RPS include bioenergy such as biogas and biomass, small hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. The CPUC and the CEC jointly

---

[42] CEC, 2022. 2022 Building Energy Efficiency Standards Summary. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency, accessed February 2023.

[43] California Building Standards Commission (CBSC), 2016. 2016 California Green Building Standards Code (Part 11 of Title 24). https://www.dgs.ca.gov/BSC/CALGreen, accessed August 2022.

[44] CBSC, 2019. 2019 California Green Building Standards Code, Effective January 1, 2020. https://www.dgs.ca.gov/BSC/CALGreen, accessed August 2022.

[45] CBSC, 2022. 2022 California Green Building Standards Code, Effective January 1, 2023. https://www.dgs.ca.gov/BSC/CALGreen, accessed February 2022.

implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance, (2) reviewing and approving each investor-owned utility's renewable energy procurement plan, (3) reviewing contracts for RPS-eligible energy, and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.[46]

3.2.9 Executive Order S-14-08 and S-21-09

In November 2008, then-Governor Schwarzenegger signed EO S-14-08, to expand the state's RPS to 33% renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directed the CARB under its AB 32 authority to enact regulations to help the state meet this RPS goal.

3.2.10 SB 350 - Clean Energy and Pollution Reduction Act of 2015

SB 350, also known as the Clean Energy and Pollution Reduction Act of 2015, was enacted on October 7, 2015 and provides a new set of objectives in clean energy, clean air, and pollution reduction by 2030. The objectives include the following:

1. To increase the procurement of California's electricity from renewable sources from 33% to 50% by December 31, 2030.
2. To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

3.2.11 Senate Bill 100

On September 10, 2018, then-Governor Brown signed SB 100, establishing that 100% of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both IOUs and POUs from 50% to 60% by 2030. Incrementally, these energy providers are also required to have a renewable energy supply of 33% by 2020, 44% by 2024, and 52% by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

On the same day that SB 100 was signed, then-Governor Brown signed EO B-55-18 with a new statewide goal to achieve carbon neutrality (zero-net GHG emissions) by 2045 and to maintain net negative emissions thereafter.

3.2.12 Senate Bill 1020

On September 16, 2022, Governor Newsom signed SB 1020, revising SB 100 RPS goals. SB 1020 establishes the following RPS goals:

- 90% of all retail sales of electricity to California end-use customers must be obtained from renewable and zero-carbon sources by 2036,
- 95% of all retail sales of electricity to California end-use customers must be obtained from renewable and zero-carbon sources by 2041,
- 100% of all retail sales of electricity to California end-use customers must be obtained from renewable and zero-carbon sources by 2046, and

[46] CPUC, 2021. RPS Program Overview. http://www.cpuc.ca.gov/RPS_Overview/, accessed August 2022.

- 100% of all electricity procured to serve all state agencies must be obtained from renewable and zero-carbon sources by 2036.

3.2.13 Appliance Efficiency Regulations, California Code of Regulations (CCR) Title 20

California's Appliance Efficiency Regulations (20 CCR Part 160-1608) contain standards for both federally regulated appliances and non-federally regulated appliances. The regulations are updated regularly to allow consideration of new energy efficiency technologies and methods. The current regulations were adopted by the CEC on December 9, 2020.[47] The standards outlined in the regulations apply to appliances that are sold or offered for sale in California. More than 23 different categories of appliances are regulated, including refrigerators, freezers, water heaters, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings.

3.2.14 Transportation Energy

3.2.14.1 AB 1007 (Pavley)-Alternative Fuel Standards

AB 1007 (Pavley, Chapter 371, Statutes of 2005) required the CEC to prepare a state plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other state, federal, and local agencies. The final State Alternative Fuels Plan, published in December 2007, attempts to achieve an 80% reduction in GHG emissions associated with personal modes of transportation, even as California's population increases.

3.2.14.2 California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (commonly referred to as CARB's Pavley regulations) was enacted on July 22, 2002 and requires CARB to set GHG emission standards for new passenger vehicles, light duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009 through 2016 and Phase II established standards for model years 2017 through 2025.[48,49] Refer to Ramboll's Greenhouse Gas Technical Report (February 2023) for additional details regarding this regulation.

3.2.14.3 Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through EO S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products that started with a 0.25% reduction in 2011 and culminated in a 10% total reduction in 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the Program including a doubling of the carbon intensity reduction to 20% by 2030.

---

[47] CEC, 2022i. Appliance Efficiency Proceedings – Title 20. https://www.energy.ca.gov/rules-and-regulations/appliance-efficiency-regulations-title-20/appliance-efficiency-proceedings, accessed August 2022.

[48] California Air Resources Board (CARB), 2017a. Clean Car Standards—Pavley, Assembly Bill 1493, last reviewed January 11, 2017. https://ww2.arb.ca.gov/californias-greenhouse-gas-vehicle-emission-standards-under-assembly-bill-1493-2002-pavley, accessed August 2022.

[49] United States Environmental Protection Agency (USEPA), 2012. EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017 through 2025 Cars and Light Trucks. https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.pdf, accessed August 2022.

Petroleum importers, refiners, and wholesalers can either develop their own low carbon fuel products or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

3.2.14.4 Executive Order B-16-12 and N-79-20 - Goals for Zero Emission Vehicles

In March 2012, then-Governor Brown issued an executive order identifying a goal of 1.5 million ZEVs on California roads by 2025. In addition to the ZEV goal, EO B-16-12 stipulated that by 2015 all major cities in California will have adequate infrastructure and be "zero-emission vehicle ready"; that by 2020 the state will have established adequate infrastructure to support 1 million ZEVs; and that by 2050, virtually all personal transportation in the state will be based on ZEVs, and GHG emissions from the transportation sector will be reduced by 80% below 1990 levels. In 2020, Governor Newsom expanded upon these goals by issuing EO N-79-20 which targets all new vehicles to have zero-emissions for passenger cars by 2035 and medium and heavy-duty vehicles by 2045.

3.2.14.5 CARB's Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations.[50] The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the ZEV regulations to require manufactures to produce an increasing number of pure ZEV's (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

3.2.14.6 CARB's Mobile Source Strategy

The Mobile Source Strategy (2016) includes an expansion of the Advanced Clean Cars program and further increases the stringency of GHG emissions for all light-duty vehicles, and 4.2 million zero-emission and plug-in hybrid light-duty vehicles by 2030. It also calls for more stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero-emission trucks primarily for classes 3 through 7 "last mile" delivery trucks in California. Statewide, the Mobile Source Strategy would result in a 45% reduction in GHG emissions, and a 50% reduction in the consumption of petroleum-based fuels. CARB's Mobile Source Strategy includes measures to reduce total light-duty vehicle miles travelled (VMT) by 15% compared to business-as-usual in 2050.

In 2004, CARB adopted an Airborne Toxics Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (Title 13 California Code of Regulations Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

[50] CARB, 2017a. Clean Car Standards—Pavley, Assembly Bill 1493.

In addition to limiting exhaust from idling trucks, CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

3.2.14.7 Executive Order B-48-18

On January 26, 2018, then-Governor Brown issued an executive order identifying a goal of 5 million ZEVs on California roads by 2030 and spur the installation and construction of 250,000 plug-in electric vehicle chargers, including 10,000 direct current fast chargers, and 200 hydrogen refueling stations by 2025.

3.2.14.8 Executive Order N-79-20

In September 2020, Governor Newsom signed EO N-79-20, which sets a new State goal that 100% of in-state sales of new passenger cars and trucks will be zero-emission by 2035; that 100% of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible; and by 2035 for drayage trucks; and that 100% of off-road vehicles and equipment will be zero emission by 2035 where feasible. This order calls upon state agencies including CARB, the CEC, the CPUC, the Department of Finance, and others to develop and propose regulations and strategies to achieve these goals.

3.2.14.9 Sales of GHG-emitting cars after 2035

In August 2022, the California Air Resources Board issued a rule that will require that all new cars sold in the state by 2035 be free of greenhouse gas emissions. This will result in lower usage of gasoline and diesel fuels in the state, but likely higher electricity usage. The rule also sets interim targets, requiring that 35 percent of new passenger vehicles sold by 2026 produce zero emissions. That requirement climbs to 68 percent by 2030. This will rapidly reduce fossil-fuel fired vehicles in the fleet in the state.

3.3 Local Plans, Ordinances and Policies

3.3.1 City of Morro Bay General Plan

The General Plan for the City of Morro Bay contains several environmental management policies aimed at sustainability within the city. They are outlined below[51]:

- Policy C-6.1: Renewable Energy Incentive Programs. Create incentives that promote renewable and sustainable energy systems as a component of new development or reuse projects. Require water- and energy-efficient features in all new and significantly renovated development, such as low flow and energy-efficient appliances, drought-tolerant vegetation, rooftop solar, and passive heating and cooling features.

[51] Plan Morro Bay. 2021. https://www.morrobayca.gov/DocumentCenter/View/15424/Plan-Morro-Bay-GP-LCP-Final, accessed October 2022.

- Policy C-6.2: Renewable Energy in Home and Commercial Uses. Encourage the use of solar energy systems in homes and commercial businesses as a form of renewable energy, including in support of zero net energy goals.
- Policy C-6.3: Renewable Energy in Municipal Uses. Maximize renewable energy capacity on municipal property and renewable energy use in City sponsored projects and activities
- Policy ED-3.2: Environmental Guidelines. Develop guidelines that describe desired environmentally conscious building landscapes, designs, features, and practices that will be used to give recommendations to businesses and to provide City staff with suggested conditions of approval for permitting new or significantly renovated homes and businesses.
- Policy CIR-1.1: Balanced Transportation. Work to complete a balanced multimodal transportation system that meets the needs of all users, including pedestrians, cyclists, motorists, children, seniors, and people with disabilities.
- Policy CIR-1.5: Regional Transit. Coordinate with the San Luis Obispo Regional Transit Authority to ensure local transit connects smoothly with regional transit and possible future route and schedule expansions.
- Policy CIR-1.12: Climate Change Impacts on Transportation. Require ongoing evaluation of the transportation infrastructure system and its ability to withstand future effects of climate change. Identify future points to begin incorporating resilient strategies and materials into design, using the most up-to-date guidance from the Federal Highway Administration.
- Policy CIR-3.2: VMT Thresholds. Achieve State-mandated reductions in VMT by establishing and adopting a VMT standard.

4. IMPACTS AND MITIGATION MEASURES

4.1 Significance Thresholds

Changes to Appendix G of the State California Environmental Quality Act (CEQA) Guidelines effective in December 2018 were intended to reflect recent changes to the CEQA statutes and court decisions. In the case of energy, the topic was added to the Appendix G checklist, in addition to being discussed in Appendix F of the State CEQA Guidelines. For purposes of this analysis, consistent with the changes to Appendix G of the State CEQA Guidelines, impacts associated with energy are significant if the Proposed Project would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.2 Approach to Analysis

This impact analysis evaluates the potential for the Proposed Project to result in the wasteful use of energy or wasteful use of energy resources during Proposed Project construction and operation, consistent with Public Resources Code 21100(b)(3) and Section 15126.2(b) and Appendices F and G of the State CEQA Guidelines. The analysis provides construction and operational energy use estimates for the Proposed Project and the CEQA baseline. The analysis then uses this information to evaluate whether this energy use would be considered wasteful, inefficient, or unnecessary, taking into account available energy supplies and existing use patterns, the Proposed Project's energy efficiency features, and compliance with applicable standards and policies aimed to reduce energy consumption, including California's Title 24 Energy Efficiency Standards. The Project's expected energy use is then compared to the local and regional supplies and capacities to evaluate if there could be a substantial impact. Additionally, the Project features are compared to applicable state and local plans for renewable energy or energy efficiency to determine consistency.

This energy analysis includes quantification of electricity, gasoline, and diesel fuel that would be required to construct and operate the Proposed Project. Construction energy use includes off-road equipment and on-road mobile sources. Sources of operational energy use include building energy use, operational equipment use, and on-road mobile sources.

The energy analysis is based mainly on default values in the California Emission Estimator Model (CalEEMod®) version 2022.1. and the latest version of Emission Factors Model version 2021 (EMFAC2021), which have not been updated for the most recent executive orders, specifically EO N-79-20 which bans the sale of gasoline-powered cars in California by 2035, and the newly implemented CARB rules; and EO B-55-18 which set as a goal carbon neutrality in California by 2045. Both EOs, if implemented, will change the energy mix in California for future operations at the Proposed Project. However, as there is insufficient information to incorporate these executive orders into this analysis, to do so would be speculative. Accordingly, this energy analysis has been conducted with the most recent available tools prepared and accepted by the regulatory agencies. CalEEMod® outputs are included as **Appendix C.**

Construction for the Proposed Project is expected to begin in late 2023 and end in late 2026. Demolition is anticipated to start at the end of construction of the Proposed Project, beginning in mid-2026 and ending in 2028. Overall, the Proposed Project construction could take 36 to 48 months, followed by up to 2 years of demolition. The 36-month construction period used in this analysis is conservative because the compressed schedule would maximize the annual construction activities. The Proposed Project land use amounts and construction schedule are shown in **Appendix A Table 1 and 2**.

4.3 Construction Energy Estimates

This section describes the estimation of energy usage from construction activities within the Project area. Energy usage from these construction phases is largely attributable to fuel use from off-road construction equipment and on-road mobile trips from workers, vendors, and hauling vehicles.

Summaries of the total estimated Proposed Project construction energy use requirements for diesel fuel and gasoline are presented in **Appendix A Table 5**, as well as below in **Table 3** under the Impact ENE-1 discussion.

4.3.1 Off-Road Equipment

Off-Road equipment is the most significant source of construction fuel usage. Diesel fuel consumption associated with on-site off-road construction equipment has been estimated based on the construction schedule, equipment list, and CARB estimated diesel consumption rate for off-road equipment. The analysis used the default construction assumptions from CalEEMod® unless project-specific information was available. The construction schedule is shown in **Appendix A Table 2**.

The construction equipment list – including equipment type, quantity, hours of use, horsepower, and load factor was based on CalEEMod® default assumptions and input from the Project Sponsor. Further details on the construction equipment are provided in **Appendix A Table 3**. For the purposes of the energy analysis, all equipment was assumed to be diesel-fueled unless otherwise specified; electricity- or gasoline-fueled equipment would not be expected to substantially affect energy resource demands. Note that engine tier does not significantly affect fuel consumption rates. Fuel consumption rates in gallons per horsepower-hour (gal/hp-hr) were calculated from US EPA's AP-42 'Compilation of Air Pollutant Emissions Factors' database.[52]

4.3.2 On-Road Vehicles

On-road construction vehicles such as light-duty automobiles and trucks that will be used by workers for commuting to and from the construction site and on-road trucks, such as vendor and haul trucks for demolition debris, soil, and other material hauling, are assumed to be fueled according to the default EMFAC2021 fuel distribution mix. The gasoline, diesel, and natural gas fuel quantities that would be required for on-road vehicles during construction have been calculated based on fuel efficiency factors estimated for each vehicle and fuel type using EMFAC2021 fuel consumption rates and VMT. The fuel efficiency for electric vehicles was obtained from the US Department of Energy Trip counts were estimated using CalEEMod® default methods. Fuel efficiency factors and on-road activity assumptions are shown in **Appendix A Table 5.** CalEEMod® defaults were also used for worker, vendor, and haul trip lengths.

---

[52] USEPA. 1996. AP-42. Section 3.4 Large Stationary Diesel And All Stationary Dual-fuel Engines. October. Available at: https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf

Electricity required to supply, treat, and transport water to the Proposed Project site for dust control purposes is assumed to be negligible and is thus not calculated in this analysis.

4.4 Operational Energy Estimates

The Proposed Project would consume energy from a variety of sources, including building energy use (electricity), operational equipment, and mobile sources (daily trips). While there is likely to be energy usage associated with water consumption associated with indoor plumbing (e.g., for restrooms), the usage is expected to be minimal and inconsequential. **Table 1** in **Appendix A** contains a summary of the different land uses analyzed at full project buildout.

Summaries of the total estimated Proposed Project operational energy use requirements for electricity, gasoline, diesel fuel, and gasoline are presented in **Appendix A Table 10**, as well as below in **Table 4** under the Impact ENE-1 discussion.

4.4.1 Building Energy Use

Building electricity and natural gas usage rates for the Proposed Project buildings are presented in **Appendix A Table 7**. The CalEEMod® default energy consumption profiles account for 2019 Title 24 Building Energy Efficiency Standards. The Proposed Project would be constructed beginning in 2023, by which time the 2022 Title 24 Standards would be in place; therefore, energy consumption is expected to be lower than calculated.

4.4.2 Operational Equipment Energy Use

Diesel use rates for operational equipment were calculated for the proposed 350 horsepower emergency fire pump on the Project site. In 2011, CARB issued an amendment to the applicable ATCM, setting a maximum number of allowable non-emergency operational hours for fire pumps based on the pump engine diesel PM standards. A 350-horsepower fire pump that meets the diesel PM standard of less than or equal to 0.4 g/bhp-hr is permitted to operate a maximum of 30 hours per year.[53] Annual fuel usage was calculated using a representative fire pump, specifications for which provide a fuel rate of 18.1 gallons per hour.[54] Therefore, the fuel pump is estimated as:

$$\frac{30\ hours}{year} \times \frac{18.1\ gallons}{hour}$$

or 543 gallons of diesel per year.

4.4.3 Mobile Energy Use

Mobile fuel usage for the Proposed Project is summarized in **Appendix A Table 9**. Fuel usage is evaluated for on-road mobile sources using trip rates provided by the Project Sponsor and CalEEMod® default trip rates, trip lengths, and trip types.

Diesel and gasoline use rates were calculated using trip rates, trip length, and trip type data based on information provided by the Project Applicant in September 2022. Fuel efficiency for diesel and gasoline fueled vehicles was calculated from EMFAC2021 daily VMT and fuel

[53] California Air Resources Board, 2011. Amendments to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines. CCR Section 93115. https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/finalreg2011.pdf, accessed November 2022.

[54] https://mart.cummins.com/imagelibrary/data/assetfiles/0062915.pdf

consumption data, averaged across all vehicle categories for operational year 2028. Fuel efficiency for electric vehicles was obtained from US Department of Energy data.

4.5 Impact Evaluation

4.5.1 Impact ENE-1:

Construction and operation of the Project could result in potentially significant environmental impact due to the wasteful, inefficient, and/ or unnecessary use of energy. (Criterion 1.). (Less than Significant)

4.5.1.1 Construction Energy Use

Construction of the Proposed Project would require the use of fuels (primarily gasoline and diesel) for the operation of construction equipment and vehicles to perform a variety of activities, including excavation, hauling, paving, and vendor and construction worker travel.

Table 3 presents total and annual average estimated construction energy consumption by energy source for the Proposed Project.

Total energy consumption would occur over different calendar years and would fluctuate depending on the type of construction activity underway during any particular time period. Construction is expected to take place from 2023 to 2026 for the Proposed Project. Gasoline and diesel fuel would be the primary energy source for vehicles driven by construction crews and to power the large trucks used to deliver and retrieve construction equipment, materials, and debris. Total gasoline and diesel fuel usage by the transportation sector in California was expected to be 13.8 billion gallons and 3.1 billion gallons, respectively, in 2021.[55],[56] Proposed construction fuel usage would represent less than 0.004% of the state’s transportation sector diesel and gasoline fuel usage. Off-road construction equipment also consumes fuel while idling.

CARB implemented The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which limits idling to five minutes at any one location. This was done to save fuel because CARB estimated that heavy-duty vehicles (off-road equipment) can consume up to one gallon of diesel fuel per hour of idling, which can total to 1,500 gallons of diesel fuel per year per vehicle. By implementing this rule, idling is greatly reduced, and the use of diesel fuel is reduced. The Proposed Project would be compliant with this ATCM. This ATCM has led to fuel savings of approximately 121 million gallons per year statewide since full implementation.[57] Therefore, construction-related impacts from the Proposed Project would be less than significant.

[55] CDFTA, 2022a. Net Taxable Gasoline Gallons, Including Aviation Gasoline. September 2022 – Motor Vehicle Fuel 10 Year Reports. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm, accessed December 2022.

[56] CDFTA, 2022b. Taxable Diesel Gallons 10 Year Report. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm, accessed December 2022.

[57] CARB, 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking; Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. https://ww3.arb.ca.gov/regact/idling/isor.pdf, accessed September 2022.

Table 3: Proposed Project Construction Energy Resource Use

Year	Source[A,B]	Gasoline Usage (gal)	Diesel Usage (gal)
2023	Off-Road Construction Equipment	--	98,390
	On-Road Construction Trips	4,599	1,337
2024	Off-Road Construction Equipment	--	485,763
	On-Road Construction Trips	39,236	8,995
2025	Off-Road Construction Equipment	--	523,096
	On-Road Construction Trips	62,497	10,503
2026	Off-Road Construction Equipment	--	330,988
	On-Road Construction Trips	47,567	30,865
2027	Off-Road Construction Equipment	--	144,715
	On-Road Construction Trips	13,347	140,641
2028	Off-Road Construction Equipment	--	59,882
	On-Road Construction Trips	5,416	57,195
Total		**172,663**	**1,892,370**

Notes:

[A] On-road mobile source fuel use is based on vehicle miles traveled (VMT) for all years of construction and fleet-average fuel consumption in gallons per mile from EMFAC2021 for calendar years 2023-2028 in San Luis Obispo County.

[B] Off-road mobile source fuel usage is calculated using a fuel usage rate of 0.05 gallons of diesel per horsepower (HP)-hour. This is calculated based on diesel conversion factors from AP-42 in Section 3.4. These factors are an average brake-specific fuel consumption (BSFC) of 7,000 BTU/hp-hr, a heating value of 19,3000 BTU/lb, and a density of 7.1 lb/gallon.

Source: Ramboll, 2022. **Appendix A Table 6**.

4.5.1.2 Operational Energy Use

Proposed Project operations would require long-term consumption of energy in the form of electricity and diesel fuel. The electricity that would be required for operation of the proposed buildings have been estimated based on Proposed Project specific building area estimates, 2019 Title 24 requirements, and CalEEMod® default factors, as discussed above. No natural gas infrastructure would be installed as part of the Proposed Project.

Mobile source fuel use associated with operation of the Proposed Project has been estimated based on VMT and the fleet-average fuel consumption (in gallons per mile) from EMFAC2021. Furthermore, based on State targets and current trends, EV penetration may increase beyond EMFAC defaults, which would increase electricity consumption and decrease fossil fuel consumption relative to what is presented in **Appendix A Table 10**, as well as **Table 4** below.

The annual energy use requirements estimated for full buildout operations of the Proposed Project are summarized in **Table 4** by energy use type.

Based on the energy use analysis, the Proposed Project would use energy necessary for building operation (e.g., lighting and other auxiliary uses). Furthermore, **Section 4.5.1.1** analyzes the factors identified in Appendix F of the CEQA Guidelines relating to whether a project would result in the wasteful, inefficient, or unnecessary consumption of fuel or energy, and concludes the Proposed Project avoids wasteful, inefficient, or unnecessary consumption of fuel or energy. In addition, the proposed project would increase the battery storage capacity in the state and contribute to meeting state renewable energy goals. Battery storage is used to store energy during off-peak hours when energy usage/demand is lower and dispatch stored energy on an as-needed basis during peak demand hours. This technology reduces the amount of fossil fuels consumed during peak hours and maximizes usage of energy from renewable sources, such as wind and solar facilities that may not be able to produce energy during times of peak demand. As a result, the Proposed Project construction and operation will not result in the wasteful, inefficient, or unnecessary consumption of energy and the impacts would be **less than significant.**

Table 4: Proposed Project Operational Energy Use

Energy Use Type [A]	Gasoline Usage (gal)	Diesel Usage (gal)	Natural Gas Usage (MMBtu)	Electricity Usage (MWh)
Building Electricity Consumed (+)	--	--	--	2,754
Building Natural Gas	--	--	--	--
Operational Equipment	--	543	--	--
Mobile Sources	463	3,709	--	--
Total Usage	**463**	**4,252**	**--**	**2,754**

Notes:

[A] Electric vehicle charging outlets would be expected to reduce gasoline, diesel, and natural gas usage while slightly increasing electricity usage. Conservatively, no credit has been taken.

MMBtu = million British Thermal Unit; MWh = Megawatt-hour

SOURCE: Ramboll, 2022. **Appendix A Table 10.**

4.5.1.3 Analysis of Factors Identified in CEQA Guidelines Appendix F

Appendix F of the CEQA Guidelines identifies factors relating to whether a project would result in the wasteful, inefficient, or unnecessary consumption of fuel or energy, and conversely whether the project would fail to incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation or other project features. The Appendix F factors are addressed below and used as guidance to evaluate the energy impact of the Proposed Project relative to the identified significance criteria.

Appendix F.II.C.1: Energy Requirements and Energy Use Efficiencies

CEQA Guidelines Appendix F, Section II.C.1, includes the following impact guidance factor:

The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.

The energy estimates in this evaluation include electricity and fuels used for construction and operation of the Proposed Project. These energy use requirements are summarized in **Table 3** for the construction activities and in **Tables 4** for Proposed Project operations.

Appendix F.II.C.2: Local and Regional Energy Supplies

CEQA Guidelines Appendix F, Section II.C.2, includes the following impact guidance factor:

The effects of the project on local and regional energy supplies and on requirements for additional capacity.

As discussed above, the Proposed Project would result in the consumption of electricity, gasoline, and diesel associated with mobile vehicle sources, building energy uses, operational equipment uses, and construction activities. The Proposed Project site is currently supplied electricity by PG&E. PG&E has established contracts and commitments to ensure there is adequate electricity generation to meet its current and future energy loads. Total energy use requirements are shown in **Table 3** for construction activities and in **Tables 4** for the Proposed Project operations.

<u>Electricity</u>

To put the Proposed Project's operational electricity requirements in context, in 2021 the total generated electricity for California was 277,764 GWh of electricity,[58] of which consumers in SLO County used 1,689 GWh.[59] The CEC estimates that state-wide energy demand will increase to 320,375 GWh in 2025[60] based on an average annual mid-energy demand growth rate of 1.32%.[61] As shown in **Tables 4**, the Proposed Project's anticipated long-term operational electricity usage is approximately 2,754 Megawatt-Hour [MWh] per year in 2026. This small increase represents approximately 0.001% of the total 2020 state-wide electricity usage and approximately 0.16% of the SLO County electricity usage. There will be no appreciable electricity usage associated with Proposed Project on-road and off-road construction equipment usage.

Based on a comparison to the state-wide and San Luis Obispo County annual energy demand and the projected demand growth rate, the Proposed Project-related increase in electricity consumption would not cause adverse effects on local and regional energy supplies or require additional generation capacity beyond the state-wide planned increase to accommodate projected energy demand growth. The Proposed Project's building electricity

---

[58] CEC, 2021. 2020 Total System Electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation/2020, accessed September 2022.

[59] CEC, 2022e. 2020 Electricity Consumption by County. http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed August 2022.

[60] The CEC did not publish a forecasted value for 2026, the last year of construction. Therefore, 2025 was selected because it is the last full year of construction and aligns with published values by the CEC.

[61] CEC, 2018a. California Energy Demand 2018-2030 Revised Forecast. https://efiling.energy.ca.gov/getdocument.aspx?tn=223244, docketed April 2018, accessed August 2022.

use can be considered efficient due to compliance with statewide regulations designed to promote energy efficiency, such as California Energy Efficiency Standards and California Green Building Standards Code (Title 24, Parts 6 and 11, respectively). In addition, the Proposed Project's operational electricity demand estimates conservatively exclude several likely energy savings features, such as: future revisions to Title 24 energy standards, construction of energy efficiency buildings, installation of solar panels, and installation of energy efficiency appliances which would further reduce electricity demand.

Natural Gas

There would be no natural gas consumption associated with Proposed Project off-road construction activities and negligible natural gas consumption (0.033 MMBtu) associated with on-road construction activities. There would be no natural gas consumption associated with Proposed Project's annual operation at full buildout in 2026 (**see Table 4**). In comparison, state-wide natural gas consumption in 2020 was approximately 1,233,153,000 MMBtu and SLO County natural gas demand was 80,639,339 MMBtu in 2020.[62] The Proposed Project's estimated natural gas consumption rate is not substantial compared to the 2020 countywide consumption and would not cause adverse effects on local and regional energy supplies or require additional transmission capacity beyond the state-wide planned increase in consumption.

Transportation Fuels

Off-road construction equipment and on-road vehicles would consume a total of 1,892,370 gallons of diesel fuel over the course of the Proposed Project construction. On-road worker vehicles would consume a total of 172,663 gallons of gasoline over the course of the Proposed Project construction (see **Table 3**). For the Proposed Project, the average construction diesel consumption per year is approximately 0.017% of the total 2021 state-wide diesel consumption and approximately 2.4% of 2021 San Luis Obispo County diesel consumption. Average construction gasoline consumption per year is approximately 0.0005% of the total 2021 state-wide gasoline consumption and approximately 0.05% of 2021 San Luis Obispo County gasoline consumption.

During operations, the Proposed Project will result in an increase in consumption of diesel fuel as compared to existing conditions of 4,252 gallons per year. There will be a net annual increase in gasoline consumption as a result of the Proposed Project of 463 gallons per year. For the Proposed Project, operational equipment diesel consumption is less than 0.0001% of the total 2021 state-wide diesel consumption and approximately 0.002% of 2021 San Luis Obispo County diesel consumption. Operational traffic gasoline consumption is approximately 0.000003% of the total 2021 state-wide gasoline consumption and approximately 0.0003% of 2021 San Luis Obispo County gasoline consumption. Operational traffic diesel consumption is approximately 0.0001% of the total 2021 state-wide diesel consumption and approximately 0.017% of 2021 San Luis Obispo County diesel consumption. In future years as the fleet becomes more electrified, this consumption is anticipated to decrease, and electricity consumption will increase.

Note that the statewide fuel sales data is from the BOE, while the SLO County fuel sales data is from the CEC (see sections 2.1.4 and 2.2.4, respectively). The BOE tracks all fuel sales, both retail and non-retail, but only at a statewide level. Thus, SLO County data was obtained

[62] CEC, 2022c. 2020 Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed August 2022.

from a separate source (CEC) that only tracks retail level fuel sales. As a result, the percentage of SLO County gasoline or diesel consumption that the Project represents is overestimated relative to the percentage of statewide gasoline or diesel consumption.

Appendix F.II.C.3: Peak and Base Period Demands

CEQA Guidelines Appendix F, Section II.C.3, includes the following impact guidance factor:

The effects of the project on peak and base period demands for electricity and other forms of energy.

Peak period electrical demand is the short period of time during which electrical power is needed when electricity is in highest demand. Base period electrical load is the minimum amount of electrical demand needed over a 24-hour time period. Wasteful, inefficient, or unnecessary consumption or use of energy during the peak period of electrical demand has greater potential to cause adverse environmental effects compared to during the base period because of the higher demand during the peak period. The Proposed Project would not have a substantial impact on the peak and base period demands for electricity or other forms of energy. The Proposed Project's base energy consumption compared to regional and statewide energy consumption is discussed above. Further details and reasoning on the peak demand are described below.

In 2021, California's peak grid demand was 43,982 MW. On that same peak day, PG&E reached a maximum demand of 20,118 MW.[63] In comparison, the Proposed Project's annual electricity usage rate of 2,754 MWh for the Proposed Project in 2026corresponds to average hourly electricity demand of 0.31 MW (assuming 8,760 hours per year of operations). The maximum peak demand is anticipated to be no more than twice the hourly average usage, corresponding to 0.62 MW.[64] This also conservatively excludes improvements in demand response due to future updates to the Title 24 energy standards. These future updates would further reduce peak demand through performance standards that are based on the time dependent valuation of energy, which uses the value of the electricity or natural gas used during every hour of the year to incentivize load shifting off of the peak use periods.

The overall energy use requirements would not be substantial relative to the current total sales of transportation fuels in SLO County. Operational energy requirements for the Proposed Project result in a negligible net increase compared to statewide and SLO electricity consumption rates. Additionally, the Proposed Project's peak demand represents approximately 0.0014% of PG&E's peak demand, and with proper planning of the PG&E power generation inventory, would have a minor effect on PG&E's system-wide peak demands. As a result, the Proposed Project construction and operation will not result in energy demand substantially affecting local and regional energy supplies and capacity and the impacts would be less than significant.

[63] California Independent System Operator (Cal ISO), 2022. 2021-2022 Transmission Plan, March 17, 2022. http://www.caiso.com/Documents/ISOBoardApproved-2021-2022TransmissionPlan.pdf, accessed September 2022.

[64] Since the peak energy demand for the Proposed Project was not available, Ramboll used a factor of 2 to estimate the peak demand based on historic CAISO peak-to-average demand ratio. Peak-to-average electricity demand ratio rising in California. https://www.eia.gov/todayinenergy/detail.php?id=15051#tabs_SpotPriceSlider-7, accessed September 2022.

Appendix F.II.C.4: Existing Energy Standards

CEQA Guidelines Appendix, Section II.C.4, includes the following impact guidance factor:

The degree to which the project complies with existing energy standards.

This factor is further discussed in section 4.5.2. As discussed, the Proposed Project would comply with the existing building energy efficiency standards, including the CALGreen 2022 standards effective on January 1, 2023.

Appendix F.II.C.5: Energy Resources

CEQA Guidelines Appendix F, Section II.C.5, includes the following impact guidance factor:

The effects of the project on energy resources.

The Proposed Project's energy use, including electricity, gasoline, and diesel consumption, would primarily be associated with construction activities, vehicle travel, and building operations. Total energy use requirements are shown in **Table 3** for construction activities and in **Tables 4** for the operational activities. Refer to **Section 4.5.2**, below, for the effects that the Proposed Project would have on energy supply resources and energy conservation plans, respectively. The Proposed Project will limit idling of construction vehicles through SLO County APCD's Standard Mitigation Measures (as described further in the Air Quality Technical Report). Despite an increase in total VMT due to Project construction and operation, total gasoline and diesel fuel consumption are expected to decrease over time due to the use of vehicles that meet increasingly stringent fuel efficiency standards. The construction of new buildings that comply with the stringent current Title 24 Energy Efficiency Standards, CALGreen, and appliance efficiency standards, will result in high energy efficiency relative to existing buildings in the region. These developments will implement the efficient use of energy. The Proposed Project's use of energy would not have a substantial adverse effect on statewide or regional energy resources relative to wasteful, inefficient, or unnecessary use of energy.

Appendix F.II.C.6: Transportation Energy Use

CEQA Guidelines Appendix F, Section II.C.6, includes the following impact guidance factor:

The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

The Proposed Project's transportation energy use requirements in terms of gasoline, diesel, natural gas, and electricity quantities for construction and operation of the Proposed Project are presented in **Table 3 and Tables 4**, respectively. SB 743 requires the Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. OPR has identified net VMT as well as VMT per capita and per employee as metrics for land use project transportation analyses. The quantification of VMT associated with Proposed Project operations, which is used to quantify the total operational transportation-related energy use requirements, is discussed in detail in the Transportation section.

Based on the above analysis, the Proposed Project avoids wasteful, inefficient, or unnecessary consumption of fuel or energy.

4.5.2 Impact ENE-2:

Construction and operation of the Project could conflict with or obstruct adopted energy conservation plans or violate energy efficiency standards. (Criterion 2.). (*Less than Significant*)

Discussion of whether construction and operation of the Proposed Project would result in a conflict with adopted energy conservation plans or violate energy efficiency standards is provided below relative to construction vehicles and equipment, building efficiency, and transportation. Relevant Appendix F factors are addressed below and used as guidance to evaluate the energy impact of the Proposed Project relative to the identified significance criteria.

4.5.2.1 Appendix F.II.C.4: Existing Energy Standards

CEQA Guidelines Appendix, Section II.C.4, includes the following impact guidance factor:

The degree to which the project complies with existing energy standards.

The Proposed Project would comply with existing energy standards, including state and local standards designed to minimize use of fuel in construction vehicles and ensure that buildings employ strict energy efficiency techniques as described above. For a full list of relevant state and local standards, see Sections 3.2 and 3.3. The Proposed Project would construct new buildings that are compliant with the most recent Title 24 standards, including the CALGreen 2022 standards effective on January 1, 2023.

Construction Vehicles and Equipment

Proposed Project construction would require use of on-road trucks for soil and debris hauling and material deliveries, and off-road equipment such as excavators, cranes, forklifts, and pavers. The Proposed Project would comply with state and local requirements designed to minimize idling and associated emissions, which also minimizes use of fuel. In accordance with SLO County APCD's Standard Mitigation Measures, idling times for heavy duty trucks and vehicles shall be minimized by turning off the engine or reducing idling to a maximum of 5 minutes.[65]

Building Efficiency

The Proposed Project's anticipated electricity use in buildings is discussed above. New building construction is subject to California's Title 24 by law, as discussed in **Section 3.2.7**, above. California's Title 24 reduces energy use in residential and commercial buildings through progressive updates to both the Green Building Standards Code (Title 24, Part 11) and the Energy Efficiency Standards (Title 24, Part 6). Provisions added to Title 24 over the years include consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, lighting, as well as construction waste diversion goals. Additionally, some standards focus on larger energy saving concepts such as reducing loads at peak periods and seasons, improving the quality of energy-saving installations, and performing energy system inspections. Past updates to the Title 24 standards have proven very effective in reducing building energy use, with the

---

[65] SLO County APCD. 2012. CEQA Air Quality Handbook. April. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf .

2013 update to the energy efficiency standards estimated to reduce energy consumption in residential buildings by 25% and energy consumption in commercial buildings by 30%, relative to the 2008 standards.[66] By law, the Proposed Project will comply with these standards.

Transportation

The Proposed Project's anticipated transportation fuel usage are discussed above. As mentioned previously, fuel efficiency continues to improve over time and will help reduce fuel usage.

Impact Conclusion Summary

Based on the above analysis, the Proposed Project is expected to have a less than significant impact.

4.5.3 Cumulative Impacts

Impact ENE-1.CU: The Project, combined with cumulative development in the Project vicinity and citywide, could result in significant cumulative energy impacts. (Less than Significant)

4.5.3.1 Geographic Context

The geographic scope of potential cumulative effects with respect to energy resources includes PG&E's electric grid that would serve the Proposed Project, areas from which transportation fuels would be provided, publicly available fuel sources in the vicinity of the Proposed Project site, and the cumulative projects nearby.

4.5.3.2 Cumulative Impact and Project Contribution

There is no significant cumulative condition to which the Proposed Project could contribute related to the use of large amounts of fuel or energy in a wasteful or inefficient manner. The CEC is planning to meet 2050 statewide energy demands in a low-carbon and efficient manner.[67] Given the relatively small percentage of the Proposed Project's fuel and energy use compared to existing fuel and energy use in the region, the Proposed Project's less-than-significant incremental impacts related to the use of fuel or energy in a wasteful or inefficient manner are not expected to combine with the incremental impacts of other projects to cause an adverse cumulative impact. Moreover, the estimated consumption rates are not substantial compared to the 2021 countywide or state consumption. The Proposed Project's incremental cumulative impact relating to the consumption of energy would be less than significant.

Proposed Project-related transportation fuel impacts could overlap with the transportation needs (including fuel needs) of previously approved past projects, as well as other present or future projects that occur during the Proposed Project's construction and operation. However, there is no significant cumulative condition to which the Proposed Project could contribute. In addition, implementation of sustainability features and SLO County APCD's Standard Mitigation Measures would help avoid wasteful or inefficient use of energy during

---

[66] CEC, 2012. Energy Commission Approves More Efficient Buildings for California's Future. https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C17.pdf, accessed September 2022.

[67] CEC. 2019. Building a Healthier and More Robust Future: 2050 Low-Carbon Energy Scenarios for California. https://ww2.energy.ca.gov/2019publications/CEC-500-2019-033/CEC-500-2019-033.pdf, accessed September 2022.

construction. Therefore, the Proposed Project's incremental impact associated with its energy use would result in less-than-significant cumulative impacts.

The nearby cumulative projects could require increased peak and base energy demands and, therefore, could cause or contribute to adverse cumulative conditions. However, the cumulative projects would be subject to the same applicable federal, state, and local energy efficiency requirements (e.g., the State's Title 24 requirements) that would be required of the Proposed Project, which would result in efficient energy use during their construction and operation. As discussed in **Section 4.2.2**, the Proposed Project's small increase in electricity usage is negligible compared to San Luis Obispo County and statewide demand and will not cause adverse effects and would not constitute a considerable contribution under CEQA. Furthermore, peak demand for the Proposed Project is expected to be approximately 0.0014% of PG&E's peak demand during 2021. These estimates do not account for the Proposed Project's energy saving features and are conservative. Thus, adverse Proposed Project-related impacts to electricity demand would be negligible and would not contribute any considerable impact peak or base power demands during construction, operation, or maintenance. It is not expected there would be a significant cumulative impact and, even if a statewide impact from cumulative development did occur, the Proposed Project's less-than-considerable incremental contribution to cumulative peak and base demands would not result in a significant impact.

4.5.3.3 Conclusion

Potential energy-related impacts that would result from construction and operation of development of the Proposed Project will have a less than significant cumulative impact.

APPENDIX A
CONSTRUCTION AND OPERATIONAL ENERGY TABLES

Table 1
Land Use Summary
Vistra BESS
Morro Bay, California

Land Use[1]	CalEEMod Land Use	Size	Units
Industrial	User Defined Industrial	273	1000sqft

Notes:

1. Land uses analyzed based on information provided by the Project Sponsor. The site location is shown in Figure 1.

Table 2
Construction Schedule
Vistra BESS
Morro Bay, California

Construction Subphase[1]	CalEEMod Subphase	Start Date	End Date	Year	Number of Work Days	Days per Week
Fencing and Site Preparation	Site Preparation	9/30/2023	10/31/2023	2023	22	5
Foundation and Pile Installation	Grading	11/1/2023	7/30/2024	2024	195	5
BESS, substation, and Gen-tie installation	Building Construction	7/31/2024	7/31/2026	2026	523	5
	Paving	8/1/2026	8/28/2026	2026	20	5
	Architectural Coating	8/29/2026	9/30/2026	2026	23	5
Demolition of Existing Power Plant Stacks	Demolition	10/30/2026	5/31/2028	2028	414	5

Notes:

1. All construction phasing information was provided by the Project Sponsor. Construction is generally expected to occur between 7am-7pm Monday-Friday per San Luis Obispo County's construction ordinance.

Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA

Anticipated Construction Start Date:	9/30/2023

Construction Subphase(s)	Equipment Name[1]	CalEEMod Equipment Name[2]	Fuel[3]	Number[1]	Horsepower[1]	Daily Usage (hours/day)[1]	Utilization[4]	Controlled Engine Tier[5]
Site Preparation	Scrapers	Scrapers	Diesel	2	500	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
Grading	Pile Drivers	Excavators	Diesel	10	600	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
Building Construction	Cranes	Cranes	Diesel	16	750	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
	Trenchers	Trenchers	Diesel	4	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
Paving	Pavers	Pavers	Diesel	2	81	8	100%	Tier 4 Interim
	Paving Equipment	Paving Equipment	Diesel	2	89	8	100%	Tier 4 Interim
	Rollers	Rollers	Diesel	2	36	8	100%	Tier 4 Interim
Architectural Coating	Air Compressors	Air Compressors	Diesel	2	37	6	100%	Tier 4 Interim
Demolition	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim
	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	85	5	100%	Average
	Skid Steer Loaders	Skid Steer Loaders	Diesel	2	85	6	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	435	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	2	360	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	355	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	290	4	100%	Tier 4 Interim
	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	225	4	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim

Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA

Notes:

1. Equipment information was provided by the Project Sponsor.
2. CalEEMod equipment types are assigned using CalEEMod Appendix G.
3. All equipment is conservatively assumed to be diesel-fueled.
4. Equipment horsepower is based on information provided by the Project Sponsor. Where no horsepower was provided, CalEEMod Appendix G defaults were used.
5. Controlled equipment engine tiers are conservatively assumed to be Tier 4 Interim.

References:

The California Emissions Estimator Model (CalEEMod). Available at: http://www.caleemod.com/

Table 4
Total Diesel Consumption from Off-Road Construction Equipment
Morro Bay BESS Installation
Morro Bay, California

Year	Phase Name	Project Equipment[1]	Number of Days	Number per Day	Hours Per Day	Utilization	HP[2]	LF[2]	HP-Hour[3]	Fuel Usage[4] (gal)
2023	Site Preparation	Scrapers	22	2.0	8.0	100%	500	0.48	84,480	4,224
		Rubber Tired Dozers	22	6.0	8.0	100%	300	0.40	126,720	6,336
		Graders	22	6.0	8.0	100%	250	0.41	108,240	5,412
		Rubber Tired Loaders	22	2.0	8.0	100%	300	0.36	38,016	1,901
		Off-Highway Trucks	22	3.0	8.0	100%	350	0.38	70,224	3,511
		Tractors/Loaders/Backhoes	22	5.0	8.0	100%	120	0.37	39,072	1,954
	Grading	Excavators	43	10	8.0	100%	600	0.38	784,320	39,216
		Forklifts	43	4.0	8.0	100%	150	0.20	41,280	2,064
		Rubber Tired Loaders	43	2.0	8.0	100%	300	0.40	82,560	4,128
		Graders	43	6.0	8.0	100%	250	0.41	211,560	10,578
		Off-Highway Trucks	43	3.0	8.0	100%	350	0.37	133,644	6,682
		Rubber Tired Dozers	43	6.0	8.0	100%	300	0.40	247,680	12,384
2024	Grading	Excavators	152	10	8.0	100%	600	0.38	2,772,480	138,624
		Forklifts	152	4.0	8.0	100%	150	0.20	145,920	7,296
		Rubber Tired Loaders	152	2.0	8.0	100%	300	0.40	291,840	14,592
		Graders	152	6.0	8.0	100%	250	0.41	747,840	37,392
		Off-Highway Trucks	152	3.0	8.0	100%	350	0.37	472,416	23,621
		Rubber Tired Dozers	152	6.0	8.0	100%	300	0.40	875,520	43,776
	Building Construction	Cranes	110	16	8.0	100%	750	0.29	3,062,400	153,120
		Forklifts	110	4.0	8.0	100%	150	0.20	105,600	5,280
		Tractors/Loaders/Backhoes	110	5.0	8.0	100%	120	0.37	195,360	9,768
		Trenchers	110	4.0	8.0	100%	250	0.50	440,000	22,000
		Off-Highway Trucks	110	3.0	8.0	100%	350	0.45	415,800	20,790
		Rubber Tired Loaders	110	2.0	8.0	100%	300	0.36	190,080	9,504
2025	Building Construction	Cranes	261	16	8.0	100%	750	0.29	7,266,240	363,312
		Forklifts	261	4.0	8.0	100%	150	0.20	250,560	12,528
		Tractors/Loaders/Backhoes	261	5.0	8.0	100%	120	0.37	463,536	23,177
		Trenchers	261	4.0	8.0	100%	250	0.50	1,044,000	52,200
		Off-Highway Trucks	261	3.0	8.0	100%	350	0.45	986,580	49,329
		Rubber Tired Loaders	261	2.0	8.0	100%	300	0.36	451,008	22,550
2026	Building Construction	Cranes	152	16	8.0	100%	750	0.29	4,231,680	211,584
		Forklifts	152	4.0	8.0	100%	150	0.20	145,920	7,296
		Tractors/Loaders/Backhoes	152	5.0	8.0	100%	120	0.37	269,952	13,498
		Trenchers	152	4.0	8.0	100%	250	0.50	608,000	30,400
		Off-Highway Trucks	152	3.0	8.0	100%	350	0.45	574,560	28,728
		Rubber Tired Loaders	152	2.0	8.0	100%	300	0.36	262,656	13,133
	Paving	Pavers	20	2.0	8.0	100%	81	0.42	10,886	544
		Paving Equipment	20	2.0	8.0	100%	89	0.36	10,253	513
		Rollers	20	2.0	8.0	100%	36	0.38	4,378	219
	Architectural Coating	Air Compressors	23	1.0	6.0	100%	37	0.48	2,451	123

Table 4
Total Diesel Consumption from Off-Road Construction Equipment
Morro Bay BESS Installation
Morro Bay, California

Year	Phase Name	Project Equipment[1]	Number of Days	Number per Day	Hours Per Day	Utilization	HP[2]	LF[2]	HP-Hour[3]	Fuel Usage[4] (gal)
2026	Demolition	Skid Steer Loaders	45	1.0	5.0	100%	85	0.37	7,076	354
		Cranes	45	1.0	4.0	100%	335	0.29	17,487	874
		Skid Steer Loaders	45	1.0	5.0	100%	85	0.37	7,076	354
		Excavators	45	1.0	8.0	100%	700	0.38	95,760	4788
		Skid Steer Loaders	45	2.0	6.0	100%	85	0.37	16,983	849
		Excavators	45	1.0	8.0	100%	700	0.38	95,760	4788
		Excavators	45	1.0	8.0	100%	435	0.38	59,508	2975
		Excavators	45	2.0	8.0	100%	360	0.38	98,496	4925
		Excavators	45	1.0	8.0	100%	355	0.38	48,564	2428
		Excavators	45	1.0	4.0	100%	290	0.38	19,836	992
		Tractors/Loaders/Backhoes	45	1.0	4.0	100%	225	0.37	14,985	749
		Cranes	45	1.0	4.0	100%	335	0.29	17,487	874
2027	Demolition	Skid Steer Loaders	261	1.0	5.0	100%	85	0.37	41,042	2052
		Cranes	261	1.0	4.0	100%	335	0.29	101,425	5071
		Skid Steer Loaders	261	1.0	5.0	100%	85	0.37	41,042	2052
		Excavators	261	1.0	8.0	100%	700	0.38	555,408	27770
		Skid Steer Loaders	261	2.0	6.0	100%	85	0.37	98,501	4925
		Excavators	261	1.0	8.0	100%	700	0.38	555,408	27770
		Excavators	261	1.0	8.0	100%	435	0.38	345,146	17257
		Excavators	261	2.0	8.0	100%	360	0.38	571,277	28564
		Excavators	261	1.0	8.0	100%	355	0.38	281,671	14084
		Excavators	261	1.0	4.0	100%	290	0.38	115,049	5752
		Tractors/Loaders/Backhoes	261	1.0	4.0	100%	225	0.37	86,913	4346
		Cranes	261	1.0	4.0	100%	335	0.29	101,425	5071
2028	Demolition	Skid Steer Loaders	108	1.0	5.0	100%	85	0.37	16,983	0,849
		Cranes	108	1.0	4.0	100%	335	0.29	41,969	2,098
		Skid Steer Loaders	108	1.0	5.0	100%	85	0.37	16,983	0,849
		Excavators	108	1.0	8.0	100%	700	0.38	229,824	11,491
		Skid Steer Loaders	108	2.0	6.0	100%	85	0.37	40,759	2,038
		Excavators	108	1.0	8.0	100%	700	0.38	229,824	11,491
		Excavators	108	1.0	8.0	100%	435	0.38	142,819	7,141
		Excavators	108	2.0	8.0	100%	360	0.38	236,390	11,820
		Excavators	108	1.0	8.0	100%	355	0.38	116,554	5,828
		Excavators	108	1.0	4.0	100%	290	0.38	47,606	2,380
		Tractors/Loaders/Backhoes	108	1.0	4.0	100%	225	0.37	35,964	1,798
		Cranes	108	1.0	4.0	100%	335	0.29	41,969	2,098
Total Construction Off-Road Energy Use in 2023										**98,390**
Total Construction Off-Road Energy Use in 2024										**485,763**
Total Construction Off-Road Energy Use in 2025										**523,096**
Total Construction Off-Road Energy Use in 2026										**330,988**
Total Construction Off-Road Energy Use in 2027										**144,715**
Total Construction Off-Road Energy Use in 2028										**59,882**

Table 4
Total Diesel Consumption from Off-Road Construction Equipment
Morro Bay BESS Installation
Morro Bay, California

Notes:

1. The construction equipment type and number of construction equipment were provided by the client for demolition, site preparation, grading, paving and building construction. CalEEMod® defaults were used for construction equipment type, number of construction equipment, and equipment horsepower in the paving and architectural coating phase.
2. Load factor and horsepower are CalEEMod® defaults for the equipment type.
3. HP-Hour is the basis for the fuel calculation. HP-Hour is calculated using the following formula:
   HP-Hour = Total Hours x LF x HP
4. Off-road mobile source fuel usage is calculated using a fuel usage rate of 0.05 gallons of diesel per horsepower (HP)-hour. This is calculated based off of diesel conversion factors from AP-42 in Section 3.4. These factors are an average brake-specific fuel consumption (BSFC) of 7,000 BTU/hp-hr, a heating value of 19,3000 BTU/lb, and a density of 7.1 lb/gallon. Fuel usage was calculated with the following equation:

   Fuel Usage = Σ(N * HP * LF * Day * Hr * U * F)

   N: number of Equipment Pieces
   HP: equipment horsepower
   LF: Load Factor
   Day: duration of equipment usage
   Hr: hours per day of equipment usage
   U: Utilization
   F: Fuel Usage Rate

Abbreviations:

Gal: gallon
HP: horsepower
LF: load factor

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at https://www.caleemod.com
USEPA. 1996. AP-42. Section 3.4 Large Stationary Diesel And All Stationary Dual-fuel Engines. October. Available at: https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf

Table 5
Proposed Project Construction On-Road Activity Assumptions and Energy Use
Morro Bay BESS Installation
Morro Bay, California

Project Construction Onroad Data

Construction Area	Construction Activity	Year	Worker	Vendor	Hauling
			Trips (one way trips/activity)		
			Worker Trips[1]	Vendor Trips[2]	Hauling Trips
Project Site	Site Preparation	2023	2,200	0	--
	Grading	2023	8,600	1290	
		2024	30,400	4560	
	Building Construction	2024	66,000	4400	--
		2025	156,600	10440	--
		2026	91,200	6080	--
	Paving	2026	12,000	200	--
	Architectural Coating	2026	13,800	--	--
	Demolition	2026	6,040	225	1440
		2027	35,032	1305	8353
		2028	14,496	540	3456

EMFAC2021 Onroad Data by Vehicle Category[3]

Vehicle Category	Year	Fuel Consumption[4]		VMT[5]	
		Gasoline	Diesel	Gasoline	Diesel
		gal/day	gal/day	miles/day	
LDA	2023	139,167	729	4,043,033	30,644
	2024	136,602	662	4,050,649	27,957
	2025	133,376	594	4,042,132	25,173
	2026	130,298	526	4,036,277	22,426
	2027	127,757	458	4,042,408	19,738
	2028	125,473	397	4,050,231	17,242
LDT1	2023	20,524	11	490,143	266
	2024	19,582	10	473,940	233
	2025	18,599	8	456,761	203
	2026	17,664	7	440,396	178
	2027	16,804	4	425,512	101
	2028	16,009	3	411,716	71
LDT2	2023	98,627	378	2,287,581	11,703
	2024	98,505	378	2,334,937	11,863
	2025	97,667	375	2,367,771	11,912
	2026	96,602	368	2,393,926	11,868
	2027	95,661	360	2,421,058	11,794
	2028	94,690	351	2,444,786	11,686
MHDT	2023	3,369	12,463	15,560	105,805
	2024	3,255	12,557	15,226	107,064
	2025	3,140	12,601	14,867	108,006
	2026	3,039	12,623	14,553	108,793
	2027	2,938	12,600	14,228	109,187
	2028	2,828	12,503	13,840	108,933
HHDT	2023	21	30,984	71	176,485
	2024	16	31,058	55	179,253
	2025	13	31,013	49	181,762
	2026	12	30,932	43	184,136
	2027	11	30,756	41	186,171
	2028	10	30,491	40	187,801

Table 5
Proposed Project Construction On-Road Activity Assumptions and Energy Use
Morro Bay BESS Installation
Morro Bay, California

EMFAC2021 Onroad Data by Fleet Type[b]

Fleet Type	Year	Fuel Consumption[4]		VMT[5,6]	
		Gasoline	Diesel	Gasoline	Diesel
		gal/day	gal/day	miles/day	
Worker	2023	69,710	282	1,827,725	10,720
	2024	68,568	265	1,833,366	10,072
	2025	67,060	246	1,830,856	9,373
	2026	65,557	227	1,827,749	8,662
	2027	64,256	207	1,828,623	7,934
	2028	63,045	188	1,829,612	7,267
Vendor	2023	1,695	21,723	7,816	141,145
	2024	1,636	21,808	7,640	143,158
	2025	1,577	21,807	7,458	144,884
	2026	1,525	21,778	7,298	146,465
	2027	1,474	21,678	7,135	147,679
	2028	1,419	21,497	6,940	148,367
Hauling	2023	21	30,984	71	176,485
	2024	16	31,058	55	179,253
	2025	13	31,013	49	181,762
	2026	12	30,932	43	184,136
	2027	11	30,756	41	186,171
	2028	10	30,491	40	187,801

Fuel Efficiency Data by Fleet Type

Scenario	Year	Fuel Efficiency[7]		VMT by Vehicle Fuel Type[8]	
		Gasoline	Diesel	Gasoline	Diesel
		mi/gal	mi/gal	Percentage (%)	
Worker	2023	26	38	99.4%	0.58%
	2024	27	38	99.5%	0.55%
	2025	27	38	99.5%	0.51%
	2026	28	38	99.5%	0.47%
	2027	28	38	99.6%	0.43%
	2028	29	39	99.6%	0.40%
Vendor	2023	5	6	5%	94.75%
	2024	5	7	5%	94.93%
	2025	5	7	5%	95.10%
	2026	5	7	5%	95.25%
	2027	5	7	5%	95.39%
	2028	5	7	4%	95.53%
Hauling	2023	3	6	0.04%	99.96%
	2024	4	6	0.03%	99.97%
	2025	4	6	0.03%	99.97%
	2026	4	6	0.02%	99.98%
	2027	4	6	0.02%	99.98%
	2028	4	6	0.02%	99.98%

Table 5
Proposed Project Construction On-Road Activity Assumptions and Energy Use
Morro Bay BESS Installation
Morro Bay, California

Fuel Consumption

Scenario	Year	Trip Rate (trips/year)[9]	Trip Length (mi/trip)[10]	Annual VMT (mi/yr)	Fuel Consumption[11]	
					Gallons of Gasoline	Gallons of Diesel
Worker	2023	10,800	11	118,580	4,496	18
	2024	96,400	11	1,037,036	38,573	149
	2025	156,600	11	1,694,616	61,754	227
	2026	123,040	11	1,319,904	47,119	163
	2027	35,032	11	377,650	13,213	42
	2028	14,496	11	156,269	5,363	16
Vendor	2023	1,290	7.3	9,042	103	1,319
	2024	8,960	7.3	61,171	663	8,846
	2025	10,440	7.3	71,788	743	10,276
	2026	6,505	7.3	44,285	439	6,272
	2027	1,305	7.3	8,939	85	1,252
	2028	540	7.3	3,699	34	512
Hauling	2023	0	20	0	0	0
	2024	0	20	0	0	0
	2025	0	20	0	0	0
	2026	1,440	101	145,460	9	24,429
	2027	8,353	101	843,669	49	139,347
	2028	3,456	101	349,104	19	56,667
Total Construction On-Road Energy Use in 2023					**4,599**	**1,337**
Total Construction On-Road Energy Use in 2024					**39,236**	**8,995**
Total Construction On-Road Energy Use in 2025					**62,497**	**10,503**
Total Construction On-Road Energy Use in 2026					**47,567**	**30,865**
Total Construction On-Road Energy Use in 2027					**13,347**	**140,641**
Total Construction On-Road Energy Use in 2028					**5,416**	**57,195**

Notes:

1. Worker trip rates are based on the number of expected staff in each phase provided by the Project Sponsor
2. Vendor trip rates are based on the number of expected daily deliveries in each phase provided by the Project Sponsor
3. Data obtained from EMFAC2021 for San Luis Obispo County using the following inputs: emission rates mode, annual time period, EMFAC2007 vehicle classes, aggregated model year, aggregated speed.
4. Fuel consumption rates summed by fuel type and year. EMFAC2021 outputs gasoline and diesel fuel consumption rates in 1000 gallons per day, natural gas fuel consumption rates in diesel gallon equivalents (DGE) per day, and electricity consumption rates for electric vehicles in kilowatt-hour (kWh) per day.
5. Daily VMT summed by fuel type and year.
6. Construction fleets were defined consistent with CalEEMod® 2022.1. assumptions. The worker fleet is assumed to be 25% LDA, 50% LDT1, and 25% LDT2. The vendor fleet is assumed to be 50% MHDT and 50% HHDT. The hauling fleet is assumed to be 100% HHDT. Fuel consumption and VMT data by vehicle category were converted to fuel consumption and VMT data by fleet type using weighted sums.
7. Fuel efficiency for gasoline and diesel energy efficiency calculated as daily fuel consumption rate divided by daily total VMT as shown in the EMFAC2021 Onroad Data by Fleet Type table.
8. Percentage of gasoline and diesel vehicle miles calculated by taking the ratio of vehicle miles driven by a specific fuel-type over total miles for that fleet type (for all fuel types) in EMFAC.
9. Annual trip rates calculated by summing worker, vendor, and hauling trips rates per activity by year.
10. Worker and vendor trip lengths are based on CalEEMod Appendix G defaults for San Luis Obispo County. Hauling trip lengths for 2023 through 2025 are based on CalEEMod Appendix G defaults for San Luis Obispo County, whereas hauling trip lengths for 2026 through 2028 are based on information provided by the Project Sponsor.
11. Annual energy usage rate calculated as follows: (Annual VMT) * (% of VMT attributed to fuel type) / (Fuel Efficiency).

Abbreviations:

gal - gallons	mi - mile
kWh - kilowatt-hour	VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at https://www.caleemod.com. Accessed November 2022.

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://arb.ca.gov/emfac/emissions-inventory/03eaeda93ac858f033fb113cfb0e086eca776ea3

Table 6
Proposed Project Construction Energy Resource Use
Morro Bay BESS Installation
Morro Bay, California

Year	Source	Gasoline Usage (gal)	Diesel Usage (gal)
2023	Off-Road Construction Equipment	--	98,390
	On-Road Construction Trips	4,599	1,337
2024	Off-Road Construction Equipment	--	485,763
	On-Road Construction Trips	39,236	8,995
2025	Off-Road Construction Equipment	--	523,096
	On-Road Construction Trips	62,497	10,503
2026	Off-Road Construction Equipment	--	330,988
	On-Road Construction Trips	47,567	30,865
2027	Off-Road Construction Equipment	--	144,715
	On-Road Construction Trips	13,347	140,641
2028	Off-Road Construction Equipment	--	59,882
	On-Road Construction Trips	5,416	57,195
Total		**172,663**	**1,892,370**

Notes:

1. Off-Road fuel usage is calculated in Table 4.
2. On-Road fuel usage is calculated in Table 5.

Abbreviations:

gal - gallons

Table 7
Estimated Energy Consumption from Building Energy Use
Morro Bay BESS Installation
Morro Bay, California

		Energy Usage[1]			
Land Use		Electricity		Natural Gas[2]	
		Title 24	Non Title 24	Title 24	Non Title 24
Project Description	CalEEMod Type	MWh/yr		MMBtu/yr	
Industrial	User Defined Industrial	1131	1623	0	0
Total Energy Consumption (+)		**2754**		**--**	

Notes:

1. Energy usage is based on CalEEMod defaults for General Light Industry in EDFZ6 (Central Coast).
2. The Proposed Project will not consume natural gas or have natural gas infrastructure since there is no refrigeration or heating
3. Electricity from the main grid will only be used to recharge the batteries. Auxilary power will be used to power lighting.

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at https://www.caleemod.com. Accessed November 2022.

Table 8
Estimated Energy Consumption from Operational Equipment Use
Morro Bay BESS Installation
Morro Bay, California

Project Equipment	Fuel Type	Horsepower	Annual Operational Hours[1]	Fuel Rate (gal/hr)[2]	Annual Fuel Usage (gal)
Fire Pump	Diesel	350	30	18.1	543

Notes:

1. Annual operational hours were set as the maximum allowable non-emergency operational hours for fire pumps in San Luis Obispo County. Maximum allowable non-emergency operational hours depend on the horsepower of the fire pump and whether the fire pump meets the diesel PM standard of less than or equal to 0.4 g/bhp-hr.
2. The fuel rate was obtained using specifications from a representative fuel pump

Abbreviations:

gal - gallons
MMBTU - million British Thermal Units
MWh - megawatt-hour

References:

Cummins, Inc. 2022. Fire Pump Drive Engine Specification Sheet. Available at: https://mart.cummins.com/imagelibrary/data/assetfiles/0062915.pdf

Table 9
Estimated Energy Consumption from Mobile Sources
Morro Bay BESS Installation
Morro Bay, California

Proposed Project Operations Traffic Data

Project Land Use	CalEEMod Land Use	Year	Trip Type	Weekday[1,2]	Saturday	Sunday	Average Trips Rates	
							trips/day	trips/yr
Industrial	User Defined Industrial	2028	Worker	3	0	0	2	780
			Vendor	10	0	0	7	2,600

EMFAC2021 Onroad Data by Fleet Type[3]

Trip Type	Fleet Type[4]	Year	Fuel Consumption[5]		VMT	
			Gasoline	Diesel	Gasoline	Diesel
			gal/day	gal/day	miles/day	
Worker	LDA/LDT1/LDT2	2028	63,045	188	1,829,612	7,267
Vendor	MHDT/HHDT	2028	1,419	21,497	6,940	148,367

Fuel Efficiency Data by Fuel Type

Trip Type	Year	Fuel Efficiency[6]		VMT by Vehicle Fuel Type	
		Gasoline	Diesel	Gasoline	Diesel
		mi/gal	mi/gal	Percentage (%)[7]	
Worker	2028	29	39	99.6%	0.4%
Vendor		5	7	4.5%	95.5%

Fuel Consumption

Land Use	Trip Type	Year	Trip Rate (trips/year)	Trip Length (mi/trip)[8]	Annual VMT (mi/yr)	Fuel Consumption[9]	
						Gallons of Gasoline	Gallons of Diesel
Industrial	Worker	2028	780	10.8	8,424	289	0.9
	Vendor		2,600	7.3	18,980	173	3,708
Project Operational Mobile Energy Use						**463**	**3,709**

Notes:

1. Worker trip rates are based on the number of expected staff in each phase provided by the Project Sponsor
2. Vendor trip rates are based on the number of expected daily deliveries in each phase provided by the Project Sponsor
3. Data obtained from EMFAC2021 for San Luis Obispo County using the following inputs: emission rates mode, annual time period, EMFAC2007 vehicle classes, aggregated model year, aggregated speed.
4. Construction fleets were defined consistent with CalEEMod® 2022.1. assumptions. The worker fleet is assumed to be 25% LDA, 50% LDT1, and 25% LDT2. The vendor fleet is assumed to be 50% MHDT and 50% HHDT. Fuel consumption and VMT data by vehicle category were converted to fuel consumption and VMT data by fleet type using weighted sums.
5. Fuel consumption rates summed by fuel type and year. EMFAC2021 outputs gasoline and diesel fuel consumption rates in 1000 gallons per day, natural gas fuel consumption rates in diesel gallon equivalents (DGE) per day, and electricity consumption rates for electric vehicles in kilowatt-hour (kWh) per day.
6. Fuel efficiency for gasoline and diesel energy efficiency calculated as daily fuel consumption rate divided by daily total VMT as shown in the EMFAC2021 Onroad Data by Fleet Type table.
7. Percentage of gasoline and diesel vehicle miles calculated by taking the ratio of vehicle miles driven by a specific fuel-type over total miles for that fleet type (for all fuel types) in EMFAC.
8. Worker and vendor trip lengths are based on CalEEMod Appendix G defaults for San Luis Obispo County. Hauling trip lengths for 2023 through 2025 are based on CalEEMod Appendix G defaults for San Luis Obispo County, whereas hauling trip lengths for 2026 through 2028 are based on information provided by the Project Sponsor.
9. Annual energy usage rate calculated as follows: (Annual VMT) * (% of VMT attributed to fuel type) / (Fuel Efficiency).

Table 9
Estimated Energy Consumption from Mobile Sources
Morro Bay BESS Installation
Morro Bay, California

Abbreviations:

gal - gallons	LDA - Light Duty Automobile	LDT2 - Light-duty Truck Type 2	mi - mile
HHDT - Heavy Heavy-duty Truck	LDT1 - Light-duty Truck Type 1	MHDT - Medium Heavy-duty Truck	VMT - vehicle miles traveled

References:

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model (CalEEMod), Version 2022.1. Available online at https://www.caleemod.com. Accessed November 2022.

California Air Resources Board (ARB) 2021. EMFAC2021. Available at: https://arb.ca.gov/emfac/emissions-inventory/03eaeda93ac858f033fb113cfb0e086eca776ea3

Table 10
Proposed Project Operational Energy Resource Use
Morro Bay BESS Installation
Morro Bay, California

Source[1]	Annual Energy Consumption			
	Gasoline Usage (gal)	Diesel Usage (gal)	Natural Gas Usage (MMBtu)	Electricity Usage (MWh)
Building Electricity Consumed (+)	--	--	--	2,754
Building Natural Gas	--	--	--	--
Operational Equipment	--	543	--	--
Mobile Sources	463	3,709	--	--
Total	**463**	**4,252**	**--**	**2,754**

Notes:

1. Electric vehicle charging outlets recommended as a GHG mitigation measure would be expected to reduce gasoline and diesel usage while slightly increasing electricity usage. Conservatively, no credit has been taken.

Abbreviations:

gal - gallons

MMBTU - million British Thermal Units

MWh - megawatt-hour

APPENDIX B
CALEEMOD® OUTPUTS

Vistra BESS - Tier Mitigated v3 Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vistra BESS - Tier Mitigated v3
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	24.0
Location	35.37488204736745, -120.85921757800375
County	San Luis Obispo
City	Morro Bay
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3324
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	24.0	273,000	0.00	—	—	Buildings housing battery energy storage system

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.70	278	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	1.95	24.4	48,335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.73	5.63	103	212	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	1.95	0.68	48,105
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	19.6	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	34,130	34,130	1.35	1.40	7.39	34,314
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	3.58	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,651	5,651	0.22	0.23	1.22	5,681
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshol	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.39	3.36	64.1	131	0.23	0.47	18.2	18.6	0.47	8.28	8.75	—	25,585	25,585	1.05	0.23	3.94	25,685
2024	5.70	5.56	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	0.67	24.4	48,335
2025	4.51	4.28	43.2	101	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,952	47,952	2.01	0.67	22.7	48,225
2026	4.40	278	43.0	100.0	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,813	47,813	1.86	0.66	21.0	48,079
2027	2.74	2.18	46.5	73.9	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,165	25,165	1.06	1.95	24.0	25,796
2028	2.63	2.17	45.8	73.5	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,833	24,833	0.99	1.88	21.9	25,439
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.73	5.63	103	212	0.38	0.78	18.3	19.0	0.78	8.42	9.20	—	43,164	43,164	1.78	0.50	0.25	43,357
2024	5.65	5.54	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	0.67	0.63	48,105
2025	4.50	4.24	43.5	100	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,750	47,750	1.89	0.67	0.59	47,998
2026	4.39	4.14	47.6	98.8	0.40	0.46	11.1	11.6	0.39	2.15	2.54	—	47,615	47,615	1.89	1.95	0.68	47,860
2027	2.74	2.18	46.9	73.7	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,122	25,122	1.07	1.95	0.62	25,731
2028	2.62	2.17	46.2	73.3	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,791	24,791	0.99	1.88	0.57	25,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.89	0.87	16.2	33.1	0.06	0.12	3.27	3.39	0.12	1.50	1.62	—	6,694	6,694	0.28	0.07	0.60	6,724
2024	3.72	3.60	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	32,299	32,299	1.35	0.41	4.79	32,459
2025	3.19	3.01	31.0	71.6	0.28	0.20	3.38	3.58	0.20	0.80	1.00	—	34,130	34,130	1.35	0.48	7.01	34,314

2026	2.46	19.6	24.5	53.3	0.19	0.18	3.86	4.04	0.17	0.85	1.02	—	23,544	23,544	0.93	0.54	6.14	23,734
2027	1.95	1.55	33.6	52.6	0.14	0.33	7.91	8.24	0.28	1.53	1.80	—	17,949	17,949	0.76	1.40	7.39	18,391
2028	0.78	0.64	13.8	21.8	0.06	0.12	3.29	3.41	0.12	0.64	0.75	—	7,376	7,376	0.29	0.56	2.81	7,553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.16	0.16	2.95	6.04	0.01	0.02	0.60	0.62	0.02	0.27	0.30	—	1,108	1,108	0.05	0.01	0.10	1,113
2024	0.68	0.66	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,347	5,347	0.22	0.07	0.79	5,374
2025	0.58	0.55	5.66	13.1	0.05	0.04	0.62	0.65	0.04	0.15	0.18	—	5,651	5,651	0.22	0.08	1.16	5,681
2026	0.45	3.58	4.47	9.72	0.03	0.03	0.70	0.74	0.03	0.16	0.19	—	3,898	3,898	0.15	0.09	1.02	3,930
2027	0.36	0.28	6.12	9.60	0.03	0.06	1.44	1.50	0.05	0.28	0.33	—	2,972	2,972	0.13	0.23	1.22	3,045
2028	0.14	0.12	2.51	3.98	0.01	0.02	0.60	0.62	0.02	0.12	0.14	—	1,221	1,221	0.05	0.09	0.47	1,250

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Area	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Area	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.04	0.25	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	58.9	58.9	< 0.005	< 0.005	0.08	59.9
Area	1.91	9.34	0.09	10.7	< 0.005	0.01	—	0.01	0.02	—	0.02	—	44.1	44.1	< 0.005	< 0.005	—	44.3

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.2	24.2	< 0.005	< 0.005	—	24.2
Total	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Area	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	255	255	0.04	< 0.005	—	257
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,924	12,924	0.52	0.10	—	12,969

Demolitio	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.05	8.04	0.01	0.03	—	0.03	0.03	—	0.03	—	1,593	1,593	0.06	0.01	—	1,599
Demolitio n	—	—	—	—	—	—	0.88	0.88	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	264	264	0.01	< 0.005	—	265
Demolitio n	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.53	0.43	4.81	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,015	1,015	0.03	0.04	0.11	1,029
Vendor	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	110	110	< 0.005	0.02	0.01	114
Hauling	0.67	0.16	14.2	4.02	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,363	11,363	0.51	1.79	0.56	11,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	126	126	< 0.005	0.01	0.22	128
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.1

Hauling	0.08	0.02	1.76	0.49	0.01	0.03	0.10	0.12	0.02	0.04	0.05	—	1,401	1,401	0.06	0.22	1.15	1,469
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.34
Hauling	0.02	< 0.005	0.32	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	232	232	0.01	0.04	0.19	243

3.3. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	1.07	23.5	46.6	0.09	0.17	—	0.17	0.17	—	0.17	—	9,230	9,230	0.37	0.07	—	9,261

Demolitio	—	—	—	—	—	—	5.11	5.11	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	4.28	8.50	0.02	0.03	—	0.03	0.03	—	0.03	—	1,528	1,528	0.06	0.01	—	1,533
Demolition	—	—	—	—	—	—	0.93	0.93	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.35	4.74	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,040	1,040	0.02	0.04	3.88	1,057
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.25	112
Hauling	0.67	0.16	13.2	3.87	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,095	11,095	0.51	1.79	19.9	11,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.40	4.49	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	997	997	0.03	0.04	0.10	1,011
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.01	112
Hauling	0.67	0.16	13.5	3.88	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,096	11,096	0.51	1.79	0.51	11,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.36	0.28	3.19	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	717	717	0.02	0.03	1.20	728
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	76.6	76.6	< 0.005	0.01	0.08	80.1
Hauling	0.48	0.12	9.71	2.76	0.05	0.15	0.56	0.71	0.10	0.20	0.31	—	7,925	7,925	0.36	1.28	6.12	8,321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.58	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	119	119	< 0.005	0.01	0.20	121
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3

Hauling	0.09	0.02	1.77	0.50	0.01	0.03	0.10	0.13	0.02	0.04	0.06	—	1,312	1,312	0.06	0.21	1.01	1,378

3.5. Demolition (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	9.77	19.4	0.04	0.07	—	0.07	0.07	—	0.07	—	3,839	3,839	0.16	0.03	—	3,852
Demolition	—	—	—	—	—	—	2.13	2.13	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	1.78	3.54	0.01	0.01	—	0.01	0.01	—	0.01	—	636	636	0.03	0.01	—	638
Demolition	—	—	—	—	—	—	0.39	0.39	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.51	0.31	4.46	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,022	1,022	0.02	0.04	3.56	1,039
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	104	104	< 0.005	0.02	0.22	109
Hauling	0.60	0.16	12.5	3.72	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,800	10,800	0.44	1.72	18.1	11,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.50	0.36	4.26	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	980	980	0.03	0.04	0.09	993
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	105	105	< 0.005	0.02	0.01	109
Hauling	0.60	0.16	12.8	3.73	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,801	10,801	0.44	1.72	0.47	11,324
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	293	293	0.01	0.01	0.46	298
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.5
Hauling	0.18	0.05	3.85	1.11	0.02	0.04	0.23	0.28	0.04	0.08	0.13	—	3,213	3,213	0.13	0.51	2.33	3,371
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.08	49.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.14	5.14	< 0.005	< 0.005	< 0.005	5.37
Hauling	0.03	0.01	0.70	0.20	< 0.005	0.01	0.04	0.05	0.01	0.02	0.02	—	532	532	0.02	0.08	0.39	558

3.7. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	3.84	7.59	0.01	0.03	—	0.03	0.03	—	0.03	—	1,492	1,492	0.06	0.01	—	1,497
Dust From Material Movement	—	—	—	—	—	—	1.05	1.05	—	0.49	0.49	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.70	1.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	247	247	0.01	< 0.005	—	248
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.37	4.64	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	835	835	0.05	0.03	3.94	850
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.47	0.43	4.41	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	800	800	0.05	0.03	0.10	811
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.10	49.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.04	8.04	< 0.005	< 0.005	0.02	8.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,873	40,873	1.66	0.33	—	41,013
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.56	12.1	24.2	0.05	0.09	—	0.09	0.09	—	0.09	—	4,879	4,879	0.20	0.04	—	4,896
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.96	0.96	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	808	808	0.03	0.01	—	811

Dust From Material Movement	—	—	—	—	—	—	0.36	0.36	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.94	0.86	8.82	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,600	1,600	0.10	0.07	0.20	1,622
Vendor	0.06	0.03	1.11	0.46	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	691	691	0.02	0.10	0.05	722
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	192	192	0.01	0.01	0.40	195
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.5	82.5	< 0.005	0.01	0.09	86.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	31.8	31.8	< 0.005	< 0.005	0.07	32.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	14.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.93	1.93	41.9	84.0	0.16	0.32	—	0.32	0.32	—	0.32	—	16,928	16,928	0.69	0.14	—	16,986
Dust From Material Movement	—	—	—	—	—	—	6.88	6.88	—	3.32	3.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.35	7.65	15.3	0.03	0.06	—	0.06	0.06	—	0.06	—	2,803	2,803	0.11	0.02	—	2,812

Dust From Material Movement	—	—	—	—	—	—	1.25	1.25	—	0.61	0.61	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.98	0.87	0.69	8.63	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,641	1,641	0.09	0.07	7.34	1,670
Vendor	0.06	0.03	1.03	0.42	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	1.76	713
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.93	0.86	0.76	8.18	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,572	1,572	0.10	0.07	0.19	1,594
Vendor	0.06	0.03	1.07	0.43	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	0.05	712
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.35	0.31	3.39	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	657	657	0.04	0.03	1.31	667
Vendor	0.02	0.01	0.44	0.18	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	283	283	0.01	0.04	0.31	296
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.62	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	109	109	0.01	< 0.005	0.22	110
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	46.8	46.8	< 0.005	0.01	0.05	48.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.52	12.1	23.2	0.12	0.08	—	0.08	0.08	—	0.08	—	12,727	12,727	0.52	0.10	—	12,771
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.22	0.02	0.01	—	0.01	0.01	—	0.01	—	2,107	2,107	0.09	0.02	—	2,114
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.95	2.61	2.06	25.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,922	4,922	0.27	0.20	22.0	5,010
Vendor	0.08	0.04	1.38	0.56	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	908	908	0.03	0.13	2.35	951
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.57	2.28	24.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,715	4,715	0.30	0.20	0.57	4,781
Vendor	0.07	0.04	1.42	0.58	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	909	909	0.03	0.13	0.06	949
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.77	0.68	7.38	0.00	0.00	0.09	0.09	0.00	0.00	0.00	—	1,431	1,431	0.09	0.06	2.86	1,454
Vendor	0.02	0.01	0.43	0.17	< 0.005	< 0.005	0.01	0.02	< 0.005	0.01	0.01	—	274	274	0.01	0.04	0.30	286
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	237	237	0.01	0.01	0.47	241
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	45.3	45.3	< 0.005	0.01	0.05	47.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	1.24	28.6	54.9	0.28	0.19	—	0.19	0.19	—	0.19	—	30,163	30,163	1.22	0.24	—	30,267
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	5.22	10.0	0.05	0.04	—	0.04	0.04	—	0.04	—	4,994	4,994	0.20	0.04	—	5,011
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.70	2.51	1.89	24.1	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,831	4,831	0.26	0.20	20.4	4,916
Vendor	0.07	0.04	1.31	0.53	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	892	892	0.03	0.13	2.34	935
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.69	2.47	2.11	22.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,628	4,628	0.15	0.20	0.53	4,690
Vendor	0.07	0.04	1.35	0.54	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	893	893	0.03	0.13	0.06	933
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.89	1.74	1.49	16.4	0.00	0.00	0.20	0.20	0.00	0.00	0.00	—	3,329	3,329	0.10	0.14	6.29	3,380
Vendor	0.05	0.03	0.96	0.38	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	638	638	0.02	0.10	0.72	667
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.32	0.27	2.99	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	551	551	0.02	0.02	1.04	560
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	106	106	< 0.005	0.02	0.12	110

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.72	16.6	31.9	0.16	0.11	—	0.11	0.11	—	0.11	—	17,505	17,505	0.71	0.14	—	17,565

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.03	5.82	0.03	0.02	—	0.02	0.02	—	0.02	—	2,898	2,898	0.12	0.02	—	2,908
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.06	0.03	1.25	0.50	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	2.18	917
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.38	1.94	21.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,545	4,545	0.15	0.20	0.49	4,607
Vendor	0.06	0.03	1.28	0.51	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	0.06	915
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	0.98	0.79	8.87	0.00	0.00	0.12	0.12	0.00	0.00	0.00	—	1,899	1,899	0.05	0.08	3.38	1,928
Vendor	0.03	0.01	0.53	0.21	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	364	364	0.01	0.05	0.39	380
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	1.62	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	314	314	0.01	0.01	0.56	319
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	60.2	60.2	< 0.005	0.01	0.06	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.39	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.02	0.01	0.31	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	219	219	0.01	0.03	0.54	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.17	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	251	251	0.01	0.01	0.45	255
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.21	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	41.5	41.5	< 0.005	< 0.005	0.07	42.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.08
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.44
Architectural Coatings	—	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.39	1.39	< 0.005	< 0.005	—	1.40
Architectural Coatings	—	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	0.51	293
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.25	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.8	47.8	< 0.005	< 0.005	0.09	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Total	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257
Total	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.11	1.95	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Total	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.35	0.32	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Total	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/30/2026	5/31/2028	5.00	414	—
Site Preparation	Site Preparation	9/30/2023	10/31/2023	5.00	22.0	—
Grading	Grading	11/1/2023	7/30/2024	5.00	195	—
Building Construction	Building Construction	7/31/2024	7/31/2026	5.00	523	—
Paving	Paving	8/1/2026	8/28/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	8/29/2026	9/30/2026	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	500	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Grading	Excavators	Diesel	Tier 4 Interim	10.0	8.00	600	0.38
Grading	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Grading	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.40
Grading	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Grading	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	16.0	8.00	750	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Building Construction	Trenchers	Diesel	Tier 4 Interim	4.00	8.00	250	0.50
Building Construction	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Concrete/Industrial Saws	Electric	Average	1.00	5.00	85.0	0.73
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	6.00	85.0	0.37

Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	435	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	2.00	8.00	360	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	355	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	4.00	290	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.00	225	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Site Preparation	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36
Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Building Construction	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	134	10.8	LDA,LDT1,LDT2
Demolition	Vendor	5.00	6.85	HHDT,MHDT
Demolition	Hauling	32.0	101	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	100	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.85	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	10.8	LDA,LDT1,LDT2
Grading	Vendor	30.0	6.85	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	600	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	40.0	6.85	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	600	10.8	LDA,LDT1,LDT2
Paving	Vendor	10.0	6.85	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	600	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.85	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	409,500	136,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	134,000	—
Site Preparation	—	—	176	0.00	—
Grading	—	—	1,170	0.00	—
Building Construction	—	—	24.0	0.00	—
Paving	0.00	0.00	0.00	0.00	5.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	5.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	231	204	0.03	< 0.005
2027	231	204	0.03	< 0.005
2028	231	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Industrial	13.0	0.00	0.00	3,389	105	0.00	0.00	27,266

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	409,500	136,500	—

5.10.3. Landscape Equipment

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	330

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Industrial	2,753,533	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Fire Pump	Diesel	1.00	0.08	30.0	350	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.70	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	36.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	13.6
AQ-PM	8.43
AQ-DPM	16.6
Drinking Water	44.2
Lead Risk Housing	54.6
Pesticides	61.6
Toxic Releases	11.4
Traffic	40.3
Effect Indicators	—
CleanUp Sites	78.0
Groundwater	35.0
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	83.0
Solid Waste	59.2
Sensitive Population	—
Asthma	40.0
Cardio-vascular	25.3

Low Birth Weights	98.9
Socioeconomic Factor Indicators	—
Education	26.4
Housing	17.4
Linguistic	—
Poverty	52.1
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—

Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	75.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	9.6
Physically Disabled	23.7
Heart Attack ER Admissions	73.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	65.9
Children	94.5
Elderly	6.6
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	87.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	54.0
Traffic Density	0.0
Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0

Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use changed to reflect information provided by project sponsor.
Construction: Construction Phases	All phases - updated duration to match information provided by project sponsor
Construction: Off-Road Equipment	All phases - updated construction equipment list to match information provided by project sponsor
Operations: Vehicle Data	Weekday trip rate - adjusted to reflect information provided by project sponsor
Operations: Energy Use	Energy use - used electricity intensity defaults for General Light Industry in EDFZ 6 (Central Coast). The buildings housing the batteries are not expected to use any natural gas, as there will be no refrigeration or heating capacity.
Construction: Trips and VMT	Updated trip numbers and trip length to match information provided by the project sponsor.
Construction: Dust From Material Movement	In the data request, water trucks are associated with building construction and are added here to reflect that. Total acres graded for Building Construction was set to 24 to reflect the project acreage
Construction: Paving	Update paved area acreage to reflect information provided by the project sponsor.