Van Ness Avenue Water Transmission Grid Main
Initial Study and Mitigated Negative Declaration

Prepared for:

City of Fresno
Department of Public Utilities
Utilities Planning and Engineering
2101 G Street, Building A
Fresno, CA 93706

Prepared on: February 2022

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Appendices

Project Overview

Initial Study

1.	Project Title:	Van Ness Avenue Water Transmission Grid Main
2.	Lead Agency Name and Address:	City of Fresno 2101 G Street, Building A Fresno, CA 93706
3.	Contact Person and Phone Number:	Beth Field, PE, Department of Public Utilities, Utilities Planning and Engineering 559-621-1607
4.	Project Location:	Fresno, CA
5.	Project Sponsor's Name and Address:	City of Fresno 2101 G Street, Building A Fresno, CA 93706
6.	General Plan Designation(s) (City of Fresno, 2014): 7. Zoning	Downtown Neighborhood from Divisadero St. to Stanislaus St. (NW section) Downtown Core from Stanislaus St. to Merced St. (SE section)
8.	Description of Project:	See Project Description. Relocation and replacement of water transmission grid mains.
9.	Surrounding Land Uses and Setting: *Descriptions include existing zoning and land use; planned land uses in the Project area are to remain the same as existing.*	North: Neighborhood Mixed Use (existing single- and multi-family uses) East: Downtown Core (existing Commercial, Office, Public/Institutional uses); Downtown General (existing Commercial, Office uses); Downtown Neighborhood (existing multi-family uses) South: Downtown Core (existing Commercial, Office, Public/Institutional uses) West: Downtown Neighborhood (existing multi-family uses)
10.	Public Agency Approvals (potential):	Cal/OSHA – construction/excavation permit City of Fresno – plan check approval Fresno Irrigation District – plan check approval Fresno Metropolitan Flood Control District – plan check approval Regional Water Quality Control Board – Construction General Permit San Joaquin Valley Air Pollution Control District – Indirect Source Review; Construction Notification Form

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?	A Native American consultation has been completed. See Appendix D for a record of correspondence that was sent to interested tribes. No responses were received after the required noticing period.

The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and supported by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2). According to the most recent census data, California is home to 109 currently recognized Indian tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Fresno County has a number of Rancherias such as Table Mountain Rancheria, Millerton Rancheria, Big Sandy Rancheria, Cold Springs Rancheria, and Squaw Valley Rancheria. These Rancherias are not located within the city limits.

Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

Determination

On the basis of this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATEIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are impost upon the proposed project, nothing further is required.

[signature]	01/31/22
Signature	*Date*
Beth Field, City of Fresno	Professional Engineer
Printed Name	*Title*

Chapter 1 – Project Description and Setting

This document has been prepared to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before they approve or implement those projects.

Project Setting

The Project site is located within the City of Fresno (City), along Van Ness Avenue and the adjacent alleys between Divisadero Street and Merced Street. The area is classified in the City's 2014 General Plan as Downtown Neighborhood from Divisadero Street to Stanislaus Street (northwest section of Project Area) and Downtown Core from Stanislaus Street to Merced Street (southeast section of Project Area) (City of Fresno, 2014). Van Ness Avenue is classified as an Expressway from Divisadero Street to its end point at South Railroad Avenue. It is classified as a Scenic Expressway from Divisadero to East Normal Avenue, then transitions back to an Expressway heading north. Existing land uses in the Project Area include mostly commercial and office buildings, with some public/institutional buildings and one multi-family housing development (apartment complex) on the southwest side of Van Ness Avenue between East Stanislaus Street and Calaveras Street. There are no schools, hospitals, or other sensitive receptors located in the immediate vicinity, nor are there any environmentally sensitive areas. Figure 1 Location Maps depicts the Project vicinity and site, and Figure 2 General Plan Land Use Diagram shows existing land use and circulation classifications.

Project Description

The City is proposing the Van Ness Avenue Water Transmission Grid Main (TGM) Project (Project), which would include construction of approximately 0.55 miles of replacement water distribution mains within Van Ness Avenue between Divisadero Street and Merced Street in Downtown Fresno, California. The Project would also relocate all services to existing buildings that front Van Ness Avenue that are currently served by water mains in the alleys between Van Ness and Fulton Street and between Van Ness and L Street. Existing water mains in those alleys serve properties on each side of the alleys and would remain in place until future projects are completed to install new water mains in adjacent main streets and relocate the services for the properties that do not front Van Ness Avenue. The existing water mains in the alleys may be abandoned after all services have been transferred. Additionally, the existing 2-inch water line in Van Ness Avenue, from Amador Street to Divisadero Street that serves a few properties along Van Ness Avenue would also be replaced with the proposed TGM, and services would be similarly transferred. Figure 1 (below) shows the Project location.

Existing water mains consist mainly of 10- and 12-inch cast-iron pipe. The proposed TGM would be located along an alignment within Van Ness Avenue and would be either Polyvinyl Chloride (PVC) or ductile iron pipe. The City anticipates that the proposed water main may range in size from 12 to 16 inches in diameter. Most construction would occur within City of Fresno right-of-way, with some occurring within private properties to transfer services from the alleys to Van Ness Avenue. New water and fire services would be constructed from the proposed TGM to those properties fronting Van Ness Avenue that are currently served by the existing water mains within the alleys. Services to be relocated would be installed within City Street right-of-way up to the water meter for each property. All service alignments would be maintained as much as possible within the properties they serve to avoid the need to secure any easements, however some properties may require their services to be routed through adjacent properties due to space limitations, and the City would need to issue cross-access agreements for these properties. New fire hydrants along Van Ness Avenue would be installed at the current City spacing requirements, and new services would be similarly designed from the proposed TGM for each hydrant within City right-of-way. Construction may include open trenching as well as direct boring. Trench resurfacing in Van Ness Avenue would include application of a slurry seal. All work would occur outside of building footprints and no buildings would be disturbed.

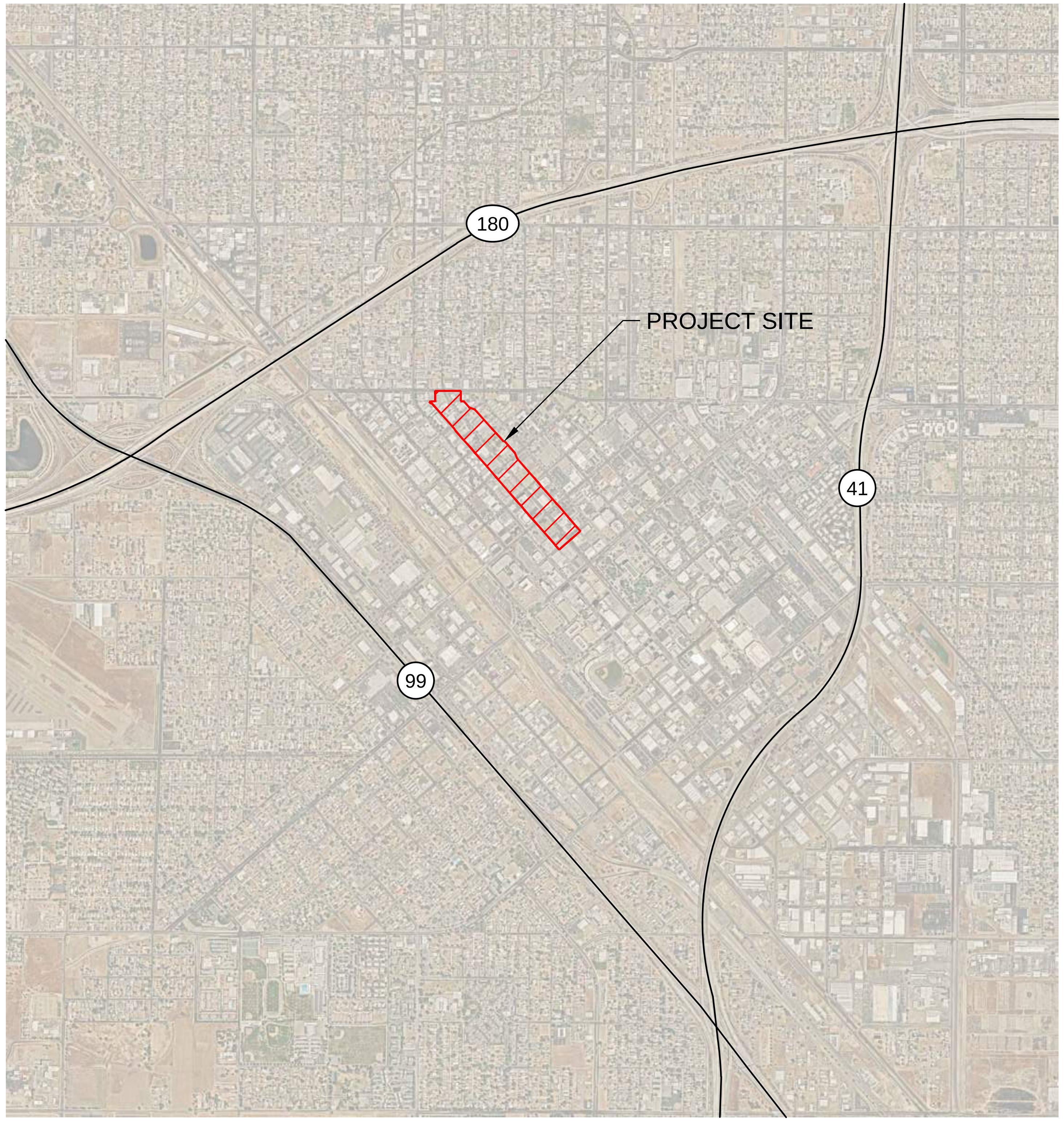
Due to the timing of funding, construction of the proposed TGM would be split into two phases. Phase I would include construction of the proposed TGM within Van Ness Avenue between Amador and Calaveras Streets, and within Amador Street from the alley to Van Ness Avenue. Phase I construction is anticipated to occur from May 1, 2022 to October 31, 2022.

Phase II would include construction of the proposed TGM within Van Ness Avenue between Divisadero and Amador Streets, and between Calaveras and Merced Streets. Phase II construction would start October 2022 and would be completed within approximately 12 months.

The purpose of the Project is to replace existing outdated and substandard water mains with larger transmission grid mains (TGM) that would meet modern performance and safety standards and serve current and near-future demands. Additionally, replacement and maintenance of existing mains within alleys is difficult due to the multitude of other utilities and features present; relocating mains to major streets would better facilitate system operations and maintenance.

The Project would not cause any additional expansion or development, rather it would replace aging infrastructure to meet current standards and performance requirements and ensure adequate service to meet increased demands that have occurred over the past several decades as a result of development and population increases. The City expects to undertake similar future projects to replace existing water mains in Downton Fresno alleys, but each project would be separate, with unknown timing and scope, and would not cause any additional expansion or development.

Figure 3 Site Map shows the Project Boundary, existing Water Transmission Grid Mains, and Phase I and Phase II Proposed Water Transmission Grid Mains.



LOCATION MAP
NOT TO SCALE

PROJECT SITE
SCALE: 1"=500'

SITE LOCATION: VAN NESS AVE. FROM DIVISADERO ST. TO MERCED ST. | FRESNO, CA | 36.74003, -119.79511	FIGURE: 1

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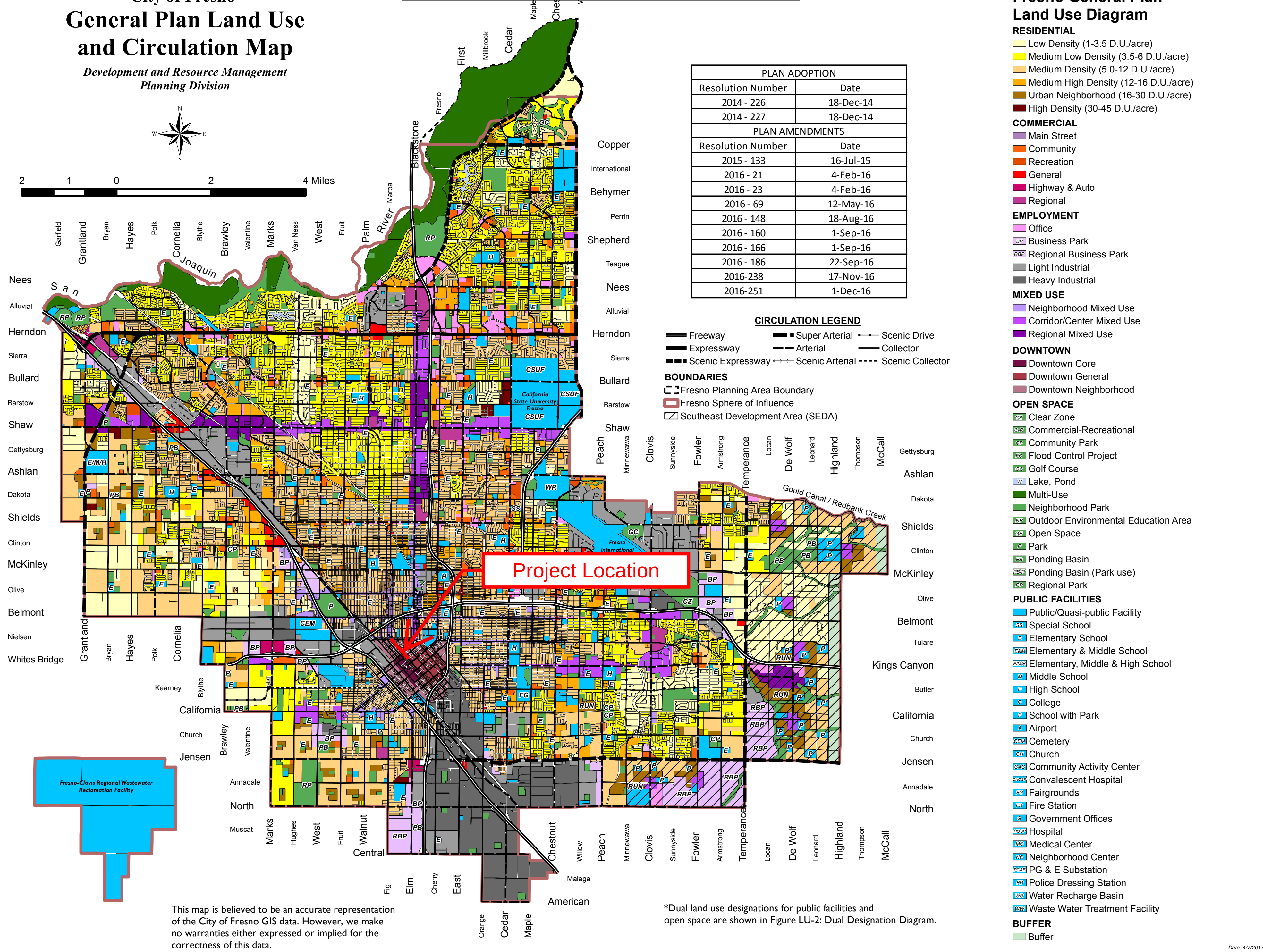
CITY OF FRESNO

VAN NESS AVENUE
WATER MAIN REPLACEMENT
LOCATION MAPS

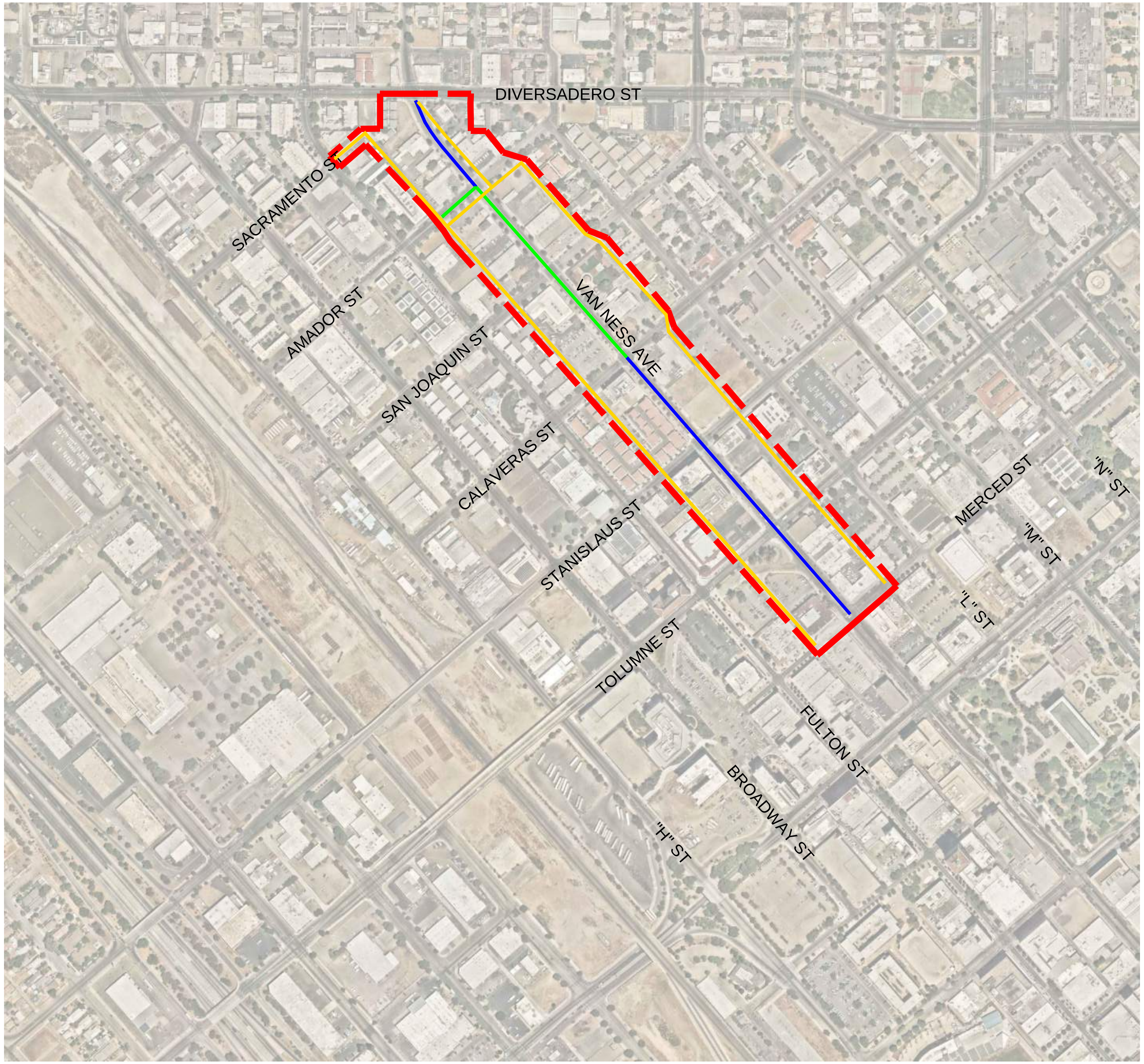
DR. BY	MG	SHEET NO.	1
CH. BY	JM		
DATE	10-18-21	OF 3 SHEETS	
SCALE:	AS NOTED		

Drawing: C:\Users\mgennaro\appdata\local\temp\AcPublish_23352\221232_Environmental_SiteMap.dwg; Figure 1 Plot by: MGennaro Dec 21, 2021 - 2:29pm

Figure 2: General Plan Land Use Diagram



PLAN ADOPTION	
Resolution Number	Date
2014 - 226	18-Dec-14
2014 - 227	18-Dec-14
PLAN AMENDMENTS	
Resolution Number	Date
2015 - 133	16-Jul-15
2016 - 21	4-Feb-16
2016 - 23	4-Feb-16
2016 - 69	12-May-16
2016 - 148	18-Aug-16
2016 - 160	1-Sep-16
2016 - 166	1-Sep-16
2016 - 186	22-Sep-16
2016-238	17-Nov-16
2016-251	1-Dec-16



SYMBOL LEGEND:

- PROJECT BOUNDARY
- PHASE I - PROPOSED WATER TRANSMISSION GRID MAIN
- PHASE II - PROPOSED WATER TRANSMISSION GRID MAIN
- EXISTING WATER TRANSMISSION GRID MAIN

N

0 100 250 500 1000
SCALE IN FEET

SITE LOCATION: VAN NESS AVE. FROM DIVISADERO ST. TO MERCED ST. | FRESNO, CA | 36.74003, -119.79511				FIGURE: 3
Blair, Church & Flynn CONSULTING ENGINEERS	CONSULTANT Blair, Church & Flynn Consulting Engineers 451 Clovis Avenue, Suite 200 Clovis, California 93612 Tel (559) 326-1400 Fax (559) 326-1500	CITY OF FRESNO VAN NESS AVENUE WATER MAIN REPLACEMENT SITE MAP	DR. BY MG CH. BY JM DATE 10-18-21 SCALE: AS NOTED	SHEET NO. 3 OF 3 SHEETS

Drawing: C:\Users\mgennaro\appdata\local\temp\AcPublish_23352\221232_Environmental_SiteMap.dwg; Figure 2 Plot by: MGennaro Dec 21, 2021 - 2:30pm

Chapter 2 – Environmental Checklist

The following environmental checklist is based on Appendix G of the 2021 California Environmental Quality Act (CEQA) Statute and Guidelines (CEQA Guidelines) (Association of Environmental Professionals, 2021).

A discussion of each environmental topic is provided, including the following (where applicable): background and summary of existing conditions; potential impacts; mitigation measures. The significance levels for potential impacts are defined as follows:

- *Potentially Significant Impact* is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

- *Less than Significant with Mitigation Incorporated* applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact. The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

- *Less than Significant Impact* applies where the project would potentially have an effect on the environment but there is no substantial evidence that the effect would be significant, without the incorporation of mitigation measures.

- *No Impact* applies if the referenced information sources show that the impact does not apply to projects like the one involved.

As discussed in the following sections, all potential impacts will be less than significant with the incorporation of mitigation measures.

2.1 Aesthetics

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				X
d) Create a new source of light or glare that would adversely affect day or nighttime views in the area?				X

a) Have a substantial adverse effect on a scenic vista? *Less than Significant Impact:*

The Project Site is in a fully developed area of downtown Fresno and there are no scenic vistas in the immediate vicinity. According to the Fresno General Plan Land Use and Circulation Map, there are two scenic drives north of the Project Site on Van Ness Avenue and North Fulton Street, north of Divisadero Street, but they would not be impacted by the Project. In addition, all improvements would occur underground or at the surface, except for new fire hydrants, and would only service existing properties (City of Fresno, 2014). Therefore, the Project would result in a *less than significant impact* to scenic vistas and scenic resources

b) Substantially damage scenic resources, including, but not limited to, trees, rock out-croppings, and historic buildings within a state scenic highway? *No Impact:*

According to the Fresno General Plan Land Use and Circulation Map (City of Fresno, 2014), there are no sections of scenic highway near the Project Site. Additionally, all improvements would occur underground or at the surface, except for new fire hydrants and backflow preventers, and would only service existing properties. Therefore, the Project would have no impact on scenic highway resources.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surrounds? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? *No Impact:*

The Project is in an urbanized area. According to the 2014 General Plan (City of Fresno, 2014), the Project Site is designated as Downtown Neighborhood from Divisadero Street to Stanislaus Street, and Downtown Core from Stanislaus Street to Merced Street. All improvements would occur underground or at the surface, except for new fire hydrants, and would only service existing properties. Therefore, the Project would not conflict with zoning or other regulations governing scenic quality and there would be no impact to scenic quality.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? *No Impact:*

The Project would not add any light features or features that add glare. Therefore, The Project would result in no impacts related to light or glare.

<u>Mitigation Measures</u>

None.

2.2 Agricultural and Forestry Resources

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)), timberland (as defined by Public Resources Cod Section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)?				X
d) Result in the loss of forestland or conversion of forestland to non-forest use?				X
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forestland to non-forest use?				X

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land including the Forest and Range Assessment Project, the Forest Legacy Assessment project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? ***No Impact:***

The Project Site is in Downtown Fresno. The City of Fresno *2016 General Plan* designates the land within the Project Site as “Downtown Neighborhood”, from Divisadero St. to Stanislaus St. (NW section), and Downtown Core from Stanislaus St. to Merced St. (SE section). The Project site is densely developed with commercial buildings and associated infrastructure and there is no farmland, zoning for agricultural use, forest land, or timberland within or near the Project site. Therefore, the Project would result in no impact on agricultural and forestry resources.

b) Conflict with existing zoning for agricultural use or Williamson Act contract? *No Impact:*

The Project Site is in Downtown Fresno. The City of Fresno *2016 General Plan* designates the land within the Project Site as “Downtown Neighborhood”, from Divisadero St. to Stanislaus St. (NW section), and Downtown Core from Stanislaus St. to Merced St. (SE section). The Project site is densely developed with commercial buildings and associated infrastructure and there is no farmland, zoning for agricultural use, forest land, or timberland within or near the Project site. Therefore, the Project would result in no impact on agricultural and forestry resources.

c) Conflict with existing zoning for, or cause for rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timerland zoned Timberland Production (as defined by Government Code section 51104(g))? *No Impact:*

The Project Site is in Downtown Fresno. The City of Fresno *2016 General Plan* designates the land within the Project Site as “Downtown Neighborhood”, from Divisadero St. to Stanislaus St. (NW section), and Downtown Core from Stanislaus St. to Merced St. (SE section). The Project site is densely developed with commercial buildings and associated infrastructure and there is no farmland, zoning for agricultural use, forest land, or timberland within or near the Project site. Therefore, the Project would result in no impact on agricultural and forestry resources.

d) Result in the loss of forest land or conversion of forest land to non-forest use? *No Impact:*

The Project Site is in Downtown Fresno. The City of Fresno *2016 General Plan* designates the land within the Project Site as “Downtown Neighborhood”, from Divisadero St. to Stanislaus St. (NW section), and Downtown Core from Stanislaus St. to Merced St. (SE section). The Project site is densely developed with commercial buildings and associated infrastructure and there is no farmland, zoning for agricultural use, forest land, or timberland within or near the Project site. Therefore, the Project would result in no impact on agricultural and forestry resources.

e) Involve other changes to the existing environment, which, due to their natural location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? *No Impact:*

The Project Site is in Downtown Fresno. The City of Fresno *2016 General Plan* designates the land within the Project Site as “Downtown Neighborhood”, from Divisadero St. to Stanislaus St. (NW section), and Downtown Core from Stanislaus St. to Merced St. (SE section). The Project site is densely developed with commercial buildings and associated infrastructure and there is no farmland, zoning for agricultural use, forest land, or timberland within or near the Project site. Therefore, the Project would result in no impact on agricultural and forestry resources.

Mitigation Measures

None.

2.3 Air Quality

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

According to the CEQA Guidelines, where available, significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. The Project is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Therefore, where available, SJVAPCD significance criteria were used for project-specific analysis of potential air quality impacts. The SJVAPCD provides guidance for air quality analysis under CEQA in its *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI). (San Joaquin Valley Air Pollution Control District, 2015)

a) Conflict with or obstruct implementation of the applicable air quality plan? *Less than Significant Impact:*

The SJVAPCD is tasked with implementing programs and regulations required by the Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA). In that capacity, the SJVAPCD has prepared plans to attain Federal and State ambient air quality standards. SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on SJVAPCD New Source Review (NSR) offset requirements for stationary sources. Emission reductions achieved through implementation of SJVAPCD offset requirements are a major component of the SJVAPCD air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to not conflict with or obstruct implementation of the SJVAPCD air quality plans.

Air quality modeling was performed, using the approved *California Emissions Estimator Model* (CalEEMod), version 2016.3.2. The complete CalEEMod analysis is attached as Appendix A. The exact locations of all ground disturbance are not yet known, thus the Project Site area was overestimated to account for all reasonable possibilities. As stated in the Project Description, Phase I is expected to occur from May through October 2022, and Phase II is expected to occur immediately after, from October 2022 through October 2023. However, the Phase II timeline includes design, permitting, planning, and all other steps to complete that phase. Therefore, the May 2022 start date was used, but CalEEMod default durations were used for the construction timeline because they are the most accurate estimate available at the time of this Initial Study. Additionally, because significance thresholds have been established in units of tons per year (tpy), a more compressed construction timeline (as was used for this Initial Study) would be an overestimation of Project emissions compared to a more extended timeline (as will be the case for the Project), given the same amount of work involved. Thus, the analysis results presented below are expected to by an overestimate of Project emissions that would actually occur.

Table 1, below, presents the results of the analysis compared to SJVAPCD significance thresholds for criteria pollutants. Project construction would result in criteria air pollutant emissions that are below SJVAPCD significance thresholds for construction. The Project would not include any new or increased operational activities and thus would not cause any long-term, operational emissions. Therefore, the Project would result in a less than significant impact.

Table 1: Annual Construction Emissions (Tons per Year)

Construction	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Project Construction Emissions (maximum annual)	0.2	1.8	1.6	0.004	0.2	0.1
SJVAPCD Significance Threshold	10	10	100	27	15	15
Exceeds SJVAPCD Threshold?	No	No	No	No	No	No
Operation	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Project Operation Emissions	0.02	0.00002	0.002	0	0.00001	0.00001
SJVAPCD Significance Threshold	10	10	100	27	15	15
Exceeds SJVAPCD Threshold?	No	No	No	No	No	No

Definitions:

a. ROG: Reactive Organic Gases (roughly equivalent to Volatile Organic Compounds or "VOC")
b. NOx: Oxides of Nitrogen
c. CO: Carbon Monoxide
d. SOx: Oxides of Sulfur (only SO_2 is provided in CalEEMod results but is approved by SJVAPCD as a rough equivalent)
e. PM_{10}: Particulate Matter with an aerodynamic diameter less than or equal to 10 microns.
f. $PM_{2.5}$: Particulate Matter with an aerodynamic diameter less than or equal to 2.5 microns.

References:

1. Appendix A – California Emissions Estimator Model (CalEEMod) Results
2. San Joaquin Valley Air Pollution Control District. (2015). *Air Quality Thresholds of Significance – Criteria Pollutants.* http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf.

Additionally, the Project would comply with applicable SJVAPCD Rules and Regulations. The following SJVAPCD requirements directly relate to the Project:

- Regulation VIII (Fugitive Dust Control) – Projects must control fugitive dust on the site and access routes through an appropriate combination of specified control measures. Projects greater than 5 acres must prepare and submit a Dust Control Plan that includes all project details and specific control measures to be implemented through construction. Projects with a total disturbed area of 1-5 acres are not required to prepare a Dust Control Plan but must submit a Construction Notification Form to SJVAPCD that includes basic project information. The Project would disturb a maximum of 4.7 acres
- Rule 9510 (Indirect Source Review or "ISR") – Projects that are above the applicability size thresholds must prepare and submit to SJVAPCD an Air Impact Assessment (AIA) application. The AIA application includes project details required to model "indirect emissions" that would result from the Project. The Project requires discretionary approval from the City of Fresno and would therefore be subject to the applicability size threshold of 9,000 square feet. The Project site is estimated to be 205,000 square feet. Thus, an AIA application would be required. The emissions modeling performed for this Initial Study (see Appendix A) indicate that construction emissions of oxides of nitrogen (NOx) would be below the mitigation threshold of 2.0 tpy. Thus, the Project would not be required to implement mitigation measures (such as a Construction Clean Fleet) to reduce construction emissions or pay fees to offset the emissions. A more detailed analysis would be performed for the ISR AIA application and applicable requirements would be identified for compliance with Rule 9510.

The SJVAPCD thresholds of significance for toxic air contaminants would not apply to the Project because the project would not result in any new or increased operational emissions of toxic air contaminants.

As discussed above, the Project would not conflict with or obstruct implementation of the applicable air quality plan; therefore, the Project would result in a less than significant impact.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. ***Less than Significant Impact:***

According to the SJVAPCD GAMAQI (San Joaquin Valley Air Pollution Control District, 2015), CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable", meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

According to the SJVAPCD GAMAQI (San Joaquin Valley Air Pollution Control District, 2015), by its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of State and Federal ambient air quality standards is a function of successful implementation of SJVAPCD attainment plans. Consequently, SJVAPCD's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

According to the SJVAPCD GAMAQI (San Joaquin Valley Air Pollution Control District, 2015), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [14 C.C.R. §15064(h)(3)].

According to the SJVAPCD GAMAQI (San Joaquin Valley Air Pollution Control District, 2015), therefore, if project specific emissions exceed the thresholds of significance for criteria pollutants the project would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which SJVAPCD is in non-attainment under applicable Federal or State ambient air quality standards. This does not imply that if the project is below all such significance thresholds, it cannot be cumulatively significant.

As discussed in the response to question (a), above, Project emissions would be well under SJVAPCD significance thresholds for criteria air pollutants. Thus, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which SJVAPCD is in non-attainment under applicable Federal or State ambient air quality standards.

The City of Fresno is one of the largest metropolitan regions in California and its infrastructure is in constant and ongoing need of improvement and repair as it ages and demands increase due to the normal progression of development and population increases. Future similar projects are expected to be completed to relocate water transmission grid mains from alleyways to main streets. However, the timing and details of those projects are uncertain, and none of them could be considered to result either directly or indirectly from completion of the Project. The Project itself would not directly or indirectly result in any other projects, activities, or additional cumulative air pollutant emissions, outside those analyzed in this Initial Study. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, and this impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations? *Less than Significant Impact:*

According to the SJVAPCD GAMAQI (San Joaquin Valley Air Pollution Control District, 2015), Determination of whether project emissions would expose sensitive receptors to substantial pollutant concentrations is a function of assessing potential health risks. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. When evaluating whether a development proposal has the potential to result in localized impacts, Lead Agency staff need to consider the nature of the air pollutant emissions, the proximity between the emitting facility and sensitive receptors, the direction of prevailing winds, and local topography.

The Project is not a development proposal; rather, it is a water transmission grid main relocation project. The Project would not result in any new or increased operational activities or associated long-term, operational emissions of air pollutants. During construction, the Project would result in criteria air pollutants and toxic air contaminants (TAC). The primary TAC of concern would be diesel particulate matter (DPM). However, there are very few sensitive receptors located near the Project site, with the closest being the Healthcare Centre of Fresno, a nursing home located approximately 0.14 miles northeast of the Project. Project construction emissions would be short term, intermittent, and minimized with the use of modern air pollution controls in vehicles and equipment, including on- and off-road engine tier standards, anti-idling standards, and fuel standards. See Appendix A for a list of equipment expected to be used for Project discussion, based on CalEEMod defaults. Emissions would disperse rapidly over the distance to sensitive receptors. Additionally, the Project site is located within the core of Downtown Fresno, and the number, size, and density of buildings and structures between the Project site and the nearest sensitive receptors would prevent any substantial pollutant concentrations from persisting all the way to those receptors. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? *Less than Significant Impact:*

According to the SJVAPCD GAMAQI (San Joaquin Valley Air Pollution Control District, 2015), due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine the presence of a significant odor impact. Rather, SJVAPCD recommends that odor analyses strive to fully disclose all pertinent information. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. SJVAPCD has identified some common types of facilities that have been known to produce odors in the San Joaquin Valley.

The Project is a water transmission grid main relocation project and has not been identified as a type of facility that has been known to produce odors in the San Joaquin Valley. The Project would not include any new or increased operational activity and therefore would not result in any long-term, operational emissions.

During construction, the Project could potentially disturb soil contaminated by historical commercial and industrial activities within and near the Project site. If encountered, any contaminants that could volatize or otherwise become entrained in the air would be strictly controlled under existing safety and hazardous materials management regulations. See section 2.9 Hazards and Hazardous Materials for a detailed discussion on potentially contaminated soil at the Project site. Mitigation measures have been included in that section to complete field sampling and a plan to manage any expected hazardous materials prior to the start of construction. Any potential airborne contaminants would be required to be controlled to a level that is safe for onsite workers; thus, any offsite receptors would receive even lower concentrations because the emissions would rapidly disperse over the distances to receptors and with intervening structures. Therefore, the Project would not result in other emissions that would adversely affect a substantial number of people.

Mitigation Measures

None

2.4 Biological Resources

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. fish and Wildlife Service?				X
b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) Through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				X

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulation, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? ***No Impact:***

The Project site is within the core of Downtown Fresno and is densely developed with existing commercial uses. All work would occur in paved or cleared dirt areas. There are no habitats or other biological resources in the area that would be affected by the Project. Therefore, there would be no impact to biological resources.

b) Have a substantial aderse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? *No Impact:*

The Project site is within the core of Downtown Fresno and is densely developed with existing commercial uses. All work would occur in paved or cleared dirt areas. There are no habitats or other biological resources in the area that would be affected by the Project. Therefore, there would be no impact to biological resources.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? *No Impact:*

The Project site is within the core of Downtown Fresno and is densely developed with existing commercial uses. All work would occur in paved or cleared dirt areas. There are no habitats or other biological resources in the area that would be affected by the Project. Therefore, there would be no impact to biological resources.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? *No Impact:*

The Project site is within the core of Downtown Fresno and is densely developed with existing commercial uses. All work would occur in paved or cleared dirt areas. There are no habitats or other biological resources in the area that would be affected by the Project. Therefore, there would be no impact to biological resources.

e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance? *No Impact:*

The Project site is within the core of Downtown Fresno and is densely developed with existing commercial uses. All work would occur in paved or cleared dirt areas. There are no habitats or other biological resources in the area that would be affected by the Project. Therefore, there would be no impact to biological resources.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, or other approved local, regional, or state habitat conservation plan? *No Impact*:

The Project site is within the core of Downtown Fresno and is densely developed with existing commercial uses. All work would occur in paved or cleared dirt areas. There are no habitats or other biological resources in the area that would be affected by the Project. Therefore, there would be no impact to biological resources.

Mitigation Measures

None.

2.5 Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Rincon Consultants, Inc. (Rincon) completed a Cultural Resources Assessment for the Project in November 2021, which is attached as Appendix B. The assessment was conducted in support of this Initial Study and included a cultural resources records search, Sacred Lands File (SLF) search, and a pedestrian field survey. (Rincon Consultants, Inc., 2021.a)

The results of the Cultural Resources Assessment are summarized below; see Appendix C for the complete assessment.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? *No Impact*

The background research and pedestrian field survey identified five known built environment historical resources within the project site. Additionally, the project site contains numerous other properties over 45 years of age which may have potential to qualify as historical resources pending further analysis. However, the proposed project does not have the potential to impact any known or potential historical resources pursuant to Section 15064.5 of the CEQA Guidelines. The project components would be constructed underground in the public right-of-way and extend onto private property to install buried connecting lines to the water meters of several properties. The street profile and surface would be restored to virtually intact post-construction. Because the project elements proposed for private properties would entail only minor subterranean construction and would not cause direct changes to any building in the project site, the project would not result in the material impairment of any known or potential historical resource. Material impairment is defined in the CEQA Guidelines as demolition or alteration in an adverse manner of those characteristics of a historical resource that convey its historical significance and that justify its eligibility as a historical resource. Therefore, there would be no impact to historical resources. (Rincon Consultants, Inc., 2021.a)

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? *Less than Significant Impact with Mitigation Incorporated:*

The SLF search was returned with negative results, and no prehistoric resources were identified within the Project site during the records search or survey. As such, the project site is considered to have low prehistoric archaeological sensitivity. However, the Town of Fresno historic district was identified directly adjacent to the project site. Of particular concern would be the remnants of tracks related to the historic trolley system (P-10-007224) which could be buried along Van Ness Avenue, and along Stanislaus Street where it intersects with Van Ness Avenue, and additional elements of the Town of Fresno historic district (P-10- 007206). Given the proximity to a historic district and the history of the vicinity, the project site is considered to have moderate to high historic-period archaeological sensitivity. Unanticipated discoveries are possible during construction-related ground disturbance and impacts are potentially significant. Consequently, mitigation is recommended to ensure that potential impacts to cultural resources, including those that may be considered historical resources, are reduced to a less-than-significant level. Archaeological monitoring would occur during project development, as well as a Worker's Environmental Awareness Program (WEAP) be developed to inform construction crews of the potential cultural resources concerns in the area. These mitigation measures are discussed in greater detail below. Therefore, the Project would result in a less than significant impact to archaeological resources with mitigation incorporated. Also included are best management practices that are recommended in case of unanticipated discoveries and a summary of existing regulations regarding the discovery of human remains. (Rincon Consultants, Inc., 2021.a)

c) Disturb any human remains, including those interred outside of formal cemeteries? *Less than Significant Impact with Mitigation Incorporated:*

The SLF search was returned with negative results, and no prehistoric resources were identified within the Project site during the records search or survey. As such, the project site is considered to have low prehistoric archaeological sensitivity. However, the Town of Fresno historic district was identified directly adjacent to the project site. Of particular concern would be the remnants of tracks related to the historic trolley system (P-10-007224) which could be buried along Van Ness Avenue, and along Stanislaus Street where it intersects with Van Ness Avenue, and additional elements of the Town of Fresno historic district (P-10- 007206). Given the proximity to a historic district and the history of the vicinity, the project site is considered to have moderate to high historic-period archaeological sensitivity. Unanticipated discoveries are possible during construction-related ground disturbance and impacts are potentially significant. Consequently, mitigation is recommended to ensure that potential impacts to cultural resources, including those that may be considered historical resources, are reduced to a less-than-significant level. Archaeological monitoring would occur during project development, as well as a Worker's Environmental Awareness Program (WEAP) be developed to inform construction crews of the potential cultural resources concerns in the area. These mitigation measures are discussed in greater detail below. Therefore, the Project would result in a less than significant impact to archaeological resources with mitigation incorporated. Also included are best management practices that are recommended in case of unanticipated discoveries and a summary of existing regulations regarding the discovery of human remains. (Rincon Consultants, Inc., 2021.a)

Mitigation Measures

MITIGATION MEASURE CULTURAL – 1*: Worker's Environmental Awareness Program. A qualified archaeologist should be retained to conduct a Worker's Environmental Awareness Program training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities. The training should be conducted by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archeology (NPS 1983). Archaeological sensitivity training should include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a find.* (Rincon Consultants, Inc., 2021.a)

MITIGATION MEASURE CULTURAL – 2*: Archaeological Monitoring and Discovery Plan. Prior to project construction, a qualified archaeologist shall prepare an Archaeological Monitoring and Discovery Plan (AMDP) to ensure the proper treatment and long-term protection of unanticipated discoveries during project construction. The AMDP shall be submitted to the City for review and approval. The AMDP shall provide a description of the methods to be undertaken during monitoring and the steps to be taken in the event of an archaeological discovery during construction, including, at minimum: development of research questions and goals to be addressed by the investigation in the event of a find; detailed field strategy used to record, recover, or avoid the finds and address research goals; analytical methods to be employed for identified resources; requirements for reporting; and disposition of the artifacts.* (Rincon Consultants, Inc., 2021.a)

MITIGATION MEASURE CULTURAL – 3*: Archaeological Monitoring. Archaeological monitoring would be conducted of all project-related ground disturbing activities. Archaeological monitoring should be performed under the direction of the qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983). The qualified archaeologist, in consultation with the City of Fresno, may recommend the reduction or termination of monitoring depending upon observed conditions (e.g., no resources encountered within the first 50 percent of ground disturbance). If archaeological resources are encountered during ground-disturbing activities, work within a minimum of 50 feet of the find must halt and the find evaluated for CRHR eligibility in accordance with the steps identified in the AMDP. Should an unanticipated resource be found as CRHR eligible and avoidance is infeasible, additional analysis (e.g., testing) may be necessary to determine if project impacts would be significant.* (Rincon Consultants, Inc., 2021.a)

Best practices for unanticipated discovery of Cultural Resources: In the unlikely event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work in the immediate area should be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archeology (NPS 1983) will be contacted immediately to evaluate the find. If the find is prehistoric, then a Native American representative will be contacted to participate in the evaluation of the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for listing in the CRHR and cannot be avoided additional work, such as testing and data recovery excavations, may be warranted to mitigate any significant impacts to cultural resources to less than a significant level. (Rincon Consultants, Inc., 2021.a)

Best Practices for Unanticipated Discovery of Human Remains: In the unlikely event of an unanticipated discovery of human remains, all ground-disturbing activities in the vicinity of the discovery will be immediately suspended and redirected elsewhere. All steps required to comply with State of California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 will be implemented including contacting the Fresno County Department of Medical Examiner-Coroner. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant (MLD). The MLD shall complete an inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access. (Rincon Consultants, Inc., 2021.a)

2.6 Energy

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? *Less than Significant Impact:*

The Project is a water transmission grid main relocation project. It would not include any new or increased operational activities. Energy consumption would occur during construction through the use of vehicles and equipment. All vehicles and equipment will be compliant with current energy standards. Activities will be designed and executed to minimize energy use to reduce construction costs. The Project is necessary to bring the water transmission grid main up to current safety and performance standards and meet the increased demand that has occurred over the past several decades. The Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the Project would result in less than significant energy impacts.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *Less than Significant Impact*

The Project is a water transmission grid main relocation project. It would not include any new or increased operational activities. Energy consumption would occur during construction through the use of vehicles and equipment. All vehicles and equipment will be compliant with current energy standards. Activities will be designed and executed to minimize energy use to reduce construction costs. The Project is necessary to bring the water transmission grid main up to current safety and performance standards and meet the increased demand that has occurred over the past several decades. The Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, nor would it conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the Project would result in less than significant energy impacts.

Mitigation Measures

None.

2.7 Geology and Soils

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
a.i. Rupture of a known earthquake fault, as delineated on the more recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
a.ii. Strong seismic ground shaking?				X
a.iii. Seismic-related ground failure, including liquefaction?				X
a.iv. Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
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?				X
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?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X

a.i) Rupture of a known earthquake faulty, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. *No Impact:*

The Project Site is not located near any faults according to the most recent USGS Alquist-Priolo Earthquake Fault Zoning Map. (United States Geologic Survey, 2021) The Project would not include any new buildings that would cause any additional risk to human life or property as it is only replacing current water transmission grid main infrastructure. Therefore, the Project would result in no impact to rupturing faults, strong seismic ground shaking, ground failure, or landslides.

a.ii) Strong seismic ground shaking? *No Impact:*

The Project Site is not located near any faults according to the most recent USGS Alquist-Priolo Earthquake Fault Zoning Map. (United States Geologic Survey, 2021) The Project would not include any new buildings that would cause any additional risk to human life or property as it is only replacing current water transmission grid main infrastructure. Therefore, the Project would result in no impact to rupturing faults, strong seismic ground shaking, ground failure, or landslides.

a.iii) Seismic-related ground failure, including liquefaction? *No Impact:*

The Project Site is not located near any faults according to the most recent USGS Alquist-Priolo Earthquake Fault Zoning Map. (United States Geologic Survey, 2021) The Project would not include any new buildings that would cause any additional risk to human life or property as it is only replacing current water transmission grid main infrastructure. Therefore, the Project would result in no impact to rupturing faults, strong seismic ground shaking, ground failure, or landslides.

a.iv.) Landslides? *No Impact*

The Project Site elevation is flat, ranging from 286 ft to 292 ft over a 0.55 mile stretch of road, and the Project would only improve underground utilities the replace the existing roads where disturbed. Therefore, the Project would result in no impact to landslide risk.

b) Result in substantial soil erosion or the loss of topsoil? *No Impact*

The Project would not disturb any topsoil as all work will occur by cutting existing asphaltic concrete roads to relocate water transmission grid mains, then replacing the existing roads according to modern safety and performance standards. Therefore, the Project would result in no impact to soil erosion or 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? *No Impact:*

The Project would relocate water transmission grid mains. The soil under existing Van Ness Avenue was already previously designed to be structurally sound for vehicle traffic. The Project would trench this soil, install a new water transmission grid main, backfill that soil, and compact it for resurfacing with asphaltic concrete. These improvements would result in no impact to 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? *No Impact*

The Project would relocate water transmission grid mains. The soil under existing Van Ness Avenue was already previously designed to be structurally sound for vehicle traffic. The Project would trench this soil, install a new water transmission grid main, backfill that soil, and compact it for resurfacing with asphaltic concrete. These improvements would result in no impact to site landslide, lateral spreading, subsidence, liquefaction, or collapse.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal where sewers are not available for the disposal of wastewater? *No Impact*

The Project would not involve the use of septic tanks or alternative wastewater disposal systems, and the Project area is connected to existing City of Fresno sewer and wastewater infrastructure. Therefore, the Project would result in no impact to the soil capacity to support the use of septic tanks or alternative wastewater disposal systems.

f) Directly or indirectly destroy any unique paleontological resource or site or unique geologic feature? *No Impact*

According to the field survey performed by Rincon Consultants, Inc., approximately 100 percent of the Project site has been paved over, contains gravel, or contains infrastructure development. Ground visibility within the project site was poor, approximately 0 percent. Modern trash and pavement staining were observed during the survey throughout the project alignment. The project site has been highly disturbed by the asphalt paving, imported gravel areas, and infrastructure related to the utilities, including manholes, handholes, utility conduits, fences, and drainage infrastructure. No exposed native soils were observed, and no archaeological resources were identified during the survey. Therefore it is reasonable to assume there would be no paleontological resources or geological features that would be affected by the Project, and therefore no impact to these resources.

Mitigation Measures

None.

2.8 *Greenhouse Gas Emissions*

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purposes of reducing the emissions of greenhouse gases?			X	

a) Generate greenhouse gas emission, either directly or indirectly, that may have a significant impact on the environment? *Less than Significant Impact:*

The Project would not include any new operational activities or associated long-term, operational greenhouse gas (GHG) emissions. Construction GHG emissions would result from the use of vehicles and equipment. There are no established project-level plans, policies, or regulations in the Project area for the purpose of reducing GHG emissions during construction. All related plans, policies, and regulations are at the state level and establish various standards for vehicles and equipment including emissions controls, fuel efficiency, and anti-idling. Vehicles and equipment are already required to comply with these plans, polices, and regulations, and the Project would therefore result in less than significant GHG impacts.

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purposes of reducing the emissions of greenhouse gases? *Less than Significant Impact:*

The Project would not include any new operational activities or associated long-term, operational greenhouse gas (GHG) emissions. Construction GHG emissions would result from the use of vehicles and equipment. There are no established project-level plans, policies, or regulations in the Project area for the purpose of reducing GHG emissions during construction. All related plans, policies, and regulations are at the state level and establish various standards for vehicles and equipment including emissions controls, fuel efficiency, and anti-idling. Vehicles and equipment are already required to comply with these plans, polices, and regulations, and the Project would therefore result in less than significant GHG impacts.

<u>Mitigation Measures</u>

None.

2.9 Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or environment?		X		
e) For a project located within 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?				X
f) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?				X

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? *Less than Significant Impact:*

California Health and Safety Code Section 25501(p) defines hazardous material as:

> "…any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. 'Hazardous materials' include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment."

Project construction activities would involve the transport, use, and disposal of hazardous materials including asphalt (petroleum hydrocarbons), gasoline (petroleum hydrocarbons), and Portland Cement (calcium and aluminum silicates).

The City would require the Project contractors to transport, use, and dispose of hazardous materials following labeled directions and applicable government local, regional, state, and federal regulations. These regulations can be found in the City of Fresno General Plan and Development Code Update. (First Carbon Solutions, 2014)

Implementing the relevant requirements in the City of Fresno General plan and Development Code Update would ensure that the Project would not create a significant hazard to the public or environment related to the use, transport, disposal, accidental release, or handling of hazardous materials, substances, or waste. Impacts would therefore be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment? *Less than Significant Impact:*

Implementing the relevant requirements in the City of Fresno General plan and Development Code Update would ensure that the Project would not create a significant hazard to the public or environment related to the use, transport, disposal, accidental release, or handling of hazardous materials, substances, or waste. Impacts would therefore be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? *Less than Significant Impact:*

Implementing the relevant requirements in the City of Fresno General plan and Development Code Update would ensure that the Project would not create a significant hazard to the public or environment related to the use, transport, disposal, accidental release, or handling of hazardous materials, substances, or waste. Impacts would therefore be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or environment? *Less than Significant Impact with Mitigation Incorporated:*

According to the *Hazardous Materials Survey* completed by Rincon Consultants, Inc., attached as Appendix C, the Project site and adjacent properties are not listed as a Cortese hazardous material site, nor is the Project site listed on the SEMS or DTSC EnviroStor databases. However, there was a Chevron gasoline service station located at 1506 Van Ness Avenue which is identified as meeting the "Cortese List" requirements, as determined by CalEPA. Historical aerial photographs indicate that the gasoline station was present from at least 1962 through 2014 (Sanborn Maps did not provide coverage of this area). (Rincon Consultants, Inc., 2021.b)

Based on the results of the 1992 subsurface investigation and closed case status, it doesn't appear that impacts associated with the historical gasoline release would have impacted soil beneath parts of the project site along or fronting Van Ness Avenue. There is a second closed Leaking Underground Storage Tank (LUST) case located at 2211 Merced Street which is approximately 350 feet east of the project site. Although the case status is reported as closed, based on the lack of closure documentation and the contaminant reported (gasoline), it is unknown whether impacts extend westward beneath the Project site. Although there are regional groundwater plumes southwest of the Project site, based on the reported groundwater flow direction in the vicinity of the Project site (to the west-southwest), the contaminated groundwater associated with these plumes are not expected to impact the project site. Review of Sanborn Maps and City directory listings indicates that there are many historical properties (including auto repair, tire service stores, cleaners, and gasoline stations) formerly located along Van Ness Avenue within the limits of the project site. Although these properties were not reported on release databases, there are the potential for unreported releases to have occurred at the properties formerly fronting Van Ness Avenue. The adjacent historical uses may have impacted soil and/or groundwater beneath the project site; however, groundwater is not expected to be encountered during construction. Additionally, according to a historical (1938) Thomas Bros. map of Fresno, California, an electric railroad was present along Stanislaus Street at the intersection of Van Ness Avenue. Residual impacts associated with the former electric railroad could include metals and hydrocarbon contamination. (Rincon Consultants, Inc., 2021.b)

The Project would include construction of approximately 0.55 miles of replacement water distribution mains within Van Ness Avenue between Divisadero Street and Merced Avenue in Downtown Fresno, California. The Project would also relocate all services to existing buildings that front Van Ness Avenue that are currently served by water mains in the alleys between Van Ness and Fulton Street and between Van Ness and L Street. Since soil and soil vapor may be impacted with, but not limited to, TPH, VOCs, and heavy metals, Project construction and operation could potentially create a significant hazard to the public, construction workers, future project site residents, or the environment. Therefore, prior to project construction, subsurface investigations and remediation efforts (if warranted) should be completed. (Rincon Consultants, Inc., 2021.b)

The following mitigation measures would ensure the Project results in less than significant impacts:

MITIGATION MEASURE HAZARDOUS MATERIALS – 1*: Pre-construction Soil Sampling. The soil sampling shall be completed prior to construction and in accordance with City of Fresno standard operating procedures for soil sampling. The project applicant shall retain a qualified environmental consultant, California Professional Geologist (PG) or California Professional Engineer (PE), to prepare a pre-construction soil sampling scope for the project that will be developed to determine whether soil and/or soil vapor has been impacted at concentrations exceeding San Francisco Regional Water Quality Control Board environmental screening levels (ESLs) for construction worker health risks and commercial/industrial land uses. As part of the pre-construction soil sampling, the qualified environmental consultant shall screen the analytical results against the ESLs. ESLs are risk-based screening levels for direct exposure of a construction worker under various depth and land use scenarios. The City of Fresno (lead agency) shall review and approve the results of the soil sampling prior to construction. If results of the soil sampling indicate that contaminants are detected in the subsurface at the project site, the project applicant shall take the following steps to protect site workers and the public. This shall include the preparation of a Soil Management Plan for Impacted Soils (see MITIGATION MEASURE HAZARDOUS MATERIALS – 2) prior to project construction. The lead agency shall review and approve the results of the soil sampling prior to construction. If results of the soil sampling indicate that contaminants are present at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (California Code of Regulations [CCR] Title 22, Section 66261.24 Characteristics of Toxicity), the project applicant shall complete a remediation plan (see MITIGATION MEASURE HAZARDOUS MATERIALS – 3) that shall list the required steps to protect site workers and the public. This remediation plan and implementation shall be conducted at the proposed project prior to or during onsite construction. (Rincon Consultants, Inc., 2021.b)*

MITIGATION MEASURE HAZARDOUS MATERIALS – 2*: Soil Management Plan for Impacted Soil. If impacted soil or other impacted waste are present at the project site, the project applicant shall retain a qualified environmental consultant (PG or PE), to prepare a Soil Management Plan (SMP) prior to construction. The SMP, or equivalent document, shall be prepared to address onsite handling and management of impacted soil or other impacted waste, and reduce hazards to construction workers and offsite receptors during construction. The plan must establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the site. These measures and practices shall include, but are not limited to:*

- *Stockpile management including stormwater pollution prevention and the installation of Best Management Practices (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 City of Fresno (lead agency) shall review and approve the Development Site Soil Management Plan for Impacted Soil prior to demolition and grading (construction). (Rincon Consultants, Inc., 2021.b)

MITIGATION MEASURE HAZARDOUS MATERIALS – 3*: Remediation. If soil present within the construction envelope at the development site contains chemicals at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (CCR Title 22, Section 66261.24), the Project applicant shall retain a qualified environmental consultant (PG or PE), to conduct additional analytical testing and recommend soil disposal recommendations, or consider other remedial engineering controls, as necessary. The qualified environmental consultant shall utilize the development site analytical results for waste characterization purposes prior to requiring specific offsite transportation and/or disposal requirements of identified impacted soils or other impacted wastes. The qualified environmental consultant shall provide disposal requirements and arrange for proper disposal of the waste soils or other impacted wastes (as necessary), and/or provide requirements for remedial engineering controls, if appropriate. The Project applicant shall review and approve the disposal requirements prior to transportation of waste soils offsite, and review and approve remedial engineering controls, prior to construction. Additional analytical testing per landfill or recycling facility requirements; soil excavation; and offsite disposal or recycling shall be conducted if the remediation of impacted soil and/or implementation of remedial engineering controls, requires additional delineation of impacts. The City of Fresno (lead agency) shall review and approve the development site disposal recommendations prior to transportation of waste soils offsite and review and approve remedial engineering controls, prior to construction. (Rincon Consultants, Inc., 2021.b)*

As long as potentially impacted soil is handled and managed appropriately (disposed offsite and not reused) and remediation is completed (if warranted), impacts related to the exposure to chemicals remaining in soil and soil vapor beneath the project site would be considered *Less than Significant with Mitigation Incorporated*. With implementation of MITIGATION MEASURES HAZARDOUS MATERIALS – 1 through HAZARDOUS MATERIALS – 3, hazardous material impacts to human health during construction would be less than significant. (Rincon Consultants, Inc., 2021.b)

e) For a project located within 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? *No Impact*:

The Project Area is not within an airport land use plan or within two miles of a public airport, public use airport, or private airstrip. Therefore, no impact would occur.

f) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? *Less than Significant Impact*:

The Project would temporarily and intermittently restrict traffic along Van Ness Avenue, for the portions that are actively under construction However, access will be maintained to and from the Project site in all directions via the adjacent streets and alleys. The Project would not interfere with any emergency response or evacuation plan. Therefore, the Project would result in a less than significant impact.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? *No Impact*:

There are no potential wildland fire prone areas near the Project. The Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Therefore, the Project would result in a less than significant impact.

Mitigation Measures

- MITIGATION MEASURE HAZARDOUS MATERIALS – 1: see above.
- MITIGATION MEASURE HAZARDOUS MATERIALS – 2: see above.
- MITIGATION MEASURE HAZARDOUS MATERIALS – 3: see above.

2.10 Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through addition of impervious surfaces, in a manner which would:				X
c.i) result in substantial erosion or siltation on- or off-site;				X
c.ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;				X
c.iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial or additional sources of polluted runoff; or				X
c.iv) impede or redirect flood waters?				X
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? ***Less than Significant Impact:***

The City of Fresno and the Project Site fall under the jurisdiction of the Fresno Metropolitan Flood Control District (FMFCD). FMFCD currently holds a National Pollutant Discharge Elimination System (NPDES) permit, through the State Water Resources Quality Control Board (SWRQCB), that has applicable water quality and discharge requirements. Based on the current Project site size estimate of approximately 4.7 acres, and the construction timeline of over a year, a Linear Underground Project Type 1 SWPPP would be required. Prior to construction, a SWPPP would be prepared and submitted to SWRQCB, along with a

Notice of Intent (NOI), to obtain coverage under the Construction General Permit (CGP). The approved NOI and SWPPP that would include water quality and discharge requirements to minimize any potential of violating water quality standards or waste discharge requirements, thus ensuring the Project would result in a less than significant impact.

b) ***Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? No Impact***

The Project would not change the impervious cover of the Plan Area as it is relocating an water transmission grid main within an area that is fully developed. The Project would service existing connections and would not induce growth or increase water use. Therefore, the Project would result in no impact to groundwater supply or recharge.

c) Substantially alter the existing drainage pattern or the site or area, including through the alteration of the course of a stream or river or through addition of impervious surfaces, in a manner which would:

c.i) result in substantial erosion or siltation on- or off-site; ***Less than Significant Impact:***

The Project would not change the surface conditions or existing draining patterns of the Project site. It would not include any new impervious area, drain inlets, or regrading. Existing FMFCD storm drain infrastructure would remain operational and any construction-related stormwater pollution would be minimized with implementation of the Project-specific SWPPP. Therefore, the Project would result in a less than significant impact.

c.ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; ***Less than Significant Impact:***

The Project would not change the surface conditions or existing draining patterns of the Project site. It would not include any new impervious area, drain inlets, or regrading. Existing FMFCD storm drain infrastructure would remain operational and any construction-related stormwater pollution would be minimized with implementation of the Project-specific SWPPP. Therefore, the Project would result in a less than significant impact.

c.iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial or additional sources of polluted runoff; or ***Less than Significant Impact:***

The Project would not change the surface conditions or existing draining patterns of the Project site. It would not include any new impervious area, drain inlets, or regrading. Existing FMFCD storm drain infrastructure would remain operational and any construction-related stormwater pollution would be minimized with implementation of the Project-specific SWPPP. Therefore, the Project would result in a less than significant impact.

c.iv) impede or redirect flood waters. *No Impact*

The Project would not change the surface conditions or existing draining patterns of the Project site. It would not include any new impervious area, drain inlets, or regrading. Existing FMFCD storm drain infrastructure would remain operational and any construction-related stormwater pollution would be minimized with implementation of the Project-specific SWPPP. Therefore, the Project would result in a less than significant impact.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? *Less than Significant Impact*:

According to the Fresno County Flood Zones Map (County of Fresno, 2001), the Project area is designated as being in low-risk flood plain with a 0.2% annual chance of inundation. Pollutants would be managed appropriately with implementation of the SWPPP and weather would be tracked daily, with Best Management Practices to be implemented before, during, and after every qualifying rain event to prevent, control, and clean up any pollutants. Therefore, the Project would not risk release of pollutants due to inundation and impacts would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? *No Impact*:

The Project would not change the surface conditions or existing draining patterns of the Project site. It would not include any new impervious area, drain inlets, or regrading. Existing FMFCD storm drain infrastructure would remain operational and any construction-related stormwater pollution would be minimized with implementation of the Project-specific SWPPP. Therefore, the Project would result in a less than significant impact.

Mitigation Measures

None.

2.11 Land Use and Planning

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

a) Physically divide an established community? *No Impact*

The Project has no design, construction, or operational characteristics that would physically divide Downtown Fresno. Therefore, the Project would result in no impact.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? *No Impact*

The Project would not alter any land uses in the Project area and there are no land use plans, policies, or regulations that apply to the Project for the purpose of avoiding or mitigating an environmental effect. Therefore, the Project would result in no impact.

Mitigation Measures

None.

2.12 Mineral Resources

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? *No Impact:*

According to the Mindat.org Fresno map, there are no known mineral resources within the Project Site or nearby area. (Mindat, 2021). Additionally, the Project would not remove any substantial amount of material from the site. Therefore, the Project would result in no impacts to mineral resources.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? *No Impact:*

According to the Mindat.org Fresno map, there are no known mineral resources within the Project Site or nearby area. (Mindat, 2021). Additionally, the Project would not remove any substantial amount of material from the site. Therefore, the Project would result in no impacts to mineral resources.

Mitigation Measures

None.

2.13 Noise

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
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?				X

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in local general plan or noise ordinance, or applicable standards of other agencies? *Less than Significant Impact:*

The Project would not include any new or increase operational activity or associated ambient noise increases. Ambient noise levels would be increased during construction while equipment and machinery is operated. However, these increases would be temporary, intermittent, and limited to the hours specified in the City of Fresno Noise Ordinance. Therefore, the Project would result in less than significant impacts.

b) Generation of excessive groundborne vibration or groundborne noise levels? *Less than Significant Impact with Mitigation Incorporated:*

The Project would not include any new or increase operational activity or associated groundborne vibration or groundborne noise level increases. Project construction would not include any activities that are typically considered vibration intensive, such as blasting or pile driving. Any vibration-intensive activities would be short-term, intermittent, and limited to the specific location along the alignment that is under construction at a given time. Therefore, the Project would result in less than significant impacts.

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? *No Impact:*

The Project Site is not located within the vicinity of a private airstrip or an airport land use plan or within two miles of a public airport or public use airport. It also would not include any facilities that would draw in new residents or workers. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels related to air traffic and there would be no impact.

Mitigation Measures

None.

2.14 Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a) Introduce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? *No Impact:*

The Project would not cause any additional expansion or development, rather it would replace aging infrastructure to meet current standards and performance requirements and ensure adequate service to meet increased demands that have occurred over the past several decades because of development and population increases. Therefore, the Project would result in no impact to unplanned population growth in the Project area.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? *No Impact:*

The Project is a water transmission grid main relocation project and would not affect housing. Therefore, the Project would result in no impact.

Mitigation Measures

None.

2.15 Public Services

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impact associated with the provision of new or physically alter government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				X
a.i. Fire Protection?				X
a.ii. Police Protection?				X
a.iii. Schools?				X
a.iv. Parks?				X
a.v. Other public facilities?				X

Checklist Discussion

a) Would the project result in substantial adverse physical impact associated with the provision of new or physically after government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a.i) Fire Protection? *No Impact:*

The purpose of the Project would be to improve water infrastructure for the current residents of the Plan Area. The project would improve fire protection for current residents in the Plan Area with modern standard fire hydrant spacing and would not change any surface characteristics of the Project Area. The Project would not have any direct or indirect effects on police protection, schools, parks, or other public facilities. Therefore, the Project would result in no impact to public services.

a.ii) Police Protection? *No Impact:*

The purpose of the Project would be to improve water infrastructure for the current residents of the Plan Area. The project would improve fire protection for current residents in the Plan Area with modern standard fire hydrant spacing and would not change any surface characteristics of the Project Area. The Project would not have any direct or indirect effects on police protection, schools, parks, or other public facilities. Therefore, the Project would result in no impact to public services.

a.iii) Schools? *No Impact:*

The purpose of the Project would be to improve water infrastructure for the current residents of the Plan Area. The project would improve fire protection for current residents in the Plan Area with modern standard fire hydrant spacing and would not change any surface characteristics of the Project Area. The Project would not have any direct or indirect effects on police protection, schools, parks, or other public facilities. Therefore, the Project would result in no impact to public services.

a.iv) Parks? *No Impact:*

The purpose of the Project would be to improve water infrastructure for the current residents of the Plan Area. The project would improve fire protection for current residents in the Plan Area with modern standard fire hydrant spacing and would not change any surface characteristics of the Project Area. The Project would not have any direct or indirect effects on police protection, schools, parks, or other public facilities. Therefore, the Project would result in no impact to public services.

a.v) Other public facilities? *No Impact:*

The purpose of the Project would be to improve water infrastructure for the current residents of the Plan Area. The project would improve fire protection for current residents in the Plan Area with modern standard fire hydrant spacing and would not change any surface characteristics of the Project Area. The Project would not have any direct or indirect effects on police protection, schools, parks, or other public facilities. Therefore, the Project would result in no impact to public services.

Mitigation Measures

None.

2.16 Recreation

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X

Checklist Discussion

a) Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? *No impact:*

The Project would not cause any direct or indirect effects to any recreational facilities. Therefore, the Project would result in no impact.

b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have ab adverse physical effect on the environment? *No Impact*

The Project would not cause any direct or indirect effects to any recreational facilities. Therefore, the Project would result in no impact.

<u>Mitigation Measures</u>

None.

2.17 Transportation/Traffic

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				X
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?				X
c) Substantially increase hazards due to a geometric feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				X
d) Result in inadequate emergency access?			X	

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? *No Impact:*

The Project would not include any new or increased operational activities and, once constructed, would not affect any circulation system, transit, roadways, bicycle, or pedestrian facilities. Therefore, the Project would result in no impact.

b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? *Less than Significant Impact:*

Senate Bill (SB) 743 requires that relevant CEQA analysis of transportation impacts be conducted using a metric known as vehicle miles traveled (VMT) instead of Level of Service (LOS). VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto our roads, the project may cause a significant transportation impact.

The State CEQA Guidelines were amended to implement SB 743, by adding Section 15064.3. Among its provisions, Section 15064.3 confirms that, except with respect to transportation projects, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, LOS measures of impacts on traffic facilities is no longer a relevant CEQA criteria for transportation impacts.

CEQA Guidelines Section 15064.3(b)(4) states that "[a] lead agency has discretion to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate used to estimate vehicle miles traveled and any revision to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section."

On June 25, 2020, the City of Fresno adopted CEQA Guidelines for Vehicle Miles Traveled Thresholds, dated June 25, 2020, pursuant to Senate Bill 743 to be effective of July 1, 2020. The thresholds described therein are referred to herein as the City of Fresno VMT Thresholds. The City of Fresno VMT Thresholds document was prepared and adopted consistent with the requirements of CEQA Guidelines Sections 15064.3 and 15064.7. The December 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) published by the Governor's Office of Planning and Research (OPR), was utilized as a reference and guidance document in the preparation of the Fresno VMT Thresholds.

The City of Fresno VMT Thresholds adopted a screening standard and criteria that can be used to screen out qualified projects that meet the adopted criteria from needing to prepare a detailed VMT analysis. The City of Fresno VMT Thresholds Section 3.0 regarding Project Screening discusses a variety of projects that may be screened out of a VMT analysis including specific development and transportation projects. For development projects, conditions may exist that would presume that a development project has a less than significant impact. These may be size, location, proximity to transit, or trip-making potential. For transportation projects, the primary attribute to consider with transportation projects is the potential to increase vehicle travel, sometimes referred to as "induced travel."

The Project is eligible to screen out because it has one or more of the attributes that may be presumed to create a less than significant impact. The most relevant eligibility criterion is that the Project would generate a low volume of daily traffic. According to the City of Fresno VMT Thresholds, Section 3.0 Project Screening, the City will allow screening out projects if the Project would generate less than 500 Average Daily Trips (ADT). The Project would not generate any trips once operational. According to the modeling performed for the Air Quality topic (see Air Quality section and Appendix A of this Initial Study), the Project would generate a maximum of 120 trips per day during the Building Construction phase (86 work trips and 34 vendor trips). Therefore, the Project would generate less than 500 ADT and is eligible for screening out based on the City of Fresno VMT thresholds.

In conclusion, the Project will result in a less than significant VMT impact and is consistent with CEQA Guidelines section 15064.3(b).

c) Substantially increase hazards due to a geometric feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *No Impact:*

The Project would not alter any existing geometric features or uses. Therefore, the Project would result in no impact.

d) Result in inadequate emergency access? *Less than Significant Impact:*

The Project would temporarily and intermittently restrict access along Van Ness Avenue throughout construction. However, there is ample access to most areas of the Project Site via adjacent streets and alleys. Additionally, traffic control will be carefully managed throughout construction to ensure there is a less than significant impact to emergency access.

<u>Mitigation Measures</u>

None.

2.18 Tribal Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?			X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			X	

Checklist Discussion

Cause a substantial adverse charge in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? *Less than Significant Impact:*

California Public Resources Code § 21080.3.1 (Assembly Bill [AB] 52 of 2014 or “AB 52”) requires local governments to conduct meaningful consultation with California Native American tribes that have requested to be notified by lead agencies of proposed projects in the geographic area with which the tribe is traditionally and culturally affiliated. As required by AB 52, the City sent letters via Certified Mail to tribes that had requested to be notified. After the required 30-day waiting period, no responses were received. Thus, the Project would have a less than significant impact. See Appendix D for a record of correspondence.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of the Public Resources Code Section 5024.1. In applying this criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. ***Less than Significant Impact:***

No resources have been identified pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Therefore, this impact would be less than significant.

Mitigation Measures:

None.

2.19 Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project reasonably for the foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? *Less than Significant Impact:*

The Project would not require any changes to the existing water or wastewater infrastructure, except to improve the existing water transmission grid mains to better meet current demands and performance requirements. As demonstrated in the other sections of this document, the alterations to the existing water infrastructure would not result in any significant impacts to the environment. Therefore, the Project would result in a less than significant impact.

b) Have sufficient water supplies available to serve the project reasonably for the foreseeable future development during normal, dry and multiple dry years? *No Impact:*

The Project would utilize the same water supplies currently available to serve the existing connections, and would not require additional water supplies. It would not increase wastewater treatment demand or generate any additional solid waste once operational. Therefore, the Project would result in no impact.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? *No Impact:*

The Project would utilize the same water supplies currently available to serve the existing connections, and would not require additional water supplies. It would not increase wastewater treatment demand or generate any additional solid waste once operational. Therefore, the Project would result in no impact.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? *No Impact:*

The Project would utilize the same water supplies currently available to serve the existing connections, and would not require additional water supplies. It would not increase wastewater treatment demand or generate any additional solid waste once operational. Therefore, the Project would result in no impact.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *Less than Significant Impact:*

The Project would not include any new or increased operational activities. During construction, the contractor would comply with all applicable waste reduction requirements. Therefore, the Project would result in a less than significant impact.

Mitigation Measures

None.

2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?				X
c) Require the instillation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? Less than Significant Impact:

The Project would temporarily and intermittently restrict traffic along Van Ness Avenue, for the portions that are actively under construction However, access will be maintained to and from the Project site in all directions via the adjacent streets and alleys. The Project would not interfere with any emergency response or evacuation plan. Therefore, the Project would result in a less than significant impact.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire? No Impact:

The Project is a water transmission grid main relocation project. The Project site is located within the core of Downtown Fresno, in an area that is densely developed with hardscape and structures, and has no nearby wildland or forestry resources. There are no wildfire risks in the Project area. Therefore, the Project would result in no impact.

c)Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? No Impact:

The Project is a water transmission grid main relocation project. The Project site is located within the core of Downtown Fresno, in an area that is densely developed with hardscape and structures, and has no nearby wildland or forestry resources. There are no wildfire risks in the Project area. Therefore, the Project would result in no impact.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? No Impact:

The Project is a water transmission grid main relocation project. The Project site is located within the core of Downtown Fresno, in an area that is densely developed with hardscape and structures, and has no nearby wildland or forestry resources. There are no wildfire risks in the Project area. Therefore, the Project would result in no impact.

Mitigation Measures

None.

2.21 Mandatory Findings of Significance

Would the Project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Does the project have potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				X
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effect of a project area considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Checklist Discussion

a) Does the project have potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plan or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? *No Impact*

The Project Site is located within the core of Downtown Fresno, in an area fully developed with buildings and hardscape. The Project would have no impact on degrading the quality of the environment, substantially reducing the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, reducing the number or restricting the range of a rare or endangered plant, or eliminating important examples of the major periods of California history or prehistory

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when

viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? *Less than Significant Impact:*

The City of Fresno is one of the largest metropolitan regions in California and its infrastructure is in constant and ongoing need of improvement and repair as it ages and demands increase due to the normal progression of development and population increases. Future similar projects are expected to be completed to relocate water transmission grid mains from alleyways to main streets. However, the timing and details of those projects are uncertain, and none of them could be considered to result either directly or indirectly from completion of the Project. The Project itself would not directly or indirectly result in any other projects, activities, or additional cumulative air pollutant emissions, outside those analyzed in this Initial Study. Therefore, the Project would not result in any impacts that would be cumulatively considerable, and this impact would be less than significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? *Less than Significant Impact*

As explained in the above sections, the Project would have a less than significant impact on all environmental resources with mitigation incorporated. This includes potential hazards and other adverse effects to humans. Therefore, the Project would not have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly, and this impact would be less than significant.

Chapter 3 Mitigation Monitoring and Reporting Program

The City has prepared this Mitigation Monitoring and Reporting Program to comply with Section 15097 of the State CEQA Guidelines. The purpose for the Mitigation Monitoring and Reporting Program is to ensure implementation of the mitigation measures identified in this Initial Study (see Table 9).

Lead Agency and Responsible Agency

The City will undertake the Project and is the Lead Agency for the Project. The City is responsible for the implementation of all mitigation measures identified in this Initial Study.

Mitigation Monitoring and Reporting Coordinator

The City Engineer or his/her designee shall act as the Project Mitigation Reporting Coordinator ("Coordinator").

Monitoring and Reporting Procedures for Design-, Site Clearing-, and Construction-Related Mitigation Measures

a. The Coordinator shall provide a copy of all Project design- , site clearing- , and construction-related mitigation measures to the project engineer and contractor for incorporation in the Project plans, construction specifications, permits, and contracts, as appropriate.

b. Prior to award of bid, the Coordinator shall determine that all Project design- , site clearing- , and construction-related mitigation measures have been incorporated in the Project plans, construction specifications, permits, and contracts, as appropriate.

c. During construction, the Coordinator, through the construction management team, shall inspect the Project area regularly to ensure all work complies with the mitigation measures. If a discrepancy is not resolved within a reasonable time, the City Engineer may order work to cease until the discrepancy is resolved.

d. Prior to the City accepting the Project improvements, the City Engineer shall certify that the Project incorporates all Project design- and construction-related mitigation measures.

Monitoring and Reporting Procedures for Operational- and Maintenance-Related Mitigation Measures

Before the Project becomes operational, the City Engineer shall determine that the Project operational plans and procedures incorporate all operations-related mitigation measures, as presented below in Table 9.

Table 2: Mitigation Measures

Mitigation Measure	Responsible for Implementation	Responsible for Monitoring	Action by Monitor	Timing
__MITIGATION MEASURE CULTURAL – 1:__ *Worker's Environmental Awareness Program. A qualified archaeologist should be retained to conduct a Worker's Environmental Awareness Program training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities. The training should be conducted by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archeology (NPS 1983). Archaeological sensitivity training should include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a find.*	City Contractor	City	Confirm a qualified archaeologist has provided the Worker's Environmental Awareness Program.	Prior to Construction
__MITIGATION MEASURE CULTURAL – 2:__ *Archaeological Monitoring and Discovery Plan. Prior to project construction, a qualified archaeologist shall prepare an Archaeological Monitoring and Discovery Plan (AMDP) to ensure the proper treatment and long-term protection of unanticipated discoveries during project construction. The AMDP shall be submitted to the City for review and approval. The AMDP shall provide a description of the methods to be undertaken during monitoring and the steps to be taken in the event of an archaeological discovery during construction, including, at minimum: development of research questions and goals to be addressed by the investigation in the event of a find; detailed field strategy used to record, recover, or avoid the finds and address research goals; analytical methods to be employed for identified resources; requirements for reporting; and disposition of the artifacts.*	City Contractor	City	Confirm the Archaeological Monitoring and Discovery Plan has been completed.	Prior to Construction
__MITIGATION MEASURE CULTURAL – 3:__ *Archaeological Monitoring. Archaeological monitoring would be conducted of all project-related ground disturbing activities. Archaeological monitoring should be performed under the direction of the qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983). The qualified archaeologist, in consultation with the City of Fresno, may recommend the reduction or termination of monitoring depending upon observed conditions (e.g., no resources encountered within the first 50 percent of ground disturbance). If archaeological resources are encountered during ground-disturbing activities, work within a minimum of 50 feet of*	City Contractor	City	Confirm a qualified Archaeologist has been retained to provide monitoring and ensure all monitoring records are retained.	Prior to and throughout construction

the find must halt and the find evaluated for CRHR eligibility in accordance with the steps identified in the AMDP. Should an unanticipated resource be found as CRHR eligible and avoidance is infeasible, additional analysis (e.g., testing) may be necessary to determine if project impacts would be significant.				
***MITIGATION MEASURE HAZARDOUS MATERIALS – 1**: Pre-construction Soil Sampling. The soil sampling shall be completed prior to construction and in accordance with City of Fresno standard operating procedures for soil sampling. The project applicant shall retain a qualified environmental consultant, California Professional Geologist (PG) or California Professional Engineer (PE), to prepare a pre-construction soil sampling scope for the project that will be developed to determine whether soil and/or soil vapor has been impacted at concentrations exceeding San Francisco Regional Water Quality Control Board environmental screening levels (ESLs) for construction worker health risks and commercial/industrial land uses. As part of the pre-construction soil sampling, the qualified environmental consultant shall screen the analytical results against the ESLs. ESLs are risk-based screening levels for direct exposure of a construction worker under various depth and land use scenarios. The City of Fresno (lead agency) shall review and approve the results of the soil sampling prior to construction. If results of the soil sampling indicate that contaminants are detected in the subsurface at the project site, the project applicant shall take the following steps to protect site workers and the public. This shall include the preparation of a Soil Management Plan for Impacted Soils (see MITIGATION MEASURE HAZARDOUS MATERIALS – 2) prior to project construction. The lead agency shall review and approve the results of the soil sampling prior to construction. If results of the soil sampling indicate that contaminants are present at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (California Code of Regulations [CCR] Title 22, Section 66261.24 Characteristics of Toxicity), the project applicant shall complete a remediation plan (see MITIGATION MEASURE HAZARDOUS MATERIALS – 3) that shall list the required steps to protect site workers and the public. This remediation plan and implementation shall be conducted at the proposed project prior to or during onsite construction.*	City	City	Confirm a qualified environmental consultant has been retained and pre-construction soil sampling has been performed. Review the sampling results and confirm safety.	Prior to construction.

***MITIGATION MEASURE HAZARDOUS MATERIALS – 2**: Soil Management Plan for Impacted Soil. If impacted soil or other impacted waste are present at the project site, the project applicant shall retain a qualified environmental consultant (PG or PE), to prepare a Soil Management Plan (SMP) prior to construction. The SMP, or equivalent document, shall be prepared to address onsite handling and management of impacted soil or other impacted waste, and reduce hazards to construction workers and offsite receptors during construction. The plan must establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the site. These measures and practices shall include, but are not limited to:* *Stockpile management including stormwater pollution prevention and the installation of Best Management Practices (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 City of Fresno (lead agency) shall review and approve the Development Site Soil Management Plan for Impacted Soil prior to demolition and grading (construction).*	City	City	Confirm the Soil Management Plan for Impacted Soil has been completed.	Prior to construction.

***MITIGATION MEASURE HAZARDOUS MATERIALS – 3**:* *Remediation. If soil present within the construction envelope at the development site contains chemicals at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (CCR Title 22, Section 66261.24), the Project applicant shall retain a qualified environmental consultant (PG or PE), to conduct additional analytical testing and recommend soil disposal recommendations, or consider other remedial engineering controls, as necessary. The qualified environmental consultant shall utilize the development site analytical results for waste characterization purposes prior to requiring specific offsite transportation and/or disposal requirements of identified impacted soils or other impacted wastes. The qualified environmental consultant shall provide disposal requirements and arrange for proper disposal of the waste soils or other impacted wastes (as necessary), and/or provide requirements for remedial engineering controls, if appropriate. The Project applicant shall review and approve the disposal requirements prior to transportation of waste soils offsite, and review and approve remedial engineering controls, prior to construction. Additional analytical testing per landfill or recycling facility requirements; soil excavation; and offsite disposal or recycling shall be conducted if the remediation of impacted soil and/or implementation of remedial engineering controls, requires additional delineation of impacts. The City of Fresno (lead agency) shall review and approve the development site disposal recommendations prior to transportation of waste soils offsite and review and approve remedial engineering controls, prior to construction. (Rincon Consultants, Inc., 2021.b)*	City Contractor	City	Confirm remediation plan is in place, testing has been performed, procedures are being followed, and records are being kept.	Prior to and Throughout Construction

Chapter 4 – References

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County of Fresno. (2001). *Fresno County Flood Zones.* Retrieved from County of Fresno: https://www.co.fresno.ca.us/home/showdocument?id=13323

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Appendix A: California Emissions Estimator Model (CalEEMod) Results

Van Ness Avenue Water Transmission Grid Main

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	205.00	1000sqft	4.71	205,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Pipeline installation and road repair project.

Construction Phase -

Grading - Material is expected to be balanced onsite; no substantial material import or export.

Demolition - No building demolition.

Table Name	Column Name	Default Value	New Value

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					
2022	0.1936	1.8033	1.6627	3.6400e-003	0.1382	0.0786	0.2168	0.0564	0.0737	0.1301	0.0000	322.1495	322.1495	0.0635	0.0000	323.7375
2023	0.1452	0.8565	0.9465	2.0700e-003	0.0428	0.0357	0.0785	0.0116	0.0335	0.0451	0.0000	183.1774	183.1774	0.0327	0.0000	183.9958
Maximum	**0.1936**	**1.8033**	**1.6627**	**3.6400e-003**	**0.1382**	**0.0786**	**0.2168**	**0.0564**	**0.0737**	**0.1301**	**0.0000**	**322.1495**	**322.1495**	**0.0635**	**0.0000**	**323.7375**

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					
2022	0.1936	1.8033	1.6627	3.6400e-003	0.1382	0.0786	0.2168	0.0564	0.0737	0.1301	0.0000	322.1493	322.1493	0.0635	0.0000	323.7373
2023	0.1452	0.8565	0.9465	2.0700e-003	0.0428	0.0357	0.0785	0.0116	0.0335	0.0451	0.0000	183.1772	183.1772	0.0327	0.0000	183.9957
Maximum	**0.1936**	**1.8033**	**1.6627**	**3.6400e-003**	**0.1382**	**0.0786**	**0.2168**	**0.0564**	**0.0737**	**0.1301**	**0.0000**	**322.1493**	**322.1493**	**0.0635**	**0.0000**	**323.7373**

	ROG	**NOx**	**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	5-1-2022	7-31-2022	0.8173	0.8173
2	8-1-2022	10-31-2022	0.7081	0.7081
3	11-1-2022	1-31-2023	0.6842	0.6842
4	2-1-2023	4-30-2023	0.6147	0.6147
5	5-1-2023	7-31-2023	0.1727	0.1727
		Highest	0.8173	0.8173

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	0.0177	2.0000e-005	1.8800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6600e-003	3.6600e-003	1.0000e-005	0.0000	3.9000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0177**	**2.0000e-005**	**1.8800e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.6600e-003**	**3.6600e-003**	**1.0000e-005**	**0.0000**	**3.9000e-003**

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	0.0177	2.0000e-005	1.8800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6600e-003	3.6600e-003	1.0000e-005	0.0000	3.9000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0177**	**2.0000e-005**	**1.8800e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.6600e-003**	**3.6600e-003**	**1.0000e-005**	**0.0000**	**3.9000e-003**

	ROG	NOx	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	5/1/2022	5/27/2022	5	20	
2	Site Preparation	Site Preparation	5/28/2022	6/3/2022	5	5	
3	Grading	Grading	6/4/2022	6/15/2022	5	8	
4	Building Construction	Building Construction	6/16/2022	5/3/2023	5	230	
5	Paving	Paving	5/4/2023	5/29/2023	5	18	
6	Architectural Coating	Architectural Coating	5/30/2023	6/22/2023	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 4.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 12,300 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

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
Architectural Coating	1	17.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	86.00	34.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 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	5.6000e-004	3.3000e-004	3.4500e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9663	0.9663	2.0000e-005	0.0000	0.9669
Total	**5.6000e-004**	**3.3000e-004**	**3.4500e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9663**	**0.9663**	**2.0000e-005**	**0.0000**	**0.9669**

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	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**		**0.0124**	**0.0124**		**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 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	5.6000e-004	3.3000e-004	3.4500e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9663	0.9663	2.0000e-005	0.0000	0.9669
Total	**5.6000e-004**	**3.3000e-004**	**3.4500e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9663**	**0.9663**	**2.0000e-005**	**0.0000**	**0.9669**

3.3 Site Preparation - 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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9300e-003	0.0827	0.0492	1.0000e-004		4.0300e-003	4.0300e-003		3.7100e-003	3.7100e-003	0.0000	8.3599	8.3599	2.7000e-003	0.0000	8.4274
Total	**7.9300e-003**	**0.0827**	**0.0492**	**1.0000e-004**	**0.0452**	**4.0300e-003**	**0.0492**	**0.0248**	**3.7100e-003**	**0.0285**	**0.0000**	**8.3599**	**8.3599**	**2.7000e-003**	**0.0000**	**8.4274**

3.3 Site Preparation - 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	1.7000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2899	0.2899	1.0000e-005	0.0000	0.2901
Total	**1.7000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2899**	**0.2899**	**1.0000e-005**	**0.0000**	**0.2901**

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					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9300e-003	0.0827	0.0492	1.0000e-004		4.0300e-003	4.0300e-003		3.7100e-003	3.7100e-003	0.0000	8.3598	8.3598	2.7000e-003	0.0000	8.4274
Total	**7.9300e-003**	**0.0827**	**0.0492**	**1.0000e-004**	**0.0452**	**4.0300e-003**	**0.0492**	**0.0248**	**3.7100e-003**	**0.0285**	**0.0000**	**8.3598**	**8.3598**	**2.7000e-003**	**0.0000**	**8.4274**

3.3 Site Preparation - 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	1.7000e-004	1.0000e-004	1.0300e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2899	0.2899	1.0000e-005	0.0000	0.2901
Total	**1.7000e-004**	**1.0000e-004**	**1.0300e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2899**	**0.2899**	**1.0000e-005**	**0.0000**	**0.2901**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	**7.7900e-003**	**0.0834**	**0.0611**	**1.2000e-004**	**0.0262**	**3.7600e-003**	**0.0300**	**0.0135**	**3.4600e-003**	**0.0169**	**0.0000**	**10.4219**	**10.4219**	**3.3700e-003**	**0.0000**	**10.5062**

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	2.2000e-004	1.3000e-004	1.3800e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3865	0.3865	1.0000e-005	0.0000	0.3868
Total	**2.2000e-004**	**1.3000e-004**	**1.3800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3865**	**0.3865**	**1.0000e-005**	**0.0000**	**0.3868**

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					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	**7.7900e-003**	**0.0834**	**0.0611**	**1.2000e-004**	**0.0262**	**3.7600e-003**	**0.0300**	**0.0135**	**3.4600e-003**	**0.0169**	**0.0000**	**10.4219**	**10.4219**	**3.3700e-003**	**0.0000**	**10.5062**

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	2.2000e-004	1.3000e-004	1.3800e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3865	0.3865	1.0000e-005	0.0000	0.3868
Total	**2.2000e-004**	**1.3000e-004**	**1.3800e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3865**	**0.3865**	**1.0000e-005**	**0.0000**	**0.3868**

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	0.1211	1.1087	1.1618	1.9100e-003		0.0574	0.0574		0.0540	0.0540	0.0000	164.5249	164.5249	0.0394	0.0000	165.5103
Total	**0.1211**	**1.1087**	**1.1618**	**1.9100e-003**		**0.0574**	**0.0574**		**0.0540**	**0.0540**	**0.0000**	**164.5249**	**164.5249**	**0.0394**	**0.0000**	**165.5103**

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	6.7900e-003	0.2575	0.0383	6.7000e-004	0.0160	6.3000e-004	0.0166	4.6200e-003	6.0000e-004	5.2200e-003	0.0000	63.8735	63.8735	7.5500e-003	0.0000	64.0622
Worker	0.0226	0.0133	0.1404	4.4000e-004	0.0488	3.0000e-004	0.0491	0.0130	2.7000e-004	0.0133	0.0000	39.3364	39.3364	9.0000e-004	0.0000	39.3588
Total	**0.0294**	**0.2708**	**0.1787**	**1.1100e-003**	**0.0648**	**9.3000e-004**	**0.0657**	**0.0176**	**8.7000e-004**	**0.0185**	**0.0000**	**103.2098**	**103.2098**	**8.4500e-003**	**0.0000**	**103.4210**

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	0.1211	1.1087	1.1618	1.9100e-003		0.0574	0.0574		0.0540	0.0540	0.0000	164.5247	164.5247	0.0394	0.0000	165.5101
Total	**0.1211**	**1.1087**	**1.1618**	**1.9100e-003**		**0.0574**	**0.0574**		**0.0540**	**0.0540**	**0.0000**	**164.5247**	**164.5247**	**0.0394**	**0.0000**	**165.5101**

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	6.7900e-003	0.2575	0.0383	6.7000e-004	0.0160	6.3000e-004	0.0166	4.6200e-003	6.0000e-004	5.2200e-003	0.0000	63.8735	63.8735	7.5500e-003	0.0000	64.0622
Worker	0.0226	0.0133	0.1404	4.4000e-004	0.0488	3.0000e-004	0.0491	0.0130	2.7000e-004	0.0133	0.0000	39.3364	39.3364	9.0000e-004	0.0000	39.3588
Total	**0.0294**	**0.2708**	**0.1787**	**1.1100e-003**	**0.0648**	**9.3000e-004**	**0.0657**	**0.0176**	**8.7000e-004**	**0.0185**	**0.0000**	**103.2098**	**103.2098**	**8.4500e-003**	**0.0000**	**103.4210**

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	0.0692	0.6329	0.7147	1.1900e-003		0.0308	0.0308		0.0290	0.0290	0.0000	101.9941	101.9941	0.0243	0.0000	102.6007
Total	**0.0692**	**0.6329**	**0.7147**	**1.1900e-003**		**0.0308**	**0.0308**		**0.0290**	**0.0290**	**0.0000**	**101.9941**	**101.9941**	**0.0243**	**0.0000**	**102.6007**

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	2.8800e-003	0.1247	0.0193	4.1000e-004	9.9100e-003	1.2000e-004	0.0100	2.8600e-003	1.1000e-004	2.9800e-003	0.0000	38.6165	38.6165	3.1700e-003	0.0000	38.6956
Worker	0.0131	7.3600e-003	0.0794	2.6000e-004	0.0303	1.8000e-004	0.0304	8.0400e-003	1.6000e-004	8.2000e-003	0.0000	23.4633	23.4633	5.0000e-004	0.0000	23.4758
Total	**0.0159**	**0.1320**	**0.0987**	**6.7000e-004**	**0.0402**	**3.0000e-004**	**0.0405**	**0.0109**	**2.7000e-004**	**0.0112**	**0.0000**	**62.0798**	**62.0798**	**3.6700e-003**	**0.0000**	**62.1713**

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	0.0692	0.6329	0.7147	1.1900e-003		0.0308	0.0308		0.0290	0.0290	0.0000	101.9940	101.9940	0.0243	0.0000	102.6005
Total	**0.0692**	**0.6329**	**0.7147**	**1.1900e-003**		**0.0308**	**0.0308**		**0.0290**	**0.0290**	**0.0000**	**101.9940**	**101.9940**	**0.0243**	**0.0000**	**102.6005**

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	2.8800e-003	0.1247	0.0193	4.1000e-004	9.9100e-003	1.2000e-004	0.0100	2.8600e-003	1.1000e-004	2.9800e-003	0.0000	38.6165	38.6165	3.1700e-003	0.0000	38.6956
Worker	0.0131	7.3600e-003	0.0794	2.6000e-004	0.0303	1.8000e-004	0.0304	8.0400e-003	1.6000e-004	8.2000e-003	0.0000	23.4633	23.4633	5.0000e-004	0.0000	23.4758
Total	**0.0159**	**0.1320**	**0.0987**	**6.7000e-004**	**0.0402**	**3.0000e-004**	**0.0405**	**0.0109**	**2.7000e-004**	**0.0112**	**0.0000**	**62.0798**	**62.0798**	**3.6700e-003**	**0.0000**	**62.1713**

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	8.2600e-003	0.0791	0.1097	1.7000e-004		3.9200e-003	3.9200e-003		3.6200e-003	3.6200e-003	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	6.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0144**	**0.0791**	**0.1097**	**1.7000e-004**		**3.9200e-003**	**3.9200e-003**		**3.6200e-003**	**3.6200e-003**	**0.0000**	**14.7407**	**14.7407**	**4.6300e-003**	**0.0000**	**14.8565**

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	6.2000e-004	3.5000e-004	3.7800e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1161	1.1161	2.0000e-005	0.0000	1.1167
Total	**6.2000e-004**	**3.5000e-004**	**3.7800e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1161**	**1.1161**	**2.0000e-005**	**0.0000**	**1.1167**

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	8.2600e-003	0.0791	0.1097	1.7000e-004		3.9200e-003	3.9200e-003		3.6200e-003	3.6200e-003	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	6.1700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0144**	**0.0791**	**0.1097**	**1.7000e-004**		**3.9200e-003**	**3.9200e-003**		**3.6200e-003**	**3.6200e-003**	**0.0000**	**14.7407**	**14.7407**	**4.6300e-003**	**0.0000**	**14.8565**

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	6.2000e-004	3.5000e-004	3.7800e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1161	1.1161	2.0000e-005	0.0000	1.1167
Total	**6.2000e-004**	**3.5000e-004**	**3.7800e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.1161**	**1.1161**	**2.0000e-005**	**0.0000**	**1.1167**

3.7 Architectural Coating - 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					
Archit. Coating	0.0428					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
Total	**0.0445**	**0.0117**	**0.0163**	**3.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.4000e-004**	**0.0000**	**2.3014**

3.7 Architectural Coating - 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	5.3000e-004	3.0000e-004	3.2100e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	0.9487	0.9487	2.0000e-005	0.0000	0.9492
Total	**5.3000e-004**	**3.0000e-004**	**3.2100e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.3000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9487**	**0.9487**	**2.0000e-005**	**0.0000**	**0.9492**

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	0.0428					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
Total	**0.0445**	**0.0117**	**0.0163**	**3.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.4000e-004**	**0.0000**	**2.3014**

3.7 Architectural Coating - 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	5.3000e-004	3.0000e-004	3.2100e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	0.9487	0.9487	2.0000e-005	0.0000	0.9492
Total	**5.3000e-004**	**3.0000e-004**	**3.2100e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.3000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9487**	**0.9487**	**2.0000e-005**	**0.0000**	**0.9492**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.496766	0.030510	0.170483	0.111467	0.014688	0.004287	0.033704	0.127678	0.002360	0.001460	0.004966	0.001070	0.000562

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0177	2.0000e-005	1.8800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6600e-003	3.6600e-003	1.0000e-005	0.0000	3.9000e-003
Unmitigated	0.0177	2.0000e-005	1.8800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6600e-003	3.6600e-003	1.0000e-005	0.0000	3.9000e-003

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	4.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6600e-003	3.6600e-003	1.0000e-005	0.0000	3.9000e-003
Total	**0.0177**	**2.0000e-005**	**1.8800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.6600e-003**	**3.6600e-003**	**1.0000e-005**	**0.0000**	**3.9000e-003**

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	4.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6600e-003	3.6600e-003	1.0000e-005	0.0000	3.9000e-003
Total	**0.0177**	**2.0000e-005**	**1.8800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.6600e-003**	**3.6600e-003**	**1.0000e-005**	**0.0000**	**3.9000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Appendix B: Cultural Resources Assessment

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November 4, 2021
Project No. 21-11580

Adam Holt
Blair, Church & Flynn Consulting Engineers
451 Clovis Avenue, Suite 200
Clovis, California 93612
Via email: aholt@bcf-engr.com

Subject: **Cultural Resources Assessment for the Van Ness Avenue Water Transmission Grid Main 221-0232 Project, Fresno, Fresno County, California**

Dear Mr. Holt:

Blair, Church & Flynn Consulting Engineers retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources assessment for the Van Ness Avenue Water Transmission Grid Main (TGM) 221-0232 Project (project) in the city of Fresno, Fresno County, California. This letter report documents the results of the assessment, which was conducted in support of California Environmental Quality Act (CEQA) review and consisted of a cultural resources records search, Sacred Lands File search, and a pedestrian field survey. The City of Fresno (City) is the lead agency under CEQA.

Project Location

The proposed project is located on and adjacent to Van Ness Avenue between Divisadero Street and Merced Street and on and adjacent to Amador Street between Van Ness Avenue and the Van Ness/Fulton Alley in Fresno, Fresno County, California (Figure 1, Attachment A). Project components are proposed to be constructed within the rights-of-way of Van Ness Avenue and Amador Street, and on several adjacent private properties. The project site lies within Section 4 of Township 14 South, Range 20 East of the *Fresno South, California* (USGS 2021) topographic quadrangle (Figure 2, Attachment 1).

Project Description

The proposed project would consist of construction of 0.55 miles of replacement water distribution mains within Van Ness Avenue between Divisadero Street and Merced Avenue and within Amador Street between Van Ness Avenue and Federal Alley. The Project would also relocate all services to existing buildings that front Van Ness Avenue and are currently served by water mains in the alleys between Van Ness and Fulton Street and between Van Ness and L Street. Additionally, the existing 2-inch water line in Van Ness Avenue, from Amador Street to Divisadero Street, would be replaced, and services would be similarly transferred. The existing water mains consist mainly of 10- and 12-inch cast-iron pipe. The proposed TGM would be either Polyvinyl Chloride (PVC) or ductile iron pipe and may range in size from 12- to 16-inches in diameter. Most construction would occur within the City of Fresno right-of-way, though some construction associated with the transfer of service would take place on adjacent private properties to transfer services from the alleys to Van Ness Avenue. Services to be relocated would be installed within City Street right-of-way and extend to the water meter for on property. New fire hydrants along Van Ness Avenue would be installed at the current City spacing requirements, and new services would be similarly designed from the proposed TGM for each hydrant within City right-of-way. Construction may include open trenching as well as directional boring. Trench resurfacing in Van Ness Avenue would include application of a slurry seal. The Project would not involve any the installation of any major above-ground elements or result in the direct alteration of any of the adjacent buildings.

Background Research

To identify past cultural resources studies and previously recorded cultural resources, Rincon requested a records search of the project site and a 0.25-mile radius from the California Historical Resources Information System (CHRIS) at the Southern San Joaquin Valley Information Center (SSJVIC) located at California State University, Bakersfield on September 27, 2021. On October 13, 2021, Rincon received the results of the records search for the project. In addition to the SSJVIC records search, a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the Office of Historic Preservation Historic Properties Directory, the California Inventory of Historic Resources, the Built Environment Resource Directory (BERD), the Archaeological Determinations of Eligibility list, and the City of Fresno's Local Register of Historical Resources (LRHR) was conducted. Further details are provided below and in Attachment B.

Previously Conducted Studies

The SSJVIC records search identified 14 previously conducted cultural resources studies within the 0.25-mile radius of the project (Table 1), five of which (FR-01694, FR-02076, FR-02244, FR-02557, and FR-02732) overlap portions of the project site. The studies within the current project site are discussed in further detail below.

Table 1 Previous Cultural Resource Studies within 0.25-Mile of the Project Site

Report Number	Author	Year	Title	Relationship to Project
FR-00135	Hatoff, Brian, Voss, Barb, Waechter, Sharon, Benté, Vance, and Wee, Stephen	1995	*Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project.*	Outside
FR-01694	Powell, John Edward and McGuire, Michael J.	1994	*Supplementary Historic Building Survey, Historic Resources Survey (Ratkovich Plan), Fresno, California*	**Within**
FR-02002	Mason, Roger D. and Shepard, Richard S.	2000	*Cultural Resources Survey Report for Level 3 Long Haul Fiber Optic Project: WS04 Connection to Fresno 3R Facility, in the City of Fresno, Fresno County, California*	Outside
FR-02076	Hattersley-Drayton, Karana	2004	*Historic Architecture Survey Report for the "Bungalow" Court Project, Fresno, California*	**Within**

Report Number	Author	Year	Title	Relationship to Project
FR-02107	Parker, Lori D.	2005	*Request for SHPO Review of FCC Undertaking for FAT-001B Downtown Fresno*	Outside
FR-02244	Donaldson, Milford	2005	*National Park Service (NPS) land and Water Conservation Fund (LWCF) Program Application for the Fulton Mall Children's Play Equipment Replacement Project, City of Fresno, Fresno County, California*	**Within**
FR-02329	Bonner, W.H.	2009	*Cultural Resources Records Search and Site Visit for Clearwire Candidate CA-FN02004 (DT FRESNO), 1401 Fulton Street, Fresno, Fresno County, California*	Outside
FR-02340	Billat, Lorna	2009	*Collocation Submission Packet FCC Form 621, Hwy 99 & 180, FRN-017B*	Outside
FR-02557	Peterson, Cher L. and Crawford, Kathleen A.	2012	*Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC, Candidate SC08752A (Fresno Downtown), 1457 Van Ness Avenue Fresno, Fresno County, California*	**Within**
FR-02722	Anderson, Katherine and Vader, Michael	2015	*Fresno Recycled Water Distribution System Project, Phase I Cultural Resources Study, Fresno County, California*	Outside
FR-02722A	Anderson, Katherine Vader, Michael	2017	*Recycled Water Distribution System, Southwest Quadrant: Phase I Cultural Resources Study*	Outside
FR-02732	Nelson, Douglas, Martin, John, and Knight, Lauren	2015	*Historic American Landscape Survey HALS CA-116 Fulton Mall, Fresno, Fresno County, California*	**Within**
FR-02896	Slawson, Dana N. and Kay, Michael	2012	*Fresno Fulton Corridor Specific Plan and Downtown Neighborhoods Community Plan Project*	Outside
FR-02896A	Hattersley-Drayton, Karana and Stock Jody	2015	*South Van Ness Industrial District Historic Survey, Fresno, California*	Outside

Source: SSJVIC 2021

FR-01694

John Edward Powell and Michael McGuire of the California State University, Fresno Foundation conducted study F-01694, *Supplementary Historic Building Survey, Historic Resources Survey (Ratkovich Plan) Fresno, California*, in 1994. The study consisted of background and archival research, review of death records, review of property inventories, historical resources evaluation, and a pedestrian survey for the Ratkovich Plan area project. The project consisted of the development of 1,500 acres between Highway 99, Highway 41, and Highway 180 in Downtown Fresno. For the project, the authors assessed and evaluated more than 2,400 properties within the study area for inclusion on the NRHP and the Fresno LRHR, of which 159 properties were recommended eligible for listing. In addition to the properties, five historic districts were identified by the study (Powell and McGuire 1994). The study included the entirety of the current project site. One of the resources identified by the study (P-10-004915; Blue Cross Veterinary Hospital) is recorded within the current project site.

FR-02076

Karana Hattersley-Drayton of the City of Fresno, and Jon Brady and Dana Supernowicz of J and R Environmental Services and Historic Resource Associates prepared study FR-02076, *Historic Architecture Survey Report for the "Bungalow" Court Project, Fresno, California,* in 2004. The study consisted of the identification of 128 bungalows through a reconnaissance survey, creating 13 courts. All 13 courts were evaluated for the NRHP, CRHR, and LRHR. The study findings recommended one court eligible for the NRHP, CRHR, and LRHR; four courts were recommended eligible for listing on the CRHR and LRHR; and eight courts recommended only eligible for the LRHR (Hattersley-Drayton et al. 2004). The study included the northernmost portion of the current project site along Divisadero Street. As a result of the study, one built-environment historical resource was identified within the current project site, 950 East Divisadero Street, which was recommended eligible for listing in the CRHR under Criterion 3.

FR-02244

Study FR-02244, *National Park Service (NPS) land and Water Conservation Fund (LWCF) Program Application for the Fulton Mall Children's Play Equipment Replacement Project, City of Fresno, Fresno County, California*, prepared in 2005 consists of a Land and Water Conservation Fund Program Application. The application included a records search review of the SSJVIC, comments to the State Historic Preservation Officer (SHPO), and project photographs. The records search review from the SSJVIC recommended that no survey was required for the project as no cultural resources occurred within the study area. Following submittal to the SHPO, comments were returned regarding the project. No other correspondence was included in the study documentation. The study did not identify any cultural resources within the current project site and included the southwestern most portion of the current project site.

FR-02557

Cher Peterson and Kathleen Crawford of Michael Brandman Associates prepared study FR-02557, *Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC, Candidate SC08752A (Fresno Downtown), 1457 Van Ness Avenue Fresno, Fresno County, California*, in 2012. The study consisted of a letter report documenting the findings for the project to impact cultural resources within the study area. The report consisted of the development of the area of potential effects (APE), a records search with the SSJVIC, a pedestrian survey, archival research, and discussion of historic-period resources within the vicinity of the project site. Peterson and Crawford (2012) recommended a historical resources evaluation for each of the potential historic-period resources that occur within the study area, with no adverse effect for historic properties within the indirect APE, as visual effects would not be altered. The study did not identify any cultural resources within the current project site and overlaps a small portion within the southwestern of the current project site.

FR-02732

Douglas Nelson, John Martin, and Lauren Knight of RHAA Landscape Architects prepared study FR-02732, *Historic American Landscape Survey HALS CA-116 Fulton Mall, Fresno, Fresno County, California*, in 2015. The project proposed to reconstruct the Fulton Mall and update the street right-of-way. The study consisted of a historic landscape survey of the Fulton Mall, encompassing six blocks along Fulton Street between Tuolumne Street and Inyo Street, as well as Merced Street and Mariposa Street. The study consisted of archival research, topographic map review, landscape identification and summary, feature identification, illustrations of the Fulton Mall, and discussion of project impacts to the existing Fulton Mall. The study was required for the project per the Fulton Mall Reconstruction Project Final Environmental Assessment and the Section 4(f) evaluation for the project in 2014. Although the SSJVIC indicates the surveyed area overlaps the southwest corner of the current project site, the surveyed is actually directly adjacent to the current project site along Federal Alley, between Tuolumne and Merced streets.

Previously Recorded Resources

The SSJVIC records search identified 75 previously recorded cultural resources within a 0.25-mile radius of the project site (**Error! Reference source not found.**, Attachment C), including 10 historic-period isolates, three historic-period structures, 61 historic-period buildings, and one historic district. Seven of the previously recorded resources (P-10-004273, P-10-004323, P-10-004334, P-10-004348, P-10-004370, P-10-004371, and P-10-004374) are listed on the NRHP, and one resource (P-10-004308) has been demolished.

Of the 75 previously recorded cultural resources, six are located within the project site, all of which are historic-period built-environment resources (P-10-004348, P-10-004374, P-10-004376, P-10-004377, P-10-004915, and P-10-005451). P-10-004377, however, has been demolished. Additionally, one historic-period archaeological district (P-10-007206) is located directly adjacent to the project site.

Under CEQA, any building, site, structure, object, or district that is eligible for listing or is listed in a local register qualifies as a historical resource. A review of the City of Fresno LRHR and Heritage Properties list revealed that five (5) of the individual resources identified in the records search as located within the project site are listed on or eligible for the LRHR (P-10-004348, P-10-004374, P-10-004376, P-10-004915, and P-10-004951). One LRHR-listed resource, the Flora Montague Bungalow Court (950 E. Divisadero Street; P-10-005451), is also identified in the BERD as a locally eligible historic district containing the bungalow court's eight dwellings, located at 950-960 East Divisadero Street. The Davidson House at 1762 Van Ness Avenue (P-10-004377) was removed from the LRHR after being demolished. Known resources identified during the background research for this study are listed in **Error! Reference source not found.**located in Attachment 3 of this report.

Resources located within the project site are described in greater detail below.

P-10-004348

Resource P-10-004348 is the Fresno Bee Building, located at 1515 Van Ness Avenue. In 1978, William E. Patnaude of the firm Allen Y. Lew and William E. Patnaude, Inc., recorded and evaluated the resource and found the property significant for its associations with the McClatchy Newspapers newspaper and radio operations, which were housed locally in the building. At that time, the resource was assigned a status code of 3, indicating it was recommended eligible for listing in the NRHP. In 1982, the building was subsequently formally designated in the NRHP as part of a nomination prepared by John Edward Powell of the firm Allen Y. Lew and William E. Patnaude, Inc. The property was designated under Criterion A and the theme Communication for its associations with the McClatchy media operations and under Criterion C as a good example of Classical Revival-style architecture. The resource is also listed locally on the LRHR.

P-10-004374

Resource P-10-004374 is the Romain House, located at 2055 San Joaquin Street. In 1978, William E. Patnaude of the firm Allen Y. Lew and William E. Patnaude, Inc., recorded the resource, identifying it as a "fine example of early architecture of the area" and "the home of one of Fresno's pioneer entrepreneurs" (Patnaude 1978a). The evaluation form indicates the building is significant for its architecture but does not explicitly recommend it eligible for a specific register. In 1982, the building was subsequently formally designated in the NRHP as part of a nomination prepared by John Edward Powell of the firm Allen Y. Lew and William E. Patnaude, Inc. The resource was designated under Criterion B for its associations with prominent community members, including Frank Romain, Michael Sullivan, Hugh Burns, William Whitehurst, and Daniel Whitehurst. The property is also architecturally notable and was recommended eligible under Criterion C as a rare local example of a once common combination of the Prairie and Greek Revival styles and for being "one of the oldest residential structures still standing in the city" (Powell 1982). The NRHP nomination form indicates the resource was previously determined eligible for listing at the state and local levels. The resource is also listed locally on the LRHR.

P-10-004376

Resource P-10-004376 is Sadler Office Supply, located at 1717 Van Ness Avenue. In 1978, William E. Patnaude of the firm Allen Y. Lew and William E. Patnaude, Inc., recorded and evaluated the resource, describing the building as a "typical but select example of a speculative commercial structure constructed for rental usage" (Patnaude 1978b). The property was assigned a status code of 4, meaning it might become eligible for listing on the NRHP. The resource is also listed locally on the LRHR.

P-10-004377

Resource P-10-004376 is Colonial Funeral Home, or Davidson Home, formerly located at 1762 Van Ness Avenue. In 1978, William E. Patnaude of the firm Allen Y. Lew and William E. Patnaude, Inc., recorded and evaluated the resource, describing the building as a "classic Georgian Colonial wood frame structure" (Patnaude 1978c). Based on its architectural merit, the property was assigned a status code of 4, meaning it might become eligible for listing on the NRHP. However, the building has since been demolished.

P-10-004915

Resource P-10-004915 is R.B. Griffenhagen Property, or Blue Cross Veterinary Hospital, located at 1821 Van Ness Avenue. In 1994, John Edward Powell of the California State University, Fresno Foundation recorded and evaluated the resource, recommending the veterinary hospital eligible for NRHP and LRHR as a good example of Moderne-style architecture. The evaluation form also indicates the property is significant under the secondary theme "Social/Education," but does not explain the reasoning behind the recommendation. The residence and barn on the property were not considered contributory the resource's significance.

P-10-007206

Between 2019 and 2020, Natalie Lawson, Jennifer Moritz, and David Oliver of the firm PaleoWest recorded and evaluated P-10-007206 in support of the *Fresno Recycled Water Distribution*

System, Cultural Resources Monitoring Report for Segment SW4 and SW1D. The resource was identified as the Town of Fresno, a subterranean historic archaeological district bounded generally by Inyo and Kern streets on the southeast, O and Fulton streets on the northeast, Merced and Fresno streets on the northwest, and A and B Streets on the southwest. The district consists of buried features associated with Fresno's early development as a railroad town between 1872 and 1900. The contributing features include segments of brick road or sidewalk, the remains of basements of early buildings, a tunnel, two brick wells or cisterns, and four refuse scatters. Although the features were identified only at select excavation sites, the full extent of some features are believed to extend beyond the areas excavated for the evaluation. Unexcavated portions of the features are presumed to be contained within the district boundaries, which correspond to the developed area of the town of Fresno before it was incorporated. While the northwest boundary of the district borders the project site along Merced Street, none of the recorded features were located immediately adjacent to the project site. The district was recommended eligible for the NRHP under Criterion D.

P-10-007224

In 2020, Natalie Lawson, Jennifer Moritz, David Oliver, and Tara Redinger of the firm PaleoWest recorded and evaluated P-10-007224 in support of the Fresno Recycled Water Distribution System, Cultural Resources Monitoring Report for Segment SW4 and SW1D. This resource consists of the remains of the Fresno Avenue and F Street trolley line which were encountered during ground disturbing activities for the project. Artifacts such as rail ties, rail spikes metal hardware, wood, and brick were found from just below the asphalt to 2.5 ft. below the asphalt. Lawson et al. (2020) observed that the remains appeared to be in their original locations but only existed in segments and were not intact.

Built in 1902 by the Fresno City Railway Company, later known as the Fresno Traction Company, the electric trolley system operated until the mid-to-late 1930s. The trolley line was one of several operating in Fresno during that time. Following the closing of the trolley system, the streetcar tracks were dismantled and much of the line was eventually paved over with asphalt for automobiles. The portion of the trolley system recorded by Lawson et al. (2020) was treated as eligible as a whole for the NRHP, but the specific segment location lacked integrity. Additionally, because it represented only a small portion of the entire trolley system network, the authors suggested that there would be no adverse effect as a result of the project (Lawson et al. 2020).

Though resource P-10-007224 itself is outside of the current project site, a portion of the historic trolley system had been located along Stanislaus Street between Broadway Street and Blackstone Avenue, which crosses over Van Ness Ave and, thus, through the current project site. It is possible that remains of that trolley line could still exist beneath the asphalt at the intersection of Van Ness Avenue and Stanislaus Street (see Figure 11).

Aerial Imagery and Historical Topographic Map Review

Rincon completed a review of aerial imagery and historical topographic maps to ascertain the development history of the project site. Historical topographic maps from 1923 (USGS 1923) depict the project site as developed Van Ness Avenue between Divisadero Street to Merced Street with commercial development on both sides of the road. Topographic maps from 1946 to 1966 depict the project site as developed with various buildings added on either side of the road in various year (USGS 2021; NETR Online 2021). Topographic maps from 1974 to 1982 depict the project site with Van Ness Avenue identified as a major street (USGS 2021; NETR Online 2021). Aerial imagery from 1962 to 2018 confirm that the project site has been developed as Van Ness Avenue with commercial development on either side of the road (NETR Online 2021).

Sacred Lands File Search

Rincon contacted the Native American Heritage Commission (NAHC) on September 27, 2021, to request a Sacred Lands File (SLF) search of the project site. The NAHC emailed a response on October 27, 2021, stating that the SLF search was negative. The SLF search results can be found in Attachment D of this report.

Pedestrian Field Survey

On October 23, 2021, Rincon Archaeologists Courtney Montgomery, MA, and Sabdy Jimenez Franco, BA, conducted a pedestrian survey of the project site. Under the direction of Senior Architectural Historian Steven Treffers, MHP, the surveyors also field checked known historical resources and characterized the general setting of the project area. The built environment resources within the project site were visually inspected and photographed to document characteristics and site conditions. Figure 3 through Figure 10 in Attachment 1 depict the current conditions of the project site. Digital photographs are maintained at the Rincon Fresno Office.

Approximately 100 percent of the project site has been paved over, contains gravel, or contains infrastructure development. Ground visibility within the project site was poor, approximately 0 percent. Modern trash and pavement staining were observed during the survey throughout the project alignment. The project site has been highly disturbed by the asphalt paving, imported gravel areas, and infrastructure related to the utilities, including manholes, handholes, utility conduits, fences, and drainage infrastructure.

No exposed native soils were observed, and no archaeological resources were identified during the survey. However, the project site contains numerous other properties over 45 years of age which may have potential to qualify as historical resources pending further analysis.

Findings and Recommendations

The background research and pedestrian field survey identified five known built environment historical resources within the project site. Additionally, the project site contains numerous other properties over 45 years of age which may have potential to qualify as historical resources pending further analysis. However, the proposed project does not have the potential impact any known or potential historical resources pursuant to Section 15064.5 of the CEQA Guidelines. The project components would be constructed underground in the public right-of-way and extend onto private property to install buried connecting lines to the water meters of several properties. The street profile and surface would be restored to virtually intact post-construction. Because the project elements proposed for private properties would entail only minor subterranean construction and would not cause direct changes to any building in the project site, the project would not result in the material impairment of any known or potential historical resource. Material impairment is defined in the CEQA Guidelines as demolition or alteration in an adverse manner of those characteristics of a historical resource that convey its historical significance and that justify its eligibility as a historical resource. Rincon, therefore, recommends a finding of ***no impact to historical resources.***

The SLF search was returned with negative results, and no prehistoric resources were identified within the project site during the records search or survey. As such, the project site is considered to have low prehistoric archaeological sensitivity. However, the Town of Fresno historic district was identified directly adjacent to the project site. Of particular concern would be the remnants of tracks related to the historic trolley system (P-10-007224) which could be buried along Stanislaus Street where it intersects with Van Ness Avenue, and additional elements of the Town of Fresno historic district (P-10-007206), which is directly adjacent to the project site. Given the proximity to a historic district and the history of the vicinity, the project site is considered to have moderate to high historic-period archaeological sensitivity. Unanticipated discoveries are possible during construction-related ground disturbance and impacts are potentially significant. Consequently, mitigation is recommended to ensure that potential impacts to cultural resources including those that may be considered historical resources, are reduced to a less-than-significant level.

Rincon recommends archaeological monitoring occur during project development, as well as a Worker's Environmental Awareness Program (WEAP) be developed to inform construction crews of the potential cultural resources concerns in the area. These mitigation measures are discussed in greater detail below. Therefore, Rincon recommends a finding of ***less than significant impact to archaeological resources with mitigation for the purposes of CEQA***. Also included are best management practices that are recommended in case of unanticipated discoveries and a summary of existing regulations regarding the discovery of human remains.

Worker's Environmental Awareness Program

A qualified archaeologist should be retained to conduct a Worker's Environmental Awareness Program training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities. The training should be conducted by an archaeologist who meets or exceeds the Secretary of Interior's Professional Qualification Standards for archeology (NPS 1983). Archaeological sensitivity training should include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a find.

Archaeological Monitoring and Discovery Plan

Prior to project construction, a qualified archaeologist shall prepare an Archaeological Monitoring and Discovery Plan (AMDP) to ensure the proper treatment and long-term protection of unanticipated discoveries during project construction. The AMDP shall be submitted to the City for review and approval. The AMDP shall provide a description of the methods to be undertaken during monitoring and the steps to be taken in the event of an archaeological discovery during construction, including, at minimum:

- Development of research questions and goals to be addressed by the investigation in the event of a find
- Detailed field strategy used to record, recover, or avoid the finds and address research goals
- Analytical methods to be employed for identified resources
- Requirements for reporting

- Disposition of the artifacts

Archaeological Monitoring

Rincon recommends archaeological monitoring of all project-related ground disturbing activities. Archaeological monitoring should be performed under the direction of the qualified archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983). The qualified archaeologist, in consultation with the City of Fresno, may recommend the reduction or termination of monitoring depending upon observed conditions (e.g., no resources encountered within the first 50 percent of ground disturbance). If archaeological resources are encountered during ground-disturbing activities, work within a minimum of 50 feet of the find must halt and the find evaluated for CRHR eligibility in accordance with the steps identified in the AMDP. Should an unanticipated resource be found as CRHR eligible and avoidance is infeasible, additional analysis (e.g., testing) may be necessary to determine if project impacts would be significant.

Unanticipated Discovery of Cultural Resources

In the unlikely event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work in the immediate area should be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archeology (NPS 1983) will be contacted immediately to evaluate the find. If the find is prehistoric, then a Native American representative will be contacted to participate in the evaluation of the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be eligible for listing in the CRHR and cannot be avoided additional work, such as testing and data recovery excavations, may be warranted to mitigate any significant impacts to cultural resources to less than a significant level.

Unanticipated Discovery of Human Remains

In the unlikely event of an unanticipated discovery of human remains, all ground-disturbing activities in the vicinity of the discovery will be immediately suspended and redirected elsewhere. All steps required to comply with State of California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 will be implemented including contacting the Fresno County Department of Medical Examiner-Coroner. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant (MLD). The MLD shall complete an inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access.

Please do not hesitate to contact Rincon with any questions regarding this cultural resources assessment.

Sincerely,
Rincon Consultants, Inc.

Leanna Flaherty, MA, RPA
Cultural Resources Project Manager

Andrew Pulcheon, MA, RPA, AICP, CEP
Principal/Senior Archaeologist

Steven Treffers, MHP
Architectural History Program Manager/
Senior Architectural Historian

Attachments

Attachment A Figures

Attachment B Southern San Joaquin Valley Information Center Records Search Results

Attachment C Previously Recorded Resources within 0.25-mile Radius of the Project Site

Attachment D Sacred Lands File Search

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Attachment A

Figures

Figure 1 Project Boundary Map

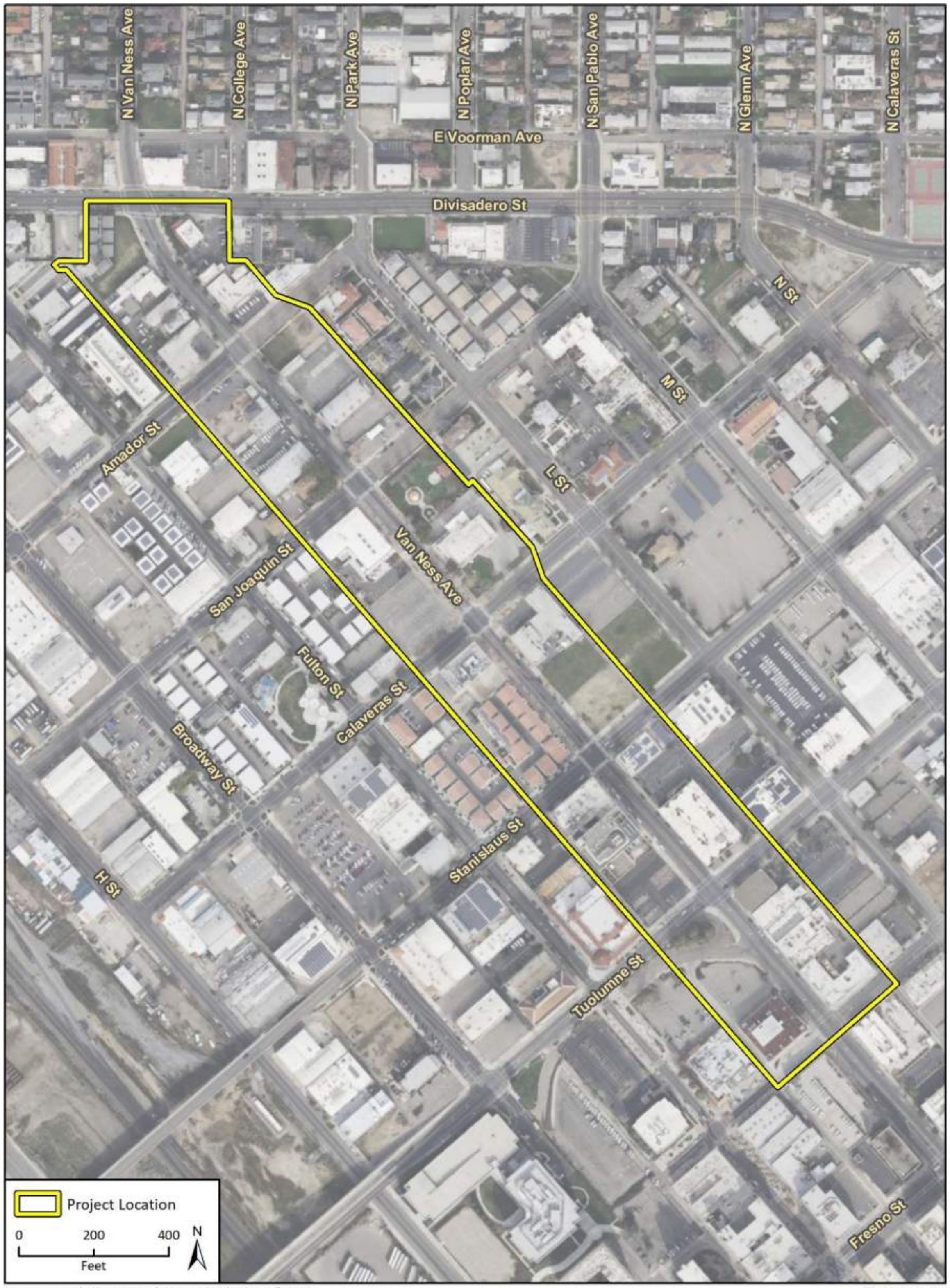

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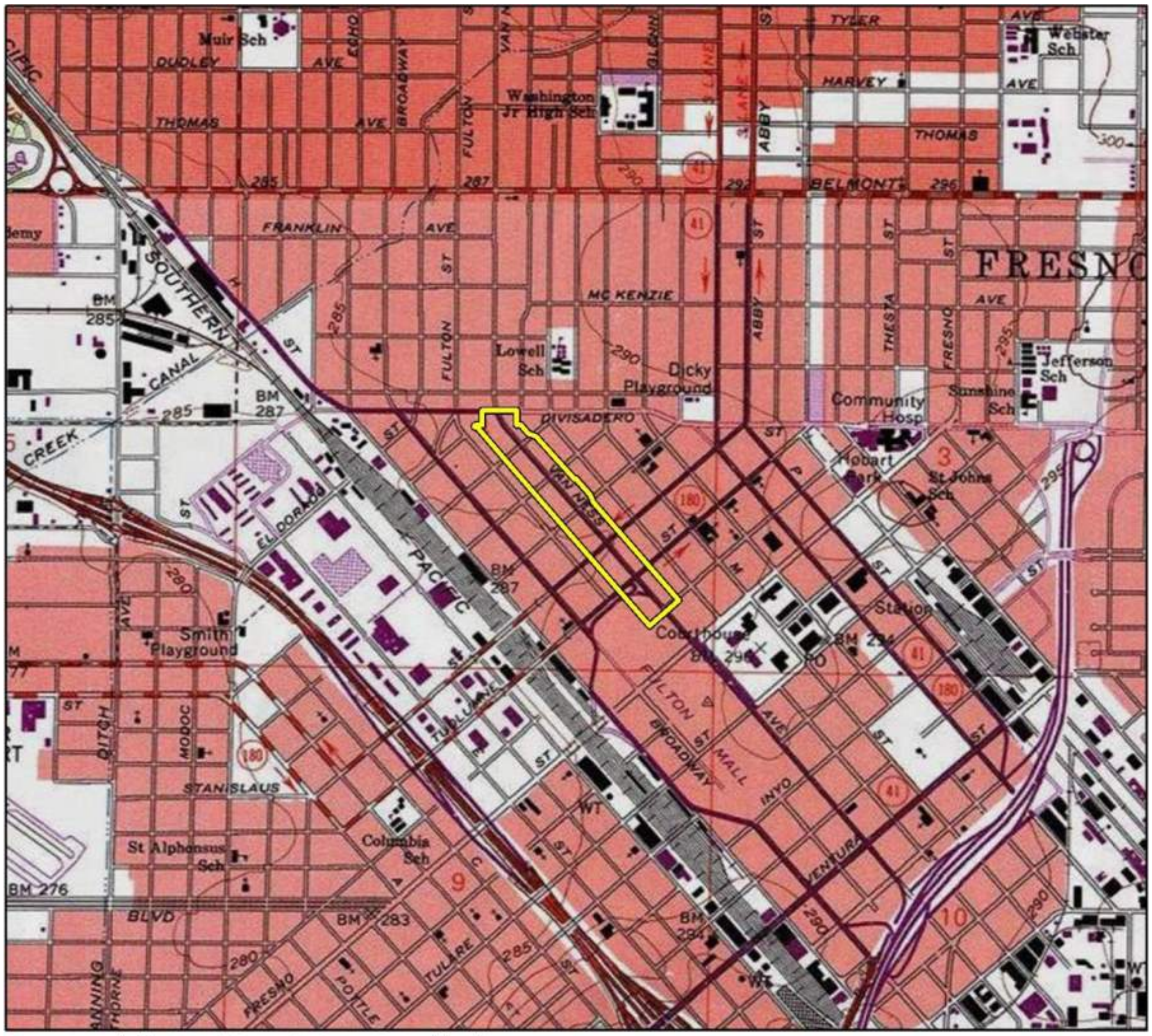
Figure 2 Project Location Map



Basemap provided by National Geographic Society, Esri and their licensors © 2021. Fresno South Quadrangle. T14S R20E S04. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may havechanged since the original topographic map was assembled.

Project Location

0 1,000 2,000 Feet

N

Figure 3 Overview of Van Ness Avenue from Divisadero Street, Facing Southeast

Figure 4 Van Ness Avenue at San Joaquin Street, Facing Southeast

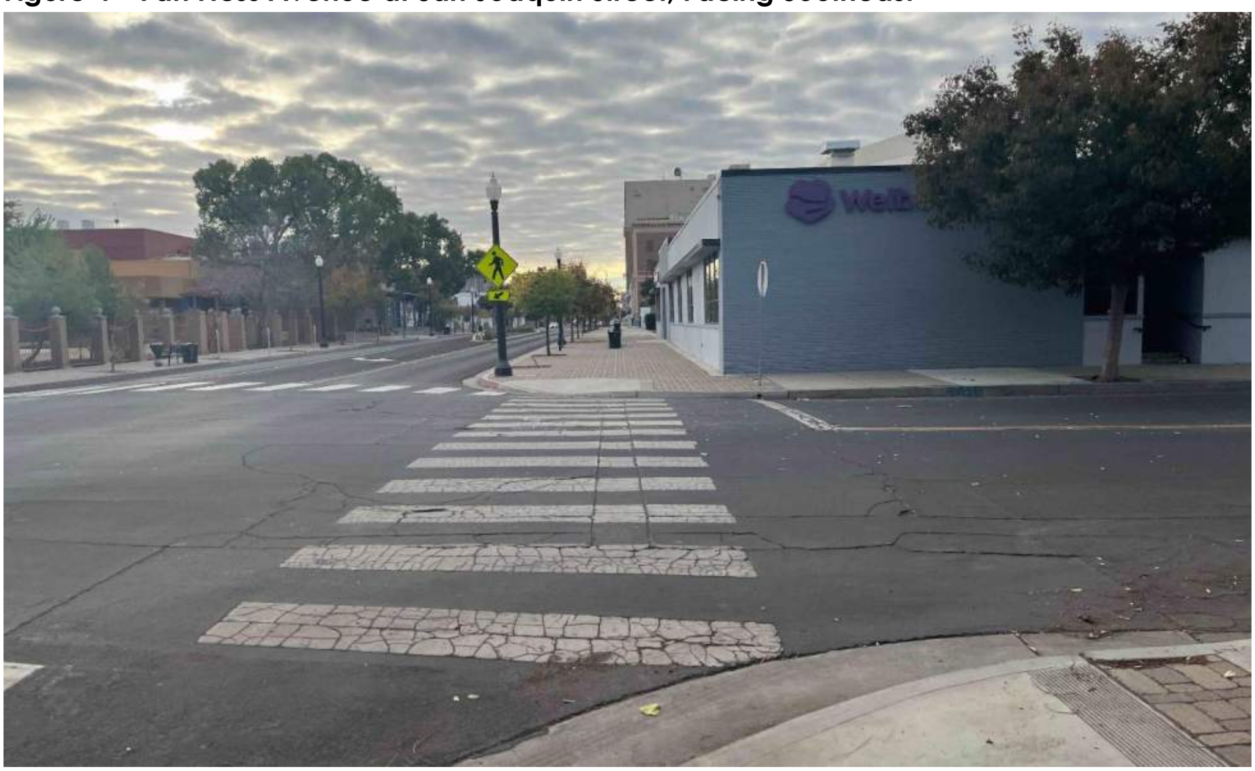


Figure 5 Intersection of Van Ness Avenue and Amador Street, Facing North

Figure 6 Van Ness Avenue and Tuolumne Street Intersection from Alleyway, Facing Southwest

Figure 7 Stanislaus Street and Van Ness Avenue Intersection, Facing South

Figure 8 Stanislaus Street and Van Ness Avenue Intersection, Facing North

Figure 9 Alleyway South of Stanislaus Street, Facing North

Figure 10 Pavement Staining within Alleyway South of Merced Street, Facing Southeast

Figure 11 Historic map of Fresno showing the location of the trolley system

Attachment B

Southern San Joaquin Valley Information Center Records Search Results

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

10/12/2021

Leanna Flaherty
Rincon Consultants, Inc.
180 N. Ashwood Ave.
Ventura, CA 93003

Re: 21-11580 Van Ness Water Grid Main
Records Search File No.: 21-373

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Fresno North, Fresno South USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.25 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☒ GIS data

Resources within project area:	P-10-004348, 004374, 004376, 004377, 004915, 007206
Resources within 0.25 mile radius:	69 resource, see attached list.
Reports within project area:	FR-01694, 02076, 02244, 02557, 02732
Reports within 0.25 mile radius:	FR-00135, 02002, 02107, 02329, 02340, 02722, 02896

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Resource Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Report Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed

OHP Built Environment Resources Directory: ☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility: ☒ enclosed ☐ not requested ☐ nothing listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☐ not requested ☒ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jeremy E. David
Assistant Coordinator

SSJVIC Record Search 21-373

Reports in PA:	Reports in .5 mile:	Resources in PA:	Resources in .5 mile:
FR-01694	FR-00135	P-10-004348	P-10-003930
FR-02076	FR-02002	P-10-004374	P-10-004243
FR-02244	FR-02107	P-10-004376	P-10-004273
FR-02557	FR-02329	P-10-004377	P-10-004275
FR-02732	FR-02340	P-10-004915	P-10-004276
	FR-02722	P-10-007206	P-10-004297
	FR-02896		P-10-004298
			P-10-004305
			P-10-004308
			P-10-004317
			P-10-004323
			P-10-004324
			P-10-004325
			P-10-004329
			P-10-004333
			P-10-004334
			P-10-004335
			P-10-004336
			P-10-004357
			P-10-004359
			P-10-004360
			P-10-004361
			P-10-004362
			P-10-004363
			P-10-004364
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			P-10-004375
			P-10-004379
			P-10-004382
			P-10-004383
			P-10-004413
			P-10-004897
			P-10-004898
			P-10-004899
			P-10-004910
			P-10-004911
			P-10-004914
			P-10-004916

Reports in PA:	Reports in .5 mile:	Resources in PA:	Resources in .5 mile:
			P-10-004919
			P-10-004920
			P-10-004921
			P-10-004922
			P-10-004923
			P-10-004924
			P-10-005444
			P-10-005445
			P-10-005451
			P-10-006072
			P-10-006073
			P-10-007211
			P-10-007212
			P-10-007214
			P-10-007215
			P-10-007216
			P-10-007217
			P-10-007218
			P-10-007219
			P-10-007220
			P-10-007221
			P-10-007224
			P-10-007225

Report List

SSJVIC Record Search 21-373

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-00135	NADB-R - 1140863	1995	Hatoff, Brian, Voss, Barb, Waechter, Sharon, Benté, Vance, and Wee, Stephen	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project.	Woodward-Clyde Consultants	
FR-01694		1994	Powell, John Edward and McGuire, Michael J.	Supplementary Historic Building Survey, Historic Resources Survey (Ratkovich Plan), Fresno, California	California State University, Fresno	
FR-02002		2000	Mason, Roger D. and Shepard, Richard S.	Cultural Resources Survey Report for Level 3 Long Haul Fiber Optic Project: WS04 Connection to Fresno 3R Facility, in the City of Fresno, Fresno County, California	Chambers Group, Inc.	10-004513
FR-02076		2004	Hattersley-Drayton, Karana	Historic Architecture Survey Report for the "Bungalow" Court Project, Fresno, California	City of Fresno	10-005447, 10-005448, 10-005449, 10-005450, 10-005451, 10-005452, 10-005453, 10-005454
FR-02107		2005	Parker, Lori D.	Request for SHPO Review of FCC Undertaking for FAT-001B Downtown Fresno	AquAeTer, Inc.	
FR-02244	IC Record Search Nbr - 05-037; OHP PRN - NPS050928B	2005	Donaldson, Milford	National park Service (NPS) land and Water Conservation Fund (LWCF) Program Application for the Fulton Mall Children's Play Equipment Replacement Project, City of Fresno, Fresno County, California	Department of Parks and Recreation	
FR-02329		2009	Bonner, W.H.	Cultural Resources Records Search and Site Visit for Clearwire Candidate CA-FN02004 (DT FRESNO), 1401 Fulton Street, Fresno, Fresno County, California	Michael Brandman Associates	
FR-02340	Submitter - Project Name: Hwy 99 &180; Submitter - Project Number: FRN-017B	2008	Billat, Lorna	Collocation Submission Packet FCC Form 621, Hwy 99 & 180, FRN-017B	EarthTouch, Inc.	
FR-02557		2012	Peterson, Cher L. and Crawford, Kathleen A.	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC, Candidate SC08752A (Fresno Downtown), 1457 Van Ness Avenue Fresno, Fresno County, California	Michael Brandman Associates	
FR-02722	IC Record Search Nbr - 13-429; 14-333; OHP PRN - EPA 2015 0309 001	2015	Anderson, Katherine and Vader, Michael	Fresno Recycled Water Distribution System Project, Phase I Cultural Resources Study, Fresno County, California	ESA Cultural Resources	10-004315

Report List

SSJVIC Record Search 21-373

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-02722A		2017	Anderson, Katherine and Vader, Michael	Recycled Water Distribution System, Southwest Quadrant: Phase I Cultural Resources Study	ESA	
FR-02732		2015	Nelson, Douglas, Martin, John, and Knight, Lauren	Historic American Landscape Survey HALS CA-116 Fulton Mall, Fresno, Fresno County, California	RHAA Landscape Architects	
FR-02896	OHP PRN - EDA_2017_0925_001	2012	Slawson, Dana N. and Kay, Michael	Fresno Fulton Corridor Specific Plan and Downtown Neighborhoods Community Plan Project	Greenwood and Associates	10-006142, 10-006143, 10-006144
FR-02896A		2015	Hattersley-Drayton, Karana and Stock Jody	South Van Ness Industrial District Historic Survey, Fresno, California	Historic Preservation Project Manager, City of Fresno and Hrchitecture+History, San Francisco In association with Watson Heritage Consulting	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-004334		OHP PRN - 3771-0096-0000; Resource Name - P.G. & E. Building; Resource Name - San Joaquin Light and Power Building	Building	Historic	HP07	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.); 2005 (Christeen Taniguchi, Barry A. Price, Galvin & Associates, Applied EarthWorks, Inc.)	
P-10-004335		OHP PRN - 3771-0097-0000; Resource Name - Wilson Theater Building	Building	Historic	HP10	1978 (Unknown)	
P-10-004336		OHP PRN - 3771-0098-0000; Resource Name - Theatre 3	Building	Historic	HP06	1978 (Unknown)	
P-10-004348		OHP PRN - 3771-0111-0000; Resource Name - Fresno Bee Building - Original Structure	Building	Historic	HP07	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.); 1982 (John Edward Powell, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004357		OHP PRN - 3771-0120-0000; Resource Name - Boy Scout Headquarters; Resource Name - Porteous Home	Building	Historic	HP06	(Unknown)	
P-10-004359		OHP PRN - 3771-0122-0000; Resource Name - Evinger Home	Building	Historic	HP06	1978 (Rosellen Kershaw and William E. Patnaude, AAUW and Lew & Patnaude, Inc.)	
P-10-004360		OHP PRN - 3771-0123-0000; Resource Name - Hope Manor; Resource Name - The Gundelfinger Home	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004361		OHP PRN - 3771-0124-0000; Resource Name - Temple Beth Israel	Building	Historic	HP16	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004362		OHP PRN - 3771-0125-0000; Resource Name - The White House; Resource Name - The Graff Home	Building	Historic	HP06	1978 (Ilene J. Marcum, Allen Y. Lew & William E. Patnaude, Inc)	
P-10-004363		OHP PRN - 3771-0126-0000; Resource Name - Nestel Home	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004364		OHP PRN - 3771-0127-0000; Resource Name - Hoover Residence	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004365		OHP PRN - 3771-0128-0000; Resource Name - The Thomas Home	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-003930	CA-FRE-003109H	Resource Name - Southern Pacific Railroad	Structure	Historic	AH07; HP11	1998 (W.L. Norton, Jones & Stokes); 1999 (S. Hooper, S. Flint, Applied EarthWorks, Inc.); 2002 (Peggy B. Murphy, Three Girls and a Shovel); 2004 (Bryan Larson, Cindy Toffelmier, JRP Historical Consulting); 2009 (Joseph Freeman, Rebecca Flores, JRP Historical Consulting); 2009 (Joseph Freeman, Rebecca Flores, JRP Historical Consulting); 2009 (Joseph Freeman, Rebecca Flores, JRP Historical Consulting); 2010 (Michael Hibma, LSA Associates); 2013 (Randy Baloian, Applied Earthworks, Inc.); 2015 (Randy Baloian, Applied EarthWorks, Inc.); 2015 (Randy Baloian, Applied Earthworks, Inc.); 2016 (J. Tibbet, Applied EarthWorks, Inc.); 2018 (Annie McCausland, Applied EarthWorks, Inc.); 2018 (Jessica Jones, Applied EarthWorks, Inc.)	FR-00238, FR-01770, FR-01771, FR-01772, FR-02642, FR-02726, FR-02769, FR-02847, FR-02942, FR-03037
P-10-004243		OHP PRN - 3771-0005-0000; Resource Name - Rainbow Ballroom	Building	Historic	HP13	1978 (Unknown)	
P-10-004273		Resource Name - Fresno Memorial Auditorium; Resource Name - Veterans Memorial Auditorium; OHP PRN - 3771-0034-0000	Building	Historic	HP12	1978 (William E. Patnaude, Allen Y Lew & William E. Patnaude, Inc.); 1994 (Unknown)	
P-10-004275		OHP PRN - 3771-0036-0000; Resource Name - Brix Apartments	Building	Historic	HP03	1978 (Unknown)	
P-10-004276		OHP PRN - 3771-0037-0000; Resource Name - Fresno City Hall	Building	Historic	HP14	1978 (Unknown)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-004297		OHP PRN - 3771-0057-0000; Resource Name - Ramona Apartments; Resource Name - Martin Residence	Building	Historic	HP03	(Unknown)	
P-10-004298		OHP PRN - 3771-0058-0000; Resource Name - Scottish Rite Temple	Building	Historic	HP16	(Unknown)	
P-10-004305		OHP PRN - 3771-0065-0000; Resource Name - Twin Sisters; Resource Name - The McVey Homes; OHP PRN - 3771-0066-0000	Building	Historic	HP02	(Unknown)	
P-10-004308		OHP PRN - 3771-0069-0000; Resource Name - St. Paul Armenian Church; Resource Name - First Baptist Church	Building	Historic	HP16	1978 (William E. Patnaude, Allen Y. Lew and William E. Patnaude, Inc.)	
P-10-004317		OHP PRN - 3771-0079-0000; Resource Name - Berkholts Residence	Building	Historic	HP02	(Unknown)	
P-10-004323		OHP PRN - 3771-0085-0000; Resource Name - Hotel Fresno	Building	Historic	HP05	(Unknown)	
P-10-004324		OHP PRN - 3771-0086-0000; Resource Name - The Mason Building	Building	Historic	HP07	(Unknown)	
P-10-004325		OHP PRN - 3771-0087-0000; Resource Name - Guarantee Savings Building; Resource Name - Mattei Building	Building	Historic	HP07	1978 (Unknown)	
P-10-004329		OHP PRN - 3771-0091-0000; Resource Name - Helm Building; Resource Name - Griffith-McKenzie Building	Building	Historic	HP07	(Unknown)	
P-10-004333		OHP PRN - 3771-0095-0000; Resource Name - Warnor's Theatre	Building	Historic	HP10	(Unknown); 1977 (R.M. Caglia, Electric Motor Shop)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-004366		OHP PRN - 3771-0129-0000; Resource Name - The Swift Home	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004367		OHP PRN - 3771-0130-0000; Resource Name - Kutner Home	Building	Historic	HP06	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004368		OHP PRN - 3771-0131-0000; Resource Name - The Bean Home	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004369		OHP PRN - 3771-0132-0000; Resource Name - Long Home; Resource Name - Black Home	Building	Historic	HP02	1978 (Ilene Marcum, AAUW and Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004370		Resource Name - YWCA Activity Building; Resource Name - Einstein Home; OHP PRN - 3771-0133-0000	Building	Historic	HP06	1977 (Valerie D. Comegys, Young Women's Christian Association); 1978 (Ilene Marcum, AAUW)	
P-10-004371		Resource Name - YWCA Residence; OHP PRN - 3771-0134-0000	Building	Historic	HP02; HP06	1978 (Valerie D. Comegys, Y.M.C.A.); 1978 (William E. Patnaude)	
P-10-004372		OHP PRN - 3771-0135-0000; Resource Name - Schutz Residence	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004373		OHP PRN - 3771-0136-0000; Resource Name - First Church of Christ Scientist	Building	Historic	HP16	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004374		OHP PRN - 3771-0137-0000; Resource Name - The Romain Home	Building	Historic	HP02	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.); 1980 (Ephraim Smith, California State University, Fresno)	
P-10-004375		OHP PRN - 3771-0138-0000; Resource Name - King Solomon Lodge; Resource Name - First Congregational Church	Building	Historic	HP16	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004376		OHP PRN - 3771-0139-0000; Resource Name - Sadler Office Supply	Building	Historic	HP06	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004377		OHP PRN - 3771-0140-0000; Resource Name - Colonial Funeral Home; Resource Name - The Davidson Home	Building	Historic	HP06	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-004379		OHP PRN - 3771-0142-0000; Resource Name - Offices of H. Wayne Taul; Resource Name - The McAlpine Home	Building	Historic	HP06	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004382		OHP PRN - 3771-0145-0000; Resource Name - Artefactor Age; Resource Name - The Alexander Home	Building	Historic	HP06	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004383		OHP PRN - 3771-0146-0000; Resource Name - Garden House Tea Room; Resource Name - Farr Residence	Building	Historic	HP06	1978 (William E. Patnaude, Allen Y. Lew & William E. Patnaude, Inc.)	
P-10-004413		Resource Name - Alamo House; OHP PRN - 3771-0174-0000; Resource Name - The Helm Home	Building	Historic	HP02	1978 (Ilene Marcum, William E. Patnaude, AAUW and Lew and Patnaude, Inc.)	
P-10-004897		Resource Name - J.C. Forkner Home; Resource Name - John Humiston Home; OHP Property Number - 142102	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004898		Resource Name - Jacob N. Kavoian Home; Resource Name - Christian L. Samuelson Home; OHP Property Number - 142103	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004899		Resource Name - Mary and Della Strupp Home; Resource Name - John B. Frinchaboy Home; OHP Property Number - 142105	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004910		Resource Name - William H. Smith Home; OHP Property Number - 142110	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004911		Resource Name - Donahoo Home; OHP Property Number - 142117	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004914		Resource Name - Velvet Ice Cream Company; OHP Property Number - 142120	Building	Historic	HP06	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-004915		Resource Name - R.B. Griffenhagen Property; Resource Name - Blue Cross Veterinary Hospital; OHP Property Number - 142121	Building	Historic	HP02; HP41	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004916		Resource Name - Steven Mensel Residence; Resource Name - Charles W. Lowrie Home; OHP Property Number - 142122	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004919		Resource Name - Susan P. Furze Home; Resource Name - George H. Walley Home; OHP Property Number - 142125	Building	Historic	HP02	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004920		Resource Name - Budd & Quinn Showroom; OHP Property Number - 142126	Building	Historic	HP06	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004921		Resource Name - Dale Bros. Coffee; Resource Name - Benham Ice Cream; OHP Property Number - 142127	Building	Historic	HP06	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004922		Resource Name - Mayflower Apartments; OHP Property Number - 142128	Building	Historic	HP03	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004923		Resource Name - Parker Nash Building; Resource Name - Herring & Kieffer; OHP Property Number - 142129	Building	Historic	HP06	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-004924		Resource Name - Brix Court Apartments; OHP Property Number - 142130; OHP Property Number - 152877	Building	Historic	HP03	1994 (John Edward Powell, Michael McGuire, California State University, Fresno Foundation)	
P-10-005444		Resource Name - Royal Court Apartments; Resource Name - Block 108, Lots 7-9 of the City of Fresno; OHP Property Number - 152886	Building	Historic	HP03	2004 (Jon L. Brady, Dana E. Supernowicz, Barbara Supernowicz)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-005445		Resource Name - Brix Apartment Court; OHP Property Number - 152877	Building	Historic	HP03	2004 (Jon L. Brady, Dana E. Supernowicz, Barbara Supernowicz)	
P-10-005451		Resource Name - 950-960 E. Divisadero Bungalow Court; OHP Property Number - 152665; OHP Property Number - 152666	Building	Historic	HP03	2004 (Jon L. Brady, Dana E. Supernowicz, Barbara Supernowicz)	FR-02076
P-10-006072		Resource Name - Map Reference No. 26; Resource Name - State of California Property; OHP Property Number - 149926	Building	Historic	HP03; HP04	2004 (Jon L. Brady, Caltrans District 6)	FR-02232
P-10-006073		Resource Name - Map Reference No. 28; Resource Name - Marmolejo Property; OHP Property Number - 149945	Building	Historic	HP02	2004 (Jon L. Brady, Caltrans District 6)	FR-02232

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-007206	CA-FRE-003902H	Resource Name - Town of Fresno; Other - BF-SW4-1; Other - BF-SW4-2; Other - BF-SW4-3; Other - BF-SW4-4; Other - BF-SW4-6; Other - BF-SW4-8; Other - S-SW4-1; Other - S-SW4-2; Other - S-SW4-5; Other - S-SW4-7	District	Historic	AH04; AH05; AH06; AH07; HP46	2019 (David Oliver and Jennifer Moritz, PaleoWest); 2019 (Jennifer Moritz, David Oliver, and Natalie Lawson, PaleoWest); 2019 (Jennifer Moritz, Natalie Lawson, and David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest); 2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest)	
P-10-007211		Resource Name - I-SW4-04	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007212		Resource Name - I-SW4-05	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007214		Resource Name - I-SW4-10	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007215		Resource Name - I-SW4-11	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007216		Resource Name - I-SW4-12	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007217		Resource Name - I-SW4-14	Other	Historic	AH07	2020 (Natalie Lawson, Jennifer Moritz, and David Oliver, PaleoWest)	
P-10-007218		Resource Name - I-SW4-15	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	

Resource List

SSJVIC Record Search 21-373

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-007219		Resource Name - I-SW4-16	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007220		Resource Name - I-SW4-17	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007221		Resource Name - I-SW4-18	Other	Historic	AH16	2020 (Jennifer Moritz, David Oliver, PaleoWest)	
P-10-007224		Resource Name - BF-SW4-5	Structure	Historic	AH07	2020 (Natalie Lawson, Jennifer Moritz, David Oliver, Tara Redinger, PaleoWest)	
P-10-007225		Resource Name - BF-SW4-7	Structure	Historic	HP11	2020 (Natalie Lawson, Jennifer Moritz, and Cynthia Morales, PaleoWest)	

Attachment C

Previously Recorded Resources within 0.25-mile Radius of the Project Site

Table 2 Previously Recorded Resources within 0.25-mile Radius of the Project Site

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-003930	CA-FRE-309H	Historic-Period Structure	Southern Pacific Railroad	1998 (W.L. Norton); 1999 (S. Hooper and S. Flint); 2002 (P. B. Murphy); 2004 (B. Larson and C. Toffelmier); 2009 (J. Freeman and R. Flores); 2009 (J. Freeman and R. Flores); 2009 (J. Freeman and R. Flores); 2010 (M. Hibma); 2013 (R. Baloian); 2015 (R. Baloian); 2015 (R. Baloian); 2016 (J. Tibbet); 2018 (A. McCausland); 2018 (J. Jones)	Recommended ineligible for listing on NRHP	Outside
P-10-004243	–	Historic-Period Building	Rainbow Ballroom	1978 (Unknown)	3: Appears eligible for NRHP	Outside
P-10-004273	–	Historic-Period Building	Fresno Memorial Auditorium/ Veterans Memorial Auditorium	1978 (W. Patnaude); 1994 (Unknown)	Listed on NRHP	Outside
P-10-004275	–	Historic-Period Building	Brix Apartments	1978 (Unknown)	4: Might become eligible for listing on the NRHP	Outside
P-10-004276	–	Historic-Period Building	Fresno City Hall	1978 (Unknown)	4: Might become eligible for listing on the NRHP	Outside
P-10-004297	–	Historic-Period Building	Ramona Apartments/ Martin Residence	Unknown	4: Might become eligible for listing on the NRHP	Outside
P-10-004928	–	Historic-Period Building	Scottish Rite Temple	1978 (Unknown)	4: Might become eligible for listing on the NRHP	Outside
P-10-004305	–	Historic-Period Building	Twin Sister/ The McVey Homes	1978 (Unknown)	3: Appears eligible for NRHP	Outside
P-10-004308	–	Historic-Period Building	St. Paul Armenian Church/ First Baptist Church	1978 (W. Patnaude)	3: Appears eligible for NRHP. Site demolished	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-004317	–	Historic-Period Building	Berkholts Residence	Unknown	3: Appears eligible for NRHP or CRHR	Outside
P-10-004323	–	Historic-Period Building	Hotel Fresno	1978 (Unknown)	Listed on NRHP	Outside
P-10-004324	–	Historic-Period Building	The Mason Building	Unknown	3: Appears eligible for NRHP	Outside
P-10-004325	–	Historic-Period Building	Guarantee Savings Building/ Mattei Building	1978 (Unknown)	3: Appears eligible for NRHP	Outside
P-10-004329	–	Historic-Period Building	Helm Building/ Griffith-McKenzie Building	Unknown	3: Appears eligible for NRHP	Outside
P-10-004333	–	Historic-Period Building	Warnor's Theater	1977 (R. M. Caglia)	3: Appears eligible for NRHP	Outside
P-10-004334	–	Historic-Period Building	P.G.&E. Building/ San Joaquin Light and Power Building	1978 (W. Patnaude); 2005 (C. Taniguchi and B. Price)	Listed on NRHP	Outside
P-10-004335	–	Historic-Period Building	Wilson Theater Building	1978 (Unknown)	4: Might become eligible for listing on the NRHP	Outside
P-10-004336	–	Historic-Period Building	Theater 3	1978 (Unknown)	4: Might become eligible for listing on the NRHP	Outside
P-10-004348	–	Historic-Period Building	Fresno Bee Building	1978 (W. Patnaude); 1982 (J. E. Powell)	Listed on NRHP and LRHR	**Within**
P-10-004357	–	Historic-Period Building	Boy Scout Headquarters/ Porteous Home	Unknown	4: Might become eligible for listing on the NRHP	Outside
P-10-004359	–	Historic-Period Building	Evinger Home	1978 (R. Kershaw and W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004360	–	Historic-Period Building	Hope Manor/ The Gundelfinger Home	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004361	–	Historic-Period Building	Temple Beth Israel	1978 (W. Patnaude);	3: Might become eligible for listing on the NRHP	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-004362	–	Historic-Period Building	The White House	1978 (I. Marcum)	4: Might become eligible for listing on the NRHP	Outside
P-10-004363	–	Historic-Period Building	Nestel Home	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004364	–	Historic-Period Building	Hoover Residence	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004365	–	Historic-Period Building	The Thomas Home	1978 (W. Patnaude)	3: Appears eligible for NRHP	Outside
P-10-004366	–	Historic-Period Building	The Swift House	1978 (W. Patnaude)	3: Appears eligible for NRHP	Outside
P-10-004367	–	Historic-Period Building	Kutner Home	1978 (W. Patnaude)	3D: Appears eligible for NRHP as a contributor to a NRHP eligible multi-component resource through survey evaluation.	Outside
P-10-004368	–	Historic-Period Building	The Bean Home	1978 (W. Patnaude)	3: Appears eligible for NRHP	Outside
P-10-004369	–	Historic-Period Building	Long Home/ Black Home	1978 (I. Marcum)	3D: Appears eligible for NRHP as a contributor to a NRHP eligible multi-component resource through survey evaluation.	Outside
P-10-004370	–	Historic-Period Building	YWCA Activity Building/ Einstein Home	1978 (V. Comegys); 1978 (I. Marcum)	Listed on NRHP	Outside
P-10-004371	–	Historic-Period Building	YWCA Residence	1978 (V. Comegys); 1978 (W. Patnaude)	Listed on NRHP	Outside
P-10-004372	–	Historic-Period Building	Schultz Residence	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004373	–	Historic-Period Building	First Church of Christ Scientist	1978 (W. Patnaude)	3: Appears eligible for NRHP	Outside
P-10-004374	–	Historic-Period Building	The Frank Romain Home	1978 (W. Patnaude); 1980 (E. Smith)	Listed on NRHP and LRHR	**Within**

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-004375	–	Historic-Period Building	King Solomon Lodge/ First Congregational Church	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004376	–	Historic-Period Building	Sadler Office Supply	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP; listed on the LRHR	**Within**
P-10-004377	–	Historic-Period Building	Colonial Funeral Home/ The Davidson Home	1978 (W. Patnaude)	3: Appears eligible for NRHP; listed on the LRHR	**Within**
P-10-004379	–	Historic-Period Building	Offices of H. Wayne Taul/ The McAlpine Home	1978 (W. Patnaude)	3D: Appears eligible for NRHP as a contributor to a NRHP eligible multi-component resource through survey evaluation.	Outside
P-10-004382	–	Historic-Period Building	Artefactor Age/ The Alexander Home	1978 (W. Patnaude)	3D: Appears eligible for NRHP as a contributor to a NRHP eligible multi-component resource through survey evaluation.	Outside
P-10-004383	–	Historic-Period Building	Garden House Tea Room/ Farr Residence	1978 (W. Patnaude)	4: Might become eligible for listing on the NRHP	Outside
P-10-004413	–	Historic-Period Building	Alamo House/ The Helm Home	1978 (I. Marcum and W. Patnaude)	3: Appears eligible for NRHP	Outside
P-10-004897	–	Historic-Period Building	J. C. Forkner Home/ John Humiston Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside
P-10-004898	–	Historic-Period Building	Jacob N. Kavoian Home/ Christian L. Samuelson Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-004899	–	Historic-Period Building	Mary and Della Strupp Home/ John B. Frinchaboy Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for NRHP and local listing	Outside
P-10-004910	–	Historic-Period Building	William H. Smith Home/ Adam Baird Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for NRHP and local listing	Outside
P-10-004911	–	Historic-Period Building	Donahoo Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for NRHP and local listing	Outside
P-10-004914	–	Historic-Period Building	Velvet Ice Cream Company	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside
P-10-004915	–	Historic-Period Building	R. B. Griffenhagen Property/ Blue Cross Veterinary Hospital	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	**Within**
P-10-004916	–	Historic-Period Building	Steven Mensel Residence/ Charles W. Lowrie Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for NRHP and local listing	Outside
P-10-004919	–	Historic-Period Building	Susan P. Furze Home/ George H. Walley Home	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside
P-10-004920	–	Historic-Period Building	Budd & Quinn Showroom	1994 (J. E. Powell and M. McGuire)	Recommended eligible for NRHP and local listing	Outside
P-10-004921	–	Historic-Period Building	Dale Bros. Coffee/ Benham Ice Cream	1994 (J. E. Powell and M. McGuire)	Recommended eligible for NRHP and local listing	Outside
P-10-004922	–	Historic-Period Building	Mayflower Apartments	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside
P-10-004923	–	Historic-Period Building	Parker Nash Building/ Herring & Kieffer	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside
P-10-004924	–	Historic-Period Building	Brix Court Apartments	1994 (J. E. Powell and M. McGuire)	Recommended eligible for local listing	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-005444	–	Historic-Period Building	Royal Court Apartments/ Block 108, Lots 7-9 of the City of Fresno	2004 (J. Brady, D. Supernowicz, and B. Supernowicz)	Recommended ineligible for NRHP or CRHR listing. Recommended eligible for local listing	Outside
P-10-005445	–	Historic-Period Building	Brix Apartment Court	2004 (J. Brady, D. Supernowicz, and B. Supernowicz)	Recommended ineligible for NRHP or CRHR listing. Recommended eligible for local listing	Outside
P-10-005451	–	Historic-Period Building	Flora Montague Bungalow Court	2004 (J. Brady, D. Supernowicz, and B. Supernowicz)	Listed on the LRHR	**Within**
P-10-006072	–	Historic-Period Building	Single Family Apartments	2004 (J. Brady)	Recommended ineligible for listing	Outside
P-10-006073	–	Historic-Period Building	Marmolejo Property	2004 (J. Brady)	6Y: Determined ineligible for NRHP by consensus through Section 106 process – Not evaluated for CRHP or local listing.	Outside
P-10-007206	–	Historic District	Town of Fresno	2019 (D. Oliver and J. Moritz); 2020 (J. Moritz, D. Oliver, and N. Lawson)	Recommended eligible for listing	**Adjacent**
P-10-007211	–	Historic-Period Isolate	Bottle Fragment	2020 (J. Moritz, and D. Oliver)	Unevaluated, isolate collected	Outside
P-10-007212	–	Historic-Period Isolate	Sun Colored Amethyst Glass	2020 (J. Moritz, and D. Oliver)	Unevaluated, isolate collected	Outside
P-10-007214	–	Historic-Period Isolate	Green Glass	2020 (J. Moritz, and D. Oliver)	Unevaluated, isolate collected	Outside
P-10-007215	–	Historic-Period Isolate	Horseshoe and Glass Fragment	2020 (J. Moritz, and D. Oliver)	Unevaluated	Outside
P-10-007216	–	Historic-Period Isolate	Plate Fragments	2020 (J. Moritz, and D. Oliver)	Unevaluated	Outside
P-10-007217	–	Historic-Period Isolate	Ceramics	2020 (J. Moritz, D. Oliver, and N. Lawson)	Unevaluated	Outside

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/ CRHR Status	Relationship to Project Site
P-10-007218	–	Historic-Period Isolate	Horseshoe and Glass Fragment	2020 (J. Moritz, and D. Oliver)	Unevaluated	Outside
P-10-007219	–	Historic-Period Isolate	Aqua Glass Fragment	2020 (J. Moritz, and D. Oliver)	Unevaluated	Outside
P-10-007220	–	Historic-Period Isolate	Brown Bottle Base Fragment	2020 (J. Moritz, and D. Oliver)	Unevaluated	Outside
P-10-007221	–	Historic-Period Isolate	Olive Green Glass Bottle Base	2020 (J. Moritz, and D. Oliver)	Unevaluated	Outside
P-10-007224	–	Historic-Period Structure	F Street Trolley Line Remains	2020 (N. Lawson, J. Moritz, D. Oliver, and T. Redinger)	Recommended eligible for listing	**Within**
P-10-007225	–	Historic-Period Structure	Steam Tunnel	2020 (N. Lawson, J. Moritz, and C. Morales)	Recommended eligible for listing	Outside

Sources: SSJVIC 2021; Historic Fresno 2021

Attachment D

Sacred Lands File Search

NATIVE AMERICAN HERITAGE COMMISSION

October 27, 2021

Courtney Montgomery
Rincon Consultants, Inc.

Via Email to: cmontgomery@rinconconsultants.com

Re: 21-11580 Van Ness Water Main Project, Fresno County

Dear Ms. Montgomery:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

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

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

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

Native American Heritage Commission
Native American Contact List
Fresno County
10/27/2021

Big Sandy Rancheria of Western Mono Indians Elizabeth Kipp, Chairperson P.O. Box 337 Auberry, CA, 93602 Phone: (559) 374 - 0066 Fax: (559) 374-0055 lkipp@bsrnation.com	Western Mono
Cold Springs Rancheria of Mono Indians Jared Aldern, P. O. Box 209 Tollhouse, CA, 93667 Phone: (559) 855 - 5043 Fax: (559) 855-4445 csrepa@netptc.net	Mono
Cold Springs Rancheria of Mono Indians Carol Bill, Chairperson P.O. Box 209 Tollhouse, CA, 93667 Phone: (559) 855 - 5043 Fax: (559) 855-4445 coldsprgstribe@netptc.net	Mono
Dumna Wo-Wah Tribal Government Robert Ledger, Chairperson 2191 West Pico Ave. Fresno, CA, 93705 Phone: (559) 540 - 6346 ledgerrobert@ymail.com	Foothill Yokut Mono
Kings River Choinumni Farm Tribe Stan Alec, 3515 East Fedora Avenue Fresno, CA, 93726 Phone: (559) 647 - 3227	Foothill Yokut
North Valley Yokuts Tribe Katherine Perez, Chairperson P.O. Box 717 Linden, CA, 95236 Phone: (209) 887 - 3415 canutes@verizon.net	Costanoan Northern Valley Yokut
North Valley Yokuts Tribe Timothy Perez, P.O. Box 717 Linden, CA, 95236 Phone: (209) 662 - 2788 huskanam@gmail.com	Costanoan Northern Valley Yokut
Picayune Rancheria of Chukchansi Indians Heather Airey, Tribal Historic Preservation Officer P.O. Box 2226 Oakhurst, CA, 93644 Phone: (559) 795 - 5986 hairey@chukchansi-nsn.gov	Foothill Yokut
Picayune Rancheria of Chukchansi Indians Claudia Gonzales, Chairwoman P.O. Box 2226 Oakhurst, CA, 93644 Phone: (599) 412 - 5590 cgonzales@chukchansitribe.net	Foothill Yokut
Table Mountain Rancheria Brenda Lavell, Chairperson P.O. Box 410 Friant, CA, 93626 Phone: (559) 822 - 2587 Fax: (559) 822-2693 rpennell@tmr.org	Yokut
Table Mountain Rancheria Bob Pennell, Cultural Resource Director P.O. Box 410 Friant, CA, 93626 Phone: (559) 325 - 0351 Fax: (559) 325-0394 rpennell@tmr.org	Yokut
Traditional Choinumni Tribe David Alvarez, Chairperson 2415 E. Houston Avenue Fresno, CA, 93720 Phone: (559) 217 - 0396 Fax: (559) 292-5057 davealvarez@sbcglobal.net	Foothill Yokut

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 21-11580 Van Ness Water Main Project, Fresno County.

Native American Heritage Commission
Native American Contact List
Fresno County
10/27/2021

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 — Yokut
Porterville, CA, 93258
Phone: (559) 781 - 4271
Fax: (559) 781-4610
neil.peyron@tulerivertribe-nsn.gov

Tule River Indian Tribe
Kerri Vera, Environmental Department
P. O. Box 589 — Yokut
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
kerri.vera@tulerivertribe-nsn.gov

Tule River Indian Tribe
Joey Garfield, Tribal Archaeologist
P. O. Box 589 — Yokut
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
joey.garfield@tulerivertribe-nsn.gov

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokut
Salinas, CA, 93906 — Mono
Phone: (831) 443 - 9702
kwood8934@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 21-11580 Van Ness Water Main Project, Fresno County.

Appendix C: Hazardous Materials Survey

Rincon Consultants, Inc.

7080 North Whitney Avenue
Suite 101
Fresno, California 93720

559 228 9925

info@rinconconsultants.com
www.rinconconsultants.com

October 29, 2021
Project No. 21-11580

Adam Holt
Blair, Church & Flynn Consulting Engineers
451 Clovis Avenue, Suite 200
Clovis, California 93612
Via email: aholt@bcf-engr.com

Subject: Hazardous Materials Survey - CEQA Question d.
Van Ness Avenue Water Transmission Grid Main 221-0232 Project
Fresno, Fresno County, California

Dear Mr. Holt:

Blair, Church & Flynn Consulting Engineers retained Rincon Consultants, Inc. (Rincon) to complete a hazardous materials survey for the Van Ness Avenue Water Transmission Grid Main 221-0232 Project (project) in the City of Fresno, Fresno County, California. This letter report documents the results of the survey, which was conducted in support of California Environmental Quality Act (CEQA) review. Our survey consisted of an online resources assessment, a historical map and city directory review, as well as a pedestrian field survey. The proposed project is subject to CEQA and local regulations and the City of Fresno (City) is the lead agency under CEQA.

Project Location

The proposed project is located along Van Ness Avenue between Divisadero Street and Merced Street in Fresno, Fresno County, California (Figure 1, Attachment A). The project site lies within Section 4 of Township 14 south, Range 20 east of the *Fresno South, California* (USGS 2021) topographic quadrangle (Figure 2, Attachment 1). The project site is bound by Divisadero Street to the north, Merced Street to the south, and commercial development to the east and west. The project environmental limits occur within the Van Ness Avenue right-of-way, as well as 0.5 mile on either side of the road between Divisadero Street and Merced Street.

Project Description

The proposed project consists of designing a Water Transmission Grid Main (TGM) in Van Ness Avenue from Divisadero Avenue to Merced Street within Downtown Fresno. Currently, there is a small water main serving the area that runs between Fulton Street and Van Ness Avenue. The City proposes to update the system by designing, constructing and installing a water transmission main within Van Ness Avenue between Divisadero Street and Merced Street.

Our survey was completed for both Phase I and II of the proposed project. It is our understanding that Phase I would include construction of the proposed TGM within Van Ness Avenue between Amador and Calaveras Streets, and within Amador Street from the alley to Van Ness Avenue. Phase I construction is anticipated to occur from May 1, 2022 to October 31, 2022. Phase II would include construction of the proposed TGM within Van Ness Avenue between Divisadero and Amador Streets, and between Calaveras and Merced Streets. Phase II construction would start October 2022 and would be completed within approximately 12 months. At this time, only construction plans for Phase I have been provided to Rincon; plans for Phase II have not yet been provided and are therefore not included on figures.

Hazardous Materials Survey – CEQA Question d

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?

Although the project (paved roads where disturbance is proposed) is not specifically listed as a Department of Toxic Substances (DTSC) Cortese hazardous material site compiled pursuant to Government Code Section 65962.5[1], there is a former gasoline station located at 1506 Van Ness Avenue which is identified as meeting the "Cortese List" requirements, as determined by the California Environmental Protection Agency (CalEPA) [2].

The following resources were also reviewed to determine if hazardous materials may be present at the project site:

United States Environmental Protection Agency (U.S. EPA)

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)/Superfund Enterprise Management System (SEMS)/Envirofacts database search (U.S. EPA 2021)

DTSC

- Online EnviroStor database for hazardous waste facilities or known contamination sites (DTSC 2021a)
- Online Cortese List of Hazardous Waste and Substances Sites (DTSC 2021b)

California State Water Resources Control Board (SWRCB)

- Online GeoTracker database search for leaking underground storage tanks (LUST) and other cleanup sites (SWRCB 2021a)
- Per- and polyfluoroalkyl substances (PFAS) Investigation online Public Map Viewer (SWRCB 2021b)
- 2019 Statewide Drinking Water System Quarterly Testing Results online Public Map Viewer/GeoTracker PFAS Map (SWRCB 2021c)

Nationwide Environmental Title Research (NETR)

- Online historical aerial photographs and topographic maps dated from 1923 through 2018 (NETR 2021)

[1] https://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST
[2] https://calepa.ca.gov/sitecleanup/corteselist/

California Department of Conservation Geologic Energy Management Division (CalGEM)

- Online Mapping System

U.S. Department of Transportation (USDOT)

- National Pipeline Mapping System (NPMS) online Public Map Viewer (USDOT 2021)

The information obtained from these resources is described below. Additionally, Rincon completed a reconnaissance of the project site on October 23, 2021. A summary of our onsite observations is included below.

Online Database Reviews

SEMS Database Review

The project site (paved roads where disturbance is proposed) and adjacent properties are not listed in the SEMS database.

DTSC EnviroStor and SWRCB GeoTracker Database Review

PROJECT SITE

A review of the SWRCB GeoTracker and DTSC EnviroStor databases indicates that the project site along Van Ness Avenue is not associated with an unauthorized release case. However, there was a historical Chevron gasoline service station formerly located at 1506 Van Ness Avenue (Figure 3). The former Chevron gasoline station is associated with a closed leaking underground storage tank (LUST) case as follows:

- **Chevron #9-0909 – 1506 Van Ness Avenue, Fresno, California.** This site is located on the northern corner of the intersection of Van Ness Avenue and East Stanislaus Street. Based on the Project Description, the property is included as part of the project site. The property is reported as a LUST site with cleanup status indicated as “Completed – Case closed as of 8/16/1992.” The contaminant of concern was reported as gasoline and the media affected was reported as soil. The County of Fresno reportedly issued a Certification of Response Action letter on August 6, 1992, which essentially granted no further action related to the LUST case. A copy of the Case Closure Summary was not available for online review.

  Based on a January 22, 1992 Site Characterization Investigation Report prepared by Chevron, subsurface investigations at the site commenced in 1990 during a tank removal/replacement event. Soil containing gasoline was detected in the tank pit as well as in the product line trench. Additional excavation was performed to remove the contaminated soil and confirmation sampling confirmed that benzene, toluene, ethylbenzene, xylenes (BTEX) and total petroleum hydrocarbons as gasoline (TPH-g) were below laboratory reporting limits (non-detect). However, the impacts in the tank pit were not defined. Therefore, Chevron advanced four soil borings to 45 feet below ground surface (bgs). Per the investigation report, “All soil samples were non-detect with one exception of B-1 at 15’ depth containing TPH-g on 15 parts per million (ppm). Groundwater is estimated at approximately 80 feet below grade. With this finding and previous sampling results, and the intent use of this site as a gas station, Chevron proposes no further action.”

Based on the results of the 1992 subsurface investigation and closed case status, it doesn't appear that contamination associated with the historical gasoline release would have impacted soil beneath parts of the project site along or fronting Van Ness Avenue. Additionally, the tanks were located on the east side of the gasoline station property, adjacent to Stanislaus Street. This property remained in use a gasoline service station through at least 2014.

NEARBY SITES

- **A Place for You Foundation – 2201 Stanislaus Street, Fresno, California.** This site is located approximately 350 feet east of the project site along the north side of Stanislaus Street. The property is reported by GeoTracker as a LUST site with cleanup status indicated as "Completed – Case closed as of 8/9/1996." The contaminant of concern was reported as "waste oil/motor/hydraulic/lubricating" and the media affected was reported as "under investigation." Case closure documentation was not available for online review. However, based on the distance from the project site, contaminants reported (heavy hydrocarbons), and closed case status, it is unlikely that impacts associated with the release are present soil beneath parts of the project site along or fronting Van Ness Avenue.
- **Fresno County Credit Union Property – 2211 Merced Street, Fresno, California.** This site is located approximately 350 feet east of the project site along the north side of Merced Street. The property is reported by GeoTracker as a LUST site with cleanup status indicated as "Completed – Case closed as of 5/28/2002." The contaminant of concern was reported as gasoline and the media affected was reported as soil. Case closure documentation was not available for online review. Although the case status is reported as closed, based on the lack of closure documentation and the contaminant reported (gasoline), is it unknown whether impacts extend westward beneath the project site.

REGIONAL GROUNDWATER IMPACTS

- **UNIVAR – 1152 G Street, Fresno, California.** This site is located approximately 1,800 feet west-southwest of the southeastern extent of the project site (intersection of Van Ness Avenue and Merced Street). The property is reported by GeoTracker as a Cleanup Program Site (CPS) with cleanup status indicated as "Open – Remediation as of 5/16/2019." The contaminant of concern is reported as tetrachloroethylene (PCE) and the media affected is reported as "aquifer used for drinking water supply." There are a significant number of offsite groundwater monitoring wells associated with the UNIVAR property and the closest groundwater well (T2-3) is located approximately 185 feet southwest of the project site, as measured from the intersection of Van Ness Avenue and Tuolumne Street. Historical groundwater sampling data for the well indicate that PCE was detected in groundwater at a concentration of 0.95 micrograms per liter (µg/L) on 11/11/2014 and at a concentration of 0.55 µg/L on 5/23/2017.

  According to the First Half 2021 Semiannual Groundwater Monitoring Report prepared by ERM-West, Inc. and dated July 15, 2021, the site is approximately 1.25 acres in in size and formerly housed a brick warehouse with loading docks and associated parking which were demolished in 2016. From approximately 1965 to 1986, Van Waters & Rodger (VW&R) leased the site and used the northeastern corner to store PCE in an aboveground storage tank (AST), which has since been removed. The site is currently vacant and falls within the footprint of the proposed California High Speed Rail Authority (HSRA) development. HSRA took possession of the site through eminent domain in September 2015 and site facilities were demolished in 2016. HSRA continues acquiring and demolishing properties along G Street, including the former Lamoure's Cleaners (dry-cleaning) site. The July 2021 groundwater monitoring report includes a summary of the investigation and remediation history. In brief, PCE was initially reported in soil samples collected from soil borings near the former AST in 1994 as part of a Phase I Environmental Site Assessment and soil investigation. Soil, groundwater, and soil vapor investigations and remediation followed. A soil vapor extraction (SVE) system ran continuously from 2008 through January 2020, then was powered down due to malfunctions. Between late January and March 2020, the SVE system operated intermittently. The SVE system was restarted in March 2021.

In 2015, an in-situ chemical oxidation (ISCO) pilot test was conducted. In December 2015, the Central Valley Regional Water Quality Control Board (CV RWQCB) issued an order for the full-scale implementation of the ISCO remedy. PCE concentrations have significantly decreased to low (i.e., less than 100 µg/L) to non-detect concentrations in shallow groundwater as a result of ISCO activities. The highest remaining PCE concentrations are located north to northwest of the release site and downgradient of Lamoure's Dry Cleaners (e.g., well MW15S [84.7 µg/L]). Based on the success of the injections conducted to date, no additional injection activities are planned.

Based on the July 2021 groundwater report, depth to groundwater ranged from approximately 94 to 97 feet bgs. ERM-West, Inc. reported that groundwater flow was generally to the southwest (away from the project site).

Based on the PCE concentrations detected in well T2-3, depth to groundwater (over 90 feet bgs), and downgradient location of the plume with respect to the project site, groundwater impacts associated with the UNIVAR plume are not expected to impact the project site.

- **Former Lamoure's Cleaners – 1304 G Street, Fresno, California.** This site is located approximately 1,700 feet southwest of the southeastern extent of the project site (intersection of Van Ness Avenue and Merced Street). The property is reported by GeoTracker as a Cleanup Programs Site (CPS) with cleanup status indicated as "Open – Site assessment as of 3/3/2010." The contaminant of concern is reported as PCE and the media affected is reported as "aquifer used for drinking water supply," soil, soil vapor, indoor air.

  According to the Supplemental Remedial Investigation (Quarterly Monitoring Report [QMR]) for the California High Speed Train locations FB-10-0121-1 and FB-10-0121-01, Lamoure's Cleaners, 1304 G Street, Fresno, prepared by Blackburn Consulting (Blackburn) dated March 9, 2020, Blackburn reported that PCE, chloroform, trichloroethylene (TCE), and cis-dichloroethene (cis-DCE) are present at elevated concentrations in soil gas. According to the QMR,

  "PCE concentrations at the Lamoure's Cleaners site are elevated at the former dry-cleaning facility from near surface to approximately 90 ft bgs. It was reported that the PCE concentrations detected exceed the DTSC commercial/industrial SL and the RWQCB commercial/industrial ESL by four to five orders of magnitude. Further analysis would be necessary to establish the level of risk that PCE concentrations, particularly in near-surface soil, may represent to site workers and the public. The deepest PCE vapor concentrations appear to exist in equilibrium with nearby groundwater impacts at approximately 100 feet bgs, with the highest PCE concentrations appearing between 30 and 70 feet bgs. In addition to a PCE release from dry cleaning operations, groundwater appears to have transported PCE and other VOCs from the Univar site to FB-10-0121. PCE vapor concentrations at off-site locations to the northwest and southeast (SV-10 and SV-11) are significantly lower than concentrations located on FB-10-0121. This indicates the source of PCE in the upper half of the vadose zone is from the former dry-cleaning operations at FB-10-0121."

Regarding groundwater, the QMR reported, "…maps indicate that groundwater in the site vicinity is approximately 100 feet below ground surface. Groundwater flows regionally to the southwest, but water supply wells may influence local flow directions."

Based on the downgradient location of the plume with respect to the project site, groundwater impacts associated with the Former Lamoure's Cleaners are not expected to impact the project site.

PFAS Database Review

Beginning in 2019, the California SWRCB sent assessment requirements 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 (DoD) sites, and bulk fuel storage terminals and refineries. 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 2021).

Based on our September 22, 2021 review of the California Statewide PFAS Investigation online Public Map Viewer, there are no current chrome plating, airport, landfill, publicly owned treatment works, bulk fuel storage terminals and refineries, or DoD orders at any facilities listed as located within one-half mile of the project site.

Based on our September 23, 2021 review of the California 2019 Statewide Drinking Water System Quarterly Testing Results online Public Map Viewer, the closest City of Fresno drinking water well (Well 015B – RAW) is located at 2326 Fresno Street. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were not detected in the most recent water sample collected from the well (sampled on 4/30/21). This well is located approximately 1.9 miles to the northeast of the project site.

Historical Document Review

According to historical (1938) Thomas Bros. map of Fresno, California, an electric railroad was present along Stanislaus Street, including through the intersection of Van Ness Avenue.

TOPOGRAPHIC MAP REVIEW

Topographic Maps were available through NETR for the following years: 1923, 1942, 1947, 1964, 1966, 1974, 1982, 2012, 2015, and 2018. Based on our review of these maps, it appears that Van Ness Avenue and cross streets had been constructed as early as 1923. Many structures are depicted fronting Van Ness on the 1923 and 1942 topographic maps. The 1947 map depicts a church structure north of the intersection of Calaveras Street and Van Ness Avenue. The remaining topographic maps (from 1964 through 2018), depict the project site as 'shaded' which indicates development.

HISTORICAL FIRE INSURANCE (SANBORN) MAPS REVIEW

Sanborn Maps were available through Environmental Data Resources (EDR) for the following years: 1885, 1888, 1898, 1906, 1918, 1919, 1948, 1950, and 1970. The maps were reviewed to evaluate historical uses of properties along Van Ness Avenue and cross streets. Sanborn Map coverage was not available for the central portion of the project site. Historical land uses that could potentially impact the subject property include agricultural land use, industrial land use, and commercial land use (i.e., gasoline service stations and historical cleaners).

It should be noted that Van Ness Avenue was formerly known as K Street in at least 1898 and 1906. The following historical property uses have the potential to have impacted the project site (Figure 3):

1906

- Kohlers Steam Laundry – 1322 K St., north of the intersection of K St. and Merced Street
- Auto facility – 1314 K St., west side of the intersection of K St. and Merced Street

1918

- Western Auto Electric Co. (auto repairing and battery recharging) – 1444 Van Ness Avenue
- Undertaker – 1459 Van Ness Avenue
- Superior Motor Co. (Garage) – 1427 Van Ness Avenue
- Gas & Oils, Tire Store, Tire Service – 1401-1413 Van Ness Avenue, west side of intersection of Van Ness and Tuolumne Street
- Auto Repair – 1347 Van Ness Avenue
- Auto Service – 1330 Van Ness Avenue
- Battery Service – 1416-1418 Van Ness Avenue
- Willy's Overland Pacific Co. Auto Sales & Service – 1400-1406 Van Ness Avenue, northern corner of Van Ness and Tuolumne Street
- Vulcanizing & Auto Repairing – 1311 Van Ness Avenue
- Undertaker with leaded glass and glazing – 1360 Van Ness, eastern corner of Van Ness and Tuolumne
- Auto Repairing – Entire west side of intersection of Merced Street and Van Ness, 2027-2057 Merced Street

1948

- Gas & Oil station with greasing and auto washing – 1805 Van Ness Avenue, west side of the intersection of Amador Street and Van Ness Avenue
- Undertaker – 1762 Van Ness Avenue
- Used Auto Sales and auto service – 2015-2031 Stanislaus Street
- Tire Service businesses – 1413 and 1439 Van Ness Avenue
- Battery Service – 1444 Van Ness Avenue
- Battery Service – 1416-1418 Van Ness Avenue
- Gas & Oils, Tire Store, Tire Service – 1401-1413 Van Ness Avenue, west side of intersection of Van Ness and Tuolumne Street
- Auto Sales & Service – 1400-1406 Van Ness Avenue, north of the intersection of Van Ness Avenue and Tuolumne Street
- Auto Repair – 1347 Van Ness Avenue
- Auto Service – 1330 Van Ness Avenue
- Western Auto Supply Co. – 2030-2048 Merced Street

1950

- Gas & Oil station with greasing and auto washing – 1800-1810 Van Ness Avenue, west side of the intersection of Amador Street and Van Ness Avenue [gone by 1970]
- Gas & Oil station with greasing building – 1810 Van Ness Avenue, north side of the intersection of Amador Street and Van Ness Avenue [gone by 1970]
- Undertaker – 1762 Van Ness Avenue
- Battery Service Station – 1444 Van Ness Avenue
- Battery Service Station – 1416-1418 Van Ness Avenue
- Used Auto Sales and auto service – 2015-2031 Stanislaus Street
- Tire Service centers – 1413 and 1439 Van Ness Avenue
- Tire Service Center with "Gas & Oils in Yard" – 1401-1413 Van Ness Avenue, west side of intersection of Van Ness and Tuolumne Street
- Auto Sales & Service – 1400-1406 Van Ness Avenue, north of the intersection of Van Ness Avenue and Tuolumne Street

1970

- Undertaker – 1762 Van Ness Avenue
- Auto Electric Service store – 1740 Van Ness Avenue

AERIAL PHOTOGRAPH REVIEW

Aerial photographs were available through NETR for the following years: 1962, 1972, 1998, 2002, 2005, 2009, 2010, 2012, 2014, 2016, and 2018. Based on our review of these images, it appears that project site has been densely developed as early as 1962. Based on the review of the 1962 and 1972 aerial photographs, several structures of varying sizes, vacant lots, and parking lots are depicted along the project site although individual uses of the structures cannot be determined. There was a gasoline station (former Chevron, discussed above) located on the northern corner of the intersection of Van Ness Avenue and East Stanislaus Street which is depicted on the historical aerial photographs through 2014. There appears to be increased commercial development through 1998. There is little variation observed on the aerial photographs from 2002 through 2014. There appears to be a park on the east side of the intersection of Van Ness Avenue and East Stanislaus Street through 2014. However, by 2016 the park appears to have been redeveloped as an apartment complex. There also appears to be some redevelopment occurring on the west side of the intersection in 2016 (former Chevron gasoline station). Google Earth imagery of the project site in 2021 generally resembles that of 2016.

CITY DIRECTORY REVIEW

City directory listings for the retail/commercial properties fronting Van Ness Avenue were available for review from 1922 through 2017 (in approximately 3 to 5-year intervals). Based on our review, it appears that historically, there was a significant number of notable industrial and auto-related occupants along the project site (Figure 4). Such facilities included, but are not limited to gasoline stations, auto repair facilities, battery facilities, clothes cleaners, and tire retailers as shown in Table 1.

Table 1 City Directory Industrial and Commercial Listings

Figure 4 ID No.	Address	Use	Year
1	1003 Divisadero Street	Gas station	1932, 1937, 1942
2	2123 East Amador Street	Central Color Graphics printers	1975
		Lampson & Sullivan Typography	1970
3	2133 East Amador Street	Unique Printing	1980, 1986, 1990
4	1346 Fulton Street	King Motor Sales Co. used cars	1927, 1932
5	1440 Fulton Street	Lechlider M L used autos	1927
		Stephenson W E auto	1932
		Snow Mancil & Scott auto repairs	1937
		Silva & Noel Garage	1942, 1947
6	1448 Fulton Street	Lechlider M L used cars	1932, 1937
7	1502 Fulton Street	Firestone Stores Tires/Retread Shop	1965, 1970
		Ace Service Inc. Store No. 2 tires	1975, 1980
8	1526 Fulton Street	Auto repair, auto electrician	1927
		Auto repair, used cars	1932
		Auto laundry, auto repair, auto body	1937
		Auto laundry, auto repair	1942
		Auto laundry, used cars, auto repairs	1947
		Auto repair, used cars	1952
9	1533 Fulton Street	Shehrian Karl clothes cleaner	1932
10	1560 Fulton Street	Shell Oil Co. gas station	1927, 1932
11	1616 Fulton Street	Walkup M C auto	1927
		McClellan & Green auto repairs	1932
		Erickson H A auto repair	1937
12	1760 Fulton Street	Printer	1942, 1947
13	1331 L Street	Waterman Bros Co. autos	1927
		Autos	1932
14	1333 L Street	Montgomery Ward & Co. Tire Depot	1970
15	1347 L Street	Fink C L used cars/auto dealer	1942, 1947
		Poff Buick Inc.	1952
16	1435 L Street	La Con Distributing Co autos “trmrs”	1952, 1958
		Pop’s Foreign Engine Distributing auto repair	1986
		Preferred Auto Detail & Hand Car Wash	1990
17	1605 L Street	Funeral home and chapel	1932-2017

Figure 4 ID No.	Address	Use	Year
18	2027 Merced Street	Thomas Karl garage	1927
		Milton H E auto repair	1932
		Dilman & Sharp auto repairs	1942, 1947, 1952, 1958
19	2115 Merced Street	Greco H J printer	1942
20	2121 Merced Street	Howard Bros welders, Fresno Automatic Wheel Alignment	1927
		Chittum & Feuerstein auto repairs	1932
21	2124 Merced Street	Marty G W auto repair	1927, 1932
22	2125 Merced Street	Dorris Service Station auto repair	1927
		Montgomery Ward & Co. tire depot	1952, 1958
23	2126 Merced Street	Hume Printing & Lithograph Co.	1927, 1932, 1942, 1947, 1952, 1958, 1965, 1970, 1975
24	2138 Merced Street	Pacific Rubber Stamp Co. typesetting	1970
25	2025 Stanislaus Street	Dupuy & Steitz used cars	1947
26	2031 Stanislaus Street	Bell Cleaners & Tailors	1947
		Bell Cleaners	1952
27	2200 Stanislaus Street	Leach Motors Used Car Lot	1965
		Sierra Chrysler Plymouth used cars	1970
28	2021 Tuolumne Street	Gagosian S A clothes cleaner	1932
29	2130 Tuolumne Street	Moreland Motor Truck Co.	1937
30	1260 Van Ness Avenue	Coast Tire Co.	1927, 1932
		Lindley & Harrison auto	1937
31	1302 Van Ness Avenue	James Wesley Wood Used Cars	2004
32	1330 Van Ness Avenue	Meacham J L autos, Phelps O L auto repair, Franzke Auto Co.	1927
		Wheel Service & Supply Co.	1932
		Cowan's Brake & Wheel Service	1937, 1942, 1947, 1952, 1958
33	1333 Van Ness Avenue	Weber G J autos	1927
		Thomas Gerald autos	1932
		Fresno Motor Sales, Cadillac Motor Cars	1937
34	1340 Van Ness Avenue	Pope G W H tires	1927
		Boyer C F & Co. tires	1932
		Ertwell W A storage batteries	1937
		National Lead Co.	1942, 1947, 1952
35	1344 Van Ness Avenue	Wheel Service Supply Co.	1927
		Ward R E garage	1932
		Lauritzen Machinery Co.	1937

Figure 4 ID No.	Address	Use	Year
36	1347 Van Ness Avenue	Evin's Auto Supply	1927
		Pope G W H tires	1932, 1937
		Schwarz H B auto repair, Pheley T W radios, Joy W J w hol auto access, Vaccaro Jos speedometer repr	1947
37	1356 Van Ness Avenue	Greco H J printer	1932
38	1357 Van Ness Avenue	Childers Nash Motor	1927
		King Motor Sales Co. autos	1932
39	1360 Van Ness Avenue	Morton Stores tires	1927
40	1400 Van Ness Avenue	Stom J P Co. autos	1927
		Rodman Chevrolet Co.	1932, 1937, 1942, 1947, 1952, 1958
41	1422 Van Ness Avenue	Electric Laboratories auto electricians, etc.	1927
		Electric Laboratories auto electricians	1932, 1937
		Electric Laboratories batteries	1942, 1947, 1952
42	1429 Van Ness Avenue	Rueckert L H w hol bear	1937, 1942
		Bearings Supply Co.	1947, 1952
		Pacific Telephone & Telegraph repair/equipment department	1958, 1962, 1965, 1970
		Pacific Telephone & Telegraph Plant	1975, 1980
		Rodman Chevrolet Co. used	1937
		Iverson & Carlton auto tires	1927, 1932, 1942, 1947, 1952
43	1430 Van Ness Avenue	San Joaquin Tire Co. Inc.	1958, 1962
44	1433 Van Ness Avenue	Iverson & Carlton tires	1937
		Ridge L motor repair	1937
45	1435 Van Ness Avenue	Ridge Motor Shop	1942, 1947, 1952
46	1440 Van Ness Avenue	Bosch Robt Magnetos, Willard Storage Battery Service Station, etc.	1927
		Toomey Batter & Elec	1932
47	1444 Van Ness Avenue	Electric Co. Inc., San Joaquin Battery	1937
		Stallard H J batteries	1942
		San Joaquin Battery & Electric Co.	1947
		Thorp A F auto repair, Bonnett T A batteries	1952
		Phillips Donald G auto repair	1958
		Thorp Fred A speedometers, Joe's Auto Electric repairs, Ed's Automotive Repair	1962
		Thorp Fred Speedometer Service Repair, Joe's Auto Electric, Van Ness Transmission Service Auto	1965
		Reeder Motor Co., Lish A P auto repair	1927
		Pacific Telephone & Telegraph Co. traffic equipment	1965, 1970

Figure 4 ID No.	Address	Use	Year
48	1445 Van Ness Avenue	Western Electric Co. Plant	1975, 1980
		Pacific Bell	1986
		Harris Bros auto painters	1927
		Routh C A clothes cleaner	1927
49	1465 Van Ness Avenue	McKay H C California service station	1927
50	1477 Van Ness Avenue	Miller Tire Co.	1927
51	1495 Van Ness Avenue	Lehnberg Waterman Inc. service station	1932
52	1500 Van Ness Avenue	Richfield Snappy Service	1937
		Kenney A W auto laundry	1942
		Thompson & Ducey gas	1932
		Gerard R H gas station	1937
53	1501 Van Ness Avenue	Gas station	1942, 1947, 1952
		Gas station	1947, 1952, 1958, 1962, 1965, 1980, 1986, 1990, 1994, 1996, 1999, 2002, 2004, 2009
54	1503 Van Ness Avenue	Thompson & Ducey tires	1932
55	1506 Van Ness Avenue	Federal Tire Co.	1927
56	1509 Van Ness Avenue	Talbott & Le Moss tires	1932
57	1514 Van Ness Avenue	Kurz Fred Motors storage	1952
		Hughes Manley Garage auto repair	1958, 1962
		Crane L clothes cleaner	1937, 1942
		King Cole Motor Co. used cars	1947
58	1515 Van Ness Avenue	Bradley EE used cars	1942
59	1526, 1527, 1528, 1529, 1530, 1531 Van Ness Avenue	McAlisters Service Stores tires, King Cole Motor Co. used cars	1947
60	1532 Van Ness Avenue	Chittums Brake & Wheel Service	1958
		Goodyear Service Inc. Goodyear Tire & Rubber tires	1932, 1937, 1942
61	1540 Van Ness Avenue	Fresno Bee Engraving Plant	1942, 1947, 1952, 1958, 1962, 1965, 1970, 1975
62	1550 Van Ness Avenue	Fresno Bee Engraving Plant	1937, 1958, 1962, 1965, 1970
63	1555 Van Ness Avenue	Shell Oil Co. gas station	1932
64	1559 Van Ness Avenue	Gas station	1937, 1942, 1947
65	1659 Van Ness Avenue	Lee Tire & Rubber	1927
66	1662 Van Ness Avenue	Lish A P auto repair, Willy's Motor Co.	1932
67	1717 Van Ness Avenue	Hamlin Neon Sign Co. Inc.	1937, 1942, 1947, 1952
68	1720 Van Ness Avenue	Leach Economy Motors	1958

Figure 4 ID No.	Address	Use	Year
69	1721 Van Ness Avenue	Sierra Printing & Lithograph Co.	1962, 1965, 1970, 1975
		Don Lee Inc. autos	1927
		Priest & Harm autos	1932
70	1740 Van Ness Avenue	Electric Laboratories Inc. auto repair	1965, 1970, 1975, 1980, 1986, 1990
		Shehrian Karl clothes cleaner	1942, 1947
		Sadler's Print Center printers	1996, 2002, 2004
71	1743, 1745 Van Ness Avenue	Funeral home/chapel	1937, 1942, 1947, 1952, 1958, 1962, 1965, 1970, 1975, 1980, 1986, 1990
72	1752 Van Ness Avenue	Associated Oil Co. service station	1927
73	1762 Van Ness Avenue	Undertaker	1927
74	1802 Van Ness Avenue	Gas station	1937, 1942, 1947, 1952, 1958
75	1805 Van Ness Avenue	Gas station	1952, 1958, 1962, 1965
		Johnnie's Speedometer Service	1958
76	1810 Van Ness Avenue	Silk screen printing	1962, 1965, 1970, 1975, 1980, 1986, 1990
77	1811 Van Ness Avenue	Rodriguez Service & Repair	1990
78	1837 Van Ness Avenue	Shekoyan Abet clothes cleaner	1932, 1937, 1942, 1947, 1952
79	1841 Van Ness Avenue	Spic N Span Cleaners	1958
80	1863 Van Ness Avenue	La B Cleaners	1962, 1965, 1970
		Gas station	1932, 1937, 1947, 1952
81	11 North Van Ness Avenue		

Well Finder Database Review

A review of the CalGEM Online Mapping System indicates that no oil wells are located on the project site, adjacent properties, or within 0.25 mile of the project site.

Pipeline Database Review

The NPMS online Public Map Viewer indicates that there are no hazardous liquid or natural gas transmission pipelines located on or adjacent to project site. The nearest underground hazardous material pipeline is an active Kinder Morgan hazardous liquid pipeline carrying non-highly volatile liquid (HVL). The pipeline runs parallel to the railroad corridor which is located approximately 0.25 mile west of the project site.

Site Reconnaissance

Rincon completed a reconnaissance of the project limits along Van Ness Avenue from Divisadero Street (north) to Merced Street (south) on October 23, 2021. The project site is located in a mixed-use corridor generally consisting of apartments, restaurants, and commercial/retail structures and offices. The project site is currently developed as Van Ness Avenue with cross streets and alley ways located to the east and west of Van Ness Avenue. The alley ways consisted of dumpsters with trash staining, utility manholes, and one homeless encampment. Stains on pavement/concrete were observed in alley ways near dumpsters, likely do to overflow or leak from the dumpsters. Some oil staining was observed in parking areas throughout the corridor. Other than surface staining and evidence of fill dirt being present within the project site, other significant environmental issues that could be reported from observations made from walking the project site were not reported. Select photographs of the project site along Van Ness Avenue are included in the cultural resources assessment letter.

Summary

The project site and adjacent properties are not listed as a Cortese hazardous material site, nor is the project site listed on the SEMS or DTSC EnviroStor databases. However, there was a Chevron gasoline service station located at 1506 Van Ness Avenue which is identified as meeting the “Cortese List” requirements, as determined by CalEPA. Historical aerial photographs indicate that the gasoline station was present from at least 1962 through 2014 (Sanborn Maps did not provide coverage of this area). Based on the results of the 1992 subsurface investigation and closed case status, it doesn’t appear that impacts associated with the historical gasoline release would have impacted soil beneath parts of the project site along or fronting Van Ness Avenue. There is a second closed LUST case located at 2211 Merced Street which is approximately 350 feet east of the project site. Although the case status is reported as closed, based on the lack of closure documentation and the contaminant reported (gasoline), is it unknown whether impacts extend westward beneath the project site. Although there are regional groundwater plumes southwest of the project site, based on the reported groundwater flow direction in the vicinity of the project site (to the west-southwest), the contaminated groundwater associated with these plumes are not expected to impact the project site.

Review of Sanborn Maps and city directory listings indicates that there are many historical properties (including auto repair, tire service stores, cleaners, and gasoline stations) formerly located along Van Ness Avenue within the limits of the project site. Although these properties were not reported on release databases, there are the potential for unreported, releases to have occurred at the properties formerly fronting Van Ness Avenue. The adjacent historical uses may have impacted soil and/or groundwater beneath the project site; however, groundwater is not expected to be encountered during construction. Additionally, according to a historical (1938) Thomas Bros. map of Fresno, California, an electric railroad was present along Stanislaus Street at the intersection of Van Ness Avenue. Residual impacts associated with the former electric railroad could include metals and hydrocarbon contamination.

It is our understanding that the proposed Van Ness Avenue Water TGM construction project will include construction of approximately 0.55 miles of replacement water distribution mains within Van Ness Avenue between Divisadero Street and Merced Avenue in Downtown Fresno, California. The project would also relocate all services to existing buildings that front Van Ness Avenue that are currently served by water mains in the alleys between Van Ness and Fulton Street and between Van Ness and L

Street. Since soil and soil vapor may be impacted with, but not limited to, TPH, VOCs, and heavy metals, project construction and operation could potentially create a significant hazard to the public, construction workers, future project site residents, or the environment. Therefore, prior to project construction, subsurface investigations and remediation efforts (if warranted) should be completed.

IMPACT HAZ-1 Based on historical industrial land use and the onsite release site, soil and soil vapor beneath the construction area may be potentially impacted with, but not limited to, TPH, VOCs, and heavy metals. Therefore, potentially significant impacts to human health may exist during construction.

Mitigation Measures

MM HAZ-1 Pre-construction Soil Sampling

The soil sampling shall be completed prior to construction and in accordance with City of Fresno standard operating procedures for soil sampling. The project applicant shall retain a qualified environmental consultant, California Professional Geologist (PG) or California Professional Engineer (PE), to prepare a pre-construction soil sampling scope for the project that will be developed to determine whether soil and/or soil vapor has been impacted at concentrations exceeding San Francisco Regional Water Quality Control Board environmental screening levels (ESLs) for construction worker health risks and commercial/industrial land uses.

As part of the pre-construction soil sampling, the qualified environmental consultant shall screen the analytical results against the ESLs. ESLs are risk-based screening levels for direct exposure of a construction worker under various depth and land use scenarios. The City of Fresno (lead agency) shall review and approve the results of the soil sampling prior to construction.

If results of the soil sampling indicate that contaminants are detected in the subsurface at the project site, the project applicant shall take the following steps to protect site workers and the public. This shall include the preparation of a Soil Management Plan for Impacted Soils (see Mitigation Measure HAZ-2) prior to project construction. The lead agency shall review and approve the results of the soil sampling prior to construction.

If results of the soil sampling indicate that contaminants are present at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (California Code of Regulations [CCR] Title 22, Section 66261.24 Characteristics of Toxicity), the project applicant shall complete a remediation plan (see Mitigation Measure HAZ-3) that shall list the required steps to protect site workers and the public. This remediation plan and implementation shall be conducted at the proposed project prior to or during onsite construction.

MM HAZ-2 Soil Management Plan for Impacted Soil

If impacted soil or other impacted waste are present at the project site, the project applicant shall retain a qualified environmental consultant (PG or PE), to prepare a Soil Management Plan (SMP) prior to construction. The SMP, or equivalent document, shall be prepared to address onsite handling and management of impacted soil or other impacted waste, and reduce hazards to construction workers and offsite receptors during construction. The plan must establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the off-site migration of contaminants from the site. These measures and practices shall include, but are not limited to:

- Stockpile management including stormwater pollution prevention and the installation of Best Management Practices (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 City of Fresno (lead agency) shall review and approve the Development Site Soil Management Plan for Impacted Soil prior to demolition and grading (construction).

MM HAZ-3 Remediation

If soil present within the construction envelope at the development site contains chemicals at concentrations exceeding hazardous waste screening thresholds for contaminants in soil (CCR Title 22, Section 66261.24), the project applicant shall retain a qualified environmental consultant (PG or PE), to conduct additional analytical testing and recommend soil disposal recommendations, or consider other remedial engineering controls, as necessary.

The qualified environmental consultant shall utilize the development site analytical results for waste characterization purposes prior to requiring specific offsite transportation and/or disposal requirements of identified impacted soils or other impacted wastes. The qualified environmental consultant shall provide disposal requirements and arrange for proper disposal of the waste soils or other impacted wastes (as necessary), and/or provide requirements for remedial engineering controls, if appropriate.

The project applicant shall review and approve the disposal requirements prior to transportation of waste soils offsite, and review and approve remedial engineering controls, prior to construction.

Additional analytical testing per landfill or recycling facility requirements; soil excavation; and offsite disposal or recycling shall be conducted if the remediation of impacted soil and/or implementation of remedial engineering controls, requires additional delineation of impacts.

The City of Fresno (lead agency) shall review and approve the development site disposal recommendations prior to transportation of waste soils offsite and review and approve remedial engineering controls, prior to construction.

As long as potentially impacted soil is handled and managed appropriately (disposed offsite and not reused) and remediation is completed (if warranted), impacts related to the exposure to chemicals remaining in soil and soil vapor beneath the project site would be considered *Less than Significant with Mitigation Incorporated*.

With implementation of Mitigation Measures HAZ-1 through HAZ-3, hazardous material impacts to human health during construction will be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Please do not hesitate to contact Rincon with any questions regarding this survey.

Sincerely,
Rincon Consultants, Inc.

Meghan Hearne-Williams
Sr. Environmental Scientist

Ryan Thacher, PhD, PE
Director

Julie Lynne (Marshall) Welch
Director of Due Diligence

Attachments

Attachment 1 Figures

Attachment 2 Regulatory Documentation

References

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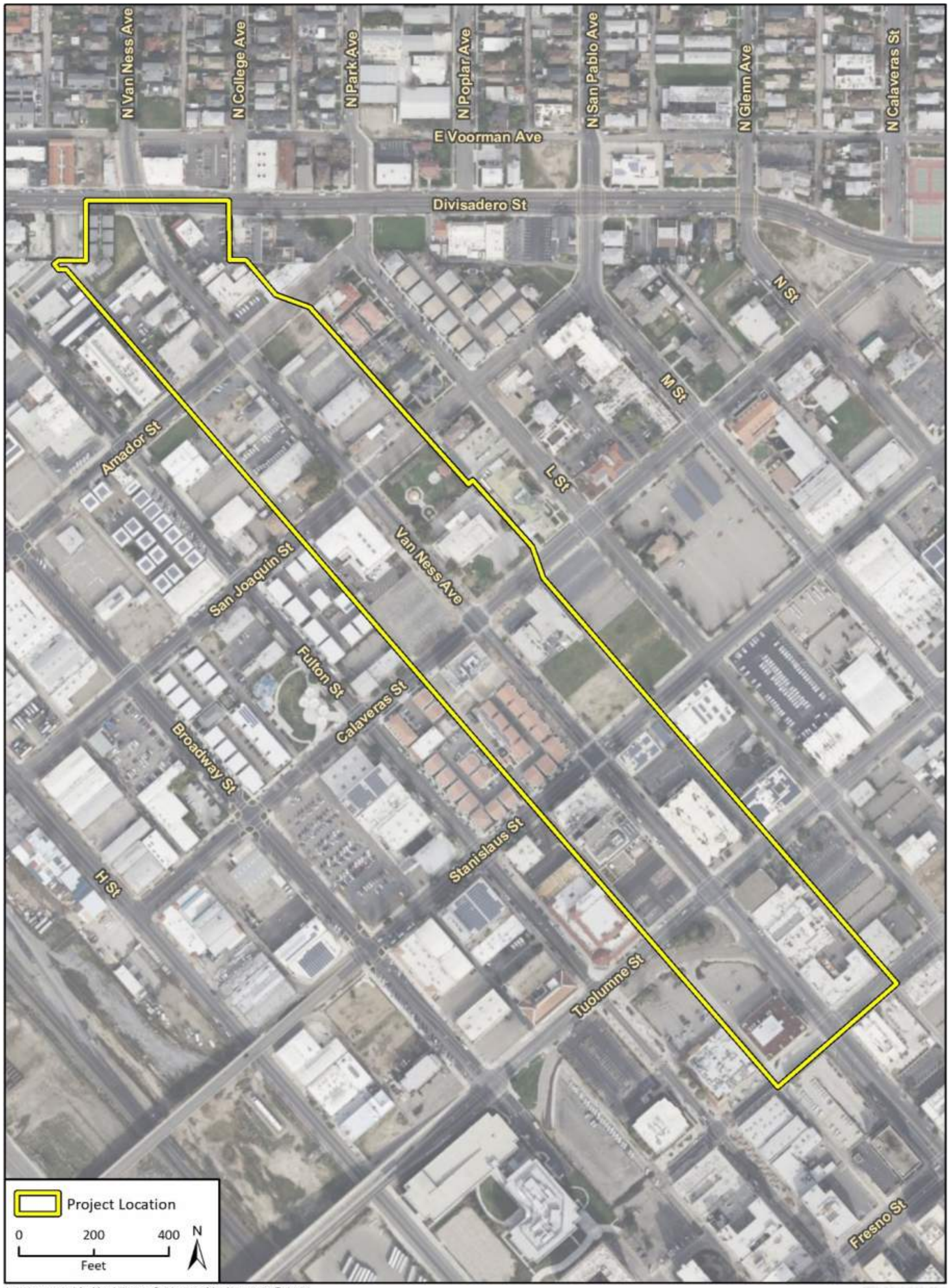
Attachment 1

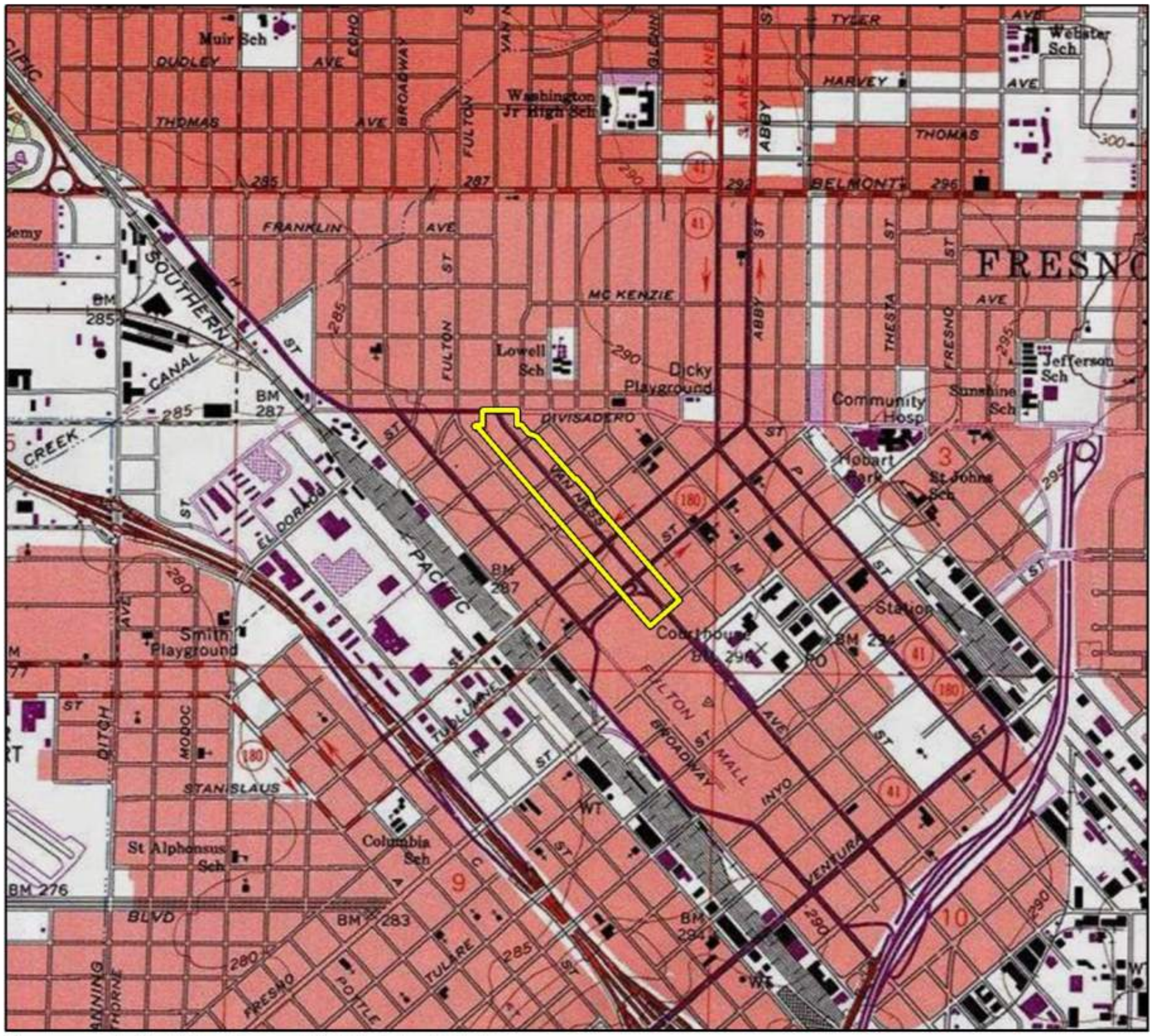
Figures

Figure 1 Project Boundary Map



Imagery provided by Microsoft Bing and its licensors © 2021.

Figure 2 Project Location Map



Basemap provided by National Geographic Society, Esri and their licensors © 2021. Fresno South Quadrangle. T14S R20E S04. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may havechanged since the original topographic map was assembled.

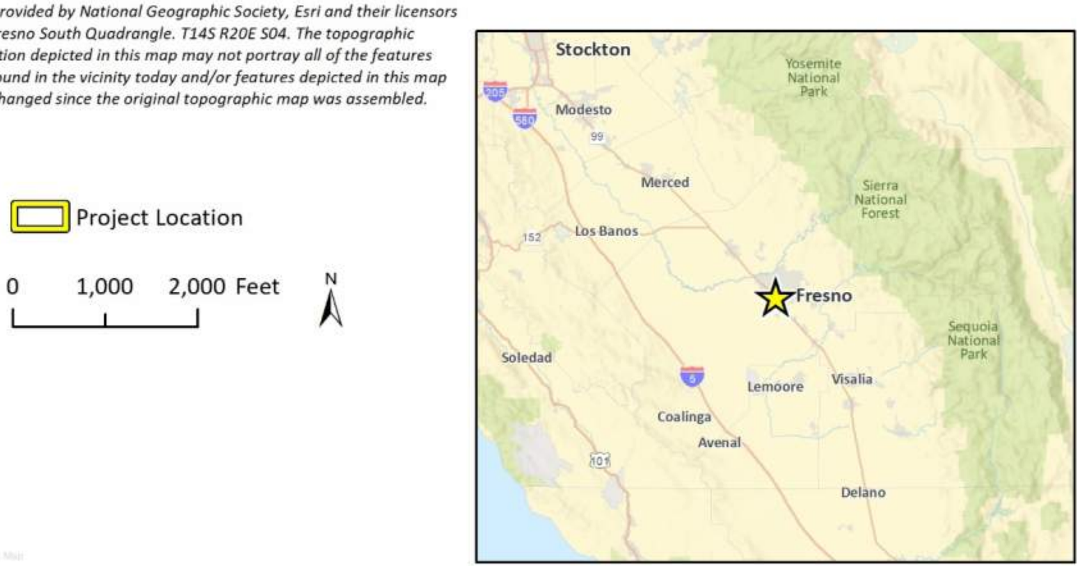


Figure 3 Historical Site Map

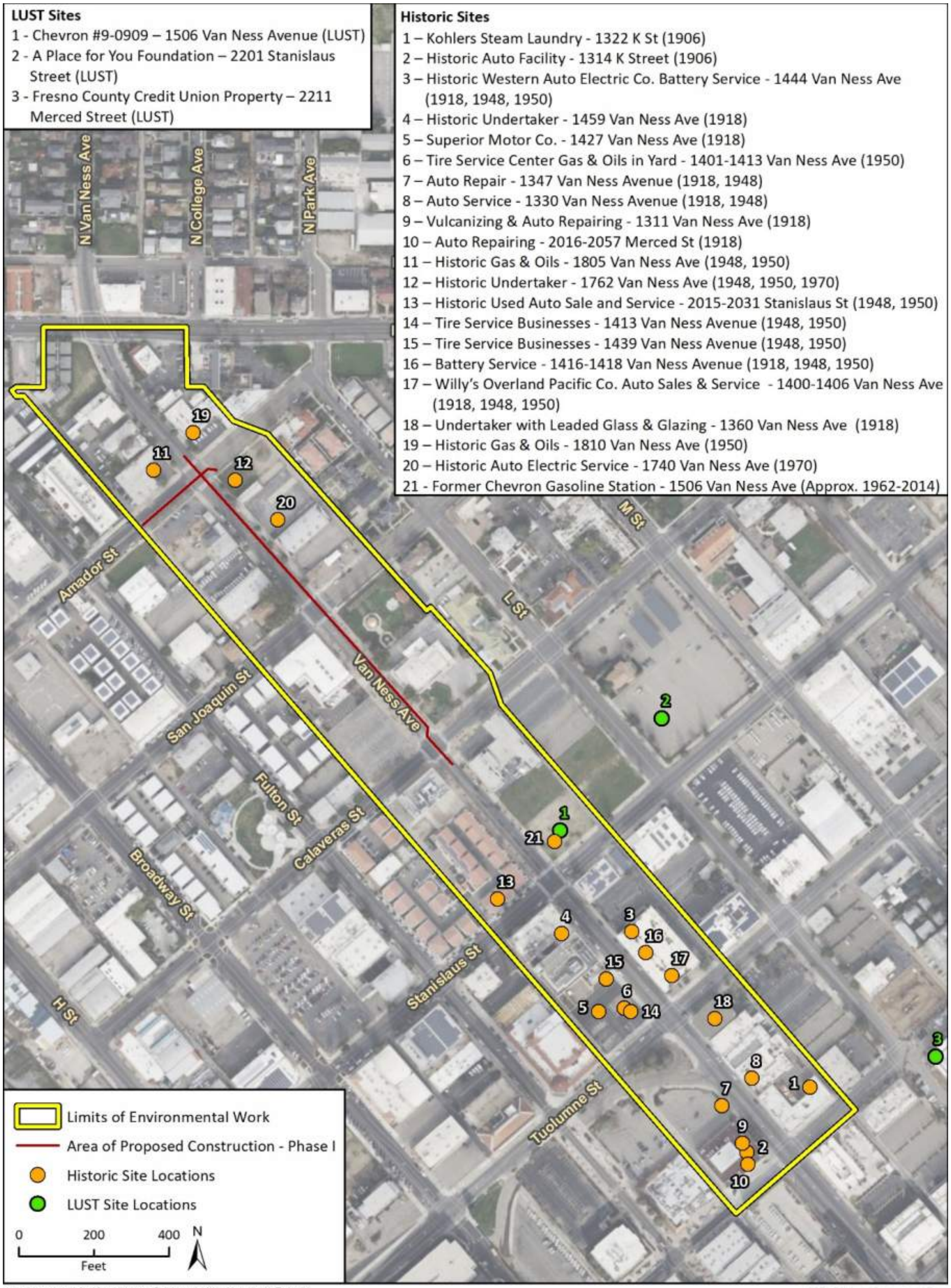


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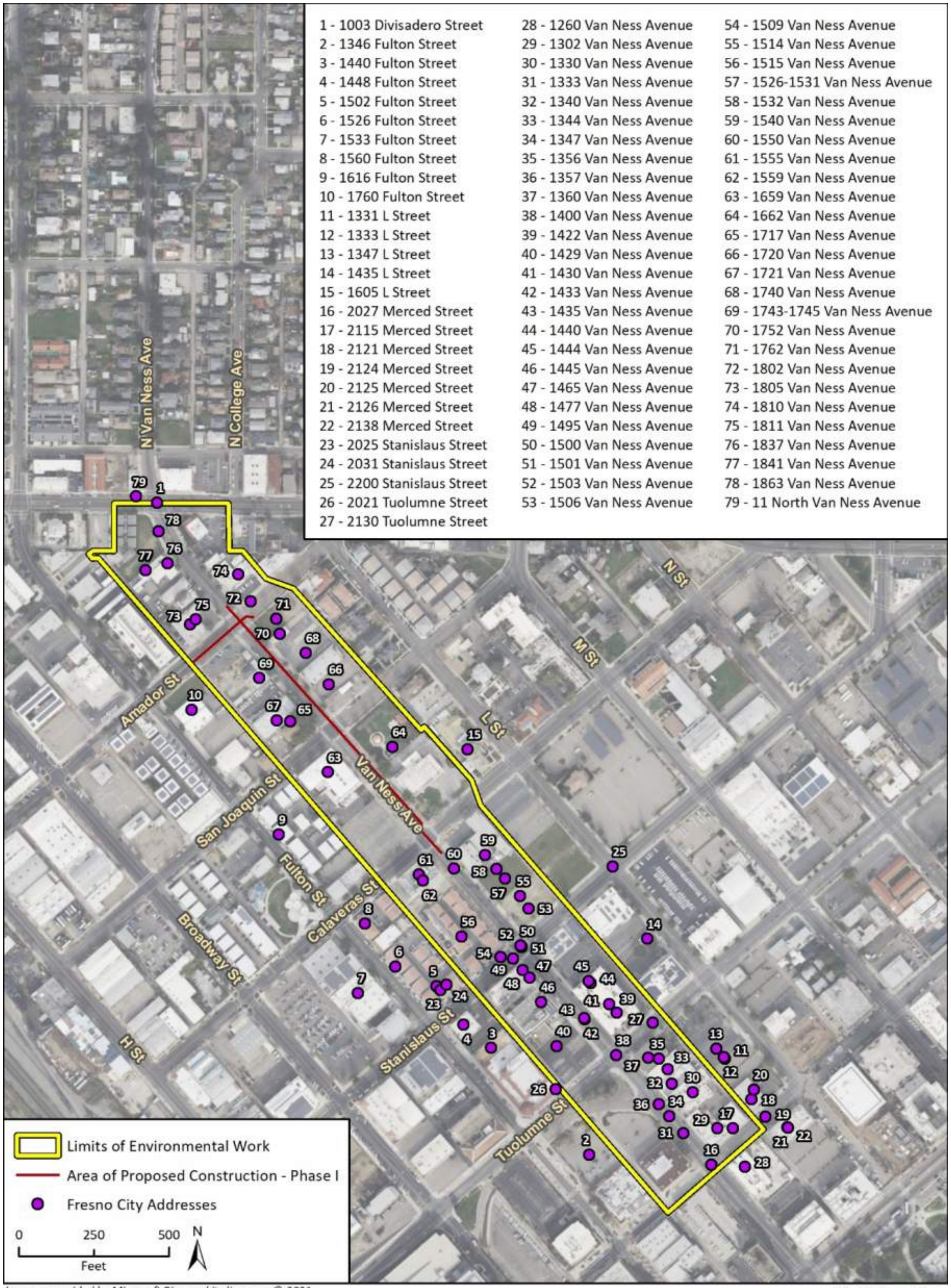
Figure 4 Historical City Directory Listings



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Additional data provided by City of Fresno, 2021.

Attachment 2

Regulatory Documentation

Chevron

Chevron U.S.A. Products Company
2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Department

File

January 22, 1992

Fresno County Environmental Health Department
Mr. Jim Armstrong
1221 Fullton Mall
Fresno, CA 93775

Re: Site Characterization Investigation Report
Chevron Station #9-0909
1506 Van Ness Ave.
Fresno, CA

Dear Mr. Armstrong:

Investigation for this site initiated in 1990 when Dames & Moore advanced five soil borings in anticipation of tank and line replacement. Confirmed by soil analysis, soil borings were non-detect for TPH-g and BTEX at the time of investigation.

During the tank removal/replacement, soil containing gasoline were detected in the tank pit as well as in the product line trench. With Fresno County's approval, additional excavation were performed to remove the contaminated soil. Lab reports confirmed that the piping trench was ND for TPH-g and BTEX, however, no samples were taken in the tank pit following the excavation.

Knowing that the extent of soil in the tank pit was not defined, Chevron proposed additional investigation to further assess the former tank area. With Fresno County's approval to our proposal, Krazan & Associates, Inc. on behalf of Chevron completed the work as documented in the attached 1-14-92 report.

Soil borings were advanced to 45 feet at four locations. All soil samples were non-detect with one exception of B-1 at 15' depth containing TPH-g of 15 ppm. Groundwater is estimated at approximately 80 feet below grade. With this finding and previous sampling results, and the intent use of this site as a gas station, Chevron proposes no further actions.

We would appreciate County's response to this proposal as your written approval is needed to close our UST replacement file.

If you should have any questions or comments, please feel free to contact or call me at (510) 842-9655.

Sincerely,

Lucia R. Chou
Engineer

Enclosure

KRAZAN & ASSOCIATES, INC.

Construction Testing and Inspection
Geotechnical Investigations
Environmental Engineering
Laboratory Soils Testing
Monitoring Wells

January 14, 1992

Project No. E90-242

Same as #909 not #2110 -
JAN 1 ? '92 T.L.B.

Chevron U.S.A.
Attn: Ms. Lucia Chou
2410 Camino Ramon
San Ramon, California 94583-0804

RE: Executive Summary
Site Characterization Investigation 909
Former Chevron Service Station #9-~~2110~~
~~1110 Clovis Avenue~~
~~Clovis, California~~ Fresno -

Dear Lucia,

In accordance with your request, we have completed our site characterization investigation of the above-referenced project site. Based upon our review of the data obtained from our field and laboratory investigations, coupled with published information regarding previous investigations and geologic/hydrologic conditions, the following conclusions have been derived:

1. The subsoil beneath the subject site consist primarily of sands, silts and clays.

2. Groundwater exists beneath the site at a depth of approximately 80 feet below grade. None of our soil borings encountered groundwater or perched waters.

3. Distribution of petroleum constituents in the former tank area appears to be centered under the southwest ends of the former supreme and low-leaded gasoline tanks, as per the findings of a November 1990 investigation. The samples from boring B-1, which was placed between the southwest ends of the former supreme and low-leaded gasoline tanks,

indicate that low levels of petroleum constituents are still present at 15 feet. However, these levels attenuate to non-detect in the 25-foot soil sample. It is estimated that the lateral extent of the plume has a radius of no greater than approximately 10 feet centered on boring B-1. The plume also appears to be limited to the interface of a thin sand lense and a silt, which occurs at approximately 16 feet below grade.

4. Non-detect levels of petroleum constituents were observed in Krazan & Associates borings B-2, B-3, and B-4 and in Dames & Moore borings BH-2 and BH-5 (previous investigation, March 23, 1991), all of which surround the area excavated during the tank removal.

If there are any questions or if we can be of further assistance, please do not hesitate to contact our Environmental Division Office at (800) 800-0711 or (209) 348-2200.

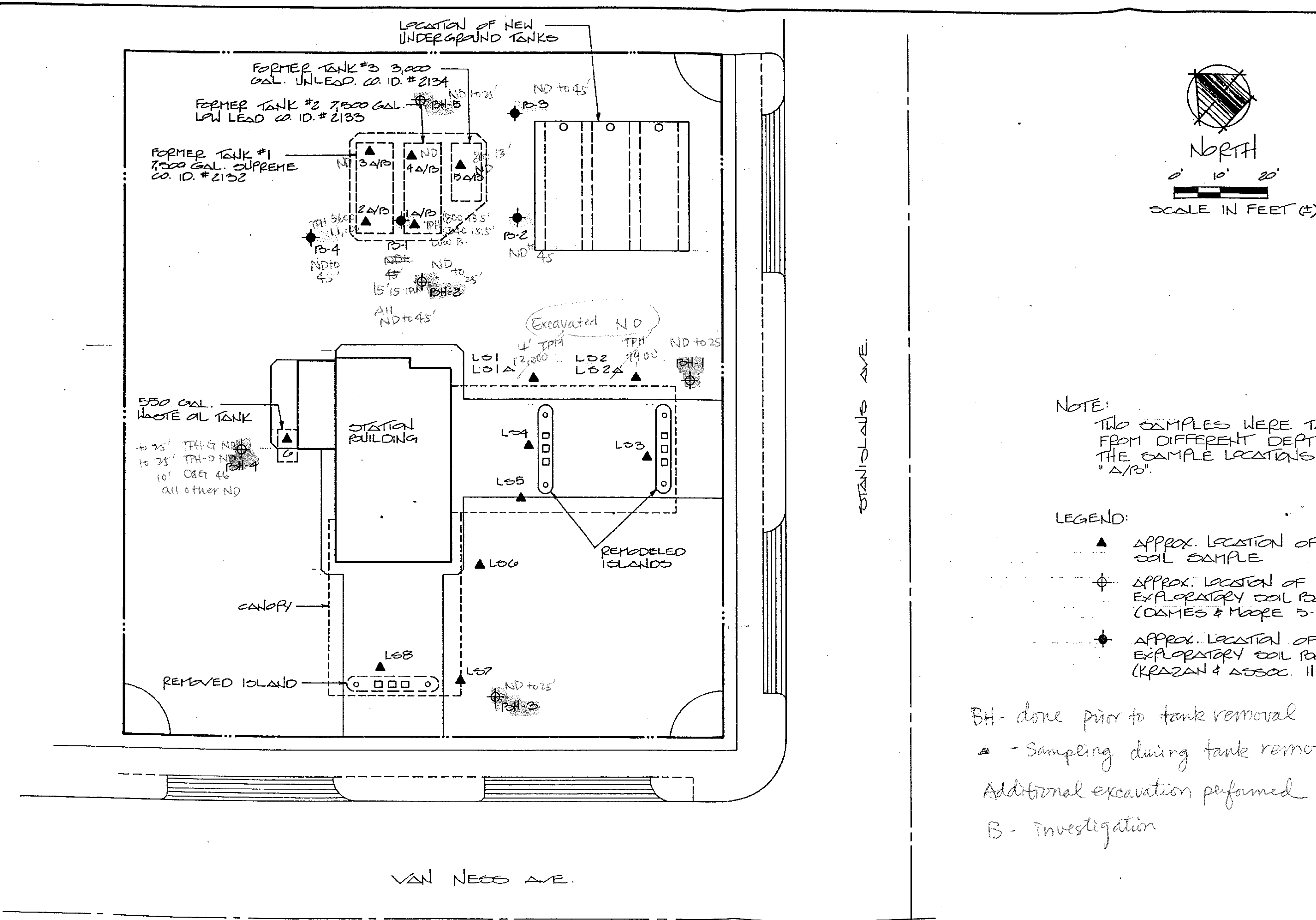
REGISTERED PROFESSIONAL ENGINEER
DEAN ALEXANDER
No. 002051
Expires Sep. 30, 1995
GEOTECHNICAL
STATE OF CALIFORNIA

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Thomas E. Zahner
Project Geologist

Dean Alexander
Geotechnical Engineer
RGE #002051/RCE #34274

TEZ/DA/sf



NOTE:
TWO SAMPLES WERE TAKEN FROM DIFFERENT DEPTHS AT THE SAMPLE LOCATIONS MARKED "A/B".

LEGEND:

▲ APPROX. LOCATION OF SOIL SAMPLE

⊕ APPROX. LOCATION OF EXPLORATORY SOIL BORING (DAMES & MOORE 5-29-90)

● APPROX. LOCATION OF EXPLORATORY SOIL BORING (KRAZAN & ASSOC. 11-13-91)

BH - done prior to tank removal

▲ - Sampling during tank removal

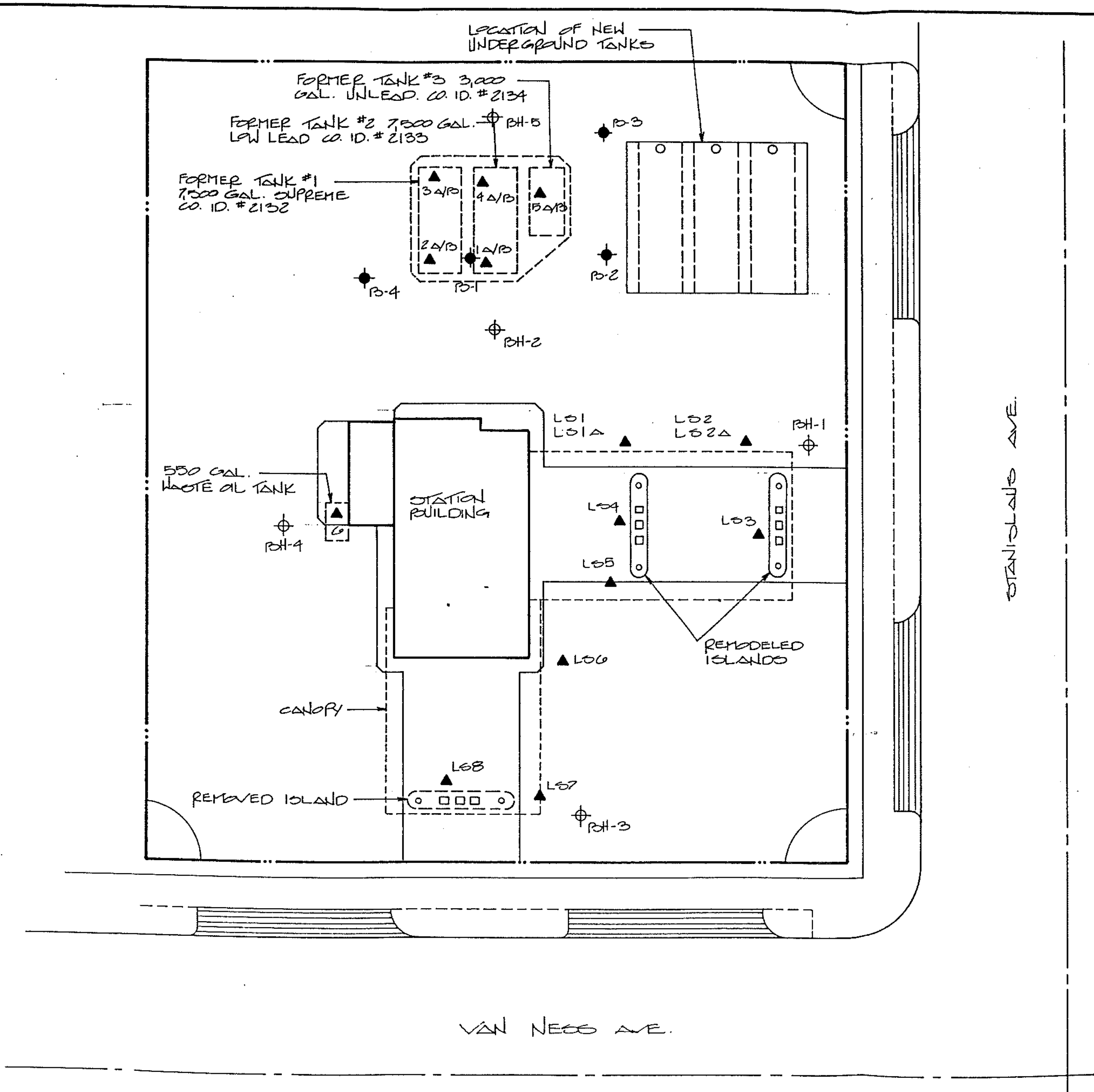
Additional excavation performed

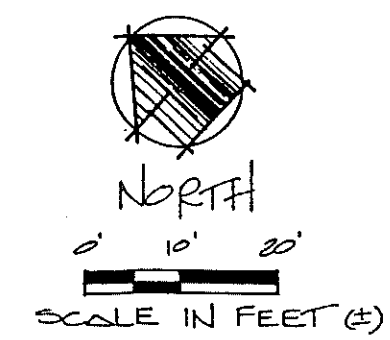
B - Investigation

KRAZAN & ASSOCIATES
Fresno Visalia Bakersfield

Scale: AS SHOWN	Date: 12-91
Drawn by: JLK	Approved by: T.Z.
Project No. E 90-242	Drawing No. 3 of 3

CHEVRON STATION #0909
1506 VAN NESS AVE.
FRESNO, CA





NOTE:
TWO SAMPLES WERE TAKEN FROM DIFFERENT DEPTHS AT THE SAMPLE LOCATIONS MARKED "A/B".

LEGEND:

▲ APPROX. LOCATION OF SOIL SAMPLE

⌖ APPROX. LOCATION OF EXPLORATORY SOIL BORING (DAMES & MOORE 5-29-90)

● APPROX. LOCATION OF EXPLORATORY SOIL BORING (KRAZAN & ASSOC. 11-13-91)

KRAZAN & ASSOCIATES
Fresno Visalia Bakersfield

Scale: AS SHOWN	Date: 12-91	
Drawn by: JAK	Approved by: T.Z.	
Project No. E 90-242	Drawing No. 3 of 3	

CHEVRON STATION #0909
1506 VAN NESS AVE.
FRESNO, CA

'92 T.L.H.

File

SITE CHARACTERIZATION INVESTIGATION
CHEVRON STATION #9-0909
1506 VAN NESS AVENUE
FRESNO, CALIFORNIA

Project No. E90-242
January 14, 1992

Prepared for:

Chevron U.S.A
Attn: Ms. Lucia Chou
P.O. Box 5004
San Ramon, CA 94583-0804

Prepared by:

Krazan & Associates, Inc.
Environmental Division
4816 East Shields Avenue
Fresno, California 93726
(209) 453-9637

krazan & associates, inc.

engineers, geologists, environmental specialists

Table of Contents
Project No. E90-242

January 14, 1992 Project No. E90-242

SITE CHARACTERIZATION INVESTIGATION
CHEVRON STATION #9-0909
1506 VAN NESS AVENUE
FRESNO, CALIFORNIA

INTRODUCTION

The following report presents the results of a Site Characterization Investigation of Chevron Station #9-0909, located at 1506 Van Ness Avenue. The investigation was conducted based upon the request of Ms. Lucia Chou of Chevron U.S.A., Inc.

During underground tank removal operations and associated soil excavation procedures in November of 1990, several soil samples were obtained by Krazan & Associates personnel from the tank removal excavation and below the dispenser islands and product piping. Subsequent chemical analysis of the soil samples obtained revealed elevated concentrations of petroleum constituents to be present in the soils at the northwestern and southern edges of the tank excavation as well as the northeastern end of both fuel dispenser islands.

Based upon the results of the chemical analysis performed, Krazan & Associates was contracted by Chevron USA to conduct a site investigation to assess the lateral and vertical extent of petroleum constituents in the soil and to evaluate the potential for groundwater degradation. The results of this investigation are detailed in the report as follows.

SITE DESCRIPTION AND LOCATION

The project site is located in the southeast 1/4 of the southeast 1/4 of Section 4, Township 14 south, Range 19 East of the Mount Diablo Baseline and Meridian. Specifically, the subject property is located at the north corner of Van Ness and Stanislaus Avenues in Fresno, California (see Drawing No 1, Vicinity Map).

The site covers approximately 1/2 acre in area and is square in shape. It is bounded on the southeast by Stanislaus Avenue and to the southwest by Van Ness Avenue, (see Drawing No. 2, Site Map). Commercial properties bound the subject site to the north and the east.

The station property currently consists of a main station building with three dispenser islands, all of which are covered by canopy. The southwestern dispenser island pumps have been removed and the island is no longer in use. The remaining two dispenser islands, located on the southeastern side of the station building, have been remodeled and remain in service.

Three underground fuel storage tanks, which consisted of one 7,500-gallon supreme-unleaded, one 7,500-gallon low-lead, and one 3,000-gallon unleaded underground tanks, were removed from the site in November, 1990. The tanks were formerly located near the central portion of the northeastern property line. In addition, a 500-gallon waste oil tank was located near the northwestern side of the station building. This tank was also removed and replaced with a 1,000-gallon fiberglass tank in December, 1990. After removal of the fuel tanks, three new tanks were installed near the eastern corner of the property. The new tanks consist of one 10,000-gallon regular, one 10,000-gallon unleaded, and one 10,000-gallon premium unleaded underground fuel storage tanks.

BACKGROUND INFORMATION

In May 1990, Dames & Moore conducted a Preliminary Site Characterization Investigation of the subject property. A total of five soil borings were advanced to a maximum depth of 25 feet in vicinity of the formerly existing underground tanks, the dispenser islands, and the formerly existing waste oil storage tank. Please refer to Drawing No. 3 for the location of Dames & Moore's soil borings. Selected soil samples from the underground fuel tanks and the dispenser islands were analyzed for the presence and concentrations of benzene, toluene, xylenes, and ethylbenzene by EPA Method 8020 and total petroleum hydrocarbons as gasoline by EPA Method 8015M. The analytical results of the soil samples are summarized in Table I as follows.

TABLE I
Concentrations of Petroleum Constituents in Soils
Preliminary Site Characterization Investigation
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
March 23, 1990 Sampling*
(Concentrations are expressed in parts per million.)

Sample I.D.	Benzene	Toluene	Ethyl-benzene	Xylens	TPH-G
Detection Limit	0.005	0.005	0.005	0.015	10
BH-1 @ 5 ft.	ND	ND	ND	ND	ND
BH-1 @ 10 ft.	ND	ND	ND	ND	ND
BH-1 @ 15 ft.	ND	ND	ND	ND	ND
BH-1 @ 20 ft.	ND	ND	ND	ND	ND
BH-1 @ 25 ft.	ND	0.02	ND	ND	ND
BH-2 @ 5 ft.	ND	0.01	ND	ND	ND
BH-2 @ 10 ft.	ND	0.03	ND	ND	ND
BH-2 @ 15 ft.	ND	0.02	ND	ND	ND
BH-2 @ 20 ft.	ND	0.03	ND	ND	ND
BH-2 @ 25 ft.	ND	0.02	ND	ND	ND
BH-3 @ 5 ft.	ND	0.03	ND	ND	ND
BH-3 @ 10 ft.	ND	0.02	ND	ND	ND
BH-3 @ 15 ft.	ND	0.03	ND	ND	ND
BH-3 @ 20 ft.	ND	0.06	ND	ND	ND
BH-3 @ 25 ft.	ND	0.03	ND	ND	ND
BH-5 @ 5 ft.	ND	0.02	ND	ND	ND
BH-5 @ 10 ft.	ND	0.02	ND	ND	ND
BH-5 @ 15 ft.	ND	0.03	ND	ND	ND
BH-5 @ 20 ft.	ND	0.05	ND	ND	ND
BH-5 @ 25 ft.	ND	0.09	ND	ND	ND

* = Sampling was conducted by Dames & Moore personnel.
TPH-G = Total Petroleum Hydrocarbons as Gasoline
ND = None Detected at the detection limits noted.

Selected soil samples from Boring BH-4, which was advanced near the underground waste oil storage tank, were analyzed for the presence and concentrations of oil and grease by EPA Method 413.2, total petroleum hydrocarbons as gasoline and as diesel by EPA Method 8015M, and purgeable aromatic hydrocarbons by EPA Method 8240. The results of these chemical analyses are summarized in Table II and III as follows.

TABLE II
Concentrations of Petroleum Constituents in Soils
Preliminary Site Characterization Investigation
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
March 23, 1990 Sampling*
(Concentrations are expressed in parts per million.)

Constituents	BH-4 @ 5'	BH-4 @ 10'	BH-4 @ 15'	BH-4 @ 20'	BH-4 @ 25'	Detection Limit
Oil & Grease	ND	46	ND	ND	ND	5.0
TPH-G	ND	ND	ND	ND	ND	10
TPH-D	ND	ND	ND	ND	ND	10

* = Sampling was conducted by Dames & Moore personnel
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
ND = None Detected at the detection limits noted.

TABLE III
Concentrations of Petroleum Constituents in Soils
Preliminary Site Characterization Investigation
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
March 23, 1990 Sampling*
(Concentrations are expressed in parts per billion.)

Constituents	BH-4 @ 5'	BH-4 @ 10'	BH-4 @ 15'	BH-4 @ 20'	BH-4 @ 25'	Detection Limit
Chloromethane	ND	ND	ND	ND	ND	500
Bromoethane	ND	ND	ND	ND	ND	500
Vinyl Chloride	ND	ND	ND	ND	ND	500
Chloroethane	ND	ND	ND	ND	ND	500
Methylene Chloride	ND	ND	ND	ND	ND	250
Acetone	ND	ND	ND	ND	ND	5000
Carbon Disulfide	ND	ND	ND	ND	ND	250
1,1-Dichloroethene	ND	ND	ND	ND	250	250
1,1-Dichloroethane	ND	ND	ND	ND	ND	250
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	250
Chloroform	ND	ND	ND	ND	ND	250
1,2-Dichloroethane	ND	ND	ND	ND	ND	250
2-Butanone	ND	ND	ND	ND	ND	5000
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	250
Carbon Tetrachloride	ND	ND	ND	ND	ND	250
Vinyl Acetate	ND	ND	ND	ND	ND	2500
Bromodichloromethane	ND	ND	ND	ND	ND	250
1,2-Dichloropropane	ND	ND	ND	ND	ND	250
Cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	250
Trichloroethene	380	ND	ND	ND	ND	250
Dibromochloromethane	ND	ND	ND	ND	ND	250
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	250
Benzene	ND	ND	ND	ND	ND	250
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	250
2-Chloroethylvinylether	ND	ND	ND	ND	ND	500
Bromoform	ND	ND	ND	ND	ND	250
4-Methyl-2-Pentanone	ND	ND	ND	ND	ND	2500
2-Hexanone	ND	ND	ND	ND	ND	2500
Tetrachloroethene	ND	ND	ND	ND	ND	250
1,1,2,2-Tetrachloroethene	ND	ND	ND	ND	ND	250
Toluene	ND	ND	ND	ND	ND	250
Chlorobenzene	ND	ND	ND	ND	ND	250
Ethylbenzene	ND	ND	ND	ND	ND	250
Styrene	ND	ND	ND	ND	ND	250
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	250
1,1&1,4-Dichlorobenzenes	ND	ND	ND	ND	ND	250
Total Xylenes	ND	ND	ND	ND	ND	250
Trichlorofluoromethane	ND	ND	ND	ND	ND	250

* = Sampling was conducted by Dames & Moore personnel.
ND = None Detected

Based upon review of the data obtained from their field and laboratory investigation, Dames and Moore stated the following conclusions:

- Boring BH-4 samples reported "non-detected" for the presence of benzene, toluene, xylenes, ethylbenzene, and total petroleum hydrocarbons as referenced to gasoline and diesel.

- The results of chemical analyses conducted on soil samples obtained from the exploratory borings BH-1, BH-2, BH-3, and BH-5 were all "non detected" for the presence of benzene, xylenes, ethylbenzene and total petroleum hydrocarbons, as referenced to gasoline. Relatively low levels of toluene were detected in samples obtained from borings BH-1, BH-2, BH-3 and BH-5. The low levels (less than 0.1 part per million) may be attributable to vapor phase migration of toluene. However, a point source of residual gasoline in the subsurface from which volatilization might occur was not readily apparent at the depth and locations explored during this investigation.

- Chemical analysis conducted on the soil samples from boring BH-4 detected the presence of trichloroethene at a depth of five feet below grade with non-detected results from samples below that depth. Also detected was 1,1-dichloroethene at a depth of 25 feet below grade. Samples obtained from above this depth were non-detected for 1,1-dichloroethene. In Dames & Moore's opinion, the sporadic distribution of only those compounds would not suggest a pattern of vertical migration of residual liquid from the waste oil tank location.

- Oil and grease was reported in Boring BH-4 at a depth of 10 feet below existing grade. Non-detected results were reported from samples obtained above and below the 10 foot strata. The bottom of the waste oil tank is likely to be at a depth of about seven feet below grade. The detected oil and grease results at 10 feet may be attributable to limited vertical migration of possible minor spillage or leakage from the waste oil tank.

- It should be recognized that underground tanks and product piping remained active and resident in the subsurface at the site during our [Dames & Moore's] study. With the methods employed in our preliminary study, there was no way to adequately evaluate possible contamination conditions immediately beneath such structures.

In November 1990, the service station was remodeled. This included the removal the underground fuel storage tank system by California Petroleum Equipment of Fresno, California. During the removal process, soil samples were collected by Krazan & Associates personnel from the excavation pit, the underground waste oil storage tank as well as along product piping lines. At each sample location, two soil samples were collected, one at two feet below the tank, and the other at four feet below the tank. For the locations of the tank removal excavation soil samples and product line soil samples, please refer to Drawing No. 3.

Samples obtained from below the removed fuel storage tanks and pipelines as well as soil composite samples of the tank removal excavation soil were analyzed for the presence and concentrations of benzene, toluene, ethylbenzene, xylenes, and total petroleum hydrocarbons as gasoline by EPA 8020 GC/PID and 8015M GC/PID. The samples obtained from beneath the waste oil tank were analyzed for the presence and concentration of oil and grease by Standard Method 503E and total petroleum hydrocarbons as diesel by Modified EPA Method 8015. The results of the analytical analysis are summarized in Tables IV and V as follows.

TABLE IV
Concentrations of Petroleum Constituents in Soils
Tank Removal Soil Sampling
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
Krazan & Associates, Inc.
November 5, 1990 Sampling
(Concentrations are expressed in parts per million.)

Sample I.D.	Feet Below Grade	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-G	O&G	TPH-D
Detection Limit		0.005	0.005	0.005	0.005	1	50	10
1A	13.5 feet	ND	4	1	110	1,800	•	•
1B	15.5 feet	0.4	83	52	660	5045	•	•
2A	13.5 feet	1	190	130	1,000	5,600	•	•
2B	15.5 feet	3	400	180	1,400	11,100	•	•
3A	13.5 feet	ND	0.080	0.010	0.130	1	•	•
3B	15.5 feet	ND	0.01	ND	0.02	ND	•	•
4A	13.5 feet	ND	0.006	ND	ND	ND	•	•
4B	15.5 feet	•	•	•	•	•	•	•
5A	13 feet	<0.03	0.4	0.5	9	830	•	•
5B	15.5 feet	ND	0.006	ND	ND	ND	•	•
6A	12.5 feet	•	•	•	•	•	ND	ND
6B	15.0 feet	•	•	•	•	•	•	•

TPH-G = Total Petroleum Hydrocarbons as Gasoline by EPA 8020.
TPH-D = Total Petroleum Hydrocarbons as Diesel by EPA 8015M.
O&G = Oil and Grease by Standard Method 503E.
ND = None detected at the detection limits noted.
• = Sample not analyzed for this constituent.
< = Less than

TABLE V
Concentrations of Petroleum Constituents in Soils
Dispenser, Pipeline, and Excavated Soils
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
Krazan & Associates
November 8, 9, and 10, 1990 Sampling
(Concentrations are expressed in parts per million)

Sample I.D.	Feet Below Grade	Benzene	Toluene	Ethylbenzene	Xylenes	TPH-G
Detection Limit		0.005	0.005	0.005	0.005	1
LS #1	4 feet	130	840	240	1,400	12,000
LS #2	4 feet	120	860	210	1,300	9,900
LS #3	3.5 feet	ND	ND	ND	ND	ND
LS #4	4 feet	ND	ND	ND	ND	ND
LS #5	4 feet	ND	0.032	ND	ND	ND
LS #6	4 feet	ND	0.006	ND	ND	ND
LS #7	4 feet	ND	0.009	ND	0.005	ND
LS #8	4 feet	ND	0.009	ND	ND	ND
SC #1	N/A	ND	0.03	ND	0.05	ND
SC #2	N/A	ND	0.006	ND	0.007	ND
SC #3	N/A	0.008	ND	ND	0.02	ND
SC #4	N/A	ND	0.005	0.005	0.07	3

ND = Non detected at the detection limits noted.
TPH-G = Total Petroleum Hydrocarbons as Gasoline
N/A = Not Applicable
LS = Line Sample
SC = Soil Composite

Composite samples of the soil from the tank removal excavation, revealed trace to low levels of petroleum constituents. It was anticipated that much of the volatile hydrocarbons in the soil were lost during excavation and subsequent soil mixing. Based upon the results of the composite samples, authorization was granted by the Fresno County Environmental Health Department (FCEHD) to use the excavated soil initially removed from the excavation as backfill.

Based upon the results of line samples LS1 and LS2, additional sampling was conducted in these areas. Upon receiving approval from the FCEHD, additional soil samples were collected by Krazan & Associates, Inc. at depths of 10 feet by use of a backhoe. The backhoe excavation was performed by Banks & Company of Fresno, California on November 26, 1990. These additional samples (LS#1A and LS#2A) were analyzed for the presence and concentrations of benzene, toluene, ethylbenzene, xylenes, and total petroleum hydrocarbons as gasoline by EPA Method 8020 and 8015M. Results of the additional line sample analyses are summarized in Table VI as follows.

TABLE VI
Concentrations of Petroleum Constituents in Soils
Product Pipeline Samples
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
Krazan & Associates
November 26, 1990 Sampling
(Concentrations are expressed in parts per million)

Sample I.D.	Feet Below Grade	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-G
LS #1A	10	0.01	0.02	ND	0.03	ND
LS #2A	10	ND	0.01	ND	0.03	ND

TPH-G = Total Petroleum Hydrocarbons as Gasoline
ND = None Detected

Results of the chemical analysis of the additional line samples revealed minor concentrations of petroleum constituents to be present in the location of LS1A and LS2A at a depth of 10 feet below grade.

Based upon the results of the chemical analysis of the tank removal excavation samples, it was determined that additional excavation would be conducted in the area of soil samples 5A, 5B, 1A, 1B, and 2A, 2B. The additional excavation was performed by California Petroleum Equipment. In the sample 5A, 5B area, additional soil was excavated to a depth of 17 feet below grade, thereby effectively removing the remaining petroleum affected soils. In the 1A, 1B and 2A, 2B soil sample areas, additional excavation was also conducted to a depth of 17 feet below grade. However, the full extent of petroleum affected soil was not removed.

Composite sampling of the additional excavated soil was conducted to determine proper disposal requirements of the additional soil removal from the excavation. These composite soil samples were analyzed for the presence and concentrations of benzene, toluene, ethylbenzene, xylenes, and total petroleum hydrocarbons as gasoline by EPA Method 8020 and 8015M. The results of the chemical analysis are summarized in Table VII as follows.

TABLE VII
Concentrations of Petroleum Constituents in Soils
Excavated Soils
Chevron Station #9-0909
1506 Van Ness Avenue
Fresno, California
Krazan & Associates
November 26, 1990 Sampling
(Concentrations are expressed in parts per million)

Sample I.D.	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-G
C-5	ND	2	3	44	930
C-6	ND	0.3	0.3	10	280
C-7	ND	8	15	200	2,700
C-8	ND	0.2	0.3	3	72

ND = None detected
TPH-G = Total Petroleum Hydrocarbons as Gasoline
C = Composite

Based upon the results of the chemical analysis of the composite samples, the additional soil excavated in the areas of samples 5A, 5B, 1A, 1B, and 2A, 2B as well as line sample excavations LS 1 and LS 2 were disposed at Laidlaw Environmental Services', GSX facility in Lokern, California on December 14, 1990.

Following the tank removal operation, new underground fuel storage tanks were installed at the site on November 28, 1990 by Banks & Company of Fresno, California. The tanks consisted of a 10,000 gallon regular, a 10,000 gallon unleaded, a 10,000 gallon premium unleaded, and 1,000 gallon waste oil tank. The three fuel tanks were installed in the southeast corner of the project site and the new waste oil tank was installed in the same location as the removed waste oil tank.

Based upon the results of the chemical analysis conducted during the tank removal and replacement operations, it was concluded that extent of petroleum constituents in the location of Tank Sample Nos. 1A, 1B, 2A, 2B was unknown and that additional investigation in this area should be conducted. Therefore, Chevron U.S.A. requested that Krazan & Associates, Inc. complete further investigations to assess the vertical and lateral extent of petroleum constituents in the soil in those areas and to assess the potential for groundwater degradation.

GEOLOGIC AND HYDROLOGIC SETTING

The topography of the site is relatively level. The site is located within the San Joaquin Valley, which is situated between the Sierra Nevada and Coast Ranges of California. The San Joaquin Valley makes up the southern portion of the Great Central Valley.

Unconsolidated materials found in the vicinity of the project site are generally composed of alluvial deposits of sands, silty sand, and silts with some minor clays and gravels. The source rock for this material is primarily the granitic and metamorphic rocks located in the Sierra Nevada. The deposition of these sediments began to take place in the Late Cretaceous (100-65 millions years before present). The majority of the San Joaquin Valley was covered at that time by eperic seas. Eperic seas were shallow salt water bodies which were generally situated on the continental shelf or within the continental interior (inland sea). Sediments currently at or near the surface are believed to be of Quaternary (2 million years old or younger) alluvium derived from the nearby Sierra Nevada.

Major faults in the vicinity of the project site are situated along the eastern edge of the Sierra Nevada Mountains and the San Andreas Fault Zone. The San Andreas Fault Zone is located along at the coastal and Diablo Ranges to the west.

The project site is located within the San Joaquin Basin Hydrologic Study Area, which is primarily an arid to semi-arid environment. Within the study area, 39 groundwater basins have been identified. Storage capacity is approximately 570 million acre-feet, useable storage totals 80 million acre feet. The project site is located in the Kings Basin.

Groundwater beneath the project site exists in a single, unconfined aquifer. It is classified by U.S. Environmental Protection Agency as a sole source aquifer. As such, waters from this aquifer are highly regulated. The aquifer's level is variable and is influenced by the withdrawal of subsurface waters for domestic and agricultural uses. According to the State of California, Department of Water Resources, San Joaquin District map entitled "Lines of Equal Elevation of Water in Wells, Unconfined Aquifer, San Joaquin Valley, Spring 1987", the elevation of the unconfined water table is approximately 205 feet above mean sea level. According to the United State Geologic Survey (USGS) 7.5 minute Fresno South, California, topographic map, the elevation of the projects site may be interpolated to be approximately 285 feet above mean sea level. Calculation using these elevations yields a depth to groundwater of approximately 80 feet below grade.

PURPOSE OF INVESTIGATION

The purpose of the investigation was to assess the lateral and vertical extent of petroleum constituents in the soil and to evaluate the potential for groundwater degradation in the western portion of the former underground tank locations where samples 1A, 1B, 2A, and 2B were obtained during an earlier investigation.

SCOPE OF THE INVESTIGATION

The scope of the investigation was limited to the advancement of four (4) exploratory soil borings in the two areas of concern to depth of 45 feet or until field observations and field instrumentation indicated the absence of petroleum constituents from two consecutive soil sample (10 vertical feet). Soil samples were obtained during the drilling process for logging purposes and possible chemical analysis.

METHODOLOGY

In order to accomplish the goals established in the purpose and scope of the investigation sections of this report, the following methods were employed:

1. All necessary permits were obtained from the Fresno County Environmental Health Department prior to the commencement of the investigation at the project site.

2. An additional literature survey of published geologic and groundwater data in the vicinity of the project site was conducted in an attempt to fully characterize the conditions present.

3. Prior to the commencement of drilling activities, Underground Services Alert Locate and Mark (U.S.A.) was contacted. Prior to drilling, each boring location was carefully hand-probed to a depth of 5 feet below grade.

4. Four (4) exploratory soil borings were advanced by means of a truck-mounted drill rig utilizing hollow-stem auger. Drilling fluids were not used while advancing any of the borings. The borings were advanced to a minimum depth of 45 feet. Please refer to Drawing 3 for the approximate location of these soil borings.

5. All soil borings were located on the subject site property. In addition, all work, use of equipment, and storage of items was conducted within the boundaries of the subject site property.

6. Soil samples were obtained for logging purposes in each boring at five foot intervals, beginning at grade. Soils will be logged using the Unified Soil Classification System. Based on field observations as to the presence or absence of hydrocarbons, at least one soil sample per 15 vertical feet boring would be submitted for chemical analysis in an attempt to further characterize the conditions present beneath the site.

7. Sampling was conducted in an attempt to follow the guidelines established by the Fresno County Environmental Health Department and the California Regional Water Quality Control Board (RWQCB).

8. Sampling was conducted by means of a split-spoon "Modified California Sampler" containing three 6" long by 2-1/2" diameter brass sleeves.

9. During the drilling process, the drilling returns and soil samples were examined for visual evidence of hydrocarbons contamination. Additionally, both would be field screened with a portable photoionization detector (PID). The PID readings will be used to aid in choosing samples for chemical analysis and were noted on the drill logs. The PID is a direct reading real time analyzer that is capable of detecting most of the volatile hydrocarbon constituents present in the vapor phase of petroleum-affected soils. The PID that was used for this investigation uses 10.2 or 10.6 electron volt lamp and is calibrated using an iso-

butylene calibration gas. Iso-butylene is relatively safe calibration gas similar in ionization potential to benzene (the carcinogen of primary concern present in gasoline).

10. Following sample retrieval, Teflon film was placed over both ends of the sleeve. Each sleeve was then capped with tight fitting plastic caps and sealed with an inert tape.

11. Samples were labeled with the project number, sampler's initials, boring number, and the time and depth at which the sample was obtained.

12. Following sample labeling, each sample was placed in a cooler chest with synthetic ice to limit the volatilization of any hydrocarbons present.

13. The soil borings were backfilled with a sand cement slurry containing 3-5% bentonite to reduce shrinkage and decrease permeability.

14. Excess soil returns were placed in 55-gallon DOT approved drums and are stored on-site in a location approved by the station manager. An effort was made to segregate the drilling returns based upon their respective PID readings. All drums have been properly labeled as to content and who to contact for additional information. Composite samples of the drilling returns were collected and submitted for chemical analysis to determine the proper disposal requirements. Any excess material will be properly disposed of by the client or their representative within 90 days following characterization. Krazan & Associates, Inc., is not the generator of said material and therefore, is not responsible for its proper disposal.

15. Samples were chosen for analysis in the following manner: two consecutive soil samples would be analyzed from the bottom of each boring; this was done to define the vertical extent of petroleum constituents; in order to define the concentration of petroleum constituents within the borings, one soil sample for each 10 to 15 feet of boring was selected for analysis based upon their PID readings.

16. All samples were collected, maintained, and transported under chain-of-custody protocol to a State-approved laboratory for chemical analysis. Selected soil samples would be analyzed for the presence and concentration of benzene, toluene, xylenes, ethylbenzene, (BTXE) and total petroleum hydrocarbons (TPH) as gas by EPA Method 8020/5030 and 8015M/5030, respectively.

17. Equipment used for the advancing of soil borings and the sampling of soils was decontaminated (steam-cleaned, TSP, lab-grade detergents, etc.) before arriving on-site, between each boring and/or sampling, before leaving the site each day, or as necessary to minimize the chances of cross-contamination. The rinsates from the cleaning were contained and barrelled. The water has been stored on-site pending the results of the chemical analysis and proper disposal by the client within 90 days following generation.

18. All of Krazan & Associates, Inc., field work was conducted by individuals meeting the Occupational Safety and Health Administration requirements for hazardous waste work including 40-hour health and safety training and medical monitoring. The work was completed under standards set forth by industry and deemed acceptable by various regulatory agencies. Hard hats, protective eye wear, steel-toe boots, protective clothing, and respiratory devices were worn by field personnel when deemed appropriate by the field engineer or geologist present.

FINDINGS OF THE INVESTIGATION

During this investigation, four (4) soil borings were advanced to a maximum depth of 45 feet. Drilling returns were examined and undisturbed soil samples were obtained to further define the geology beneath the project site. Additionally, selected soil samples were analyzed for the presence and concentration of petroleum constituents in order to determine their distribution in the soil.

Soil Profile

The alluvial material comprising the soil profile at the project site was noted to vary only slightly between excavations and previous borings. A generalized soil profile is as follows:

Depth	Soil Type
Grade to approximately 4 inches	asphaltic concrete
Approximately 4 inches to 15 feet	brown fine to medium sand w/ minor silt
Approximately 15 feet to 25 feet	firm gray to reddish brown silt
Approximatley 25 feet to 35 feet	red gravelly sand
Approximately 36 feet to 40 feet	firm, brown silts and clays

For more detailed information regarding the soils encountered during the advancement of our soil borings, please refer to Appendix B for copies of the soil boring logs.

Results of Chemical Analysis

During the advancement of our soil borings, soil samples were obtained for logging purposes. Eighteen (18) soil samples were later submitted for chemical analysis. The results of the chemical analysis of the selected soil samples were used to identify the presence and distribution of petroleum constituents in the subsoil. Selected soil samples from the former underground fuel storage tank area were analyzed for benzene, toluene ethylbenzene, and xylenes by EPA Method 8020 and total petroleum hydrocarbons as gasoline by EPA Method 8015 M. The results of the analyses have been summarized in Table VIII as follows. For the location of the soil borings, please refer to Drawing No. 3. For copies of the Certified Analytical Reports and Chain of Custody Records, please refer to Appendix C.

TABLE VIII
Concentrations of Petroleum Constituents in Soil
Chevron Station No. 9-0909
1506 Van Ness Avenue
Fresno, California
November 14, 1991 Sampling
(All concentrations are in parts per million.)

Sample No.	Location	Benzene	Toluene	Ethyl-benzene	Xylenes	TPH-Gas
0115	B-1 @ 15	ND	0.5	0.14	2.3	21
0125	B-1 @ 25	ND	ND	ND	ND	ND
0140	B-1 @ 40	ND	ND	ND	ND	ND
0145	B-1 @ 45	ND	ND	ND	ND	ND
0215	B-2 @ 15	ND	ND	ND	ND	ND
0225	B-2 @ 25	ND	ND	ND	ND	ND
0240	B-2 @ 40	ND	ND	ND	ND	ND
0245	B-2 @ 45	ND	ND	ND	ND	ND
0315	B-3 @ 15	ND	ND	ND	ND	ND
0320	B-3 @ 20	ND	ND	ND	ND	ND
0325	B-3 @ 25	ND	ND	ND	ND	ND
0340	B-3 @ 40	ND	ND	ND	ND	ND
0345	B-3 @ 45	ND	ND	ND	ND	ND
0415	B-4 @ 15	ND	ND	ND	ND	ND
0420	B-4 @ 20	ND	ND	ND	ND	ND
0425	B-4 @ 25	ND	ND	ND	ND	ND
0440	B-4 @ 40	ND	ND	ND	ND	ND
0445	B-4 @ 45	ND	ND	ND	ND	ND

DISCUSSION OF FINDINGS

During the course of the investigation, four (4) soil borings were advanced on the subject property. Subsoils beneath the property, as determined from the soil borings, consist primarily of sands to approximately 15 feet and clays and silts from approximately 15 feet to 45 feet.

Boring B-1 was advanced between the former locations of the supreme unleaded gasoline tank and the low leaded gasoline tank, near the southwest ends. The only concentration of petroleum constituents detected in boring B-1 were found in the 15-foot sample. Non-detectable levels of petroleum constituents were observed in samples taken from 25 feet, 40 feet and 45 feet.

Boring B-2 was advanced near the southwest end of the unleaded gasoline tank. Non-detectable levels of petroleum constituents were observed in all samples analyzed from boring B-2.

Boring B-3 was advanced near the northeast end of the unleaded gasoline tank. Non-detectable levels of petroleum constituents were observed in all samples analyzed from boring B-3.

Boring B-4 was advanced approximately 10 feet west of the former underground storage tank location. Non-detectable levels of petroleum constituents were observed in all samples analyzed from boring B-4.

CONCLUSIONS

Based upon the review of data from our field and laboratory investigation and past investigations of the project site, the following conclusions have been derived:

1. The subsoil beneath the subject site consist primarily of sands, silts and clays.

2. Groundwater exists beneath the site at a depth of approximately 80 feet below grade. None of our soil borings encountered groundwater or perched waters.

3. Distribution of petroleum constituents in the former tank area appears to be centered under the southwest ends of the former supreme and low-leaded gasoline tanks, as per the findings of a November 1990 investigation. The samples from boring B-1, which was placed between

the southwest ends of the former supreme and low-leaded gasoline tanks, indicate that low levels of petroleum constituents are still present at 15 feet. However, these levels attenuate to non-detect in the 25-foot soil sample. It is estimated that the lateral extent of the plume has a radius of no greater than approximately 10 feet centered on boring B-1. The plume also appears to be limited to the interface of a thin sand lense and a silt, which occurs at approximately 16 feet below grade.

4. Non-detect levels of petroleum constituents were observed in Krazan & Associates borings B-2, B-3, and B-4 and in Dames & Moore borings BH-2 and BH-5 (previous investigation, March 23, 1991), all of which surround the area excavated during the tank removal.

LIMITATIONS

The findings of the report were based upon the results of field and laboratory investigations, coupled with the interpolation of subsurface conditions associated with our soil borings. Therefore, the data are accurate only to the degree implied by review of the data obtained and by professional interpretation.

Our exploratory soil borings were located in the field by review of available maps and by pacing or tape measurement from existing landmarks. Therefore, these should be considered accurate only to the degree implied by the methods used to locate them.

Chemical testing was done by laboratories certified by the State of California Department of Health Services. The results of the chemical testing are accurate only to the degree of the care of ensuring the testing accuracy and the representative nature of the soils obtained.

The findings presented herewith are based on professional interpretation using state of the art methods and equipment, and a degree of conservatism deemed proper as of this report date. It is not warranted that such data cannot be superseded by future geotechnical, environmental, or technological developments.

This time schedule is intended for use only as a planning tool. Factors such as the time necessary for regulatory approval, weather, or the subsurface conditions encountered are beyond our control.

Our investigation and report were prepared for the exclusive use of our client who authorized this work. Unauthorized use of or reliance on the information contained in this report without the expressed written consent of Krazan & Associates, Inc. is strictly prohibited.

If there are any questions or if we can be of further assistance, please do not hesitate to contact our Environmental Division Office at (209) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Tom Zahner

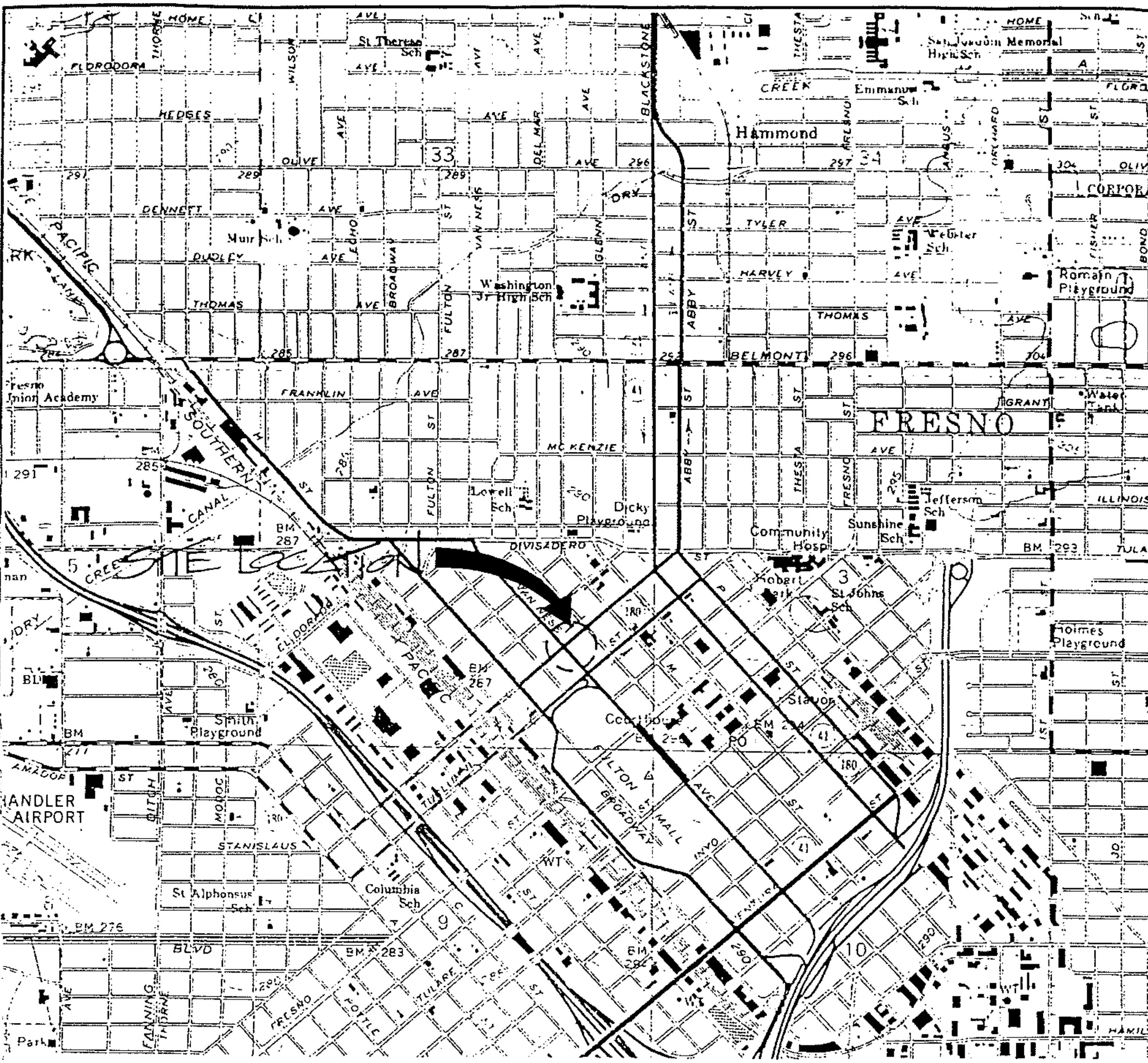
Thomas E. Zahner
Project Geologist

Dean Alexander

Dean Alexander
Geotechnical Engineer
RGE #002051/RCE #34274

TEZ/sf

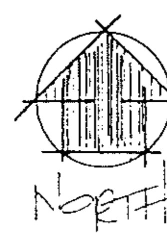
2c herewith
1c Fresno County Environmental Health Department
Attn: Mr. Jim Armstrong
(herewith for distribution)

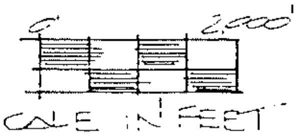


VICINITY MAP

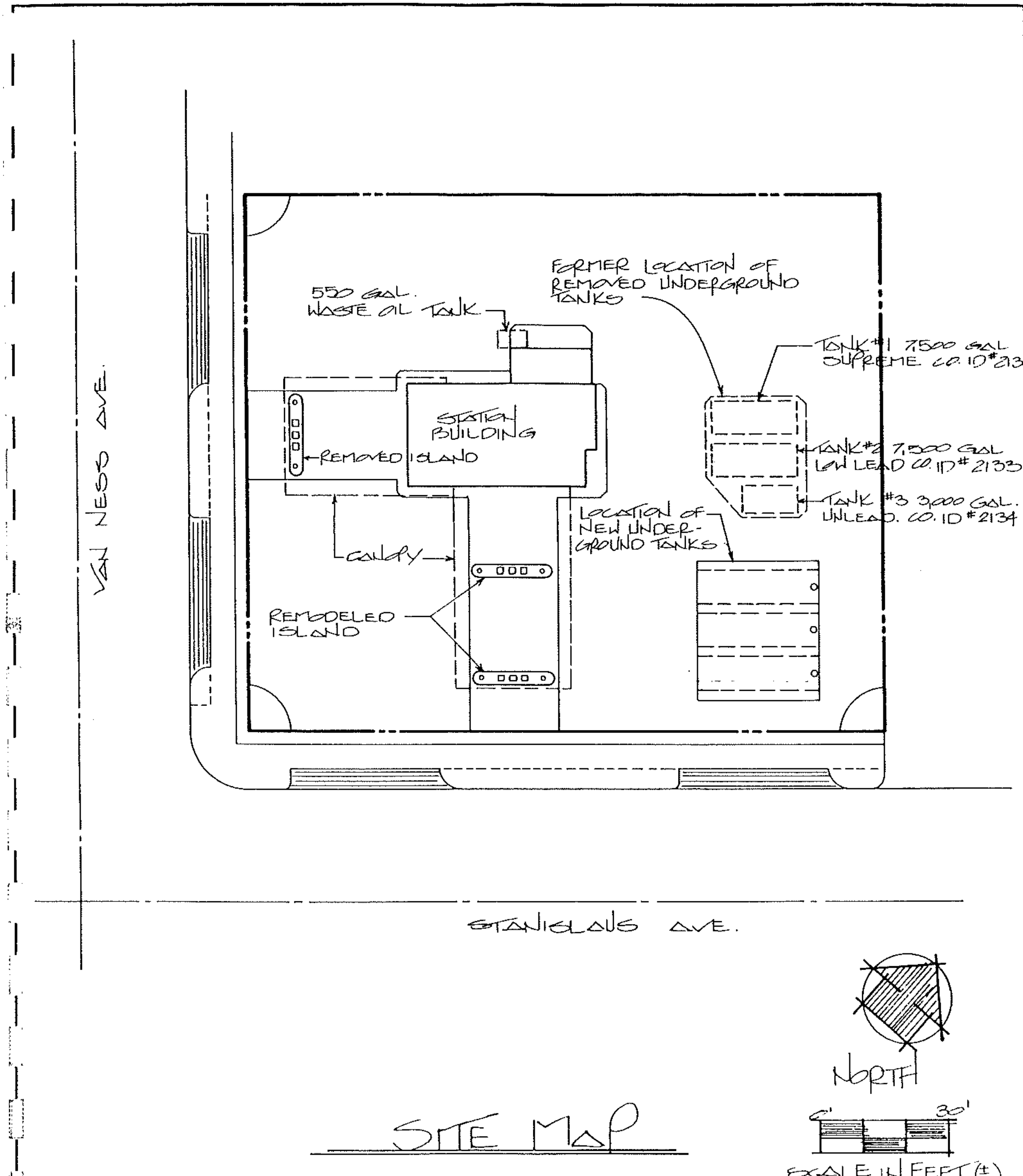
NOTE:

THIS MAP COMPILED FROM U.S.G.S. "FRESNO NORTH, CA" AND "FRESNO SOUTH, CA" QUADRANGLES 7.5 MINUTE SERIES (TOPO)



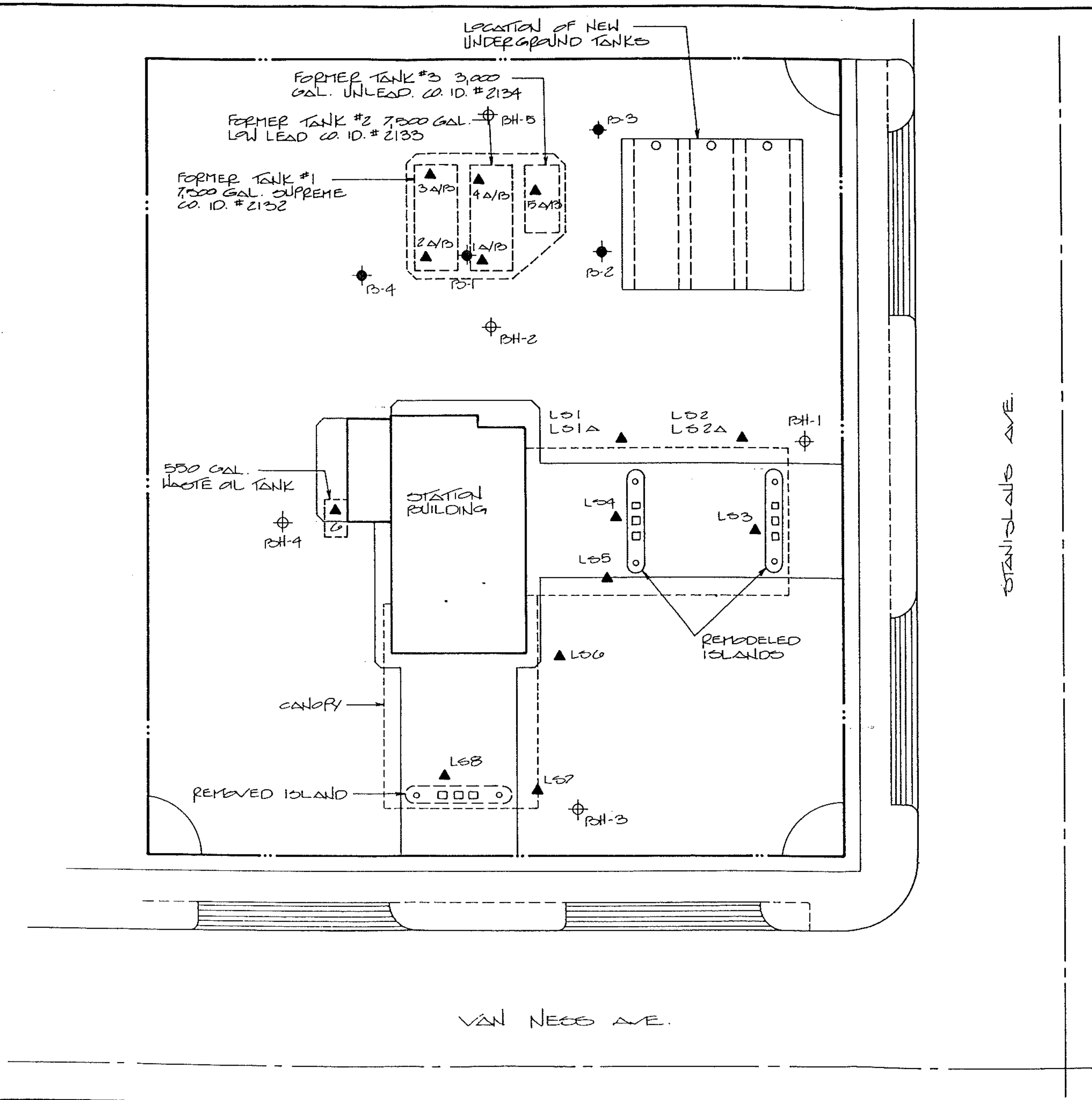


CHEVRON STATION 0909 1506 VAN NESS AVE FRESNO, CA	Scale: AS SHOWN	Date: 11-90	KRAZAN & ASSOCIATES Merced Fresno Visalia Bakersfield
	Drawn by: JAK	Approved by: CW	
	Project No. E90-202	Drawing No. 1 of 3	



SITE MAP

CHEVRON STATION 0909 1530 VAN NESS AVE FRESNO, CA	Scale: AS SHOWN	Date: 11-90	**KRAZAN & ASSOCIATES** Merced Fresno Visalia Bakersfield
	Drawn by: JAK	Approved by: C.W.	
	Project No. E90-242	Drawing No. 2 of 3	



NORTH

0' 10' 20'

SCALE IN FEET (±)

NOTE:
TWO SAMPLES WERE TAKEN FROM DIFFERENT DEPTHS AT THE SAMPLE LOCATIONS MARKED "A/B".

LEGEND:

▲ APPROX. LOCATION OF SOIL SAMPLE

⌖ APPROX. LOCATION OF EXPLORATORY SOIL BORING (DAMES & MOORE 5-29-90)

● APPROX. LOCATION OF EXPLORATORY SOIL BORING (KRAZAN & ASSOC. 11-13-91)

KRAZAN & ASSOCIATES
Fresno Visalia Bakersfield

Scale: AS SHOWN	Drawn by: JK	Project No. E 90-242
Date: 12-91	Approved by: T.Z.	Drawing No. 3 of 3

CHEVRON STATION #0909
1509 VAN NESS AVE.
FRESNO, CA

11/13/91
7:00

FRESNO COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH SYSTEM
P.O. BOX 11867, FRESNO, CALIFORNIA 93721
TELEPHONE (209) 445-3271
PERMIT APPLICATION FOR UNDERGROUND STORAGE TANKS

☐ ABANDONMENT/REMOVAL ☐ NEW CONSTRUCTION ☒ SUBSURFACE ASSESSMENT/REMEDIATION

☐ ABANDONMENT/IN PLACE ☐ REPAIR OR REPLACE ☐ PRECISION TEST:DATE ________

SITE INFORMATION:

Site Address 1506 Van Ness City Fresno Zip 93721
Facility Name Chevron Station # 9-0909 Cross Street Stanislaus
Owner/Operator Chevron USA Phone 348-2200
Mailing Address P.O. Box 5004 City San Ramon Zip 94583-0804

CONTRACTOR INFORMATION:

Company Krazan + Assos.
Address 215 W. Dakota
City Clovis Phone 348-2200
Contractor Lic. No./Class 499908

CONSULTANT INFORMATION:

Company Same as Contractor
Address
City Phone
Registration Lic. No/Type RCE 002051

TANK CLEANING/TRANSPORTER INFORMATION:

Company
Address
City Phone
Waste Transporter ID No.
Tank Destination
Rinsate Manifested ☐ Tank Manifested ☐

PRECISION TESTER INFORMATION:

Company
Address
City Phone
Type of Test
Tester Name
CA State Cert. No.

TANK INFORMATION

PERMIT #	SIZE	PRODUCT	AGE OF TANK	PREVIOUSLY STORED MATERIAL

DESCRIBE WORK TO BE PERFORMED

Soil boring to define extent of contamination

(Use Reverse Side if Necessary)

OFFICIAL USE ONLY

Site I.D. 86241 CT 23 APN 466-142-07 Fee $ None Application Date 11/13/91

NOTE: Permit expires ninety (90) days after the application date. The applicant has received, understands, and will comply with the attached conditions of this permit and any other State and local regulations.

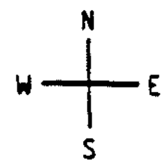
Chris Brown
Approved by:

Michael Fuller
Applicant Name (Please Print)

M. Fuller
Applicant Signature/Title

<u>PLOT PLAN</u>

Please indicate the location of the following: Major building(s), tank(s) lines, dispenser island(s), streets or alleyways, approximate excavation limits, boring locations and any other relevent information that exists at the site.



See approved work plan.

Additional comments (Cont'd):

TC:dhp/EHS#2460

FRESNO COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH SYSTEM

GENERAL CRITERIA FOR SUBSURFACE
ASSESSMENT/REMEDIATION ACTIVITIES

Variations to any General Criteria may be appropriate on a site specific basis and should be discussed with FCDH prior to the initiation of any investigation.

1. All environmental assessments and/or remedial actions shall be preceded by a written workplan which is to be submitted to Fresno County Department of Health (FCDH) for review and comment prior to the commencement of work. The workplans should fully describe soil and water sampling procedures which are consistent with generally accepted engineering principles and practices.

2. Samples are to be analyzed for constituents representative of known and/or suspected contaminants of concern.

3. Documentation of the precision (reproducibility) and accuracy (use of spiked samples) of the chemical analytical methodology used for the assessment may be required from the laboratory performing the analyses.

4. Workplans and/or reports of remedial excavation operations shall include a scale diagram depicting excavation limits, existing site features, confirmation sample locations and depths and shall outline in detail the handling and disposition of contaminated soil. All excavation procedures shall conform to appropriate CAL-OSHA requirements. Contractors designated to perform work at sites where soil has been impacted by hydrocarbon constituents should possess a General Engineering "A" license and/or demonstrate experience handling hazardous materials.

5. All work and reports which require geologic or engineering evaluations and/or judgements must be performed under the direction of an appropriately registered or certified professional (Business and Professions Code Section 6735, 7835, 7835.1).

6. Workplans for environmental assessments should include a statement from a property owner, responsible party, or other interested party stating what response, if any, is needed or expected from FCDH following submission of the results of the investigation.

7. All reportings of soil and/or water sampling events must be accompanied by a site plan depicting sampling locations and all pertinent site features (i.e., former or existing tank locations, etc.).

8. Excavated soil, drill cuttings from soil borings, liquid generated by rinsing drilling equipment, liquid purged from groundwater monitoring wells and any other hazardous or potentially hazardous waste generated by any assessment,

remedial action or tank removal procedure shall be properly identified, managed and disposed of in accordance with all applicable, Federal, State, and Local regulations.

9. Proposals for aeration of contaminated soil and/or in-place remediation procedures shall be submitted for concurrent review and approval by the Fresno County Air Pollution Control District <u>and</u> Fresno County Hazardous Materials/UST Program <u>prior to</u> the implementation of the plan.

Site assessments utilizing soil borings to define the extent of contaminated soil shall meet the following conditions.

10. The locations of soil borings relative to City of Fresno property shall be checked and permits to install groundwater monitoring wells shall be obtained from Fresno City Public Works Department and/or any other appropriate municipal government.

11. At least one soil sample per fifteen vertical feet in a boring should be submitted to a California State Certified Hazardous Waste Laboratory for analysis of suspected contaminants of concern in order to ensure complete subsurface profile data.

12. The vertical extent of contaminated soil can generally be determined by two consecutive five foot soil samples with no detectable contaminants of concern (analyzed by a California State Certified Hazardous Waste Laboratory).

13. Exploratory soil borings which are intended to penetrate contaminated soil should have a stated maximum depth that is no closer than fifteen feet to the estimated groundwater surface level.

14. Workplans for monitoring well installation shall specify that soil borings for monitoring well emplacement will not be drilled through contaminated soil and shall include written descriptions of monitoring well installation procedures which specify that annular space backfill including sand/bentonite/cement slurries will be emplaced under pressure.

15. Soil borings and/or groundwater monitoring wells installed by drilling shall be drilled only by contractors who maintain a copy of a valid C-57 license and proof of workmen's compensation at the Fresno County Department of Health Underground Storage Tank (UST) Program. Hand auger bore holes shall be drilled only by consultants/contractors who provide proof of valid workmen's compensation insurance or provide a letter stating that they are exempt from the workmen's compensation laws of the State of California.

NOTE: A permit for subsurface site assessment must be completed and approved and an inspection appointment should be made at least 48 hours <u>prior to</u> the commencement of any Assessment/Remediation activity.

Revised 6/17/91

FRESNO COUNTY DEPARTMENT OF HEALTH

ENVIRONMENTAL HEALTH SYSTEM
P. O. Box 11867, Fresno, California 93721
Telephone: 445-3350

PERMIT TO CONSTRUCT, REPAIR, RECONSTRUCT, OR DESTRUCT A WATER WELL OR PUMP INSTALLATION

Application Date: 11/~~12~~ 13/91

Well I. D. Number: N/A
T 14S R 19E S SE1/4 ~~S~~1/4
APN 466-142-07

Starting Date: 11/~~12~~ 13/91
Completion Date: 11/18/91

JOB ADDRESS/LOCATION: 1506 VAN NESS

Owner's Name: CHEV[redacted] Phone: (510) 842-9655
Address: P.O. BOX [redacted] City: SAN RAMON, CA
Contractor's Name: KRAZAN & ASSOCIATES License No. (C57) #499908 Phone: (209) 348-2200

TYPE OF WORK (Check): NEW WELL ☐ RECONSTRUCTION ☐ DESTRUCTION ☐ REPAIR ☐ PUMP ☐ OTHER ☒ SOIL BORING

DISTANCE TO NEAREST: SEPTIC TANK ____ SEWER LINES ____ PIT PRIVY ____ SUBSURFACE SEWAGE LEACHING FIELD ____ CESSPOOL/SEEPAGE PIT ____ OTHER ____

INTENDED USE	TYPE OF WELL	CONSTRUCTION SPECIFICATIONS
____ Industrial	____ Cable Tool	Diameter of Well Casing ____
____ Domestic/Private	____ Drilled	Gauge of Casing ____
____ Domestic/Public	____ Gravel Pack	Casing Depth ____
____ Agricultural	____ Rotary	Annular Seal Depth ____
____ Cathodic	____ Hardrock Hollow Stem Auger	Type of Material Used for Annular Seal ____
x Other Site Characterization	x Other Soil Borings	Other Information ____

Soil Borings

NEW WELL PUMP INSTALLATION: Contractor ____ Type of Pump ____ Horsepower ____

DESTRUCTION OF WELL: Well Diameter ____ Approximate Depth ____ Penetrates Corcoran Clay ____ Describe Material and Procedure ____

I hereby state the information above is correct. I understand that a permit must be obtained before any work is started and that various inspections will be required before the work can be finalized.

I understand approval of the Water Well Permit does not indicate whether this property is suitable for an individual sewage disposal system or that a permit to install such system will be granted.

Signed: Tom Ehmer Title: PROJECT MANAGER

DRAW PLOT PLAN

PLEASE SEE ATTACHED SITE PLAN & WORKPLAN

FOR OFFICE USE ONLY

Permit Approved: Chris Braun
Date: 11/13/91

WELL INSPECTIONS

Final ____ (Initial) (Date)

PUMP INSTALLATION INSPECTION

____ (Initial) ____ (Date)

cc: Building & Safety

1. White — File Copy
2. Canary — Field Copy
3. Pink — Applicant's Copy

DOH 4240-11 (Rev. 9/78)
H-44

CERTIFICATION OF WORKMEN'S COMPENSATION*
Labor Code Section 3800

Check the appropriate box:

_____ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subjec the workmen's compensation laws of California.

__X__ I have in existence a valid copy of workmen's compensation insurance as is evidenced by a certificate or copy thereof on file with the Count Fresno.

_____ I have obtained a certificate of consent to self-insure issued by the Director of Industrial Relations as is evidenced by a certificate or copy thereo file with the County of Fresno.

*Applicable for work in excess of $100.00

Signed Tom Elmer

DECLARATION OF CONSTRUCTION LENDER REFERENCE FROM CIVIL CODE

Section 3097(i) requires an applicant for building permit to indicate on the application, in space provided, the name, branch designation if any, and add of the construction lender; or if there is not a construction lender financing the subject construction, that fact must be noted in the space provided.

Name of Construction Lender ________________

Branch Designation ________________

Address ________________

☐ There is no construction lender.

Applicant's Signature ________________ Date ________

DECLARATION EXEMPTION FOR OWNER-BUILDER
Reference From
State Business and Professional Code

7031.5 Statement of contractor as to license required as part of local permit regulations. Each county or city which requires the issurance of a permit condition precedent to the construction, alteration, improvement, demolition or repair of any building or structure shall also require that each applicant such a permit file as a condition precedent to the issuance of a permit a statement which he has prepared and signed stating that the applicant is licensed der the provisions of this chapter, giving the number of the license and stating that it is in full force and effect, or if the applicant is exempt from the pr sions of this chapter, the basis for the alleged exemption.

I HEREBY CERTIFY THAT I AM EXEMPT FROM THE CONTRACTORS LICENSE LAWS OF THE STATE OF CALIFORNIA UNDER SECTION 7031.5 OF THE BUS. AND PROF. CODE BECAUSE OF ONE OR MORE OF THE FOLLOWING CONDITIONS:

1. I am the owner of the property and the structure is being built for the occupancy of the owner and will not be offered for sale within the year. (Sec. 7044)
2. The building does not contain more than three (3) dwelling units, one of which will be occupied by me as the owner. (Sec. 7044)
3. As the owner, I am contracting with a licensed contractor to construct the project. (Sec. 7050)
4. Aggregate total of the contracts is not more than $100.00 for labor, material and all other items of work. (Sec. 7048)
5. I am a licensed architect, engineer, or structural pest control operator operating within the scope of my license. (Sec. 7051)
6. I am furnishing materials and supplies without fabrication as exempted by Sec. 7052 of the State Contractors License Laws. (Sec. 7052)
7. I am an employee with wages as my sole compensation. (Sec. 7053)
8. The property is in the ownership of the Federal Government. (Sec. 7047)

Signed (Owner): ________________

Signed (Agent for Owner): ________________

Owner's Address ________________

Telephone No. ________ Date ________

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 1
Project No. E90-242

DATE DRILLED: 11/13/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
						Asphaltic Concrete at surface
						Fine to coarse SAND with minor silt (SW), dark brown, moist, very loose, drills easy. Contains rubble.
						Becomes dense below 4 feet.
5	NO	0.0	XX		SW	
10	NO	0.0	XX			Traces of fine gravel, yellowish-brown, loose, below 9 feet.
						More fine gravel with traces of silt below 13 feet.
					ML	SILT (ML), grayish brown, moist, drills firm.
15	NO	204	XX		SP	Fine to coarse SAND with increased coarse sand fraction (SP), yellowish-brown, moist, drills very firm.
						SILT (ML), non-elastic, light gray with rust colored mottles, less moist than at 15 feet, drills hard.
20	NO	9.0	XX		ML	
25	NO	1.6	XX			Grades to light reddish-brown with minor fine to medium sand at 25 feet.

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 1
Project No. E90-242

DATE DRILLED: 11/13/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
					ML	Becomes less dense at 26 feet.
					SW	Fine to coarse SAND with minor fine gravel (SW), reddish-yellow, moist, medium dense.
30	NO	0.0	XX			
35	NO	0.0	XX			
					CH	Fine to coarse sandy CLAY (CH), elastic, brown wtih yellowish-red mottles, moist drills firm.
40	NO	0.0	XX			
					GM	Fine to medium gravelly, SAND with trace silt (GM), brown, moist, drills firm.
45	NO	0.0	XX			BOTTOM OF BORING
50						

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 2
Project No. E90-242

DATE DRILLED: 11/13/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
						Asphaltic Concrete at surface
					SM	Silty, fine to coarse SAND (SM), dark brown, slightly moist, loose, drills firm. Color becomes brown at 5 feet. Becomes very firm below 6 feet.
5	NO	0.0	XX			
					SW	Fine to coarse SAND (SW), brown, moist, drills very firm.
10	NO	0.0	XX			
					ML	SILT (ML), reddish-brown, moist, drills firm.
					SW	Fine to medium SAND (SW), brown, moist, drills firm.
15	NO	0.0	XX			
					ML	SILT (ML), with fine sand, brown, slightly increased moisture, drills firm.
					ML	SILT (ML), olive-gray, mottled, moist, drills firm.
20	NO	0.0	XX			
25	NO	0.0	XX			

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 2
Project No. E90-242

DATE DRILLED: 11/13/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
					ML	
						Gravelly, fine to coarse SAND (GP/SW), reddish-yellow, moist, drills easy.
30	NO	0.0	XX			
					GP/SW	
35	NO	0.0	XX			
						Clayey, fine to medium sandy SILT (ML/MH), elastic, yellowish-red, moist, drills firm.
40	NO	0.0	XX			
					ML/MH	
					CH	CLAY (CH), elastic, gray, moist, drills firm, biogenic structures.
45	NO	0.0	XX			
						BOTTOM OF BORING
50						

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 3
Project No. E90-242

DATE DRILLED: 11/14/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
						Asphaltic Concrete at surface
					SM/SP	Silty, fine SAND (SM/SP), with trace fine gravel, dark reddish-brown, slightly moist, loose, drills easy.
						Becomes medium dense at 4 feet.
5	NO	0.0	XX			
					SP	Fine to coarse SAND predominantly coarse (SP), red, slight decrease in moisture, very dense, drills firm.
10	NO	0.0	XX			
					ML	SILT (ML), reddish-brown, moist, drills firm.
15	NO	0.0	XX		SW	Fine to coarse SAND (SW), reddish-brown, moist, very dense, drills firm.
					SM	Becomes silty (SM)
					SW	Silt content diminishes (SW)
20	NO	0.0	XX		CH	CLAY (CH), elastic, grayish-brown, moist, drills hard.
						Becomes silty at 23 feet.
						Mottled green, pink, and reddish-brown, micaceous, increased moisture, grades to 24.5 feet.
25	NO	0.0	XX		ML	SILT (ML), light reddish-brown, moist, drills firm.

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 3
Project No. E90-242

DATE DRILLED: 11/14/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
30	NO	0.0	XX			
						Color becomes brownish-yellow at 31 feet.
					ML	
35	NO	0.0	XX			
40	NO	0.0	XX			
					ML	Clayey sandy SILT (ML), slightly elastic, yellowish-brown, moist, drills firm.
					MH	Clayey SILT (MH), elastic, grayish-brown, moist, drills firm.
45	NO	0.0	XX			BOTTOM OF BORING
50						

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 4
Project No. E90-242

DATE DRILLED: 11/14/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
						Asphaltic Concrete at surface
						Silty fine to medium SAND (SM), dark brown, slightly moist, loose, drills easy.
						Firm below 3 feet, color becomes red-brown.
5	NO	0.0	XX		SM	
						Color becomes red below 9 feet.
10	NO	0.0	XX		SP/SM	Silty fine SAND (SP/SM), reddish-brown, moist, drills firm.
						SILT (ML), olive-brown, moist, drills firm.
15	NO	0.0	XX			
					ML	
20	NO	0.0	XX			
25	NO	0.0	XX			

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Project: Chevron Station #9-0909
1506 Van Ness Avenue, Fresno, California

Boring No. 4
Project No. E90-242

DATE DRILLED: 11/14/91 TYPE OF BORING: 3 1/4" I.D. Hollow Stem Auger

HOLE ELEV: NA GROUNDWATER LEVEL: N/A LOGGED BY: MF

Depth (Ft)	Odor	PID Reading	Undisturbed Sample	Graphic Log	Soil Classification	SOIL DESCRIPTION
					ML	
30	NO	0.0	XX			
					SM	Silty fine to medium SAND (SM), reddish-brown, moist, drills firm.
35	NO	0.0	XX			
40	NO	0.0	XX			
					ML	SILT (ML), reddish-brown, moist, drills firm.
45	NO	0.0	XX			BOTTOM OF BORING
50						

*R = Refusal, greater than 100 blows/foot

KRAZAN & ASSOCIATES, INC.

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12553
CLIENT: Krazan & Associates
CLIENT JOB NO.: E90-242

DATE RECEIVED: 11/19/91
DATE REPORTED: 11/21/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12553- 1	0115	11/13/91	11/19/91
12553- 2	0125	11/13/91	11/20/91
12553- 3	0140	11/13/91	11/19/91
12553- 4	0145	11/13/91	11/19/91
12553- 5	0215	11/13/91	11/19/91
12553- 6	0225	11/13/91	11/19/91
12553- 7	0240	11/13/91	11/19/91
12553- 8	0245	11/13/91	11/19/91
12553- 9	0315	11/14/91	11/19/91
12553-10	0320	11/14/91	11/19/91

Laboratory Number:	12553 1	12553 2	12553 3	12553 4	12553 5
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	21	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	0.50	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	0.14	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	2.3	ND<.005	ND<.005	ND<.005	ND<.005

Laboratory Number:	12553 6	12553 7	12553 8	12553 9	12553 10
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12553
CLIENT: Krazan & Associates
CLIENT JOB NO.: E90-242

DATE RECEIVED: 11/19/91
DATE REPORTED: 11/21/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12553-11	0325	11/14/91	11/19/91
12553-12	0345	11/14/91	11/19/91
12553-13	0415	11/14/91	11/19/91
12553-14	0420	11/14/91	11/19/91
12553-15	0425	11/14/91	11/19/91
12553-16	0445	11/14/91	11/19/91

Laboratory Number:	12553 11	12553 12	12553 13	12553 14	12553 15
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005

Laboratory Number:	12553 16
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)
OIL AND GREASE:	NA
TPH/GASOLINE RANGE:	ND<1
TPH/DIESEL RANGE:	NA
BENZENE:	ND<.005
TOLUENE:	ND<.005
ETHYL BENZENE:	ND<.005
XYLENES:	ND<.005

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E   O F   A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 12553

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	07/23/91	200ng	95/89	6.0	59-121
Benzene	06/13/91	200ng	81/84	3.9	70-125
Toluene	06/13/91	200ng	87/89	1.9	74-116
Ethyl Benzene	06/13/91	200ng	81/81	0.4	75-120
Total Xylene	06/13/91	600ng	90/91	1.2	75-119

Richard Srna, Ph.D.
Ouyi A Nwo (?) (?)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12573
CLIENT: Krazan & Associates
CLIENT JOB NO.: E90-242

DATE RECEIVED: 11/27/91
DATE REPORTED: 12/05/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12573- 1	B-3 40'	11/26/91	12/04/91
12573- 2	B-4 40'	11/26/91	12/04/91

Laboratory Number:	12573 1	12573 2
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)	
OIL AND GREASE:	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA
BENZENE:	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 12573

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	07/23/91	200ng	105/105	0.2	59-121
Benzene	06/13/91	200ng	92/97	5.3	70-125
Toluene	06/13/91	200ng	91/95	3.8	74-116
Ethyl Benzene	06/13/91	200ng	91/94	2.7	75-120
Total Xylene	06/13/91	600ng	92/95	3.2	75-119

Richard Srna, Ph.D.
Onuzi A Nwogu (?)
Laboratory Director

First Half 2021 Semiannual Groundwater Monitoring Report

Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

15 July 2021

Project No.: 0577677

The business of sustainability

Signature page

15 July 2021

First Half 2021 Semiannual Groundwater Monitoring Report

Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Greg Leung
Project Manager

Gregory J. Wheeler
Partner-in-Charge

CERTIFIED HYDROGEOLOGIST
Isaac Morrison Pelz
1056
exp. Jan 2022
STATE OF CALIFORNIA

Isaac Pelz, PG, CHG
Principal Consultant

ERM-West, Inc.

980 9th Street, Suite 750
Sacramento, California 95814

Telephone: +1 916 924 9378
Fax: +1 916 920 9378

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Acronyms and Abbreviations

µg/L	Micrograms per liter
AST	Aboveground storage tank
bgs	Below ground surface
CV-RWQCB	Central Valley Regional Water Quality Control Board
ERM	ERM-West, Inc.
ft/ft	Feet per foot
HSRA	California High Speed Rail Authority
ISCO	In situ chemical oxidation
MCL	Maximum Contaminant Level
MRP	Monitoring and Reporting Program
PCE	Tetrachloroethene
SVE	Soil vapor extraction
Univar Solutions	Univar Solutions USA Inc.
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compound
VW&R	Van Waters & Rogers Inc.
WDR	Waste Discharge Requirement

1. INTRODUCTION

On behalf of Univar Solutions USA Inc. (Univar Solutions), ERM-West, Inc. (ERM) prepared this *First Half 2021 Semiannual Groundwater Monitoring Report* to summarize first half 2021 semiannual groundwater monitoring and sampling results for the former Van Waters & Rogers Inc. (VW&R) facility located at 1152 G Street in Fresno, Fresno County, California (site; Figure 1). Groundwater monitoring was conducted in general accordance with the *Monitoring and Reporting Program R5-2015-0136*, approved by the Central Valley Regional Water Quality Control Board (CV-RWQCB 2015) effective 11 December 2015. The CV-RWQCB issued an update to the *Monitoring and Reporting Program R5-2015-0136* dated 11 June 2019 (MRP; CV-RWQCB 2019). On 22 December 2020, CV-RWQCB approved the request for rescission of the Waste Discharge Requirements R5-2015-0136. Groundwater monitoring and reporting will continue to assess post remediation site conditions.

Following this introductory section, this report consists of the following components:

- Section 2: Site background
- Section 3: Groundwater monitoring activities
- Section 4: Groundwater monitoring results
- Section 5: SVE system monitoring summary
- Section 6: Summary and conclusions
- Section 7: References used in preparation of this report

Figures and tables follow the text, and supporting information is provided in the appendices.

2. SITE BACKGROUND

The site occupies approximately 1.25 acres in Fresno, California, and formerly housed a brick warehouse with loading docks and associated parking, all of which were demolished in 2016 (Figure 2). From approximately 1965 to 1986, VW&R leased the site and used the northeastern corner to store tetrachloroethene (PCE) in an aboveground storage tank (AST), which has since been removed. A chemical supply company known as United Agri-Products, or UAP Special Products, occupied the site from 1987 to 1989. The site was reportedly used primarily as an office and warehouse for UAP Special Products' wholesale agricultural/chemical business. From 1989 to 2007, the site was leased by Good Guys Tire Center for use as a tire storage warehouse. The site is currently vacant and falls within the footprint of the proposed California High Speed Rail Authority (HSRA) development. HSRA took possession of the site through eminent domain in September 2015 and site facilities were demolished in 2016. HSRA continues acquiring and demolishing properties along G Street, including the former Lamoure's Cleaners (dry-cleaning) site.

A summary of the investigation and remediation history has been provided in numerous quarterly and semiannual reports. In brief, PCE was initially reported in soil samples collected from soil borings near the former AST in 1994 as part of a Phase I Environmental Site Assessment and soil investigation. Soil, groundwater, and soil vapor investigations and remediation followed. Provided below is a high-level overview of remediation activities performed on and off site.

2.1 Soil Vapor Remedial Actions

In 1998, Univar Solutions (formerly Univar USA Inc.) initiated remediation activities with a soil vapor extraction (SVE) system onsite. The SVE system used three nested vapor well pairs (SVE-1S/D, SVO-1S/D, and SVO-2S/D), which had screened intervals in the vadose zone from 20 to 50 feet below ground surface (bgs) and 70 to 90 feet bgs. In February 2004, Univar Solutions submitted a letter to the CV-RWQCB concluding that the SVE system had successfully remediated the vadose zone and, to some degree, the groundwater near the former AST.

In 2008, Univar Solutions implemented an SVE pilot test in the area of off-site well MW-04, as documented in the *Soil Vapor Extraction Pilot Test Report, Former Univar USA Inc. Facility, 1152 G Street, Fresno, California* (Rubicon 2008). This was conducted in response to CV-RWQCB's concerns that PCE may be present in the vadose zone near MW-04 and was acting as a source to groundwater.

Univar Solutions installed a full-scale SVE system near MW-04 with nested vapor well pairs (VW-01A/B, through VW-04A/B), which had screened intervals in the vadose zone from 20 to 50 feet bgs and 70 to 90 feet bgs. The SVE system began operation in November 2009 (Figure 2) using wells MW-04, VW-01A/B through VW-04A/B, VW-05, VW-06, and VW-07. The extracted soil vapor was treated using four carbon vessels connected in series, each containing 1,600 pounds of granular activated carbon. VW-01A and VW-02A/B were most recently the only wells open to SVE.

The SVE system ran continuously until 27 January 2020, then was powered down due to control board and motor malfunctions. Between late January and March 2020, the SVE system operated intermittently. In accordance with the 28 May 2020 Workplan (ERM 2020a), supplemental SVE wells and probes were sampled in June 2020 to evaluate curtailment of the SVE treatment system. The sampling results and recommendations were presented in the SVE Curtailment Request submitted to the CV-RWQCB on 10 August 2020 (ERM 2020b). In a letter dated 11 November 2020, the CV-RWQCB denied the SVE Curtailment Request due to the high mass removal rate observed prior to the shutdown of the SVE system, and requested that the SVE system be restarted, as soon as practical.

Following the CV-RWQCB request, the SVE system was restarted on 3 March 2021. Upon restart, operational set points were increased to stress the formation and provide optimal condition for increased mass removal in order to compare to historical data. The system operated from 3 March to 9 May 2021. Mass removal rates observed were stable when compared to historical rates.

During the evaluation of data, a miscalculation was discovered affecting mass removal data in previously submittal reports. After corrections were made, a total of 2,174 pounds (previously reported at approximately 21,253 pounds) have been removed since 16 May 2014. This assessment was discussed with the CV-RWQCB. Based on the evaluation and proposed HSRA redevelopment, an *Updated Soil Vapor Extraction System Curtailment Request (ERM 2021)* was submitted to the CV-RWQCB on 2 June 2021.

2.2 Groundwater Remedial Actions

In 2015, an in-situ chemical oxidation (ISCO) pilot test was conducted. In preparation of ISCO activities, one monitoring well (MW-23) and eight injection wells (IW-01 through IW-08) were installed in February 2015. ISCO injection activities were subsequently conducted using 2.5 percent potassium permanganate solution. The 2015 ISCO activities are summarized in the *Semiannual Groundwater Monitoring Report, January through June 2015, Former Van Waters & Rogers Inc. Facility, 1152 G Street, Fresno, California* (ERM 2015).

On 11 December 2015, the CV-RWQCB issued Waste Discharge Requirement (WDR) Order R5-2015-0136 for the full-scale implementation of the ISCO remedy. This order superseded the work being performed under the General Order, and all work was performed in accordance with WDR Order R5-2015-0136, as updated by the 2019 MRP revisions.

Based on the effectiveness of the ISCO pilot test in 2015, a full-scale ISCO injection program was conducted in November 2017. Nine target wells (VW-01B through VW-04B, VW-05, VW-06, MW-14S, MW-21S, and MW-23) were selected and redeveloped to ensure effective deployment of the ISCO compound and that the wells could withstand ISCO activities. The 2017 ISCO activities are summarized in the *Fourth Quarter 2017 and Annual Groundwater Monitoring Report, Former Van Waters & Rogers Inc. Facility, 1152 G Street, Fresno, California* (ERM 2018).

A second full-scale ISCO injection program was completed in November 2018. Eleven wells (IW-01, IW-04, IW-06, IW-08, MW-05S, MW-11, MW-12, MW-18S, VW-03B, VW-05, and VW-07) were selected for deployment of the ISCO compound. The 2018 ISCO activities are summarized in the *Fourth Quarter 2018 and Annual Groundwater Monitoring Report, Former Van Waters & Rogers Inc. Facility, 1152 G Street, Fresno, California* (ERM 2019).

Based on the success of the injections conducted to date, no additional injection activities are planned. As such, the WDR Order and associated MRP were no longer needed and a request to rescind was submitted on 23 October 2020. The CV-RWQCB approved the rescinding of the WDR Order and MRP on 22 December 2020.

On 12 January 2021, Univar Solutions submitted the *Response to Nitrate Control Program Notice to Comply, Former Van Waters & Rogers Inc. Facility, 1152 G Street, Fresno, California* (Univar 2021) to the CV-RWQCB in response to the Nitrate Control Program Notice to Comply, dated 29 May 2020; in consideration of the recent enrollment rescission of the WDR Order and MRP, Univar requested that the site be removed from the Salt and Nitrate Control Programs. On 14 January 2021, the CV-RWQCB approved this request to disregard the Notice to Comply from both the Salt Control Program and Nitrate Control Program.

3. GROUNDWATER MONITORING ACTIVITIES

First half 2021 semiannual monitoring activities were conducted from 5 through 7 April 2021. Monitoring was performed in accordance with the 2019 MRP (Table 1).

Consistent with the second semiannual 2020 monitoring event, twenty-eight monitoring wells (BIO-01, MW-01, MW-01D, MW-03, MW-04, MW-06, MW-07, MW-12, MW-13, MW-18S, MW-18D, MW-20D01, OB-07, OB-08, VW-01B through VW-04B, VW-05 through VW-07, T01-02, T01-03, T02-01, T02-02, T02-02D, T02-03, and T03-01D) were not gauged or sampled because of the CV-RWQCB's well decommissioning approval., as part of the HSRA construction activities, at the site and/or historical monitoring results indicating concentrations that were stable or below Maximum Contaminant Levels (MCLs). Per CV-RWQCB's communication, MW-07, MW-10, and MW-20D01 will be retained for future monitoring.

3.1 Water Level and Water Quality Monitoring

Monitoring activities conducted during this reporting period included depth-to-water measurements at all 31 wells and groundwater sampling at 27 of 28 wells. Monitoring well construction details are presented in Table 2 and well locations are depicted on Figure 2.

Confluence Environmental, Inc., of Sacramento, California, conducted groundwater sampling activities under ERM's supervision. The depth-to-water and groundwater elevation data are summarized in Table 3 and historical depth-to-water and groundwater elevation data are included as Appendix A. Sampling activities were recorded on log sheets, which are presented in Appendix B.

Sampling procedures included purging groundwater using a bladder pump, while recording water quality parameters, including pH, conductivity, temperature, dissolved oxygen, and oxidation-reduction potential. Once the parameters were stable, groundwater samples were collected. Laboratory-supplied, clean sample containers were filled directly from dedicated tubing at each well.

Reusable sampling supplies were decontaminated by either steam-cleaning or detergent wash, and were rinsed with deionized water. Equipment blank samples were collected and analyzed to ensure proper decontamination procedures. Purge water and decontamination water were contained in 55-gallon drums and will be disposed of offsite.

All groundwater samples collected for analysis were stored in an ice-chilled cooler for transportation to the laboratory under chain-of-custody protocol. SGS Laboratories of Orlando, Florida, analyzed the samples per the 2019 MRP requirements. Field activities were documented using the appropriate field forms, including sample labels and chain-of-custody documentation.

As discussed in Section 2.2.1, due to recent reductions in monitoring requirements as a result of the rescission of the WDR Order and MRP, groundwater samples were only analyzed for VOCs by United States Environmental Protection Agency (USEPA) Method 8260B.

Groundwater monitoring and sampling field parameters during the current reporting period are summarized in Table 4 and analytical results are presented in Table 5; historical analytical results for selected VOCs and metal/inorganic compounds are summarized in Appendices C and D, respectively.

Duplicate and trip blank samples were collected for quality assurance/quality control purposes at the time of sampling. The laboratory report, associated chain-of-custody documentation, and ERM quality assurance/quality control review of the data are included in Appendix E. No data required rejection. All of the data, including qualified data, can be used for decision making purposes.

3.2 Well Repair Status

ERM performed an assessment of the condition of the wells during the current reporting period. Minor damage was observed in wells IW-02, IW-05, IW-07, IW-08, MW-11, MW-14D, MW-14S, MW-15D, MW-15D01, MW-16D, MW-17D, MW-19D, MW-19S, MW-20D, MW-20S, MW-21S, MW-22S, MW-23, and T01-01. Selected wells have been approved for decommissioning in anticipation of HSRA redevelopment and well repairs are on hold until then. The status of well conditions is provided in Table 6.

4. GROUNDWATER MONITORING RESULTS

Groundwater level measurements and sampling analytical results obtained during the current reporting period are presented in this section.

4.1 Groundwater Flow

Groundwater elevation contour maps for the shallow and deep groundwater units are presented on Figures 3 and 4, respectively. The groundwater elevation measured at MW-15S (191.38) during site-wide gauging activities on 5 April 2021, is considered anomalous. A second value (190.27), based on data collected prior to sampling on 6 April 2021, was used for contouring purposes instead (as shown in Table 3 and on Figure 3).

A review of the current reporting period's groundwater elevation data indicates that shallow groundwater flow was generally to the southwest at an approximate gradient of 0.0004 foot per foot (ft/ft). Groundwater flow in the deep groundwater unit was generally to the southwest at an approximate gradient of 0.002 ft/ft. Current and historical horizontal and vertical groundwater flow directions and gradients are included in Appendix F.

Vertical gradients were calculated using the equation $(h_2-h_1)/(z_2-z_1)$, where:

h_1 = Shallow well groundwater elevation

h_2 = Deep well groundwater elevation

z_1 = Midpoint of the submerged section of the shallow well screen

z_2 = Midpoint of the submerged section of the deep well screen

As shown in Appendix F, groundwater flow directions and gradients historically appear variable. The ISCO injection events in 2015, 2017, and 2018 do not appear to have significantly affected the local hydrology.

4.2 VOC Analytical Results – Shallow Wells

VOCs detected in groundwater during the reporting period are included in Table 5 and historical data of selected VOCs are included in Appendix C. PCE and 1,2-dichloroethane were detected above their respective MCLs. No other VOCs were detected above their respective MCLs.

The distribution of PCE in shallow groundwater is shown on Figure 5. Time versus concentration graphs for PCE in shallow groundwater are presented for selected wells on Figures 6a and 6b and discussed below. Review of the graphs and historical sampling data shows that ISCO has had a significant effect on PCE and its degradation products, and that concentrations have generally decreased in injection wells and downgradient wells since the full-scale ISCO events. In the injection wells used for the 2017 and 2018 full-scale ISCO events, concentrations of PCE and its degradation products were all non-detect at the laboratory method detection limit.

The highest remaining PCE concentrations are located north to northwest of the site in the vicinity of wells IW-05, MW-14S, MW-17S, MW-19S, MW-21S, and T01-01 (Figure 5). The maximum PCE concentration detected in this area was 49.2 micrograms per liter (µg/L) detected in well MW-14S. Other shallow groundwater wells have shown historical and sporadic detections of PCE in the downgradient, upgradient, and cross-gradient directions, such as MW-15S, which reported concentration of PCE at 84.7 µg/L. These detections are not necessarily attributable to the site.

4.3 VOC Analytical Results – Deep Wells

The analytical results for the deep well groundwater samples collected during the reporting period are shown on Figure 7. No VOCs were detected above their respective MCLs, with the exception of detections of PCE in the samples collected from MW-15D (7.9/7.9 μg/L). These detections are consistent with historical results at this location and indicates a decrease when compared to results from November 2020 (27.3/27.4 μg/L).

Figure 8 presents a time versus concentration graph for PCE in selected deep-zone monitoring wells. A review of the graph and historical sampling data shows that PCE concentrations are stable to decreasing in the deep-zone monitoring wells since the full-scale ISCO events.

5. SVE SYSTEM MONITORING SUMMARY

During the current reporting period, the SVE system operated in accordance with San Joaquin Valley Air Pollution Control District's permit requirements from 3 March to 9 May 2021. Table 7 summarizes current and historical SVE performance. Figure 9 presents a graph showing operation time versus VOC concentration and cumulative VOC mass removed from 31 December 2012 to 30 June 2021 (8 years). The total VOC mass removed by the SVE system as of 9 May 2021 was approximately 2,174 pounds.

On 3 March 2021, the SVE system was restarted and operated at increased operational parameters (i.e., increased vacuum, increased extraction flowrate) compared to historical operations. The increased operational parameters for the SVE system allowed for the formation to be stressed and provided an optimal condition for increased mass removal. VOC concentration data collected and observed during operation and maintenance activities did not increase but remained similar to historical operational data. The data confirmed that the SVE system is unable to extract additional VOC mass from the subsurface and has reached a steady state VOC mass removal rate.

Based on the evaluation of the data, samples results, and proposed un-occupied redevelopment of the area by HSRA started in June 2021, a request for curtailment of the SVE system is appropriate.

On 2 June 2021, an *Updated Soil Vapor Extraction System Curtailment Request* (ERM 2021) was submitted to the CV-RWQCB.

6. SUMMARY AND CONCLUSIONS

This *First Half 2021 Semiannual Groundwater Monitoring Report* presents a summary of the site activities, variances from the previous sampling event, and groundwater conditions observed during the current reporting period as follows:

- More than three years have elapsed since the first full-scale ISCO injection program in November 2017 and over two years have elapsed since the second full-scale ISCO event in November 2018. Based on the success of the ISCO programs, no additional ISCO injections are planned. The WDR was rescinded in December 2020.
- With the exception of wells MW-07, MW-10, and MW-20D01, CV-RWQCB has approved decommissioning of the requested wells as part of the HSRA construction activities at the site or historical monitoring results indicated concentrations were stable or below MCLs.
- PCE has significantly decreased to low (i.e., less than 100 µg/L) to non-detect concentrations in shallow groundwater as a result of ISCO activities. The highest remaining PCE concentrations are located north to northwest of the site and downgradient of Lamoure's Dry Cleaners (e.g., well MW-15S [84.7 µg/L]). Figure 10 presents a comparison of shallow well PCE concentrations, demonstrating the effectiveness of the injection events since 2015.
- The SVE system was restarted and operated from 3 March to 9 May 2021. Based on the mass removal evaluation, soil vapor samples results, and proposed redevelopment of the area by HSRA, an *Updated Soil Vapor Extraction System Curtailment Request* was submitted to the CV-RWQCB on 2 June 2021.
- Thirty-four wells (VW-01A/B through VW-04A/B, VW-05 through VW-07, BIO-01, MW-01, MW-01D, MW-03, MW-04, MW-06, MW-12, MW-13, MW-18S, MW-18D, OB-07, OB-08,SVE-1S/D, SVP-1 through SVP-4, and SVO-1S/D through SVO-2S/D) will be decommissioning by HSRA in 2021.
- Based on RWQCB approval HSRA will also decommission the SVE treatment unit at the site in 2021.

The next semiannual groundwater monitoring event will be conducted during the second half of 2021. The results will be presented in the *Second Half 2021Semiannual Groundwater Monitoring Report* to be submitted on or before 1 February 2022.

7. REFERENCES

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ERM. 2021. *Updated Soil Vapor Extraction System Curtailment Request, Former Van Waters & Rogers Inc. Facility, 1152 G Street, Fresno, California.* 2 June

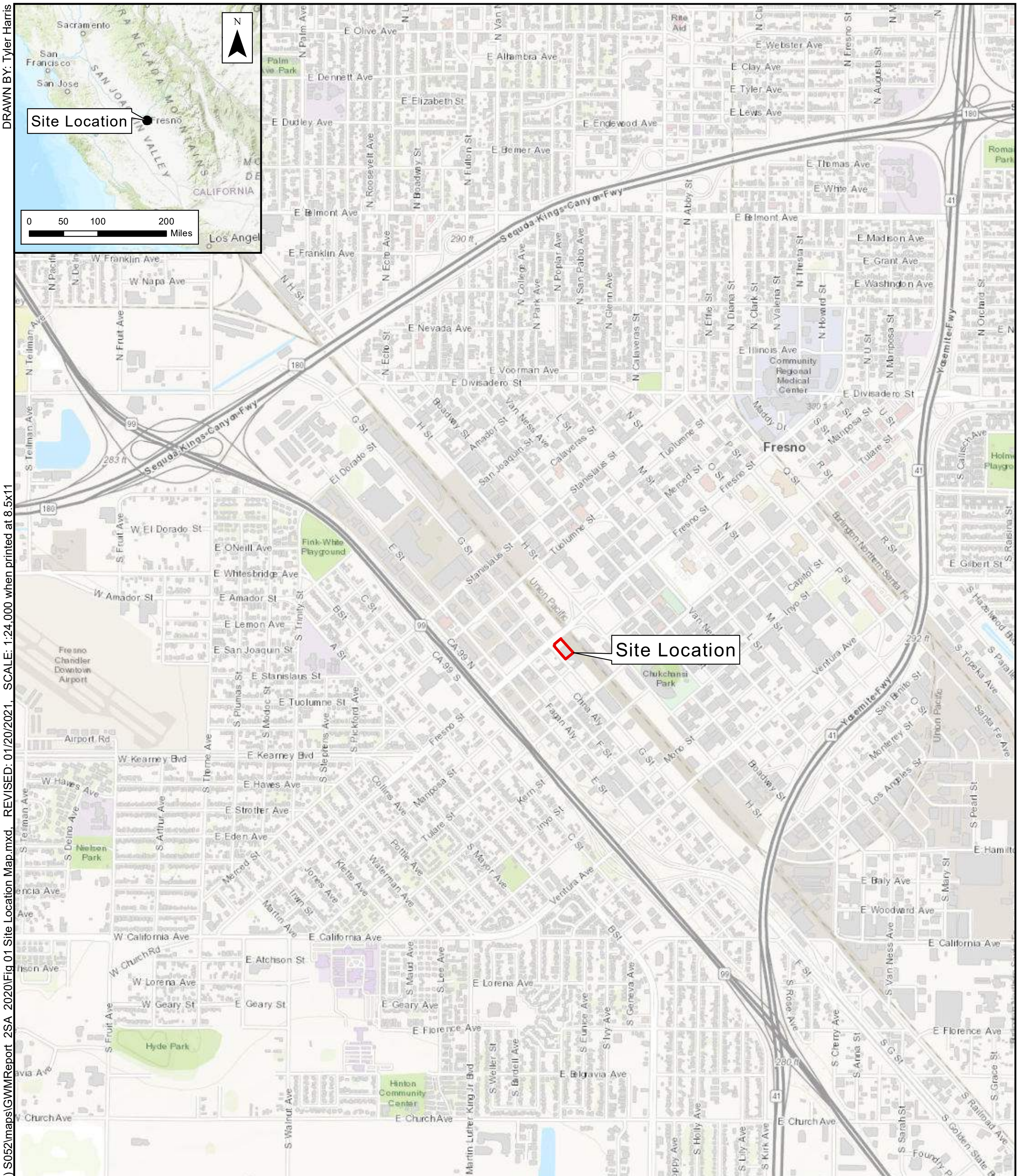
Innovative Engineering Solutions, Inc. 2010. *Remedial Action Plan & Report of Waste Discharge (following Waste Discharge Requirements Order R5-2008-0149), Univar USA Inc. Former Facility, 1152 G Street, Fresno, California*. November.

Rubicon. 2008. *Soil Vapor Extraction Pilot Test Report, Former Univar USA Inc. Facility, 1152 G Street, Fresno, California*. 19 November.

FIGURES

DRAWN BY: Tyler Harris

M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport_2SA_2020\Fig 01 Site Location Map.mxd, REVISED: 01/20/2021, SCALE: 1:24,000 when printed at 8.5x11



Legend

Property Boundary

N

0 2,000 4,000

Feet

Figure 1

Site Location

Former Van Waters & Rogers Inc. Facility

1152 G Street

Fresno, California

Environmental Resources Management
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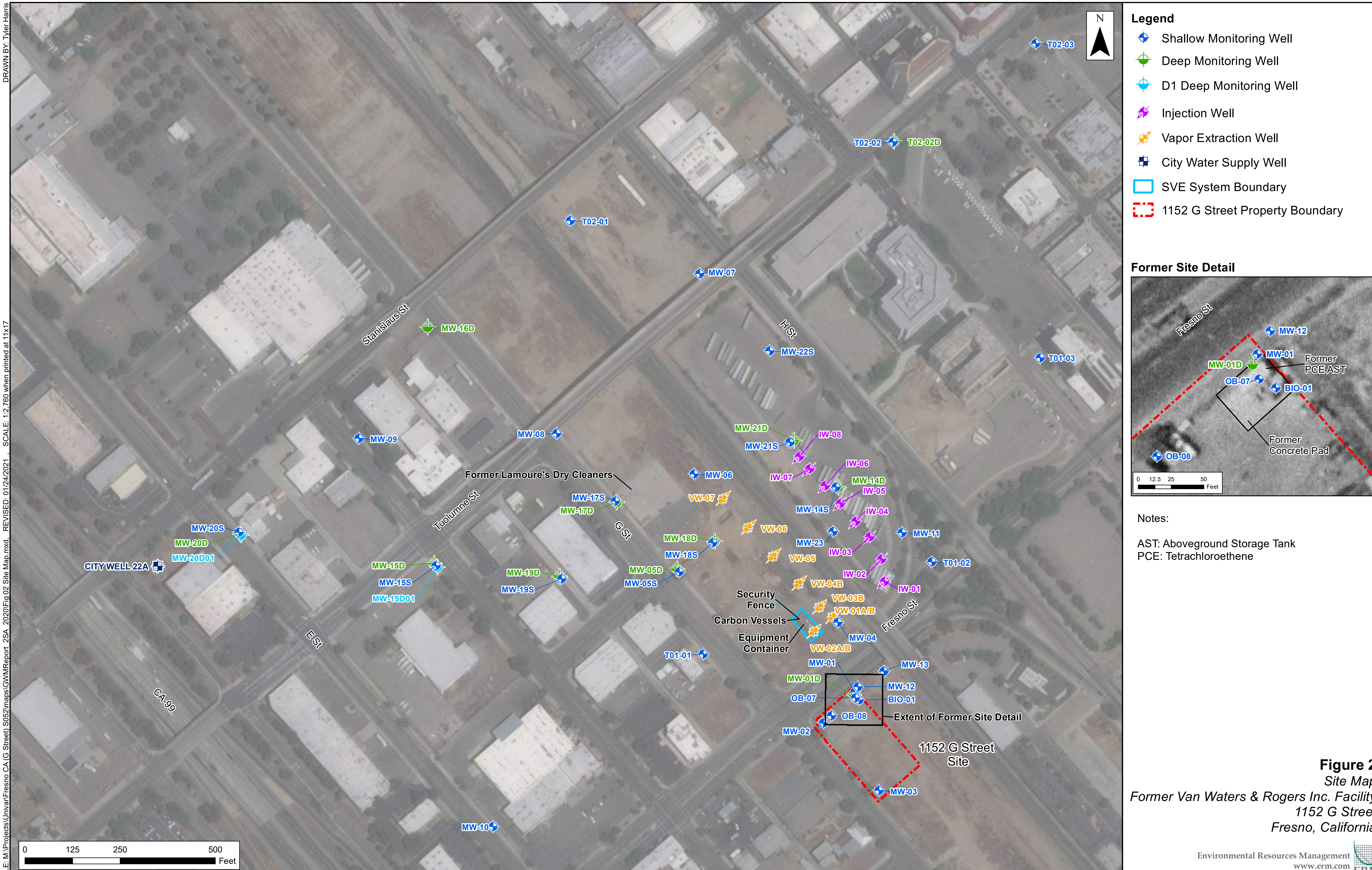
ERM

Source: Esri - World Topoographic Map; NAD 1983 StatePlane California IV FIPS 0404 Feet



Notes:

AST: Aboveground Storage Tank
PCE: Tetrachloroethene

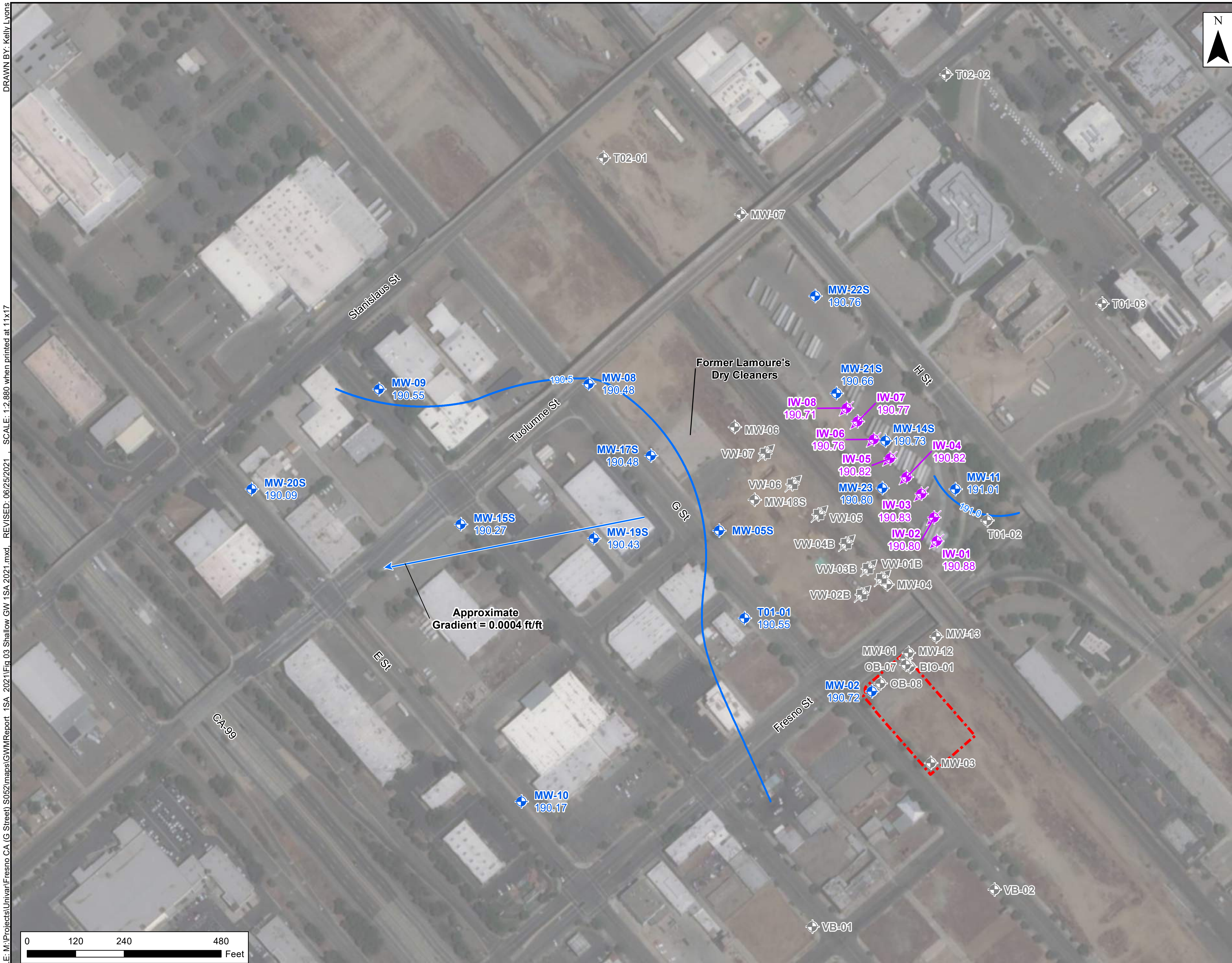
Figure 2
Site Map
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Tyler Harris

FILE: M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport_2SA_2020\Fig 02 Site Map.mxd, REVISED: 01/24/2021 , SCALE: 1:2,760 when printed at 11x17

Source: Esri World Imagery; NAD 1983 StatePlane California IV FIPS 0404 Feet



Legend

- Shallow Monitoring Well
- Injection Well
- Shallow Monitoring Well to be Decommissioned/Abandoned
- Injection Well to be Decommissioned/Abandoned
- Vapor Extract Well to be Decommissioned/Abandoned
- Shallow Groundwater Contour (0.5 ft)
- Groundwater Flow Direction
- 1152 G Street Property Boundary

Notes:

NA: Not accessible.
ft/ft = foot per foot.
* Groundwater elevation for MW-15S measured 6 April 2021.
Groundwater elevation in feet AMSL (Above Mean Sea Level).

Figure 3
Shallow Groundwater Elevations
April 2021
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Environmental Resources Management
www.erm.com

Source: Google Earth, flown 8/23/2018; NAD 1983 StatePlane California IV FIPS 0404 Feet

FILE: M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport_1SA_2021\Fig 03 Shallow GW 1SA 2021.mxd REVISED: 06/25/2021 SCALE: 1:2,880 when printed at 11x17 DRAWN BY: Kelly Lyons

Legend

- Deep Groundwater Monitoring Well
- D1 Deep Groundwater Monitoring Well
- Deep/D1 Deep Groundwater Monitoring Well to be Decommissioned/Abandoned
- Deep Groundwater Contour (.5 ft)
- Groundwater Flow Direction
- 1152 G Street Property Boundary

Notes:

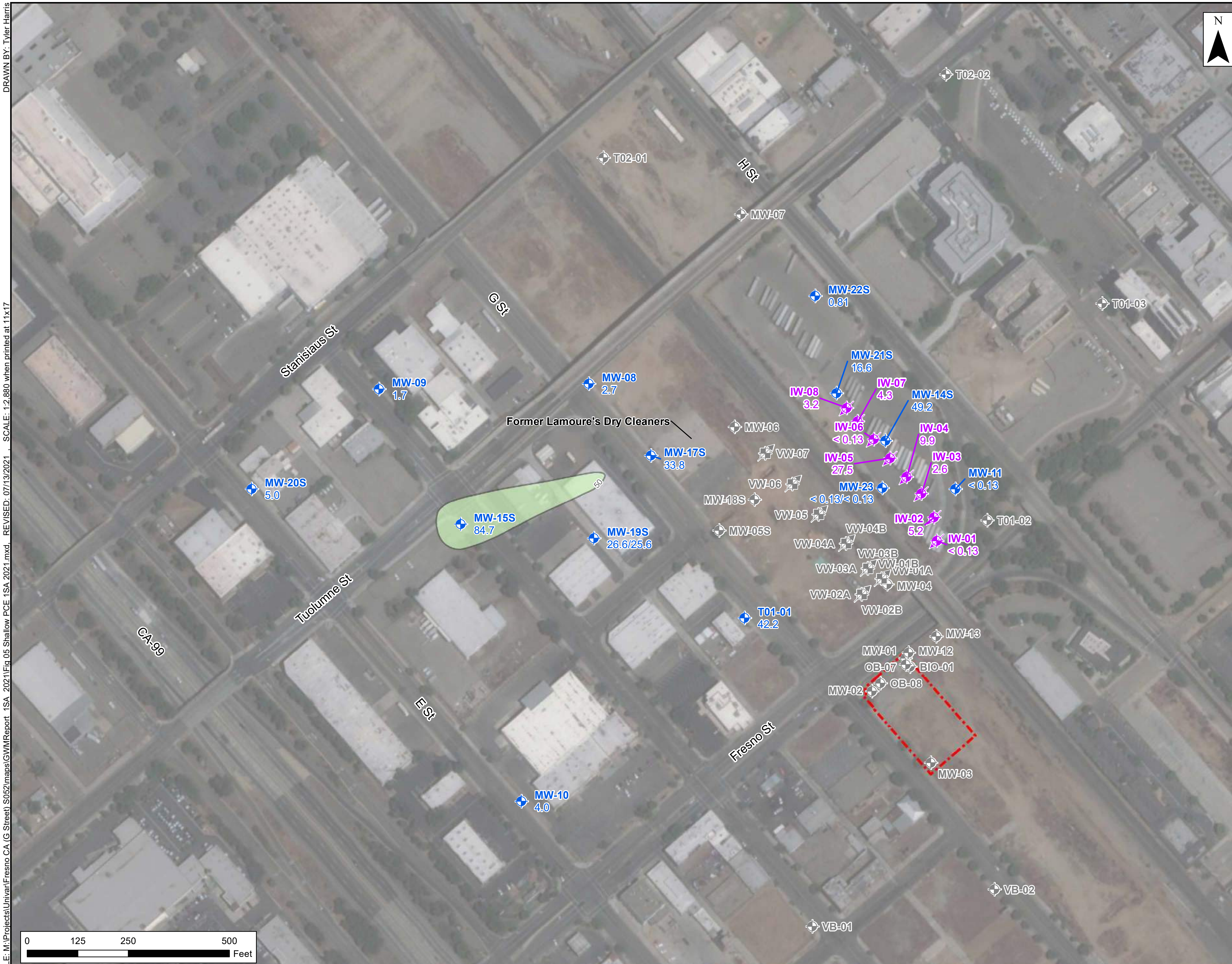
NA: Not accessible.
Groundwater elevations measured April 5, 2021.
Groundwater elevation in feet AMSL (Above Mean Sea Level).
D1 Deep groundwater elevations not used for contouring.

Figure 4
Deep Groundwater Elevations
April 2021
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Environmental Resources Management
www.erm.com
ERM

Source: Esri World Imagery; NAD 1983 StatePlane California IV FIPS 0404 Feet

FILE: M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport_1SA_2021\Fig 04 Deep GW 1SA 2021.mxd REVISED: 06/02/2021 SCALE: 1:3,400 when printed at 11x17 DRAWN BY: Kelly Lyons



Source: Esri World Imagery; NAD 1983 StatePlane California IV FIPS 0404 Feet

Legend

- Shallow Monitoring Well
- Injection Well
- Shallow Monitoring Well to be Decommissioned/Abandoned
- Injection Well to be Decommissioned/Abandoned
- Vapor Extraction Well to be Decommissioned/Abandoned
- PCE Contour
- 1152 G Street Property Boundary

Notes:

PCE: Tetrachloroethene.
Samples collected 5-7 April 2021.
All concentrations in micrograms per liter (µg/L).
34.3/35.8: Primary Result/Field Duplicate Result.
< 0.15: PCE not detected at or above the laboratory detection limit.

High Speed Rail Authority will be operating an SVE at the former Lamoure's Dry Cleaner.

Figure 5

PCE Distribution in Shallow Groundwater
April 2021
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Environmental Resources Management
www.erm.com
ERM

FILE: M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport_1SA_2021\Fig 05 Shallow PCE 1SA 2021.mxd. REVISED: 07/13/2021 SCALE: 1:2,880 when printed at 11x17 DRAWN BY: Tyler Harris

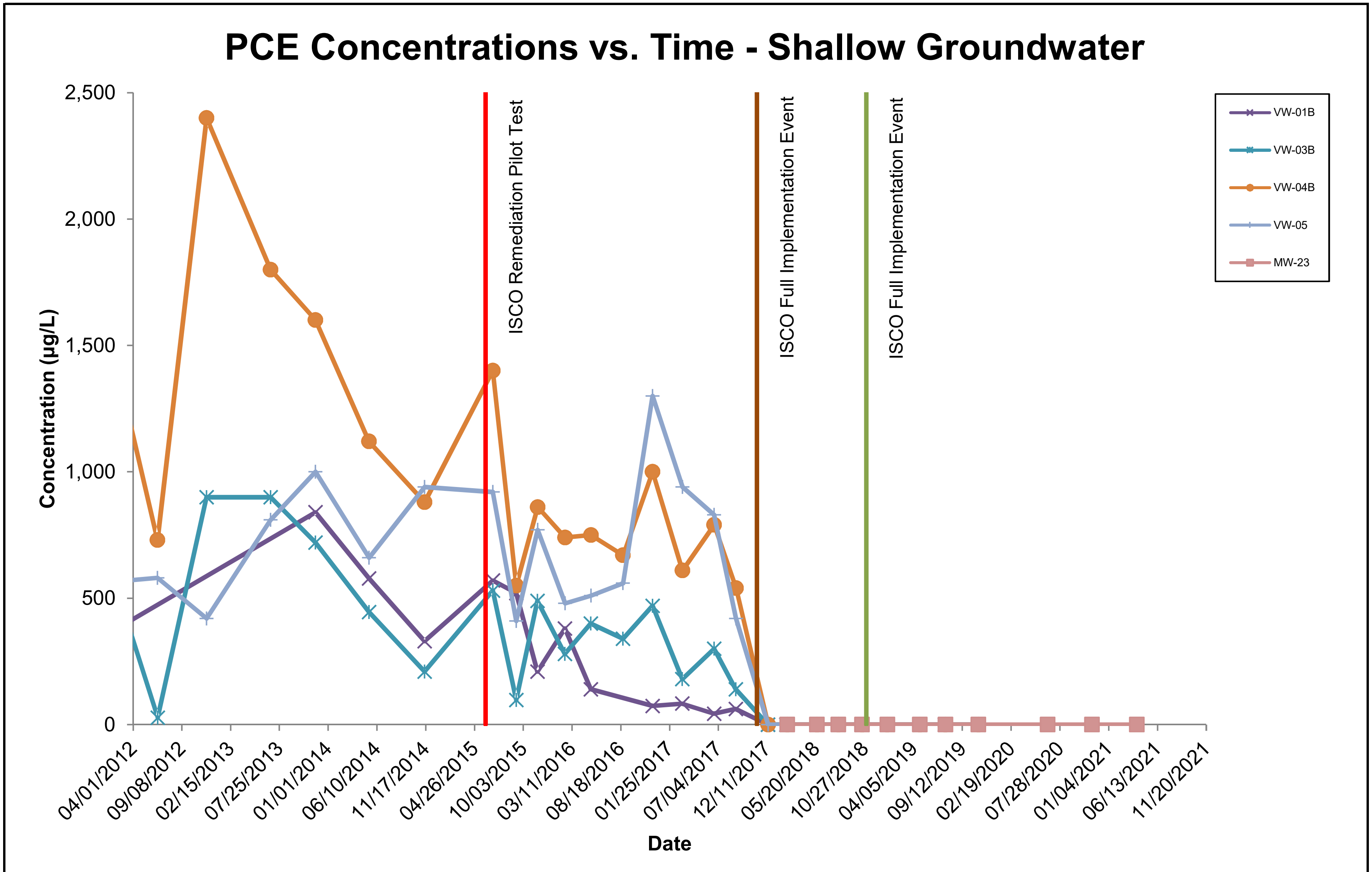


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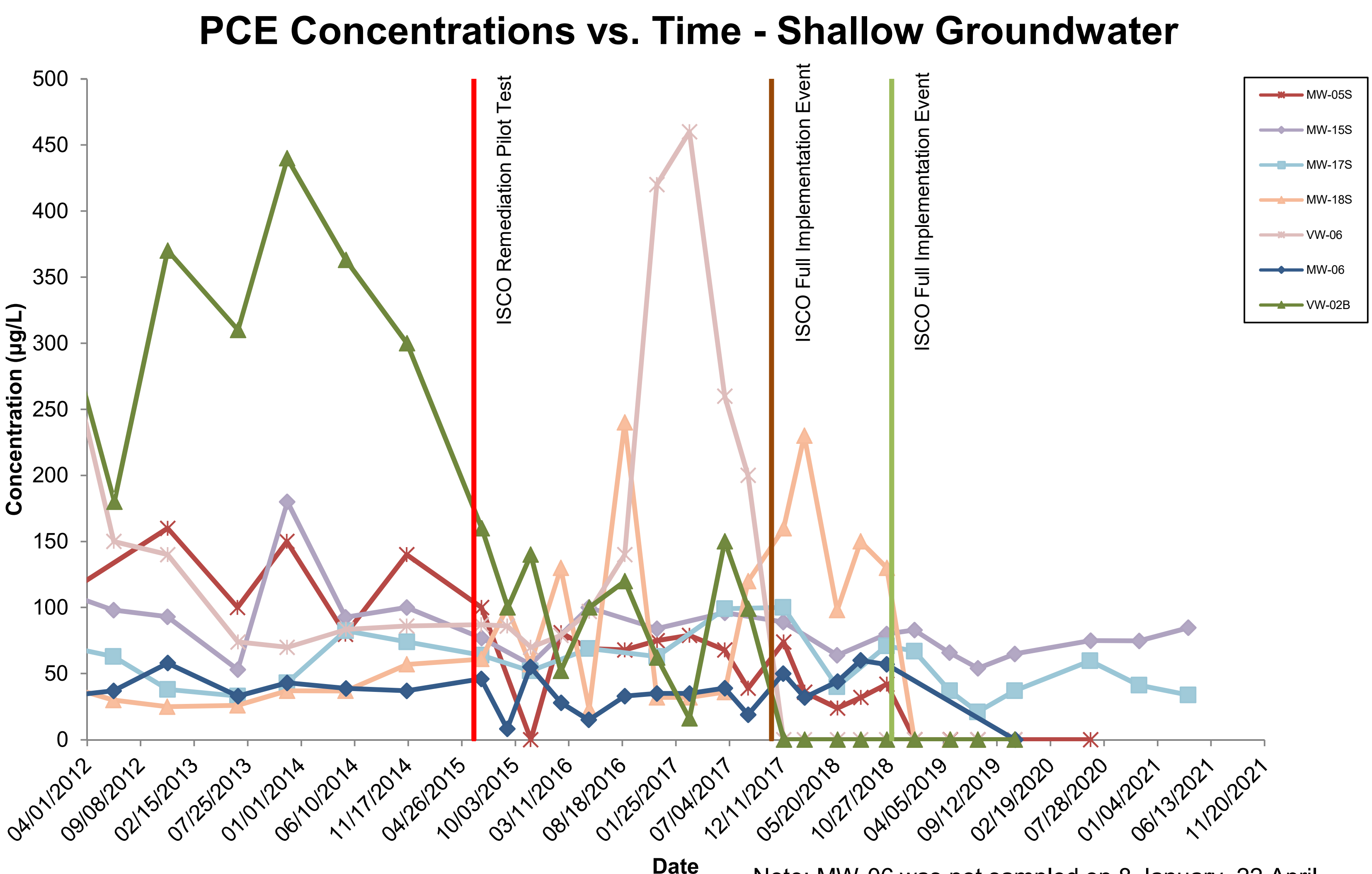
Figure 6a

PCE Concentrations vs. Time - Shallow Groundwater
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California



Note: MW-06 was not sampled on 8 January, 22 April, and 15 July 2019 due to the presence of an owl burrow.

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Figure 6b

PCE Concentrations vs. Time - Shallow Groundwater
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Legend

- Deep Groundwater Monitoring Well
- D1 Deep Groundwater Monitoring Well
- Deep/D1 Deep Groundwater Monitoring Well to be Decommissioned/Abandoned
- 1152 G Street Property Boundary

Notes:

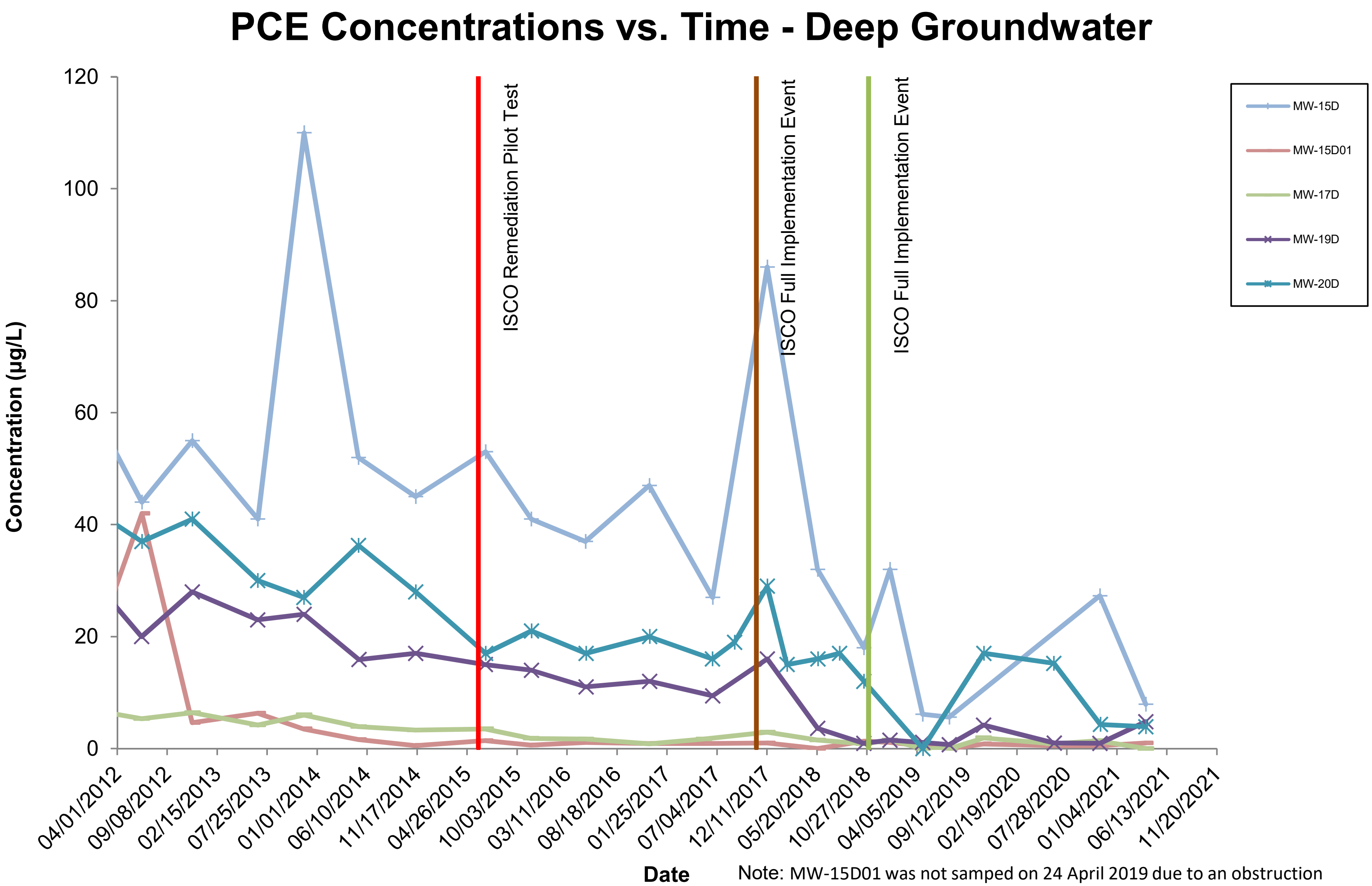
PCE: Tetrachloroethene.
Samples collected April 5-7, 2021.
All concentrations in micrograms per liter (µg/L).
5.9/6.1: Primary Result/Field Duplicate Result.
< 0.15: PCE not detected at or above the laboratory detection limit.

Figure 7
PCE Distribution in Deep Groundwater April 2021
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Environmental Resources Management
www.erm.com
ERM

Source: Esri World Imagery; NAD 1983 StatePlane California IV FIPS 0404 Feet

FILE: M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport_1SA_2021\Fig 07 Deep PCE 1SA 2021.mxd REVISED: 06/02/2021 SCALE: 1:3,601 when printed at 11x17 DRAWN BY: Kara Batdorff



Note: MW-15D01 was not samped on 24 April 2019 due to an obstruction present in the well casing. MW-20D is sampled semi-annually.

ERM
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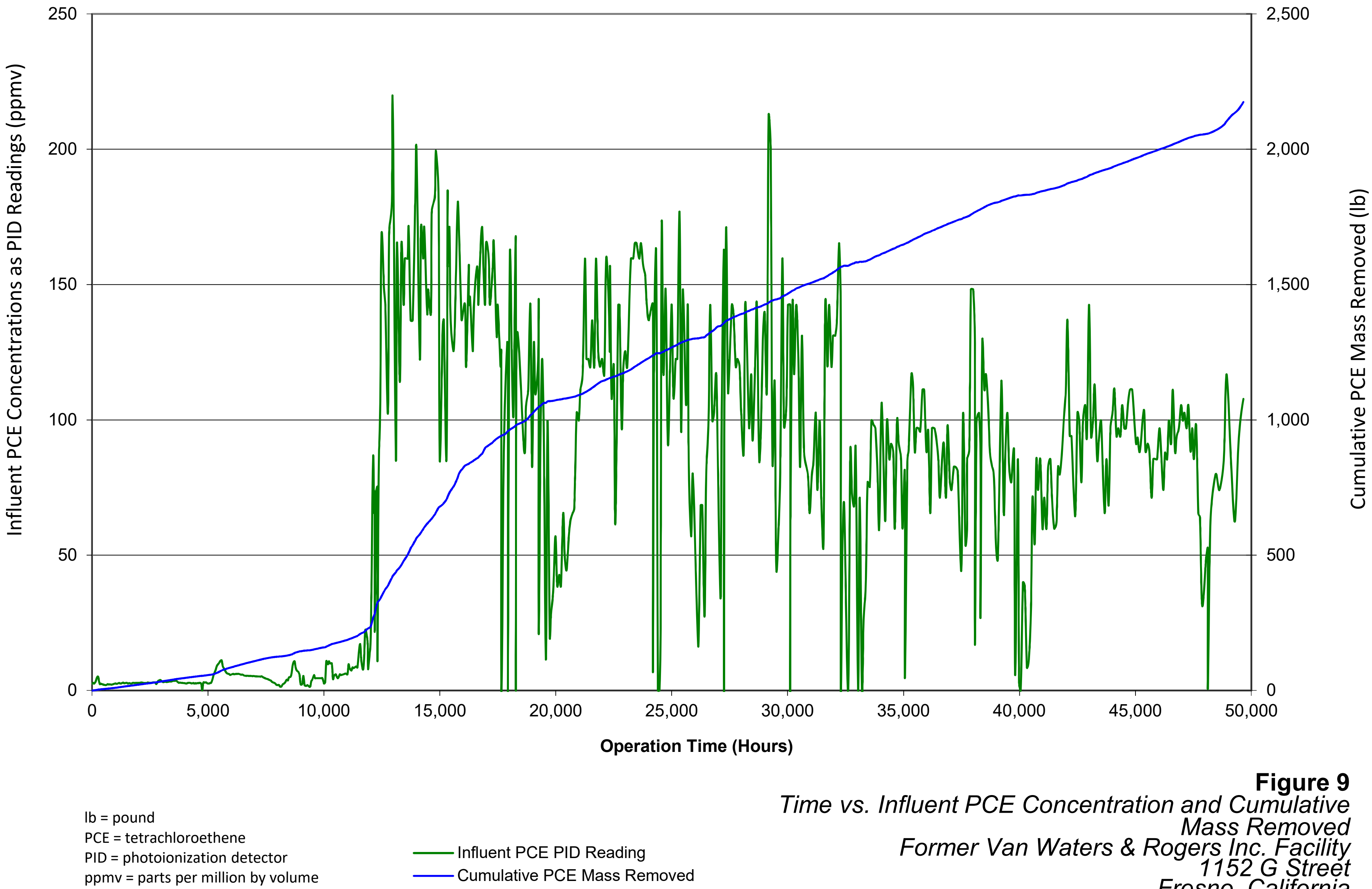
Figure 8

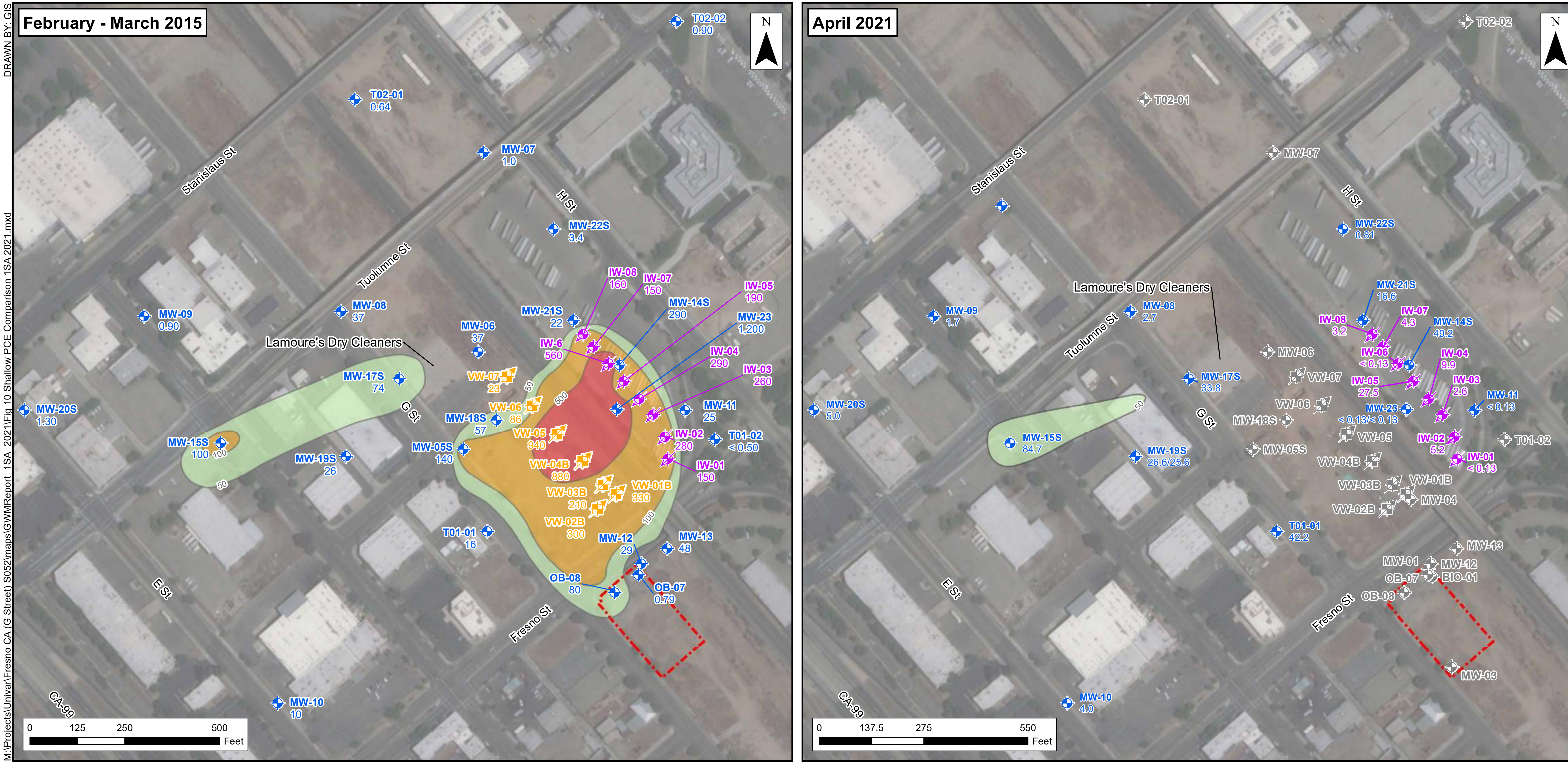
PCE Concentrations vs. Time - Deep Groundwater
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California



lb = pound
PCE = tetrachloroethene
PID = photoionization detector
ppmv = parts per million by volume

Figure 9

Time vs. Influent PCE Concentration and Cumulative Mass Removed
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California



DRAWN BY: GIS

M:\Projects\Univar\Fresno CA (G Street) S052\maps\GWMReport 1SA 2021\Fig 10 Shallow PCE Comparison 1SA 2021.mxd

Legend

- Shallow Groundwater Monitoring Well
- Injection Well
- Vapor Extraction Well
- 1152 G Street Property Boundary

PCE Concentration in Shallow Groundwater

- 50 µg/L
- 100 µg/L
- 500 µg/L

Notes:

PCE = Tetrachloroethene
ISCO injections occured in June 2015, November 2017, and November 2018.
Contours dashed where inferred.
All concentrations in micrograms per liter (µg/L).
34.3/35.8 = Primary Result/Field Duplicate Result
< 0.15: PCE not detected at or above the laboratory detection limit.

Figure 10
Pre/Post-ISCO PCE Distribution in Shallow Groundwater
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

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Source: Esri World Imagery; NAD 1983 StatePlane California IV FIPS 0404 Feet

TABLES

Table 1
Monitoring and Reporting Program Requirements
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Water Level Measurements	Suite A	Notes
IW-01	✓	SA	
IW-02	✓	SA	
IW-03	✓	SA	
IW-04	✓	SA	
IW-05	✓	SA	
IW-06	✓	SA	
IW-07	✓	SA	
IW-08	✓	SA	
MW-02	✓		
MW-05D	✓		No access, well blocked.
MW-05S	✓	SA	No access, well blocked.
MW-07	✓	SA	Not sampled, well to be sampled next semiannual event per CV-RWQCB.
MW-08	✓	SA	
MW-09	✓	SA	
MW-10	✓	SA	
MW-11	✓	SA	
MW-12	✓	SA	Not sampled, well to be sampled following reinstallation as MW-12R by HSRA.
MW-14D	✓		
MW-14S	✓	SA	
MW-15D	✓	SA	
MW-15D01	✓	SA	
MW-15S	✓	SA	
MW-16D	✓	SA	
MW-17D	✓	SA	
MW-17S	✓	SA	
MW-19D	✓	SA	
MW-19S	✓	SA	
MW-20D	✓	SA	
MW-20D01	✓	SA	Not sampled, well to be sampled next semiannual event per CV-RWQCB.
MW-20S	✓	SA	
MW-21S	✓	SA	
MW-22S	✓	SA	
MW-23	✓	SA	
T01-01	✓	SA	

Notes:
✓ = Sample
Suite A (Method) = Volatile organic compounds (8260B)
CV-RWQCB = Central Valley Regional Water Quality Control Board
HSRA = High Speed Railway Authority
SA = Semiannually; March/April, September/October

Table 2
Monitoring Well Construction Details
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Top of Casing Elevation (ft amsl)	Screen Interval Elevation (ft amsl)	Borehole Diameter (inches)	Casing Diameter (inches)	Total Depth (feet bgs)	Screen Opening (inches)	Screened Interval (ft bgs)	Sand Pack Interval (ft bgs)	Bentonite Interval (ft bgs)
BIO-01	287.41	--	--	4	104.34	--	--	--	--
IW-01	288.21	185 - 160	10	4	128	0.02	103 - 128	102 - 128	99 - 102
IW-02	287.39	185 - 160	10	4	131	0.02	103 - 128	101 - 127.5	98 - 101
IW-03	287.48	182 - 147	10	4	140	0.02	105 - 140	103 - 140	100 - 103
IW-04	287.33	182 - 147	10	4	140	0.02	105 - 140	104 - 140	101 - 104
IW-05	287.30	183 - 148	10	4	139.5	0.02	105 - 140	103 - 139.5	100 - 103
IW-06	287.51	183 - 148	10	4	140	0.02	105 - 140	104 - 140	101 - 104
IW-07	287.14	182 - 147	10	4	140	0.02	105 - 140	104 - 140	101 - 104
IW-08	287.40	182 - 147	10	4	140	0.02	105 - 140	104 - 140	101 - 104
MW-01	287.42	201 - 181	10	4	106	0.02	86 - 106	83 - 106	78 - 83
MW-01D	287.48	111 - 101	6	2	195	0.02	176 - 186	171 - 187	166 - 171
MW-02	286.24	201 - 181	10	4	105	0.02	85 - 105	82 - 105	77 - 82
MW-03	288.38	201 - 181	10	4	107	0.02	87 - 107	84 - 107	79 - 84
MW-04	288.78	202 - 177	8	2	112	0.02	87 - 112	84 - 112	79 - 84
MW-05D	285.75	106 - 96	8	2	202	0.02	180 - 190	177 - 191[a]	172 - 177
MW-05S	285.93	199 - 174	8	2	112	0.02	87 - 112	84 - 112	79 - 84
MW-06	286.54	200 - 175	8	2	112	0.02	87 - 112	84 - 112	79 - 84
MW-07	287.57	199 - 174	8	2	114	0.02	89 - 114	86 - 114	81 - 86
MW-08	285.94	198 - 173	8	2	113	0.02	88 - 113	85 - 113	80 - 85
MW-09	284.67	195 - 170	8	2	115	0.02	90 - 115	87 - 115	82 - 87
MW-10	284.56	195 - 170	8	2	115	0.02	90 - 115	87 - 115	82 - 87
MW-11	288.59	199 - 174	8	2	115	0.02	90 - 115	87 - 115	82 - 87
MW-12	287.54	183 - 163	10	2	150	0.02	105 - 125	103 - 105	101 - 103
MW-13	287.78	183 - 163	10	2	150	0.02	105 - 125	103 - 105	101 - 103
MW-14D	287.85	104 - 94	8	2	206	0.02	184 - 194	181 - 195[b]	176 - 181
MW-14S	287.82	168 - 153	8	2	135	0.02	120 - 135	117 - 135	112 - 117
MW-15D	285.85	98 - 88	6	2	210	0.02	188 - 198	185 - 199[c]	180 - 185
MW-15D01	285.27	-25 / -30	6	2	315	0.02	310 - 315	308 - 315	305 - 308
MW-15S	285.40	165 - 150	8	2	135	0.02	120 - 135	117 - 135	112 - 117
MW-16D	285.17	133 - 123	8	2	182	0.02	152 - 162	149 - 163[d]	144 - 149
MW-17D	285.87	97 - 87	8	2	202	0.02	189 - 199	186 - 199	181 - 186
MW-17S	285.92	181 - 166	8	2	120	0.02	105 - 120	102 - 120	97 - 102
MW-18D	286.57	117 - 107	6	2	195	0.02	170 - 180	165 - 181	160 - 165
MW-18S	286.11	166 - 151	6	2	136	0.02	120 - 135	117 - 136	115 - 117
MW-19D	285.68	71 - 61	6	2	255	0.02	215 - 225	210 - 226	205 - 210
MW-19S	285.32	165 - 150	6	2	136	0.02	120 - 135	117 - 136	115 - 117
MW-20D	284.43	17 - 7	6	2	290	0.02	267 - 277	262 - 277	257 - 262
MW-20D01	284.46	-21 / -31	6	2	325	0.02	305 - 315	300 - 316	295 - 300
MW-20S	284.36	164 - 149	6	2	136	0.02	120 - 135	117 - 136	115 - 117
MW-21D	287.77	103 - 88	8	2	200.5	0.01	185 - 200	180 - 200.5	175 - 180
MW-21S	287.38	167 - 152	8	2	145	0.01	120 - 135	115 - 145	110 - 115
MW-22S	289.31	169 - 154	8	2	160	0.01	120 - 135	115 - 160	110 - 115
MW-23	287.57	183 - 158	10	4	130	0.02	105 - 130	104 - 130	101 - 104
OB-07	287.40	145 - 140	8	2	147	0.02	142 - 147	140 - 147	3 - 140
OB-08	286.42	196 - 156	12	6	135	0.04	90 - 130	85 - 135	83 - 85
T01-01	285.98	192 - 172	8	2	114	0.02	94 - 114	92 - 114	91 - 90
T01-02	273.58	192 - 172	8	2	102	0.02	82 - 102	80 - 107	79 - 80

Table 2
Monitoring Well Construction Details
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Top of Casing Elevation (ft amsl)	Screen Interval Elevation (ft amsl)	Borehole Diameter (inches)	Casing Diameter (inches)	Total Depth (feet bgs)	Screen Opening (inches)	Screened Interval (ft bgs)	Sand Pack Interval (ft bgs)	Bentonite Interval (ft bgs)
T01-03	288.20	160 - 140	8	2	150	0.02	128 - 148	126 - 148	124 - 126
T02-01	287.22	152 - 137	8	2	155	0.02	135 - 150	133 - 150	131 - 133
T02-02	290.14	155 - 140	8	2	160	0.02	135 - 150	133 - 150	131 - 133
T02-02D	290.15	112 - 102	8	2	188	0.02	178 - 188	175 - 188	170 - 175
T02-03	288.90	154 - 139	8	2	155	0.02	135 - 150	133 - 150	131 - 133
T03-01D	286.20	126 - 116	8	2	185	0.02	160 - 170	157 - 170[e]	152 - 157
VW-01B	288.27	198 - 163	10	2	150	0.02	90 - 125	90 - 125	80 - 90
VW-02B	287.86	198 - 163	10	2	150	0.02	90 - 125	90 - 125	80 - 90
VW-03B	287.40	197 - 162	10	2	150	0.02	90 - 125	90 - 125	80 - 90
VW-04B	287.35	197 - 162	10	2	150	0.02	90 - 125	90 - 125	80 - 90
VW-05	287.23	197 - 162	10	2	150	0.02	90 - 125	90 - 125	80 - 90
VW-06	287.37	197 - 162	10	2	150	0.02	90 - 125	90 - 125	80 - 90
VW-07	287.23	197 - 162	10	2	150	0.02	90 - 125	90 - 125	80 - 90

Notes:
-- = Not measured
ft amsl = Feet above mean sea level
ft bgs = Feet below ground surface
[a] Bentonite plug from 191-202 ft bgs
[b] Bentonite plug from 195-206 ft bgs
[c] Bentonite plug from 199-210 ft bgs
[d] Bentonite plug from 163-182 ft bgs
[e] Bentonite plug from 170-185 ft bgs
Top of casing elevation based on April 2015 survey.

Table 3
Groundwater Elevation Data
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well ID	Date	Measuring Point Elevation (feet amsl)	Depth to Water (feet btoc)	Groundwater Elevation (feet amsl)
IW-01	04/05/2021	288.21	97.33	190.88
IW-02	04/05/2021	287.39	96.59	190.80
IW-03	04/05/2021	287.48	96.65	190.83
IW-04	04/05/2021	287.33	96.51	190.82
IW-05	04/05/2021	287.30	96.48	190.82
IW-06	04/05/2021	287.51	96.75	190.76
IW-07	04/05/2021	287.14	96.37	190.77
IW-08	04/05/2021	287.40	96.69	190.71
MW-02	04/05/2021	286.24	95.52	190.72
MW-05D	04/05/2021	285.75	NA	NA
MW-05S	04/05/2021	285.93	NA	NA
MW-08	04/05/2021	285.94	95.46	190.48
MW-09	04/05/2021	284.67	94.12	190.55
MW-10	04/05/2021	284.56	94.39	190.17
MW-11	04/05/2021	288.59	97.58	191.01
MW-14D	04/05/2021	287.85	97.09	190.76
MW-14S	04/05/2021	287.82	97.09	190.73
MW-15D	04/05/2021	285.85	95.44	190.41
MW-15D01	04/05/2021	285.27	95.04	190.23
MW-15S	04/06/2021	285.40	95.13	190.27
MW-16D	04/05/2021	285.17	94.63	190.54
MW-17D	04/05/2021	285.87	95.43	190.44
MW-17S	04/05/2021	285.92	95.44	190.48
MW-19D	04/05/2021	285.68	95.21	190.47
MW-19S	04/05/2021	285.32	94.89	190.43
MW-20D	04/05/2021	284.43	95.14	189.29
MW-20S	04/05/2021	284.36	94.27	190.09
MW-21S	04/05/2021	287.38	96.72	190.66
MW-22S	04/05/2021	289.31	98.55	190.76
MW-23	04/05/2021	287.57	96.77	190.80
T01-01	04/05/2021	285.98	95.43	190.55

Notes:
amsl = Above mean sea level
btoc = Below top of casing
NA = Not accessible

Table 4

Groundwater Field Parameters

Former Van Waters & Rogers Inc. Facility

1152 G Street

Fresno, California

Well ID	Sample Date	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	pH (units)	Temperature (°C)	Total Purge Volume (gallons)
IW-01	4/7/2021	1,125	1.93	654.1	7.12	24.0	0.79
IW-02	4/7/2021	981	1.69	648.1	7.05	23.7	0.79
IW-03	4/7/2021	760	2.51	521.7	7.12	23.9	1.27
IW-04	4/7/2021	751	0.50	603.6	7.15	23.4	1.11
IW-05	4/7/2021	684	0.49	496.9	7.07	23.3	1.11
IW-06	4/7/2021	1,039	3.53	641.7	7.28	24.6	0.79
IW-07	4/7/2021	875	4.65	527.1	7.17	22.4	0.79
IW-08	4/7/2021	944	4.85	582.3	7.39	22.6	0.79
MW-05S	--	--	--	--	--	--	--
MW-08	4/6/2021	1,093	6.31	90.0	7.10	24.1	0.79
MW-09	4/5/2021	630	6.37	86.1	7.39	24.4	0.79
MW-10	4/6/2021	543	5.67	187.4	7.09	20.7	0.79
MW-11	4/7/2021	2,980	7.12	662.1	6.89	20.5	0.79
MW-14S	4/7/2021	1,179	0.84	593.3	7.05	22.6	0.79
MW-15D	4/6/2021	740	0.98	-37.5	11.07	22.3	0.79
MW-15D01	4/5/2021	480	1.21	111.3	7.20	23.7	1.27
MW-15S	4/6/2021	657	3.53	70.1	7.17	23.0	0.79
MW-16D	4/5/2021	704	5.21	92.9	7.18	25.2	0.55
MW-17D	4/6/2021	514	3.25	118.6	7.42	11.1	0.40
MW-17S	4/6/2021	801	4.72	64.7	7.12	24.4	0.79
MW-19D	4/6/2021	546	1.37	-6.1	7.41	23.9	0.79
MW-19S	4/6/2021	671	4.18	43.9	7.31	23.8	0.79
MW-20D	4/6/2021	603	1.16	61.6	7.31	23.4	1.11
MW-20S	4/6/2021	628	4.42	96.6	7.22	22.3	1.11
MW-21S	4/6/2021	890	2.54	439.2	7.24	24.6	1.11
MW-22S	4/6/2021	614	5.71	125.9	7.05	22.1	0.95
MW-23	4/7/2021	1,136	5.73	670.8	7.17	24.0	0.79
T01-01	4/6/2021	713	2.44	103.2	7.15	24.2	0.79

Notes:

-- = Well unable to be sampled

°C = Degrees Celsius

µS/cm = MicroSiemens per centimeter

mg/L = Milligrams per liter

mV = Millivolts

Table 5
Volatile Organic Compounds Detected in Groundwater
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Location ID	Sample Date	1,1-DCA	1,1-DCE	1,2-DCP	1,2-DCA	BB	BDCM	BF	CF	DBCM	PCE	TCE
California MCLs / WQOs (µg/L)		*5.0 / 3.0*	6.0 / 6.0	*0.50 / 0.50*	*0.50 / 0.50*	*NE / NE*	*NE / NE*	*NE / NE*	*NE / NE*	*NE / NE*	*5.0 / 5.0*	*5.0 / 5.0*
IW-01	04/07/2021	**0.29 J**	< 0.13	**0.19 J**	**4.4**	< 0.13	< 0.13	**1.3**	< 0.13	< 0.13	< 0.13	< 0.13
IW-02	04/07/2021	< 0.13	< 0.13	< 0.13	**0.98**	< 0.13	< 0.13	**0.95**	< 0.13	< 0.13	**5.2**	< 0.13
IW-03	04/07/2021	**0.23 J**	< 0.13	**0.25 J**	**4.6**	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**2.6**	**0.38 J**
IW-04	04/07/2021	**0.14 J**	< 0.13	**0.16 J**	**1.8**	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**9.9**	**0.20 J**
IW-05	04/07/2021	< 0.13	< 0.13	< 0.13	**0.58**	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**27.5**	**1.1**
IW-06	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.66**	< 0.13	< 0.13	< 0.13	< 0.13
IW-07	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**4.3**	< 0.13
IW-08	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.64**	**0.15 J**	< 0.13	**3.2**	< 0.13
MW-08	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**2.7**	**0.17 J**
MW-09	04/05/2021	< 0.13	**0.19 J**	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**1.7**	< 0.13
MW-10	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.26 J**	< 0.13	**4.0**	< 0.13
MW-11	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**4.1**	**0.22 J**	**0.36 J**	< 0.13	< 0.13
MW-14S	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**49.2**	**1.8**
MW-15D	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**7.9**	**0.31 J**
MW-15D (dup)	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**7.9**	**0.27 J**
MW-15D01	04/05/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.99**	< 0.13
MW-15S	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.30 J**	< 0.13	**84.7**	**1.1**
MW-16D	04/05/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13
MW-17D	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13
MW-17D (dup)	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13
MW-17S	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.21 J**	< 0.13	**33.8**	**0.56**
MW-19D	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**4.8**	< 0.13
MW-19S	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.20 J**	< 0.13	**26.6**	**2.3**
MW-19S (dup)	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.21 J**	< 0.13	**25.6**	**2.3**
MW-20D	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**3.9**	**0.23 J**
MW-20S	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.22 J**	< 0.13	**5.0**	**0.14 J**
MW-21S	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**16.6**	< 0.13
MW-22S	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**0.55**	< 0.13	**0.81**	**0.20 J**
MW-23	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**1.0**	< 0.13	< 0.13	< 0.13	< 0.13
MW-23 (dup)	04/07/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**1.2**	< 0.13	< 0.13	< 0.13	< 0.13
T01-01	04/06/2021	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	**42.2**	**2.3**

Notes:
< = Compound not detected; method detection limit shown
µg/L = Micrograms per liter
dup = Duplicate sample
MCLs = Maximum contaminant levels
NE = Not established
WQOs = Water quality objectives
***Bolded** values indicate concentrations above the Method Detection Limit.*
Concentration exceeds the California MCL or the WQOs.
Concentrations reported in µg/L.
MCLs retrieved from California State Water Resources Control Board Maximum Contaminant Levels and Regulatory Dates for Drinking Water.
WQOs retrieved from Waste Discharge Requirements Order R5-2015-0136 for Univar USA Inc.

Abbreviation	*Compound*
1,1-DCA	*1,1-Dichloroethane*
1,1-DCE	*1,1-Dichloroethene*
1,2-DCA	*1,2-Dichloroethane*
1,2-DCP	*1,2-Dichloropropane*
BB	*Bromobenzene*
BDCM	*Bromodichloromethane*
BF	*Bromoform*
CF	*Chloroform*
DBCM	*Dibromochloromethane*
PCE	*Tetrachloroethene*
TCE	*Trichloroethene*

ERM Qualifiers:
J = Estimated result
ESW8260B analyses performed by SGS Laboratories, Orlando, Florida.

Table 6
Well Conditions
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Well Status	Planned Action
IW-01	Lock missing	Repair on hold
IW-02	One tab broken, lock missing	Repair on hold
IW-03	Lock missing	Repair on hold
IW-04	Lock missing	Repair on hold
IW-05	Two tabs broken, lock missing	Repair on hold
IW-06	Lock missing	Repair on hold
IW-07	One bolt missing, apron damaged, rim/lid broken, lock missing	Repair on hold
IW-08	One bolt missing, two tabs broken, apron damaged, rim/lid broken, lock missing	Repair on hold
MW-02	Good	No repair necessary
MW-05D	Not accessible	No repair necessary
MW-05S	Not accessible	No repair necessary
MW-08	Lock missing	Repair on hold
MW-09	Good	No repair necessary
MW-10	Good	No repair necessary
MW-11	Two bolt missing, lock missing	Repair on hold
MW-14D	Two bolts missing, lock missing	Repair on hold
MW-14S	One bolt missing, one tab broken, lock missing	Repair on hold
MW-15D	One bolt missing, lock missing	Repair on hold
MW-15D01	One tab stripped	Repair on hold
MW-15S	Good	No repair necessary
MW-16D	One bolt missing, one tab stripped, one tab broken	Repair on hold
MW-17D	Two tabs stripped, lock missing	Repair on hold
MW-17S	Lock missing	Repair on hold
MW-19D	Two tabs stripped	Repair on hold
MW-19S	One bolt missing, one tab broken	Repair on hold
MW-20D	Two tabs stripped	Repair on hold
MW-20S	One tab stripped, one tab broken	Repair on hold
MW-21S	Two tabs broken	Repair on hold
MW-22S	One tab broken	Repair on hold
MW-23	One bolt missing, two tabs broken, lock missing	Repair on hold
T01-01	Two tabs stripped	Repair on hold

Notes:
1. Select wells have been approved for decommissioning in anticipation of HSRA redevelopment and all well repairs are on hold until completion of redeveloopment activities.
HSRA = California High Speed Rail Authority

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) 3	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) 1,2	Ves D VOCs as PCE (ppmv) 4	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) 1,2	Influent VOCs as PCE (ppmv) 4	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
12/31/12 3:20 PM	0.00	-	10	110.0	43.3	8.25	0.60	--	0	141	7.20	4.10	-63.64	8.00	4.56	-81.82	6.90	3.93	-51.32	6.90	3.93	-75.44	4.4	2.51	0.00	6.20	3.53	-40.91	9.51	16.02	0.00	0.00	0.00
1/2/13 3:30 PM	48.17	48.17	10	110.0	43.3	8.25	0.60	--	0	141	7.80	4.45	-56.00	9.50	0.54	-90.00	9.00	0.51	-1562.05	9.00	0.51	-1654.39	5.0	2.85	0.00	7.00	3.99	-40.00	10.80	18.20	0.46	0.23	0.46
1/4/13 4:00 PM	48.50	96.67	10	110.0	43.3	8.25	0.60	--	0	141	7.70	4.39	-71.11	10.30	0.59	-128.89	10.70	0.61	-1722.52	10.70	0.61	-1654.39	4.5	2.57	0.00	9.50	5.42	-111.11	9.72	16.38	0.42	0.21	0.88
1/7/13 3:30 PM	71.50	168.17	10	110.0	43.3	8.25	0.60	--	0	141	7.90	4.50	-27.42	11.00	0.63	-77.42	12.20	0.70	-1845.77	12.20	0.70	-1654.39	6.2	3.53	0.00	13.50	7.70	-117.74	13.39	22.57	0.85	0.29	1.73
1/9/13 3:30 PM	48.00	216.17	10	110.0	43.3	8.25	0.60	--	0	141	10.00	5.70	-17.65	13.00	7.41	-52.94	14.00	7.98	-88.93	14.00	7.98	-75.44	8.5	4.85	0.00	15.00	8.55	-76.47	18.36	30.94	0.78	0.39	2.51
1/11/13 2:50 PM	47.33	263.50	10	110.0	43.3	8.25	0.60	--	0	141	5.40	3.08	40.00	8.90	5.07	1.11	9.80	5.59	-93.18	9.80	5.59	-75.44	9.0	5.13	0.00	9.30	5.30	-3.33	19.44	32.76	0.82	0.41	3.33
1/14/13 4:00 PM	73.17	336.67	10	110.0	43.3	8.25	0.60	--	0	141	5.50	3.14	-30.95	9.00	5.13	-114.29	10.00	5.70	-94.93	10.00	5.70	-75.44	4.2	2.39	0.00	9.50	0.00	-126.19	9.07	15.29	0.59	0.19	3.92
1/16/13 2:30 PM	46.50	383.17	10	110.0	43.3	7.90	0.58	--	0	169	12.00	6.84	-166.67	13.50	7.70	-200.00	7.00	3.99	9.03	7.00	3.99	-75.44	4.5	2.57	0.00	7.00	3.99	-55.56	9.72	16.38	0.48	0.25	4.40
1/17/13 4:50 PM	26.33	409.50	10	110.0	43.3	8.25	0.60	--	0	141	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.2	2.39	0.00	0.00	0.00	100.00	9.07	15.29	0.21	0.19	4.61
1/25/13 12:30 PM	187.67	597.17	10	110.0	43.3	7.70	0.56	--	0	185	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.5	2.00	0.00	0.00	0.00	100.00	7.56	12.74	1.66	0.21	6.27
1/28/13 4:45 PM	76.25	673.42	10	110.0	43.3	8.25	0.60	--	0	141	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.1	2.34	0.00	0.00	0.00	100.00	8.86	14.92	0.60	0.19	6.87
1/30/13 5:00 PM	48.25	721.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.9	2.22	0.00	0.00	0.00	100.00	8.43	14.20	0.43	0.22	7.30
2/1/13 4:15 PM	47.25	768.92	10	110.0	43.3	7.70	0.56	--	0	185	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.0	2.28	0.00	0.00	0.00	100.00	8.64	14.56	0.48	0.24	7.78
2/4/13 3:17 PM	71.03	839.95	10	110.0	43.3	7.80	0.57	--	0	177	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.8	2.17	0.00	0.00	0.00	100.00	8.21	13.83	0.65	0.22	8.43
2/6/13 4:52 PM	49.58	889.53	10	110.0	43.3	7.85	0.57	--	0	173	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.0	2.28	0.00	0.00	0.00	100.00	8.64	14.56	0.47	0.23	8.90
2/8/13 4:30 PM	47.63	937.17	10	110.0	43.3	7.80	0.57	--	0	177	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.2	2.39	0.00	0.00	0.00	100.00	9.07	15.29	0.48	0.24	9.38
2/11/13 5:07 PM	72.62	1,009.78	10	110.0	43.3	7.80	0.57	--	0	177	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.6	2.62	0.00	0.00	0.00	100.00	9.94	16.74	0.81	0.27	10.19
2/13/13 5:36 PM	48.48	1,058.27	10	110.0	43.3	7.85	0.57	--	0	173	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.3	2.45	0.00	0.00	0.00	100.00	9.29	15.65	0.49	0.24	10.68
2/15/13 4:40 PM	47.07	1,105.33	10	110.0	43.3	7.80	0.57	--	0	177	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.51	0.26	11.19
2/18/13 4:10 PM	71.50	1,176.83	10	110.0	43.3	7.60	0.55	--	0	193	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.92	0.31	12.11
2/20/13 2:25 PM	46.25	1,223.08	10	110.0	43.3	7.60	0.55	--	0	193	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.55	0.28	12.66
2/22/13 5:05 PM	50.67	1,273.75	10	110.0	43.3	7.70	0.56	--	0	185	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.60	0.28	13.26
2/25/13 4:24 PM	71.32	1,345.07	10	110.0	43.3	7.70	0.56	--	0	185	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.1	2.91	0.00	0.00	0.00	100.00	11.02	18.56	0.92	0.31	14.18
2/27/13 2:54 PM	46.50	1,391.57	10	110.0	43.3	7.60	0.55	--	0	193	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.57	0.30	14.75
3/1/13 6:07 PM	51.22	1,442.78	10	110.0	43.3	7.70	0.56	--	0	185	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.63	0.30	15.38
3/4/13 5:58 PM	71.85	1,514.63	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.81	0.27	16.19
3/6/13 8:50 AM	38.87	1,553.50	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.40	0.25	16.60
3/8/13 5:51 PM	57.02	1,610.52	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.8	2.74	0.00	0.00	0.00	100.00	10.37	17.47	0.63	0.27	17.23
3/11/13 6:00 PM	72.15	1,682.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.75	0.25	17.97
3/13/13 6:34 PM	48.57	1,731.23	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.53	0.26	18.50
3/15/13 5:17 PM	46.72	1,777.95	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.54	0.28	19.04
3/18/13 5:33 PM	72.27	1,850.22	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.8	2.74	0.00	0.00	0.00	100.00	10.37	17.47	0.80	0.27	19.84
3/20/13 6:00 PM	48.45	1,898.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.56	0.28	20.39
3/22/13 7:00 PM	49.00	1,947.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.55	0.27	20.95
3/25/13 6:21 PM	71.35	2,019.02	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.80	0.27	21.75
3/27/13 6:04 PM	47.72	2,066.73	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.55	0.28	22.30
3/29/13 3:00 PM	44.93	2,111.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.54	0.29	22.84
4/1/13 5:45 PM	74.75	2,186.42	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.1	2.91	0.00	0.00	0.00	100.00	11.02	18.56	0.88	0.28	23.72
4/3/13 6:00 PM	48.25	2,234.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.52	0.26	24.24
4/5/13 5:27 PM	47.45	2,282.12	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.54	0.27	24.77
4/8/13 5:15 PM	71.80	2,353.92	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.8	2.74	0.00	0.00	0.00	100.00	10.37	17.47	0.79	0.27	25.57
4/10/13 6:30 PM	49.25	2,403.17	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.59	0.29	26.16
4/12/13 7:27 PM	48.95	2,452.12	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.1	2.91	0.00	0.00	0.00	100.00	11.02	18.56	0.57	0.28	26.73
4/15/13 8:48 AM	61.35	2,513.47	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.69	0.27	27.42
4/17/13 3:26 PM	54.63	2,568.10	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.63	0.28	28.05
4/19/13 3:41 PM	48.25	2,616.35	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.58	0.29	28.63
4/22/13 3:46 PM	72.08	2,688.43	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.86	0.29	29.49
4/24/13 3:22 PM	47.60	2,736.03	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.55	0.28	30.04
4/26/13 8:48 AM	41.43	2,777.47	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.2	2.39	0.00	0.00	0.00	100.00	9.07	15.29	0.40	0.23	30.44
4/29/13 2:15 PM	77.45	2,854.92	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.2	3.53	0.00	0.00	0.00	100.00	13.39	22.57	1.11	0.34	31.55

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. $H_2$0)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in $H_2$0) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
5/1/13 11:45 AM	45.50	2,900.42	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.5	3.71	0.00	0.00	0.00	100.00	14.04	23.66	0.68	0.36	32.23
5/3/13 11:00 AM	47.25	2,947.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.8	3.88	0.00	0.00	0.00	100.00	14.69	24.75	0.74	0.38	32.97
5/6/13 7:05 PM	80.08	3,027.75	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.8	3.31	0.00	0.00	0.00	100.00	12.53	21.11	1.07	0.32	34.04
5/8/13 6:00 PM	46.92	3,074.67	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.4	3.08	0.00	0.00	0.00	100.00	11.67	19.66	0.58	0.30	34.62
5/10/13 5:30 PM	47.50	3,122.17	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.6	3.19	0.00	0.00	0.00	100.00	12.10	20.38	0.61	0.31	35.23
5/13/13 5:17 PM	71.78	3,193.95	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.6	3.19	0.00	0.00	0.00	100.00	12.10	20.38	0.93	0.31	36.16
5/15/13 4:05 PM	46.80	3,240.75	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.5	3.14	0.00	0.00	0.00	100.00	11.88	20.02	0.59	0.30	36.75
5/17/13 6:58 PM	50.88	3,291.63	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.7	3.25	0.00	0.00	0.00	100.00	12.31	20.75	0.67	0.31	37.42
5/20/13 6:22 PM	71.40	3,363.03	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.9	3.36	0.00	0.00	0.00	100.00	12.75	21.48	0.97	0.33	38.39
5/22/13 6:45 PM	48.38	3,411.42	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.8	3.31	0.00	0.00	0.00	100.00	12.53	21.11	0.65	0.32	39.03
5/24/13 5:23 PM	46.63	3,458.05	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.1	3.48	0.00	0.00	0.00	100.00	13.18	22.20	0.65	0.34	39.69
5/27/13 4:42 PM	71.32	3,529.37	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.3	3.59	0.00	0.00	0.00	100.00	13.61	22.93	1.03	0.35	40.72
5/29/13 5:48 PM	49.10	3,578.47	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.2	3.53	0.00	0.00	0.00	100.00	13.39	22.57	0.70	0.34	41.42
5/31/13 6:18 PM	48.50	3,626.97	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.5	3.71	0.00	0.00	0.00	100.00	14.04	23.66	0.73	0.36	42.15
6/3/13 6:30 PM	72.20	3,699.17	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.5	3.14	0.00	0.00	0.00	100.00	11.88	20.02	0.91	0.30	43.06
6/5/13 7:46 PM	49.27	3,748.43	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.57	0.28	43.63
6/7/13 12:42 PM	40.93	3,789.37	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.1	2.91	0.00	0.00	0.00	100.00	11.02	18.56	0.48	0.28	44.11
6/17/13 10:50 AM	238.13	4,027.50	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	2.58	0.26	46.69
6/19/13 6:41 AM	43.85	4,071.35	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.45	0.25	47.14
6/21/13 6:17 PM	59.60	4,130.95	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.67	0.27	47.81
6/24/13 6:54 PM	72.62	4,203.57	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.84	0.28	48.65
6/26/13 6:56 PM	48.03	4,251.60	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.54	0.27	49.19
6/28/13 6:46 PM	47.83	4,299.43	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.6	2.62	0.00	0.00	0.00	100.00	9.94	16.74	0.51	0.25	49.70
7/1/13 6:45 PM	71.98	4,371.42	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.81	0.27	50.51
7/3/13 7:23 AM	36.63	4,408.05	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.38	0.25	50.89
7/5/13 6:30 PM	59.12	4,467.17	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.8	2.74	0.00	0.00	0.00	100.00	10.37	17.47	0.65	0.27	51.54
7/6/13 6:08 AM	11.63	4,478.80	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.12	0.25	51.66
7/8/13 7:21 PM	61.22	4,540.02	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.8	2.74	0.00	0.00	0.00	100.00	10.37	17.47	0.68	0.27	52.34
7/10/13 5:54 AM	34.55	4,574.57	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.37	0.26	52.71
7/12/13 6:27 AM	48.55	4,623.12	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.9	2.79	0.00	0.00	0.00	100.00	10.59	17.84	0.55	0.27	53.26
7/15/13 6:51 PM	84.40	4,707.52	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.87	0.25	54.13
7/17/13 6:04 PM	47.22	4,754.73	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.1	0.06	0.00	0.00	0.00	100.00	0.22	0.36	0.01	0.01	54.15
7/19/13 7:43 PM	49.65	4,804.38	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.59	0.29	54.74
7/22/13 10:41 AM	62.97	4,867.35	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.1	2.91	0.00	0.00	0.00	100.00	11.02	18.56	0.74	0.28	55.48
7/24/13 8:17 AM	45.60	4,912.95	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.3	3.02	0.00	0.00	0.00	100.00	11.45	19.29	0.56	0.29	56.04
7/26/13 7:07 PM	58.83	4,971.78	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.64	0.26	56.67
7/29/13 4:11 PM	69.07	5,040.85	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.72	0.25	57.39
7/31/13 6:34 PM	50.38	5,091.23	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.8	2.74	0.00	0.00	0.00	100.00	10.37	17.47	0.56	0.27	57.94
8/2/13 5:14 PM	46.67	5,137.90	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	10.80	18.20	0.54	0.28	58.48
8/5/13 5:13 PM	71.98	5,209.88	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	97.44	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	7.8	4.45	0.00	0.00	0.00	100.00	16.85	28.39	1.29	0.43	59.77
8/7/13 3:11 PM	45.97	5,255.85	10	110.0	43.3	7.90	0.58	--	0	169	0.30	0.17	97.14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.11	0.58	60.88
8/9/13 5:48 PM	50.62	5,306.47	10	110.0	43.3	7.90	0.58	--	0	169	0.50	0.29	95.93	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	12.3	7.01	0.00	0.00	0.00	100.00	26.57	44.77	1.43	0.68	62.32
8/12/13 6:10 PM	72.37	5,378.83	10	110.0	43.3	7.90	0.58	--	0	169	0.90	0.51	94.19	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.5	8.84	0.00	0.00	0.00	100.00	33.48	56.42	2.58	0.86	64.90
8/14/13 1:06 PM	42.93	5,421.77	10	110.0	43.3	7.90	0.58	--	0	169	1.40	0.80	91.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	16.8	9.58	0.00	0.00	0.00	100.00	36.29	61.15	1.66	0.93	66.56
8/16/13 9:59 AM	44.88	5,466.65	10	110.0	43.3	7.90	0.58	--	0	169	1.60	0.91	90.86	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	17.5	9.98	0.00	0.00	0.00	100.00	37.80	63.70	1.81	0.97	68.37
8/19/13 2:54 PM	76.92	5,543.57	10	110.0	43.3	7.90	0.58	--	0	169	1.80	1.03	90.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.3	11.00	0.00	0.00	0.00	100.00	41.69	70.25	3.42	1.07	71.79
8/21/13 6:42 PM	51.80	5,595.37	10	110.0	43.3	7.90	0.58	--	0	169	1.90	1.08	90.26	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.5	11.12	0.00	0.00	0.00	100.00	42.13	70.98	2.33	1.08	74.11
8/23/13 5:21 PM	46.65	5,642.02	10	110.0	43.3	7.90	0.58	--	0	169	1.60	0.91	89.81	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.7	8.95	0.00	0.00	0.00	100.00	33.92	57.15	1.69	0.87	75.80
8/26/13 5:07 PM	71.77	5,713.78	10	110.0	43.3	7.90	0.58	--	0	169	1.50	0.86	89.13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	13.8	7.87	0.00	0.00	0.00	100.00	29.81	50.23	2.28	0.76	78.08
8/28/13 1:44 PM	44.62	5,758.40	10	110.0	43.3	7.90	0.58	--	0	169	1.20	0.68	90.40	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	12.5	7.13	0.00	0.00	0.00	100.00	27.00	45.50	1.28	0.69	79.36

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
8/30/13 7:21 PM	53.62	5,812.02	10	110.0	43.3	7.90	0.58	--	0	169	1.40	0.80	87.61	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	11.3	6.44	0.00	0.00	0.00	100.00	24.41	41.13	1.39	0.62	80.76
9/2/13 5:26 PM	70.08	5,882.10	10	110.0	43.3	7.90	0.58	--	0	169	1.20	0.68	88.89	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.8	6.16	0.00	0.00	0.00	100.00	23.33	39.31	1.74	0.60	82.50
9/4/13 5:06 PM	47.67	5,929.77	10	110.0	43.3	7.90	0.58	--	0	169	1.10	0.63	89.52	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.15	0.58	83.65
9/6/13 5:30 AM	36.40	5,966.17	10	110.0	43.3	7.90	0.58	--	0	169	1.00	0.57	90.10	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.1	5.76	0.00	0.00	0.00	100.00	21.82	36.76	0.85	0.56	84.50
9/9/13 11:57 AM	78.45	6,044.62	10	110.0	43.3	7.90	0.58	--	0	169	1.40	0.80	86.79	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.6	6.04	0.00	0.00	0.00	100.00	22.90	38.58	1.91	0.59	86.41
9/11/13 9:08 AM	45.18	6,089.80	10	110.0	43.3	7.90	0.58	--	0	169	1.50	0.86	86.11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.8	6.16	0.00	0.00	0.00	100.00	23.33	39.31	1.12	0.60	87.53
9/13/13 8:47 AM	47.65	6,137.45	10	110.0	43.3	7.90	0.58	--	0	169	1.80	1.03	82.86	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.15	0.58	88.69
9/16/13 6:40 AM	69.88	6,207.33	10	110.0	43.3	7.90	0.58	--	0	169	1.90	1.08	82.41	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.8	6.16	0.00	0.00	0.00	100.00	23.33	39.31	1.74	0.60	90.42
9/18/13 6:01 AM	47.35	6,254.68	10	110.0	43.3	7.90	0.58	--	0	169	2.00	1.14	81.31	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.7	6.10	0.00	0.00	0.00	100.00	23.11	38.95	1.17	0.59	91.59
9/20/13 11:30 AM	53.48	6,308.17	10	110.0	43.3	7.90	0.58	--	0	169	2.10	1.20	80.73	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.9	6.21	0.00	0.00	0.00	100.00	23.55	39.68	1.34	0.60	92.93
9/23/13 5:17 PM	77.78	6,385.95	10	110.0	43.3	7.90	0.58	--	0	169	1.90	1.08	81.90	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.88	0.58	94.81
9/25/13 4:30 PM	47.22	6,433.17	10	110.0	43.3	7.90	0.58	--	0	169	2.00	1.14	80.39	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.2	5.81	0.00	0.00	0.00	100.00	22.03	37.13	1.11	0.56	95.92
9/27/13 3:59 PM	47.48	6,480.65	10	110.0	43.3	7.90	0.58	--	0	169	2.10	1.20	79.81	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.4	5.93	0.00	0.00	0.00	100.00	22.47	37.86	1.14	0.57	97.06
9/30/13 4:58 PM	72.98	6,553.63	10	110.0	43.3	7.90	0.58	--	0	169	2.20	1.25	77.55	0.10	0.06	98.98	0.00	0.00	100.00	0.00	0.00	100.00	9.8	5.59	0.00	0.00	0.00	100.00	21.17	35.67	1.65	0.54	98.70
10/2/13 2:37 PM	45.65	6,599.28	10	110.0	43.3	7.90	0.58	--	0	169	2.30	1.31	76.04	0.20	0.11	97.92	0.00	0.00	100.00	0.00	0.00	100.00	9.6	5.47	0.00	0.00	0.00	100.00	20.74	34.94	1.01	0.53	99.71
10/4/13 4:30 PM	49.88	6,649.17	10	110.0	43.3	7.90	0.58	--	0	169	2.30	1.31	75.79	0.30	0.17	96.84	0.00	0.00	100.00	0.00	0.00	100.00	9.5	5.42	0.00	0.00	0.00	100.00	20.52	34.58	1.09	0.52	100.80
10/7/13 4:36 PM	72.10	6,721.27	10	110.0	43.3	7.90	0.58	--	0	169	2.50	1.43	73.96	0.40	0.23	95.83	0.00	0.00	100.00	0.00	0.00	100.00	9.6	5.47	0.00	0.00	0.00	100.00	20.74	34.94	1.59	0.53	102.40
10/9/13 3:38 AM	35.03	6,756.30	10	110.0	43.3	7.90	0.58	--	0	169	2.50	1.43	73.40	0.40	0.23	95.74	0.00	0.00	100.00	0.00	0.00	100.00	9.4	5.36	0.00	0.00	0.00	100.00	20.31	34.22	0.76	0.52	103.16
10/11/13 4:37 PM	60.98	6,817.28	10	110.0	43.3	7.90	0.58	--	0	169	2.60	1.48	72.63	0.50	0.29	94.74	0.00	0.00	100.00	0.00	0.00	100.00	9.5	5.42	0.00	0.00	0.00	100.00	20.52	34.58	1.33	0.52	104.49
10/14/13 5:15 PM	72.63	6,889.92	10	110.0	43.3	7.90	0.58	--	0	169	2.70	1.54	71.28	0.50	0.29	94.68	0.00	0.00	100.00	0.00	0.00	100.00	9.4	5.36	0.00	0.00	0.00	100.00	20.31	34.22	1.57	0.52	106.06
10/16/13 8:38 AM	39.38	6,929.30	10	110.0	43.3	7.90	0.58	--	0	169	2.80	1.60	69.89	0.60	0.34	93.55	0.00	0.00	100.00	0.00	0.00	100.00	9.3	5.30	0.00	0.00	0.00	100.00	20.09	33.85	0.84	0.51	106.90
10/18/13 1:23 PM	52.75	6,982.05	10	110.0	43.3	7.90	0.58	--	0	169	2.90	1.65	69.15	0.70	0.40	92.55	0.00	0.00	100.00	0.00	0.00	100.00	9.4	5.36	0.00	0.00	0.00	100.00	20.31	34.22	1.14	0.52	108.05
10/21/13 5:36 PM	76.22	7,058.27	10	110.0	43.3	7.90	0.58	--	0	169	2.80	1.60	69.57	0.90	0.51	90.22	0.00	0.00	100.00	0.00	0.00	100.00	9.2	5.24	0.00	0.00	0.00	100.00	19.87	33.49	1.61	0.51	109.66
10/28/13 4:25 PM	166.82	7,225.08	10	110.0	43.3	7.90	0.58	--	0	169	3.10	1.77	65.93	1.50	0.86	83.52	0.00	0.00	100.00	0.00	0.00	100.00	9.1	5.19	0.00	0.00	0.00	100.00	19.66	33.12	3.49	0.50	113.15
10/30/13 5:28 PM	49.05	7,274.13	10	110.0	43.3	7.90	0.58	--	0	169	3.20	1.82	64.44	1.60	0.91	82.22	0.00	0.00	100.00	0.00	0.00	100.00	9.0	5.13	0.00	0.00	0.00	100.00	19.44	32.76	1.02	0.50	114.17
11/1/13 4:21 PM	46.88	7,321.02	10	110.0	43.3	7.90	0.58	--	0	169	3.50	2.00	61.96	1.70	0.97	81.52	0.00	0.00	100.00	0.00	0.00	100.00	9.2	5.24	0.00	0.00	0.00	100.00	19.87	33.49	0.99	0.51	115.16
11/4/13 10:56 AM	66.58	7,387.60	10	110.0	43.3	7.90	0.58	--	0	169	2.20	1.25	74.12	0.30	0.17	96.47	0.00	0.00	100.00	0.00	0.00	100.00	8.5	4.85	0.00	0.00	0.00	100.00	18.36	30.94	1.30	0.47	116.47
11/6/13 4:48 PM	53.87	7,441.47	10	110.0	43.3	7.90	0.58	--	0	169	2.30	1.31	71.95	0.30	0.17	96.34	0.00	0.00	100.00	0.00	0.00	100.00	8.2	4.67	0.00	0.00	0.00	100.00	17.71	29.85	1.02	0.45	117.48
11/8/13 1:49 PM	45.02	7,486.48	10	110.0	43.3	7.90	0.58	--	0	169	2.40	1.37	69.23	0.50	0.29	93.59	0.00	0.00	100.00	0.00	0.00	100.00	7.8	4.45	0.00	0.00	0.00	100.00	16.85	28.39	0.81	0.43	118.29
11/11/13 4:07 PM	74.30	7,560.78	10	110.0	43.3	7.90	0.58	--	0	169	2.50	1.43	66.67	0.40	0.23	94.67	0.00	0.00	100.00	0.00	0.00	100.00	7.5	4.28	0.00	0.00	0.00	100.00	16.20	27.30	1.28	0.41	119.57
11/13/13 9:23 AM	41.27	7,602.05	10	110.0	43.3	7.90	0.58	--	0	169	2.60	1.48	63.89	0.70	0.40	90.28	0.00	0.00	100.00	0.00	0.00	100.00	7.2	4.10	0.00	0.00	0.00	100.00	15.55	26.21	0.68	0.40	120.26
11/15/13 4:48 PM	55.42	7,657.47	10	110.0	43.3	7.90	0.58	--	0	169	2.60	1.48	61.76	0.80	0.46	88.24	0.00	0.00	100.00	0.00	0.00	100.00	6.8	3.88	0.00	0.00	0.00	100.00	14.69	24.75	0.87	0.38	121.13
11/18/13 3:58 PM	71.17	7,728.63	10	110.0	43.3	7.90	0.58	--	0	169	2.80	1.60	55.56	0.70	0.40	88.89	0.00	0.00	100.00	0.00	0.00	100.00	6.3	3.59	0.00	0.00	0.00	100.00	13.61	22.93	1.03	0.35	122.16
11/20/13 10:50 AM	42.87	7,771.50	10	110.0	43.3	7.90	0.58	--	0	169	2.80	1.60	49.09	0.70	0.40	87.27	0.00	0.00	100.00	0.00	0.00	100.00	5.5	3.14	0.00	0.00	0.00	100.00	11.88	20.02	0.54	0.30	122.70
11/22/13 3:59 PM	53.15	7,824.65	10	110.0	43.3	7.90	0.58	--	0	169	2.70	1.54	48.08	0.80	0.46	84.62	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.64	0.29	123.34
11/25/13 12:32 PM	68.55	7,893.20	10	110.0	43.3	7.90	0.58	--	0	169	2.90	1.65	38.30	0.80	0.46	82.98	0.00	0.00	100.00	0.00	0.00	100.00	4.7	2.68	0.00	0.00	0.00	100.00	10.15	17.11	0.74	0.26	124.08
11/27/13 4:28 PM	51.93	7,945.13	10	110.0	43.3	7.90	0.58	--	0	169	2.70	1.54	28.95	0.80	0.46	78.95	0.00	0.00	100.00	0.00	0.00	100.00	3.8	2.17	0.00	0.00	0.00	100.00	8.21	13.83	0.45	0.21	124.53
11/29/13 4:52 PM	48.40	7,993.53	10	110.0	43.3	7.90	0.58	--	0	169	2.80	1.60	20.00	0.90	0.51	74.29	0.00	0.00	100.00	0.00	0.00	100.00	3.5	2.00	0.00	0.00	0.00	100.00	7.56	12.74	0.39	0.19	124.92
12/2/13 4:29 PM	71.62	8,065.15	10	110.0	43.3	7.90	0.58	--	0	169	2.70	1.54	25.00	0.80	0.46	77.78	0.00	0.00	100.00	0.00	0.00	100.00	3.6	2.05	0.00	0.00	0.00	100.00	7.78	13.10	0.59	0.20	125.52
12/4/13 9:57 AM	41.47	8,106.62	10	110.0	43.3	7.90	0.58	--	0	169	2.70	1.54	-3.85	0.80	0.46	69.23	0.00	0.00	100.00	0.00	0.00	100.00	2.6	1.48	0.00	0.00	0.00	100.00	5.62	9.46	0.25	0.14	125.76
12/6/13 4:36 PM	54.65	8,161.27	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	2.5	1.43	0.00	0.00	0.00	100.00	5.40	9.10	0.31	0.14	126.08
12/9/13 12:26 PM	67.83	8,229.10	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.0	2.28	0.00	0.00	0.00	100.00	8.64	14.56	0.62	0.22	126.70
12/11/13 1:30 PM	49.07	8,278.17	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.51	0.25	127.21
12/13/13 1:25 PM	47.92	8,326.08	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.2	2.96	0.00	0.00	0.00	100.00	11.23	18.93	0.57	0.29	127.79
12/16/13 3:26 PM	74.02	8,400.10	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	7.0	3.99	0.00	0.00	0.00	100.00	15.12	25.48	1.19	0.39	128.98
12/18/13 4:30 PM	49.07	8,449.17	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.5	3.71	0.00	0.00	0.00	100.00	14.04	23.66	0.73	0.36	129.71
12/20/13 3:15 PM	46.75	8,495.92	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.5	4.85	0.00	0.00	0.00	100.00	18.36	30.94	0.91	0.47	130.63
12/23/13 2:40 PM	71.42	8,567.33	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	9.0	5.13	0.00	0.00	0.00	100.00	19.44	32.76	1.48	0.50	132.11
12/25/13 3:55 PM	49.25	8,616.58	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	12.0	6.84	0.00	0.00	0.00	100.00	25.92	43.68	1.36	0.66	133.47
12/27/13 3:42 PM	47.78	8,664.37	10	110.0	43.3	7.90	0.58	--	0	169	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	17.0	9.69	0.00	0.00	0.00	100.00	36.72	61.88	1.87	0.94	135.34

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. $H_2$0)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in $H_2$0) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
12/30/13 3:27 PM	71.75	8,736.12	10	110.0	43.3	7.90	0.58	--	0	169	0.10	0.06	99.47	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.0	10.83	0.00	0.00	0.00	100.00	41.05	69.16	3.14	1.05	138.48
1/1/14 3:00 PM	47.55	8,783.67	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	98.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.0	8.55	0.00	0.00	0.00	100.00	32.40	54.60	1.64	0.83	140.12
1/3/14 3:13 PM	48.22	8,831.88	10	110.0	43.3	7.90	0.58	--	0	169	0.30	0.17	97.69	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	13.0	7.41	0.00	0.00	0.00	100.00	28.08	47.32	1.44	0.72	141.56
1/6/14 3:28 PM	72.25	8,904.13	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	98.33	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	12.0	6.84	0.00	0.00	0.00	100.00	25.92	43.68	2.00	0.66	143.56
1/8/14 3:58 PM	48.50	8,952.63	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	98.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.0	5.70	0.00	0.00	0.00	100.00	21.60	36.40	1.12	0.55	144.67
1/10/14 3:36 PM	47.63	9,000.27	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	95.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.0	2.28	0.00	0.00	0.00	100.00	8.64	14.56	0.44	0.22	145.11
1/13/14 4:36 PM	73.00	9,073.27	10	110.0	43.3	7.90	0.58	--	0	169	0.60	0.34	86.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.76	0.25	145.87
1/15/14 1:37 PM	45.02	9,118.28	10	110.0	43.3	7.90	0.58	--	0	169	1.20	0.68	87.37	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	9.5	5.42	0.00	0.00	0.00	100.00	20.52	34.58	0.98	0.52	146.85
1/17/14 4:37 PM	51.00	9,169.28	10	110.0	43.3	7.90	0.58	--	0	169	1.00	0.57	71.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.5	2.00	0.00	0.00	0.00	100.00	7.56	12.74	0.41	0.19	147.26
1/20/14 3:43 PM	71.10	9,240.38	10	110.0	43.3	7.90	0.58	--	0	169	1.00	0.57	66.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.0	1.71	0.00	0.00	0.00	100.00	6.48	10.92	0.49	0.17	147.75
1/22/14 4:36 PM	48.88	9,289.27	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	94.29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.5	2.00	0.00	0.00	0.00	100.00	7.56	12.74	0.39	0.19	148.15
1/24/14 11:19 AM	42.72	9,331.98	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	93.33	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	3.0	1.71	0.00	0.00	0.00	100.00	6.48	10.92	0.30	0.17	148.44
1/27/14 3:54 PM	76.58	9,408.57	10	110.0	43.3	7.90	0.58	--	0	169	0.20	0.11	92.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	2.5	1.43	0.00	0.00	0.00	100.00	5.40	9.10	0.44	0.14	148.88
1/29/14 4:03 PM	48.15	9,456.72	10	110.0	43.3	7.90	0.58	--	0	169	0.40	0.23	93.33	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	6.0	3.42	0.00	0.00	0.00	100.00	12.96	21.84	0.67	0.33	149.55
1/31/14 11:30 AM	43.45	9,500.17	10	110.0	43.3	7.90	0.58	--	0	169	0.60	0.34	91.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	7.0	3.99	0.00	0.00	0.00	100.00	15.12	25.48	0.70	0.39	150.25
2/3/14 4:24 PM	76.90	9,577.07	10	110.0	43.3	7.90	0.58	--	0	169	1.20	0.68	88.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.0	5.70	0.00	0.00	0.00	100.00	21.60	36.40	1.77	0.55	152.02
2/5/14 7:58 AM	39.57	9,616.63	10	110.0	43.3	7.90	0.58	--	0	169	1.10	0.63	86.25	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.28	29.12	0.73	0.44	152.75
2/6/14 4:42 PM	32.73	9,649.37	10	110.0	43.3	7.90	0.58	--	0	169	1.10	0.63	86.25	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.28	29.12	0.60	0.44	153.35
2/10/14 5:00 PM	96.30	9,745.67	10	110.0	43.3	7.90	0.58	--	0	169	1.10	0.63	86.25	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.28	29.12	1.77	0.44	155.12
2/12/14 12:45 PM	140.05	9,885.72	10	110.0	43.3	7.90	0.58	--	0	169	1.10	0.63	86.25	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.28	29.12	2.58	0.44	157.70
2/14/14 2:05 PM	49.33	9,935.05	10	110.0	43.3	7.90	0.58	--	0	169	1.10	0.63	86.25	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.28	29.12	0.91	0.44	158.61
2/17/14 4:30 PM	74.42	10,009.47	10	110.0	43.3	7.90	0.58	--	0	169	0.80	0.46	82.22	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	4.5	2.57	0.00	0.00	0.00	100.00	9.72	16.38	0.77	0.25	159.38
2/19/14 5:38 PM	49.13	10,058.60	10	110.0	43.3	7.90	0.58	--	0	169	0.50	0.29	90.91	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.5	3.14	0.00	0.00	0.00	100.00	11.88	20.02	0.62	0.30	160.00
2/21/14 4:43 PM	47.08	10,105.68	10	110.0	43.3	7.90	0.58	--	0	169	0.80	0.46	95.79	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.0	10.83	0.00	0.00	0.00	100.00	41.05	69.16	2.06	1.05	162.06
2/24/14 5:00 PM	72.28	10,177.97	10	110.0	43.3	7.90	0.58	--	0	169	0.80	0.46	95.29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	17.0	9.69	0.00	0.00	0.00	100.00	36.72	61.88	2.83	0.94	164.89
2/26/14 8:59 AM	39.98	10,217.95	10	110.0	43.3	7.90	0.58	--	0	169	0.80	0.46	95.79	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.0	10.83	0.00	0.00	0.00	100.00	41.05	69.16	1.75	1.05	166.64
2/28/14 2:19 PM	53.33	10,271.28	10	110.0	43.3	7.90	0.58	--	0	169	0.80	0.46	95.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	17.5	9.98	0.00	0.00	0.00	100.00	37.80	63.70	2.15	0.97	168.79
3/3/14 4:44 PM	74.42	10,345.70	10	110.0	43.3	7.90	0.58	--	0	169	1.50	0.86	91.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	17.5	9.98	0.00	0.00	0.00	100.00	37.80	63.70	3.00	0.97	171.79
3/5/14 3:23 PM	46.65	10,392.35	10	110.0	43.3	7.90	0.58	--	0	169	2.10	1.20	72.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	7.5	4.28	0.00	0.00	0.00	100.00	16.20	27.30	0.81	0.41	172.59
3/7/14 1:51 PM	46.47	10,438.82	10	110.0	43.3	7.90	0.58	--	0	169	1.80	1.03	81.05	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	9.5	5.42	0.00	0.00	0.00	100.00	20.52	34.58	1.02	0.52	173.61
3/10/14 5:17 PM	75.43	10,514.25	10	110.0	43.3	7.90	0.58	--	0	169	1.50	0.86	85.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.82	0.58	175.43
3/12/14 8:52 AM	39.58	10,553.83	10	110.0	43.3	7.90	0.58	--	0	169	1.90	1.08	78.89	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	9.0	5.13	0.00	0.00	0.00	100.00	19.44	32.76	0.82	0.50	176.25
3/14/14 5:40 PM	56.80	10,610.63	10	110.0	43.3	7.90	0.58	--	0	169	1.60	0.91	80.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.28	29.12	1.05	0.44	177.30
3/17/14 7:24 PM	73.73	10,684.37	10	110.0	43.3	7.90	0.58	--	0	169	1.50	0.86	85.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.78	0.58	179.08
3/19/14 5:26 PM	46.03	10,730.40	10	110.0	43.3	7.90	0.58	--	0	169	1.30	0.74	87.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.0	5.70	0.00	0.00	0.00	100.00	21.60	36.40	1.06	0.55	180.14
3/21/14 5:47 PM	48.35	10,778.75	10	110.0	43.3	7.90	0.58	--	0	169	1.40	0.80	86.27	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.2	5.81	0.00	0.00	0.00	100.00	22.03	37.13	1.14	0.56	181.28
3/24/14 6:30 PM	72.72	10,851.47	10	110.0	43.3	7.90	0.58	--	0	169	1.40	0.80	86.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.76	0.58	183.03
3/26/14 6:21 PM	47.85	10,899.32	10	110.0	43.3	7.90	0.58	--	0	169	1.60	0.91	85.19	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.8	6.16	0.00	0.00	0.00	100.00	23.33	39.31	1.19	0.60	184.22
3/28/14 6:03 PM	47.70	10,947.02	10	110.0	43.3	7.90	0.58	--	0	169	1.90	1.08	82.73	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	11.0	6.27	0.00	0.00	0.00	100.00	23.76	40.04	1.21	0.61	185.43
3/31/14 7:24 PM	73.35	11,020.37	10	110.0	43.3	7.90	0.58	--	0	169	1.50	0.86	85.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.5	5.99	0.00	0.00	0.00	100.00	22.68	38.22	1.77	0.58	187.21
4/2/14 3:31 PM	44.12	11,064.48	10	110.0	43.3	7.90	0.58	--	0	169	1.80	1.03	89.41	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	17.0	9.69	0.00	0.00	0.00	100.00	36.72	61.88	1.73	0.94	188.93
4/4/14 10:04 AM	42.55	11,107.03	10	110.0	43.3	7.90	0.58	--	0	169	1.60	0.91	88.97	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	14.5	8.27	0.00	0.00	0.00	100.00	31.32	52.78	1.42	0.80	190.35
4/7/14 6:42 PM	80.63	11,187.67	10	110.0	43.3	7.90	0.58	--	0	169	1.70	0.97	86.92	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	13.0	7.41	0.00	0.00	0.00	100.00	28.08	47.32	2.41	0.72	192.76
4/9/14 6:58 PM	48.27	11,235.93	10	110.0	43.3	7.90	0.58	--	0	169	1.80	1.03	88.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.0	8.55	0.00	0.00	0.00	100.00	32.40	54.60	1.67	0.83	194.43
4/11/14 9:07 AM	38.15	11,274.08	10	110.0	43.3	7.90	0.58	--	0	169	1.60	0.91	88.97	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	14.5	8.27	0.00	0.00	0.00	100.00	31.32	52.78	1.27	0.80	195.71
4/14/14 3:37 PM	78.50	11,352.58	10	110.0	43.3	7.90	0.58	--	0	169	1.80	1.03	88.16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.2	8.66	0.00	0.00	0.00	100.00	32.84	55.33	2.75	0.84	198.45
4/16/14 4:20 PM	48.72	11,401.30	10	110.0	43.3	7.90	0.58	--	0	169	2.00	1.14	87.18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.6	8.89	0.00	0.00	0.00	100.00	33.70	56.79	1.75	0.86	200.20
4/18/14 3:18 PM	46.97	11,448.27	10	110.0	43.3	7.90	0.58	--	0	169	2.10	1.20	85.91	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	14.9	8.49	0.00	0.00	0.00	100.00	32.19	54.24	1.61	0.82	201.81
4/21/14 3:54 PM	72.60	11,520.87	10	110.0	43.3	7.90	0.58	--	0	169	6.00	3.42	77.36	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	26.5	15.11	0.00	0.00	0.00	100.00	57.25	96.46	4.43	1.46	206.24
4/23/14 4:27 PM	48.55	11,569.42	10	110.0	43.3	7.90	0.58	--	0	169	6.00	3.42	80.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	30.0	17.10	0.00	0.00	0.00	100.00	64.81	109.20	3.35	1.66	209.59

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_20)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_20) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
4/25/14 4:15 PM	47.80	11,617.22	10	110.0	43.3	7.90	0.58	--	0	169	6.30	3.59	67.69	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.5	11.12	0.00	0.00	0.00	100.00	42.13	70.98	2.15	1.08	211.74
4/28/14 5:34 PM	73.32	11,690.53	10	110.0	43.3	7.90	0.58	--	0	169	7.00	3.99	48.15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	13.5	7.70	0.00	0.00	0.00	100.00	29.16	49.14	2.28	0.75	214.02
4/30/14 4:04 PM	46.50	11,737.03	10	110.0	43.3	7.90	0.58	--	0	169	6.50	3.71	69.05	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	21.0	11.97	0.00	0.00	0.00	100.00	45.37	76.44	2.25	1.16	216.27
5/2/14 5:00 PM	48.93	11,785.97	10	110.0	43.3	7.90	0.58	--	0	169	7.50	4.28	80.77	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	39.0	22.23	0.00	0.00	0.00	100.00	84.25	141.96	4.39	2.15	220.66
5/5/14 6:34 PM	73.57	11,859.53	10	110.0	43.3	7.90	0.58	--	0	169	8.00	4.56	77.14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	35.0	19.95	0.00	0.00	0.00	100.00	75.61	127.40	5.93	1.93	226.59
5/7/14 6:53 AM	36.32	11,895.85	10	110.0	43.3	7.90	0.58	--	0	169	11.00	6.27	60.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	28.0	15.96	0.00	0.00	0.00	100.00	60.49	101.92	2.34	1.55	228.93
5/7/14 5:30 PM	10.62	11,906.47	10	110.0	43.3	7.90	0.58	--	0	169	6.20	3.53	55.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	14.0	7.98	0.00	0.00	0.00	100.00	30.24	50.96	0.34	0.77	229.27
5/9/14 7:44 AM	38.23	11,944.70	10	110.0	43.3	7.90	0.58	--	0	169	6.50	3.71	65.79	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.0	10.83	0.00	0.00	0.00	100.00	41.05	69.16	1.67	1.05	230.94
5/12/14 2:52 PM	79.13	12,023.83	10	110.0	43.3	7.90	0.58	--	0	169	8.00	4.56	77.14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	35.0	19.95	0.00	0.00	0.00	100.00	75.61	127.40	6.38	1.93	237.32
5/16/14 4:00 PM	97.13	12,120.97	42	110.0	43.3	16	1.17	1,745	152	149	115.00	65.55	23.33	16.00	9.12	89.33	7.00	3.99	23.25	0.00	0.00	100.00	150.0	85.50	0.00	1.00	0.57	99.33	324.04	546.01	29.64	7.32	266.96
5/18/14 2:05 PM	46.08	12,167.05	42	110.0	43.3	16	1.17	1,685	147	144	90.00	51.30	21.74	68.00	38.76	40.87	4.00	2.28	89.68	0.00	0.00	100.00	115.0	65.55	0.00	4.00	2.28	96.52	248.43	418.61	10.41	5.42	277.38
5/19/14 3:40 PM	25.58	12,192.63	42	110.0	43.3	16	1.17	1,724	150	147	90.00	51.30	29.69	50.00	28.50	60.94	30.00	17.10	-5.26	0.00	0.00	100.00	128.0	72.96	0.00	18.00	10.26	85.94	276.52	465.93	6.58	6.18	283.96
10/17/14 1:10 PM	0.00	12,192.63	54	79.0	26.1	35	2.55	1,850	161	182	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	38.0	21.66	0.00	0.00	0.00	100.00	86.81	146.28	0.00	0.00	283.96
10/20/14 3:00 PM	73.83	12,266.47	60	95.0	35.0	34	2.48	2,135	186	203	90.00	51.30	30.77	8.50	4.85	93.46	0.00	0.00	100.00	0.00	0.00	100.00	130.0	74.10	0.00	0.00	0.00	100.00	288.43	486.01	27.29	8.87	311.25
10/22/14 2:25 PM	47.42	12,313.88	60	91.0	32.8	10	0.73	1,982	172	170	120.00	68.40	9.09	72.00	41.04	45.45	40.00	22.80	44.44	0.00	0.00	100.00	132.0	75.24	0.00	19.00	10.83	85.61	295.00	497.07	15.05	7.62	326.30
11/12/14 1:07 PM	0.00	12,313.88	6	66.0	18.9	6.0	0.44	475	41	42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	19.0	10.83	0.00	0.00	0.00	100.00	44.48	74.95	0.00	0.00	326.30
11/14/14 2:30 PM	49.38	12,363.27	6.8	67.0	19.4	6.7	0.49	479	42	42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	327.13	551.22	4.32	2.10	330.62
11/17/14 1:05 PM	70.58	12,433.85	6.5	64.0	17.8	5.7	0.42	480	42	43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	434.76	732.57	8.24	2.80	338.86
11/19/14 3:20 PM	50.25	12,484.10	7	68.0	20.0	5.90	0.43	480	42	42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	295.0	168.15	0.00	0.00	0.00	100.00	688.01	1159.29	9.22	4.40	348.08
11/24/14 3:40 PM	120.33	12,604.43	6.9	62.0	16.7	6.60	0.48	457	40	41	125.00	71.25	51.55	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	258.0	147.06	0.00	0.00	0.00	100.00	608.63	1025.55	18.87	3.76	366.96
11/26/14 3:40 PM	48.00	12,652.43	6.2	66.0	18.9	6.00	0.44	484	42	43	130.00	74.10	48.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	585.27	986.19	7.59	3.79	374.54
12/1/14 9:25 AM	113.75	12,766.18	7.7	69.0	20.6	5.90	0.43	480	42	42	165.00	94.05	8.33	19.00	10.83	89.44	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	419.01	706.03	12.69	2.68	387.23
12/3/14 11:08 AM	49.72	12,815.90	16	65.0	18.3	3.50	0.26	510	44	45	250.00	142.50	15.25	60.00	34.20	79.66	0.50	0.29	99.83	0.00	0.00	100.00	295.0	168.15	0.00	0.00	0.00	100.00	691.94	1165.92	9.69	4.68	396.92
12/8/14 8:45 AM	117.62	12,933.52	24	58.0	14.4	3.00	0.22	388	34	34	290.00	165.30	7.94	105.00	59.85	66.67	0.40	0.23	99.87	0.00	0.00	100.00	315.0	179.55	0.00	0.00	0.00	100.00	748.84	1261.80	19.08	3.89	416.00
12/10/14 12:00 AM	39.25	12,972.77	22	56.0	13.3	3.00	0.22	372	32	33	350.00	199.50	7.89	165.00	94.05	56.58	0.40	0.23	99.89	0.00	0.00	100.00	380.0	216.60	0.00	0.00	0.00	100.00	906.87	1528.08	7.42	4.54	423.43
12/15/14 2:29 PM	134.48	13,107.25	25	55.0	12.8	3.00	0.22	512	45	46	135.00	76.95	10.00	80.00	45.60	46.67	10.00	5.70	93.33	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	358.67	604.36	13.87	2.48	437.30
12/17/14 12:54 PM	46.42	13,153.67	28	55.0	12.8	3.00	0.22	387	34	34	260.00	148.20	10.34	150.00	85.50	48.28	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	693.43	1168.43	7.00	3.62	444.29
12/22/14 5:00 PM	124.10	13,277.77	30	56.0	13.3	1.50	0.11	329	29	29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	200.0	114.00	0.00	0.00	0.00	100.00	477.30	804.25	10.84	2.10	455.14
12/25/14 1:25 PM	68.42	13,346.18	30	53.0	11.7	1.40	0.10	341	30	30	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	696.13	1172.99	9.09	3.19	464.22
12/29/14 3:15 PM	97.83	13,444.02	30	52.0	11.1	1.40	0.10	439	38	39	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	601.29	1013.17	14.48	3.55	478.70
12/31/14 2:06 PM	46.85	13,490.87	26	47.0	8.3	1.30	0.09	345	30	31	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	680.09	1145.95	6.22	3.19	484.92
1/5/15 3:43 PM	121.62	13,612.48	27	56.0	13.3	1.30	0.09	363	32	32	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	668.22	1125.95	16.40	3.24	501.32
1/7/15 2:06 PM	46.38	13,658.87	40	63.0	17.2	2.00	0.15	431	37	38	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	706.36	1190.22	7.77	4.02	509.09
1/11/15 12:00 AM	81.90	13,740.77	32	59.0	15.0	1.60	0.12	623	54	55	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	569.45	959.52	16.08	4.71	525.17
1/14/15 4:58 PM	88.97	13,829.73	4.6	59.0	15.0	4.60	0.34	436	38	39	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	569.45	959.52	12.41	3.35	537.58
1/19/15 1:40 PM	116.70	13,946.43	18	51.0	10.6	2.60	0.19	345	30	31	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	320.0	182.40	0.00	0.00	0.00	100.00	771.16	1299.40	17.54	3.61	555.12
1/21/15 2:50 PM	49.17	13,995.60	20.2	51.0	10.6	2.70	0.20	358	31	32	35.00	19.95	90.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	350.0	199.50	0.00	0.00	0.00	100.00	843.45	1421.22	8.39	4.10	563.51
1/27/15 4:00 PM	145.17	14,140.77	23	59.0	15.0	2.30	0.17	339	29	30	106.00	60.42	50.70	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	510.13	859.57	13.94	2.31	577.45
1/29/15 3:48 PM	47.80	14,188.57	22	61.0	16.1	2.00	0.15	355	31	31	130.00	74.10	56.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	709.07	1194.79	6.65	3.34	584.10
2/2/15 3:20 PM	95.53	14,284.10	26	67.0	19.4	2.30	0.17	354	31	31	138.00	78.66	50.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	654.26	1102.43	12.10	3.04	596.20
2/4/15 3:13 PM	47.88	14,331.98	20	76.0	24.4	3.30	0.24	395	34	34	160.00	91.20	46.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	689.22	1161.33	7.05	3.53	603.25
2/9/15 3:40 PM	120.45	14,452.43	22	67.0	19.4	2.60	0.19	335	29	29	150.00	85.50	38.78	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	245.0	139.65	0.00	0.00	0.00	100.00	572.48	964.63	12.65	2.52	615.90
2/11/15 1:00 PM	45.33	14,497.77	19	64.0	17.8	2.50	0.18	296	26	26	154.00	87.78	40.77	10.00	5.70	96.15	0.00	0.00	100.00	0.00	0.00	100.00	260.0	148.20	0.00	0.00	0.00	100.00	611.01	1029.55	4.51	2.39	620.42
2/16/15 3:40 PM	122.67	14,620.43	20	74.0	23.3	2.50	0.18	308	27	26	160.00	91.20	34.69	40.00	22.80	83.67	0.00	0.00	100.00	0.00	0.00	100.00	245.0	139.65	0.00	0.00	0.00	100.00	564.97	951.98	11.53	2.26	631.95
2/18/15 12:00 AM	32.33	14,652.77	24	59.0	15.0	2.50	0.18	245	21	22	250.00	142.50	19.35	60.00	34.20	80.65	0.00	0.00	100.00	0.00	0.00	100.00	310.0	176.70	0.00	0.00	0.00	100.00	735.53	1239.38	3.24	2.40	635.19
2/23/15 4:05 PM	136.08	14,788.85	25	54.0	12.2	2.30	0.17	265	23	24	300.00	171.00	6.25	110.00	62.70	65.63	0.00	0.00	100.00	0.00	0.00	100.00	320.0	182.40	0.00	0.00	0.00	100.00	766.65	1291.81	15.51	2.73	650.70
2/25/15 9:50 AM	41.75	14,830.60	28	62.0	16.7	2.50	0.18	369	32	32	290.00	165.30	17.14	120.00	68.40	65.71	0.00	0.00	100.00	0.00	0.00	100.00	350.0	199.50	0.00	0.00	0.00	100.00	825.67	1391.25	7.03	4.04	657.73
3/2/15 7:45 AM	117.92	14,948.52	24	50.0	10.0	2.30	0.17	351	31	31	260.00	148.20	18.75	118.00	67.26	63.13	30.00	17.10	90.63	0.00	0.00	100.00	320.0	182.40	0.00	0.00	0.00	100.00	772.67	1301.95	18.08	3.68	675.80
3/4/15 7:42 AM	47.95	14,996.47	26	52.0	11.1	2.00	0.15	332	29	30	130.00	74.10	13.33	70.00	39.90	53.33	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	360.77	607.90	3.23	1.62	679.03
3/9/15 3:44 PM	128.03	15,124.50	24	78.0	25.6	2.50	0.18	235	20	20	170.00	96.90	27.66	120.00	68.40	48.94	0.00	0.00	100.00	0.00	0.00	100.00	235.0	133.95	0.00	0.00	0.00	100.00	537.88	906.33	8.68	1.63	687.71

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
3/11/15 3:46 PM	48.03	15,172.53	27	71.0	21.7	2.50	0.18	334	29	29	200.00	114.00	16.67	115.00	65.55	52.08	8.00	4.56	96.67	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	556.57	937.82	4.85	2.42	692.56
3/16/15 2:44 PM	118.97	15,291.50	6.6	74.0	23.3	5.50	0.40	598	52	52	143.00	81.51	4.67	122.00	69.54	18.67	50.00	28.50	66.67	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	345.90	582.84	13.49	2.72	706.06
3/18/15 1:37 PM	46.88	15,338.38	6.6	73.0	22.8	5.30	0.39	540	47	47	310.00	176.70	3.13	275.00	156.75	14.06	128.00	72.96	60.00	9.50	5.42	97.03	320.0	182.40	0.00	9.50	5.42	97.03	739.31	1245.73	10.27	5.26	716.33
3/20/15 7:30 AM	0.00	15,338.38	7.5	74.0	23.3	2.10	0.15	535	47	46	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	275.0	156.75	0.00	0.00	0.00	100.00	634.15	1068.55	0.00	0.00	716.33
3/23/15 2:12 PM	78.70	15,417.08	6.4	71.0	21.7	2.20	0.16	487	42	42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	695.71	1172.28	14.47	4.41	730.80
3/25/15 4:55 PM	50.72	15,467.80	7.2	73.0	22.8	2.20	0.16	491	43	42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	554.48	934.30	7.46	3.53	738.26
3/30/15 5:18 PM	120.38	15,588.18	0.68	89.0	31.7	2.20	0.16	485	42	40	78.00	44.46	64.55	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	220.0	125.40	0.00	0.00	0.00	100.00	493.45	831.47	15.12	3.01	753.38
4/1/15 5:38 PM	48.33	15,636.52	7.2	69.0	20.6	2.20	0.16	480	42	41	75.00	42.75	67.39	10.00	5.70	95.65	0.00	0.00	100.00	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	535.40	902.15	6.77	3.36	760.15
4/7/15 7:19 AM	133.68	15,770.20	7.8	67.4	19.7	1.90	0.14	484	42	42	300.00	171.00	4.76	45.00	25.65	85.71	0.00	0.00	100.00	0.00	0.00	100.00	315.0	179.55	0.00	0.00	0.00	100.00	735.49	1239.30	25.96	4.66	786.11
4/9/15 12:15 PM	52.93	15,823.13	7	68.0	20.0	2.30	0.17	702	61	61	250.00	142.50	16.67	220.00	125.40	26.67	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	699.67	1178.94	14.19	6.44	800.30
4/13/15 8:35 AM	92.33	15,915.47	5.9	69.0	20.6	1.50	0.11	469	41	40	245.00	139.65	2.00	210.00	119.70	16.00	5.00	2.85	98.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	581.95	980.59	13.68	3.56	813.98
4/14/15 2:35 PM	30.00	15,945.47	2	69.0	20.6	0.40	0.03	246	21	21	130.00	74.10	45.83	115.00	65.55	52.08	12.00	6.84	95.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	558.67	941.37	2.23	1.78	816.20
4/20/15 1:24 PM	142.82	16,088.28	1.4	84.0	28.9	0.80	0.06	349	30	29	145.00	82.65	42.00	120.00	68.40	52.00	40.00	22.80	84.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	565.90	953.54	14.84	2.49	831.04
4/22/15 2:36 PM	49.20	16,137.48	1.7	75.0	23.9	0.40	0.03	186	16	16	150.00	85.50	28.57	125.00	71.25	40.48	35.00	19.95	83.33	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	483.35	814.45	2.36	1.15	833.40
4/27/15 6:44 AM	112.13	16,249.62	1.7	57.0	13.9	0.30	0.02	104	9	9	220.00	125.40	20.00	210.00	119.70	23.64	70.00	39.90	74.55	3.00	1.71	98.91	275.0	156.75	0.00	3.00	1.71	98.91	655.02	1103.70	4.22	0.90	837.62
4/27/15 11:45 AM	5.02	16,249.62	1.6	79.0	26.1	0.50	0.04	175	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	571.15	962.39	0.27	0.00	837.88
4/29/15 4:39 PM	52.90	16,302.52	1.1	92.0	33.3	0.45	0.03	235	20	19	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	255.0	145.35	0.00	0.00	0.00	100.00	568.84	958.50	3.66	1.66	841.54
5/4/15 6:45 PM	122.10	16,424.62	1.2	83.0	28.3	0.45	0.03	188	16	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	220.0	125.40	0.00	0.00	0.00	100.00	498.91	840.66	6.02	1.18	847.57
5/6/15 5:43 PM	46.97	16,471.58	1.1	75.0	23.9	0.48	0.04	220	19	19	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	575.42	969.59	3.17	1.62	850.74
5/12/15 3:12 PM	141.48	16,613.07	1.2	77.0	25.0	0.45	0.03	166	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	275.0	156.75	0.00	0.00	0.00	100.00	630.61	1062.57	7.88	1.34	858.62
5/14/15 4:15 PM	49.05	16,662.12	1.3	69.0	20.6	5.00	0.36	174	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	581.95	980.59	2.74	1.34	861.36
6/3/15 5:37 PM	0.00	16,662.12	1.2	82.0	27.8	0.50	0.04	186	16	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	567.99	957.06	0.00	0.00	861.36
6/8/15 5:50 PM	120.22	16,782.33	1.4	106.0	41.1	0.70	0.05	275	24	22	20.00	11.40	93.22	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	295.0	168.15	0.00	0.00	0.00	100.00	641.79	1081.41	10.72	2.14	872.09
6/10/15 5:15 PM	47.42	16,829.75	1.8	89.0	31.7	0.60	0.04	222	19	18	32.00	18.24	89.33	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	672.89	1133.82	3.69	1.87	875.77
6/15/15 2:05 PM	116.83	16,946.58	2	99.0	37.2	0.75	0.05	590	51	48	52.00	29.64	79.20	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	550.70	927.94	19.43	3.99	895.20
6/17/15 3:00 PM	48.92	16,995.50	1.8	102.0	38.9	0.65	0.05	296	26	24	58.00	33.06	80.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	635.40	1070.66	4.68	2.30	899.88
6/22/15 11:35 AM	116.58	17,112.08	2	90.0	32.2	0.75	0.05	184	16	15	95.00	54.15	66.07	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	626.89	1056.31	6.99	1.44	906.88
6/24/15 12:19 PM	48.73	17,160.82	1.8	96.0	35.6	0.60	0.04	187	16	15	130.00	74.10	48.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	553.68	932.95	2.59	1.28	909.47
6/29/15 3:20 PM	123.02	17,283.83	1.5	102.0	38.9	0.65	0.05	204	18	16	150.00	85.50	45.45	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	275.0	156.75	0.00	0.00	0.00	100.00	602.54	1015.28	7.69	1.50	917.16
7/1/15 12:50 PM	45.50	17,329.33	1.5	99.0	37.2	0.62	0.05	297	26	24	230.00	131.10	20.69	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	638.81	1076.41	4.41	2.33	921.58
7/6/15 4:40 PM	123.83	17,453.17	1.5	95.0	35.0	0.65	0.05	283	25	23	150.00	85.50	34.78	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	510.30	859.86	9.21	1.79	930.79
7/8/15 11:50 AM	43.17	17,496.33	1.5	85.0	29.4	0.64	0.05	174	15	14	200.00	114.00	20.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	564.86	951.79	2.23	1.24	933.02
7/13/15 5:23 PM	125.55	17,621.88	1.5	95.0	35.0	0.60	0.04	240	21	20	135.00	76.95	35.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	465.93	785.09	7.23	1.38	940.25
7/15/15 2:55 AM	33.53	17,655.42	1.5	89.0	31.7	0.60	0.04	240	21	20	140.00	79.80	36.36	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	220.0	125.40	0.00	0.00	0.00	100.00	493.45	831.47	2.07	1.48	942.32
11/10/15 1:58 AM	0.00	17,655.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	942.32
11/14/15 12:03 PM	106.08	17,761.50	1.6	62.0	16.7	0.70	0.05	155	13	13	142.00	80.94	8.39	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	365.65	616.13	3.29	0.75	945.61
11/17/15 2:50 PM	74.78	17,836.28	1.9	59.0	15.0	0.70	0.05	188	16	16	120.00	68.40	40.00	5.00	2.85	97.50	0.00	0.00	100.00	0.00	0.00	100.00	200.0	114.00	0.00	0.00	0.00	100.00	474.54	799.60	3.68	1.18	949.29
11/20/15 4:15 PM	73.42	17,909.70	0.54	63.0	17.2	0.60	0.04	318	28	28	180.00	102.60	20.35	8.00	4.56	96.46	0.00	0.00	100.00	0.00	0.00	100.00	226.0	128.82	0.00	0.00	0.00	100.00	532.12	896.63	6.79	2.22	956.08
11/22/15 12:14 AM	31.98	17,941.68	0.6	59.0	15.0	0.60	0.04	310	27	27	180.00	102.60	18.18	10.00	5.70	95.45	0.00	0.00	100.00	0.00	0.00	100.00	220.0	125.40	0.00	0.00	0.00	100.00	521.99	879.56	2.85	2.14	958.93
12/1/15 11:25 AM	0.00	17,941.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	958.93
12/1/15 3:09 PM	3.73	17,945.42	0.65	56.0	13.3	0.70	0.05	315	27	28	180.00	102.60	-350.00	10.00	5.70	75.00	0.00	0.00	100.00	0.00	0.00	100.00	40.0	22.80	0.00	0.00	0.00	100.00	95.46	160.85	0.06	0.40	958.99
12/4/15 3:05 PM	71.93	18,017.35	1.6	59.0	15.0	0.70	0.05	192	17	17	250.00	142.50	10.71	24.00	13.68	91.43	3.00	1.71	98.93	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	664.35	1119.44	5.06	1.69	964.05
12/8/15 3:04 PM	95.98	18,113.33	0.75	60.0	15.6	0.75	0.05	205	18	18	170.00	96.90	19.05	25.00	14.25	88.10	4.00	2.28	98.10	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	497.31	837.96	5.38	1.35	969.43
12/11/15 12:57 PM	69.88	18,183.22	1.9	53.0	11.7	1.25	0.09	210	18	19	160.00	91.20	11.11	55.00	31.35	69.44	2.00	1.14	98.89	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	432.08	728.06	3.54	1.22	972.97
12/15/15 3:36 PM	98.65	18,281.87	2	51.0	10.6	0.65	0.05	170	15	15	250.00	142.50	13.79	60.00	34.20	79.31	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	698.86	1177.58	6.56	1.60	979.53
12/18/15 1:30 PM	0.00	18,281.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	979.53
1/21/16 11:30 AM	0.00	18,281.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	979.53
1/21/16 3:12 PM	3.70	18,285.57	3.2	59.0	15.0	1.20	0.09	311	27	27	170.00	96.90	-246.94	85.00	48.45	-73.47	0.00	0.00	100.00	0.00	0.00	100.00	49.0	27.93	0.00	0.00	0.00	100.00	116.26	195.90	0.07	0.48	979.61
1/23/16 9:04 AM	41.87	18,327.43	4.4	58.6	14.8	1.40	0.10	254	22	22	20.00	11.40	91.30	105.00	59.85	54.35	0.00	0.00	100.00	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	546.14	920.25	3.21	1.84	982.82
2/5/16 11:12 AM	314.13	18,641.57	16	62.2	16.8	1.20	0.09	185	16	16	172.00	98.04	-10.97	125.00	71.25	19.35	5.00	2.85	96.77	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	365.51	615.89	11.66	0.89	994.48

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
2/8/16 4:14 PM	77.03	18,718.60	16.5	65.8	18.8	1.00	0.07	284	25	25	142.00	80.94	23.24	130.00	74.10	29.73	6.00	3.42	96.76	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	433.27	730.06	5.16	1.61	999.65
2/12/16 2:10 PM	93.93	18,812.53	16	70.1	21.2	0.75	0.05	298	26	25	155.00	88.35	20.51	131.00	74.67	32.82	16.00	9.12	91.79	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	452.98	763.27	6.84	1.75	1006.49
2/16/16 3:29 PM	97.32	18,909.85	16	70.5	21.4	0.80	0.06	380	33	32	150.00	85.50	40.00	140.00	79.80	44.00	15.00	8.55	94.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	580.31	977.82	11.58	2.85	1018.06
2/19/16 2:02 PM	70.55	18,980.40	14	64.0	17.8	0.75	0.05	302	26	26	145.00	82.65	0.00	130.00	74.10	10.34	20.00	11.40	86.21	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	340.76	574.17	3.96	1.35	1022.03
2/22/16 4:40 PM	74.63	19,055.03	13	64.5	18.1	0.75	0.05	366	32	32	120.00	68.40	46.67	105.00	59.85	53.33	15.00	8.55	93.33	0.00	0.00	100.00	225.0	128.25	0.00	0.00	0.00	100.00	528.25	890.11	7.87	2.53	1029.90
2/25/16 11:00 AM	66.33	19,121.37	13	69.0	20.6	0.80	0.06	354	31	30	165.00	94.05	14.06	136.00	77.52	29.17	35.00	19.95	81.77	0.00	0.00	100.00	192.0	109.44	0.00	0.00	0.00	100.00	446.94	753.10	5.68	2.05	1035.57
3/1/16 1:34 PM	122.57	19,243.93	13	77.0	25.0	0.75	0.05	336	29	28	165.00	94.05	23.26	128.00	72.96	40.47	50.00	28.50	76.74	5.00	2.85	97.67	215.0	122.55	0.00	5.00	2.85	97.67	493.02	830.74	10.82	2.12	1046.39
3/2/16 11:42 AM	22.13	19,266.07	13	73.0	22.8	0.75	0.05	252	22	21	168.00	95.76	32.80	160.00	91.20	36.00	95.00	54.15	62.00	8.00	4.56	96.80	250.0	142.50	0.00	8.00	4.56	96.80	577.58	973.23	1.73	1.87	1048.12
3/9/16 12:50 PM	0.00	19,266.07	15	65.0	18.3	0.80	0.06	358	31	31	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	38.0	21.66	0.00	0.00	0.00	100.00	89.13	150.19	0.00	0.00	1048.12
3/12/16 2:09 PM	73.32	19,339.38	12	56.0	13.3	0.75	0.05	264	23	23	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	158.0	90.06	0.00	0.00	0.00	100.00	377.07	635.36	4.05	1.32	1052.16
3/15/16 4:49 PM	74.67	19,414.05	12	64.0	17.8	0.80	0.06	289	25	25	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	505.26	851.36	5.95	1.91	1058.12
3/18/16 4:19 PM	71.50	19,485.55	12	78.0	25.6	0.90	0.07	326	28	27	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	377.66	636.36	4.68	1.57	1062.80
3/22/16 12:35 PM	92.27	19,577.82	12.5	61.0	16.1	0.75	0.05	268	23	23	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	20.0	11.40	0.00	0.00	0.00	100.00	47.27	79.65	0.64	0.17	1063.44
3/25/16 9:45 AM	69.17	19,646.98	12	59.0	15.0	0.75	0.05	336	29	29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	415.22	699.65	5.32	1.85	1068.76
3/29/16 9:40 AM	95.92	19,742.90	12	53.0	11.7	0.60	0.04	144	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	35.0	19.95	0.00	0.00	0.00	100.00	84.02	141.57	0.65	0.16	1069.41
3/31/16 12:56 PM	51.27	19,794.17	12	72.0	22.2	0.70	0.05	141	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	49.0	27.93	0.00	0.00	0.00	100.00	113.42	191.11	0.44	0.21	1069.85
4/4/16 3:38 PM	98.70	19,892.87	12	82.0	27.8	0.75	0.05	165	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	65.0	37.05	0.00	0.00	0.00	100.00	147.68	248.84	1.27	0.31	1071.12
4/8/16 2:30 PM	94.87	19,987.73	12	70.0	21.1	0.80	0.06	130	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	100.0	57.00	0.00	0.00	0.00	100.00	232.34	391.50	1.55	0.39	1072.67
4/11/16 5:25 PM	74.92	20,062.65	13	74.0	23.3	0.80	0.06	233	20	20	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	68.0	38.76	0.00	0.00	0.00	100.00	156.81	264.22	1.47	0.47	1074.13
4/15/16 11:25 AM	90.00	20,152.65	10	65.0	18.3	0.80	0.06	140	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	75.0	42.75	0.00	0.00	0.00	100.00	175.92	296.42	1.21	0.32	1075.34
4/18/16 12:00 PM	72.58	20,225.23	12	88.0	31.1	0.80	0.06	150	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	68.0	38.76	0.00	0.00	0.00	100.00	152.80	257.47	0.87	0.29	1076.21
4/22/16 12:38 PM	96.63	20,321.87	14	76.0	24.4	0.75	0.05	141	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	264.20	445.18	1.92	0.48	1078.13
4/25/16 12:18 PM	71.67	20,393.53	11	64.0	17.8	0.80	0.06	127	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	85.0	48.45	0.00	0.00	0.00	100.00	199.75	336.58	0.99	0.33	1079.12
4/28/16 3:10 PM	74.87	20,468.40	12	71.0	21.7	0.85	0.06	134	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	78.0	44.46	0.00	0.00	0.00	100.00	180.88	304.79	0.98	0.31	1080.10
5/2/16 3:34 PM	96.40	20,564.80	12	90.0	32.2	0.90	0.07	139	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	100.0	57.00	0.00	0.00	0.00	100.00	223.89	377.25	1.56	0.39	1081.66
5/5/16 11:23 AM	67.82	20,632.62	12	65.0	18.3	0.80	0.06	133	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	110.0	62.70	0.00	0.00	0.00	100.00	258.01	434.75	1.26	0.45	1082.93
5/9/16 11:00 AM	95.62	20,728.23	12	74.0	23.3	0.75	0.05	126	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	265.19	446.85	1.71	0.43	1084.64
5/12/16 10:50 AM	71.83	20,800.07	12	81.0	27.2	0.80	0.06	132	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	118.0	67.26	0.00	0.00	0.00	100.00	268.59	452.57	1.35	0.45	1085.99
5/16/16 4:48 PM	101.97	20,902.03	12	86.0	30.0	0.80	0.06	139	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	405.95	684.03	3.01	0.71	1089.00
5/20/16 1:00 PM	92.20	20,994.23	10	71.0	21.7	0.80	0.06	146	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	405.83	683.83	2.95	0.77	1091.95
5/23/16 11:50 AM	70.83	21,065.07	10	73.0	22.8	0.80	0.06	131	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	450.51	759.12	2.24	0.76	1094.19
5/27/16 12:13 PM	96.38	21,161.45	10	85.0	29.4	0.80	0.06	132	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	463.18	780.47	3.09	0.77	1097.28
5/31/16 6:25 PM	102.20	21,263.65	9.5	98.0	36.7	0.80	0.06	143	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	617.89	1041.15	4.62	1.08	1101.90
6/3/16 10:10 AM	63.75	21,327.40	7.5	87.0	30.6	0.90	0.07	167	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	484.00	815.54	2.70	1.02	1104.60
6/6/16 2:55 PM	76.75	21,404.15	4	100.0	37.8	1.00	0.07	240	21	19	10.00	5.70	95.35	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	472.76	796.60	4.44	1.39	1109.05
6/10/16 9:40 AM	90.75	21,494.90	4.5	73.0	22.8	0.95	0.07	200	17	17	24.00	13.68	88.57	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	485.17	817.51	4.73	1.25	1113.78
6/13/16 3:38 PM	77.97	21,572.87	3.5	73.0	22.8	1.00	0.07	230	20	20	85.00	48.45	64.58	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	554.48	934.30	5.34	1.64	1119.12
6/17/16 10:16 AM	90.63	21,663.50	4.2	73.0	22.8	0.85	0.06	199	17	17	120.00	68.40	42.86	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	485.17	817.51	4.69	1.24	1123.81
6/20/16 12:10 PM	73.90	21,737.40	4	92.0	33.3	1.00	0.07	230	20	19	120.00	68.40	57.14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	624.61	1052.48	5.51	1.79	1129.32
6/24/16 10:10 AM	94.00	21,831.40	4	78.0	25.6	0.90	0.07	217	19	18	140.00	79.80	36.36	3.00	1.71	98.64	0.00	0.00	100.00	0.00	0.00	100.00	220.0	125.40	0.00	0.00	0.00	100.00	503.55	848.48	5.46	1.39	1134.78
6/27/16 10:53 AM	72.72	21,904.12	4	92.0	33.3	0.90	0.07	241	21	20	114.00	64.98	45.71	11.00	6.27	94.76	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	468.46	789.36	4.26	1.41	1139.04
7/1/16 12:10 PM	97.28	22,001.40	4.7	99.0	37.2	0.90	0.07	191	17	15	125.00	71.25	41.86	22.00	12.54	89.77	18.00	10.26	91.63	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	473.60	798.03	4.50	1.11	1143.54
7/5/16 11:37 AM	95.45	22,096.85	2.5	89.0	31.7	0.05	0.00	108	9	9	105.00	59.85	48.78	40.00	22.80	80.49	34.00	19.38	83.41	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	459.81	774.78	2.46	0.62	1146.00
7/8/16 5:21 PM	77.73	22,174.58	2.5	95.0	35.0	0.60	0.04	130	11	11	210.00	119.70	25.00	68.00	38.76	75.71	62.00	35.34	77.86	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	621.23	1046.78	3.23	1.00	1149.23
7/13/16 10:40 AM	113.32	22,287.90	2.7	89.0	31.7	0.40	0.03	131	11	11	140.00	79.80	44.00	65.00	37.05	74.00	54.00	30.78	78.40	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	560.74	944.85	4.33	0.92	1153.56
7/15/16 8:30 AM	45.83	22,333.73	2.5	82.0	27.8	0.36	0.03	121	11	10	140.00	79.80	36.36	68.00	38.76	69.09	61.00	34.77	72.27	3.00	1.71	98.64	220.0	125.40	0.00	1.71	0.97	99.22	499.83	842.21	1.46	0.76	1155.02
7/15/16 4:00 PM	7.50	22,341.23	0.2	108.0	42.2	0.50	0.04	112	10	9	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	275.0	156.75	0.00	0.00	0.00	100.00	596.17	1004.55	0.25	0.81	1155.27
7/18/16 10:48 AM	66.80	22,408.03	3	83.0	28.3	0.45	0.03	129	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	190.0	108.30	0.00	0.00	0.00	100.00	430.87	726.02	1.95	0.70	1157.23
7/22/16 2:30 PM	99.70	22,507.73	2.6	98.0	36.7	0.60	0.04	137	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	463.42	780.86	3.25	0.78	1160.48
7/25/16 7:30 AM	65.00	22,572.73	2.8	75.0	23.9	0.50	0.04	116	10	10	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	108.0	61.56	0.00	0.00	0.00	100.00	248.58	418.86	1.00	0.37	1161.48

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
7/30/16 9:46 AM	122.27	22,695.00	3	89.0	31.7	0.40	0.03	125	11	10	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	560.74	944.85	4.47	0.88	1165.94
8/1/16 5:25 PM	55.65	22,750.65	3	100.0	37.8	0.60	0.04	158	14	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	549.72	926.28	2.46	1.06	1168.40
8/5/16 4:25 PM	95.00	22,845.65	2.6	94.0	34.4	0.50	0.04	147	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	377.86	636.69	2.71	0.69	1171.12
8/8/16 3:06 PM	70.68	22,916.33	2.5	210.0	98.9	0.50	0.04	168	15	11	10.00	5.70	95.24	2.00	1.14	99.05	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	385.91	650.27	1.95	0.66	1173.07
8/12/16 12:00 AM	80.90	22,997.23	2.7	101.0	38.3	0.50	0.04	183	16	15	60.00	34.20	72.73	1.00	0.57	99.55	0.00	0.00	100.00	0.00	0.00	100.00	220.0	125.40	0.00	0.00	0.00	100.00	482.89	813.67	3.64	1.08	1176.71
8/15/16 4:43 PM	88.72	23,085.95	2.7	103.0	39.4	0.60	0.04	154	13	12	95.00	54.15	54.76	2.00	1.14	99.05	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	459.30	773.93	3.18	0.86	1179.89
8/19/16 7:05 AM	86.37	23,172.32	3.2	69.0	20.6	0.50	0.04	126	11	11	125.00	71.25	50.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	581.95	980.59	3.43	0.95	1183.32
8/22/16 6:30 AM	71.42	23,243.73	3.2	69.0	20.6	0.50	0.04	141	12	12	170.00	96.90	39.29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	651.79	1098.26	3.54	1.19	1186.86
8/26/16 7:15 AM	96.75	23,340.48	3.2	64.0	17.8	0.40	0.03	167	15	14	180.00	102.60	35.71	8.00	4.56	97.14	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	658.01	1108.75	5.79	1.44	1192.66
8/29/16 6:30 AM	71.25	23,411.73	3.1	65.0	18.3	0.40	0.03	153	13	13	190.00	108.30	34.48	2.00	1.14	99.31	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	680.21	1146.16	4.03	1.36	1196.69
9/1/16 6:30 AM	72.00	23,483.73	3.4	64.0	17.8	0.40	0.03	144	13	12	280.00	159.60	3.45	2.00	1.14	99.31	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	681.51	1148.35	3.84	1.28	1200.53
9/6/16 7:15 AM	120.75	23,604.48	3.5	63.0	17.2	0.40	0.03	149	13	13	270.00	153.90	3.57	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	659.27	1110.87	6.46	1.28	1206.99
9/9/16 7:30 AM	72.25	23,676.73	3.4	65.0	18.3	0.50	0.04	168	15	14	250.00	142.50	13.79	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	680.21	1146.16	4.49	1.49	1211.48
9/13/16 8:40 AM	97.17	23,773.90	4	60.0	15.6	0.50	0.04	146	13	13	205.00	116.85	25.45	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	275.0	156.75	0.00	0.00	0.00	100.00	651.23	1097.33	5.06	1.25	1216.54
9/16/16 3:42 PM	79.03	23,852.93	3	91.0	32.8	0.70	0.05	175	15	14	220.00	125.40	18.52	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	270.0	153.90	0.00	0.00	0.00	100.00	603.40	1016.73	4.33	1.32	1220.87
9/19/16 5:47 PM	74.08	23,927.02	2.7	101.0	38.3	0.40	0.03	190	16	15	210.00	119.70	16.00	10.00	5.70	96.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	548.74	924.63	3.92	1.27	1224.80
9/23/16 11:15 AM	89.47	24,016.48	4.2	74.0	23.3	0.70	0.05	151	13	13	190.00	108.30	20.83	8.00	4.56	96.67	0.00	0.00	100.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	553.44	932.55	4.01	1.08	1228.81
9/30/16 5:06 PM	173.85	24,190.33	2.8	89.0	31.7	0.50	0.04	185	16	15	215.00	122.55	14.00	78.00	44.46	68.80	70.00	39.90	72.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	560.74	944.85	9.39	1.30	1238.20
10/19/16 3:22 PM	0.00	24,190.33	2.9	82.4	28.0	1.20	0.09	212	18	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	12.0	6.84	0.00	0.00	0.00	100.00	27.24	45.90	0.00	0.00	1238.20
10/21/16 4:03 PM	48.68	24,239.02	2.0	81.6	27.6	0.80	0.06	177	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	477.46	804.52	2.17	1.07	1240.37
10/25/16 4:13 PM	96.17	24,335.18	2.3	83.8	28.8	1.40	0.10	197	17	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	634.04	1068.36	6.33	1.58	1246.70
10/28/16 4:33 PM	72.33	24,407.52	0.3	71.5	21.9	1.40	0.10	173	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	1246.70
10/31/16 8:37 AM	64.07	24,471.58	0.3	54.0	12.2	0.60	0.04	160	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	1246.70
11/2/16 8:30 AM	47.88	24,519.47	2.3	69.0	20.6	0.40	0.03	169	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	28.0	15.96	0.00	0.00	0.00	100.00	65.18	109.83	0.28	0.14	1246.99
11/4/16 8:15 AM	47.75	24,567.22	2.0	52.0	11.1	0.40	0.03	123	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	721.55	1215.81	2.36	1.19	1249.35
11/7/16 3:00 PM	78.75	24,645.97	1.8	74.0	23.3	0.50	0.04	126	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	472.73	796.55	2.51	0.76	1251.86
11/11/16 1:25 PM	94.42	24,740.38	1.8	82.0	27.8	0.50	0.04	199	17	17	2.00	1.14	99.23	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	260.0	148.20	0.00	0.00	0.00	100.00	590.71	995.34	5.84	1.48	1257.70
11/15/16 1:11 PM	95.77	24,836.15	2.0	73.0	22.8	0.60	0.04	138	12	12	4.00	2.28	97.50	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	369.65	622.87	2.62	0.66	1260.32
11/19/16 12:28 PM	95.28	24,931.43	3.2	67.0	19.4	0.70	0.05	192	17	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	490.70	826.83	4.86	1.23	1265.18
11/22/16 12:00 PM	71.53	25,002.97	3.2	53.0	11.7	0.50	0.04	120	10	11	2.00	1.14	99.20	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	600.11	1011.20	2.87	0.96	1268.05
11/25/16 2:40 PM	74.67	25,077.63	2.4	62.0	16.7	0.80	0.06	187	16	16	3.00	1.71	98.42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	190.0	108.30	0.00	0.00	0.00	100.00	448.22	755.25	3.44	1.11	1271.49
11/29/16 3:20 PM	96.67	25,174.30	3.0	57.0	13.9	0.60	0.04	131	11	11	10.00	5.70	95.35	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	512.10	862.90	3.59	0.89	1275.08
12/2/16 1:45 PM	70.42	25,244.72	3.0	53.0	11.7	0.60	0.04	139	12	12	25.00	14.25	88.37	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	516.10	869.63	2.81	0.96	1277.89
12/6/16 1:35 PM	95.83	25,340.55	4.5	49.0	9.4	0.60	0.04	138	12	12	70.00	39.90	77.42	3.00	1.71	99.03	0.00	0.00	100.00	0.00	0.00	100.00	310.0	176.70	0.00	0.00	0.00	100.00	749.99	1263.74	5.55	1.39	1283.44
12/9/16 10:18 AM	68.72	25,409.27	6	58.0	14.4	0.50	0.04	137	12	12	80.00	45.60	52.38	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	168.0	95.76	0.00	0.00	0.00	100.00	399.38	672.96	2.08	0.73	1285.52
12/12/16 1:42 PM	75.40	25,484.67	6	57.0	13.9	0.50	0.04	127	11	11	108.00	61.56	58.46	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	260.0	148.20	0.00	0.00	0.00	100.00	619.29	1043.50	3.28	1.04	1288.80
12/18/16 8:40 AM	138.97	25,623.63	8.5	32.0	0.0	0.50	0.04	106	9	10	140.00	79.80	24.32	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	463.05	780.25	3.98	0.69	1292.77
12/21/16 9:40 AM	73.00	25,696.63	8.5	41.0	5.0	0.50	0.04	115	10	10	145.00	82.65	42.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	614.50	1035.43	2.94	0.97	1295.72
12/23/16 12:00 AM	38.33	25,734.97	9	43.0	6.1	0.60	0.04	110	10	10	110.00	62.70	26.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	367.23	618.79	0.88	0.55	1296.60
12/27/16 10:14 AM	106.23	25,841.20	9.5	41.0	5.0	0.40	0.03	105	9	9	125.00	71.25	-25.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	100.0	57.00	0.00	0.00	0.00	100.00	245.80	414.17	1.56	0.35	1298.16
12/30/16 11:40 AM	73.43	25,914.63	9	47.0	8.3	0.50	0.04	128	11	11	120.00	68.40	14.29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	340.04	572.98	1.80	0.59	1299.96
1/6/17 12:31 PM	168.85	26,083.48	10	44.0	6.7	5.00	0.36	108	9	10	140.00	79.80	-154.55	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	55.0	31.35	0.00	0.00	0.00	100.00	134.38	226.44	1.42	0.20	1301.38
1/9/17 2:10 PM	73.65	26,157.13	12	55.0	12.8	0.50	0.04	118	10	10	138.00	78.66	-360.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	30.0	17.10	0.00	0.00	0.00	100.00	71.73	120.87	0.35	0.11	1301.72
1/13/17 1:30 PM	95.33	26,252.47	12	43.0	6.1	0.50	0.04	123	11	11	120.00	68.40	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	120.0	68.40	0.00	0.00	0.00	100.00	293.79	495.03	1.95	0.49	1303.67
1/16/17 10:20 AM	68.83	26,321.30	12	44.0	6.7	0.40	0.03	111	10	10	120.00	68.40	0.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	120.0	68.40	0.00	0.00	0.00	100.00	293.20	494.05	1.26	0.44	1304.93
1/20/17 11:31 AM	97.18	26,418.48	16	48.0	8.9	0.80	0.06	155	14	14	118.00	67.26	-145.83	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	48.0	27.36	0.00	0.00	0.00	100.00	116.36	196.06	0.99	0.24	1305.92
1/23/17 11:11 AM	71.67	26,490.15	20	44.0	6.7	1.50	0.11	422	37	38	120.00	68.40	14.29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	342.07	576.39	5.89	1.97	1311.81
1/27/17 11:28 AM	96.28	26,586.43	20	52.0	11.1	1.30	0.09	268	23	24	105.00	59.85	38.95	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	172.0	98.04	0.00	0.00	0.00	100.00	413.69	697.06	5.98	1.49	1317.80
1/30/17 3:30 PM	76.03	26,662.47	19	63.0	17.2	1.00	0.07	230	20	20	100.00	57.00	60.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	588.63	991.85	5.63	1.78	1323.43
2/3/17 11:30 AM	92.00	26,754.47	24	58.0	14.4	1.00	0.07	225	20	20	110.00	62.70	37.14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	416.02	701.00	4.77	1.24	1328.19

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_20)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_20) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
2/6/17 12:15 PM	72.75	26,827.22	28	56.0	13.3	1.00	0.07	259	23	23	115.00	65.55	36.11	4.00	2.28	97.78	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	429.57	723.83	4.49	1.48	1332.68
2/10/17 1:29 PM	97.23	26,924.45	7.5	59.0	15.0	1.50	0.11	326	28	29	120.00	68.40	41.46	18.00	10.26	91.22	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	486.40	819.59	8.52	2.10	1341.21
2/13/17 11:15 AM	69.77	26,994.22	8.4	65.0	18.3	1.60	0.12	329	29	29	104.00	59.28	28.28	15.00	8.55	89.66	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	340.11	573.08	4.27	1.47	1345.48
2/18/17 10:44 AM	119.48	27,113.70	15	65.0	18.3	1.30	0.09	234	20	20	56.00	31.92	6.67	24.00	13.68	60.00	0.00	0.00	100.00	0.00	0.00	100.00	60.0	34.20	0.00	0.00	0.00	100.00	140.73	237.14	2.15	0.43	1347.63
2/20/17 7:47 AM	45.05	27,158.75	13	53.0	11.7	1.00	0.07	284	25	25	144.00	82.08	20.00	72.00	41.04	60.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	432.08	728.06	3.09	1.64	1350.71
2/24/17 1:09 PM	101.37	27,260.12	8.5	54.0	12.2	1.00	0.07	210	18	19	200.00	114.00	28.57	105.00	59.85	62.50	18.00	10.26	93.57	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	670.82	1130.34	7.96	1.88	1358.67
3/3/17 3:30 PM	0.00	27,260.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	1358.67
3/3/17 3:35 PM	0.08	27,260.20	8	69.0	20.6	1.20	0.09	244	21	21	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	349.17	588.36	0.00	1.11	1358.68
3/7/17 8:20 AM	88.75	27,348.95	8	41.0	5.0	1.00	0.07	210	18	19	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	300.0	171.00	0.00	0.00	0.00	100.00	737.40	1242.52	7.86	2.12	1366.53
3/10/17 10:40 AM	74.33	27,423.28	10	68.0	20.0	1.00	0.07	155	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	454.78	766.31	2.84	0.92	1369.37
3/13/17 2:28 PM	75.80	27,499.08	10.5	80.0	26.7	1.00	0.07	147	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	490.28	826.12	2.89	0.91	1372.26
3/17/17 1:51 PM	95.38	27,594.47	11	77.0	25.0	1.00	0.07	146	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	573.28	965.98	4.26	1.07	1376.52
3/20/17 11:21 AM	69.50	27,663.97	11	74.0	23.3	1.00	0.07	143	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	245.0	139.65	0.00	0.00	0.00	100.00	564.97	951.98	3.01	1.04	1379.53
3/24/17 2:10 PM	98.82	27,762.78	13	57.0	13.9	0.60	0.04	124	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	500.19	842.83	3.39	0.82	1382.92
3/27/17 11:50 AM	69.67	27,832.45	12	61.0	16.1	1.00	0.07	132	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	508.17	856.27	2.56	0.88	1385.48
3/31/17 10:45 AM	94.92	27,927.37	12	61.0	16.1	0.45	0.03	143	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	496.35	836.35	3.69	0.93	1389.17
4/3/17 10:30 AM	71.75	27,999.12	12	65.0	18.3	0.50	0.04	132	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	422.20	711.41	2.18	0.73	1391.35
4/8/17 12:00 AM	109.50	28,108.62	14	57.0	13.9	0.70	0.05	131	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	369.19	622.09	2.93	0.64	1394.27
4/10/17 1:45 PM	61.75	28,170.37	13	68.0	20.0	0.60	0.04	148	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	583.06	982.45	2.89	1.12	1397.16
4/14/17 8:40 AM	90.92	28,261.28	14	47.0	8.3	0.50	0.04	138	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	522.21	879.93	3.68	0.97	1400.84
4/17/17 2:50 PM	78.17	28,339.45	16	74.0	23.3	0.60	0.04	142	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	392.02	660.56	2.33	0.72	1403.17
4/21/17 9:22 AM	90.53	28,429.98	16	60.0	15.6	0.50	0.04	167	15	15	10.00	5.70	95.12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	485.47	818.01	4.03	1.07	1407.20
4/24/17 12:00 AM	62.63	28,492.62	16	61.0	16.1	0.50	0.04	127	11	11	15.00	8.55	90.74	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	162.0	92.34	0.00	0.00	0.00	100.00	382.90	645.19	1.67	0.64	1408.87
4/28/17 5:25 PM	113.42	28,606.03	14	74.0	23.3	0.50	0.04	138	12	12	8.00	4.56	96.28	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	215.0	122.55	0.00	0.00	0.00	100.00	495.79	835.41	4.15	0.88	1413.03
5/1/17 2:00 PM	68.58	28,674.62	14	87.0	30.6	0.50	0.04	118	10	10	8.00	4.56	96.80	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	562.79	948.31	2.38	0.83	1415.40
5/5/17 2:18 PM	96.30	28,770.92	14	86.0	30.0	0.50	0.04	124	11	10	48.00	27.36	68.00	10.00	5.70	93.33	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	338.29	570.03	2.11	0.52	1417.51
5/8/17 11:40 AM	69.37	28,840.28	14	75.0	23.9	0.50	0.04	155	13	13	20.00	11.40	87.88	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	379.78	639.93	2.18	0.75	1419.69
5/12/17 12:44 PM	97.07	28,937.35	14	61.0	16.1	0.50	0.04	138	12	12	20.00	11.40	91.30	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	543.62	916.01	3.99	0.99	1423.68
5/15/17 3:42 PM	74.97	29,012.32	13	75.0	23.9	0.50	0.04	133	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	245.0	139.65	0.00	0.00	0.00	100.00	563.91	950.20	3.00	0.96	1426.69
5/19/17 4:50 PM	97.13	29,109.45	12	92.0	33.3	0.50	0.04	126	11	10	82.00	46.74	58.16	7.00	3.99	96.43	0.00	0.00	100.00	0.00	0.00	100.00	196.0	111.72	0.00	0.00	0.00	100.00	437.23	736.73	2.77	0.68	1429.46
5/22/17 1:30 PM	68.67	29,178.12	13	100.0	37.8	0.50	0.04	124	11	10	124.00	70.68	66.67	8.00	4.56	97.85	0.00	0.00	100.00	0.00	0.00	100.00	372.0	212.04	0.00	0.00	0.00	100.00	817.98	1378.30	3.55	1.24	1433.01
5/26/17 9:35 AM	92.08	29,270.20	12	63.0	17.2	0.50	0.04	145	13	13	176.00	100.32	49.71	7.00	3.99	98.00	0.00	0.00	100.00	0.00	0.00	100.00	350.0	199.50	0.00	0.00	0.00	100.00	824.09	1388.59	6.01	1.57	1439.02
5/29/17 11:30 AM	73.92	29,344.12	10	87.0	30.6	0.50	0.04	155	13	13	58.00	33.06	61.33	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	337.67	568.98	2.02	0.66	1441.04
6/2/17 2:20 PM	98.83	29,442.95	7	94.0	34.4	0.70	0.05	145	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	200.0	114.00	0.00	0.00	0.00	100.00	444.54	749.05	3.29	0.80	1444.33
6/5/17 8:40 AM	66.33	29,509.28	5.5	73.0	22.8	0.50	0.04	180	16	15	70.00	39.90	12.50	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	80.0	45.60	0.00	0.00	0.00	100.00	184.83	311.43	1.18	0.43	1445.51
6/9/17 12:55 PM	100.25	29,609.53	6	82.0	27.8	0.80	0.06	192	17	16	70.00	39.90	33.33	5.00	2.85	95.24	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	238.55	401.96	2.42	0.58	1447.94
6/12/17 11:32 AM	70.62	29,680.15	5.8	73.0	22.8	0.80	0.06	188	16	16	105.00	59.85	25.00	15.00	8.55	89.29	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	323.45	545.01	2.31	0.78	1450.24
6/16/17 11:40 AM	96.13	29,776.28	5	94.0	34.4	0.80	0.06	214	19	18	210.00	119.70	25.00	52.00	29.64	81.43	0.00	0.00	100.00	0.00	0.00	100.00	280.0	159.60	0.00	0.00	0.00	100.00	622.36	1048.67	6.61	1.65	1456.86
6/19/17 8:15 AM	68.58	29,844.87	5.5	87.0	30.6	0.80	0.06	173	15	14	98.00	55.86	43.02	35.00	19.95	79.65	0.00	0.00	100.00	0.00	0.00	100.00	172.0	98.04	0.00	0.00	0.00	100.00	387.20	652.43	2.40	0.84	1459.26
6/23/17 2:20 PM	102.08	29,946.95	5.8	106.0	41.1	0.80	0.06	188	16	15	130.00	74.10	29.73	70.00	39.90	62.16	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	402.48	678.18	3.90	0.92	1463.16
6/26/17 9:25 AM	67.08	30,014.03	5.8	77.0	25.0	0.80	0.06	180	16	15	240.00	136.80	4.00	120.00	68.40	52.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	573.28	965.98	3.69	1.32	1466.85
6/30/17 1:10 PM	99.75	30,113.78	5.5	95.0	35.0	0.70	0.05	198	17	16	190.00	108.30	24.00	138.00	78.66	44.80	4.00	2.28	98.40	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	554.67	934.63	5.65	1.36	1472.50
7/17/17 2:38 PM	0.00	30,113.78	4.8	108.0	42.2	1.00	0.07	227	20	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	1472.50
7/17/17 3:30 PM	0.87	30,114.65	4.8	108.0	42.2	1.00	0.07	227	20	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	95.0	54.15	0.00	0.00	0.00	100.00	205.95	347.03	0.02	0.57	1472.52
7/21/17 3:44 PM	96.23	30,210.88	4.8	99.0	37.2	1.00	0.07	189	16	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	550.70	927.94	5.12	1.28	1477.64
7/24/17 1:40 PM	69.93	30,280.82	5	102.0	38.9	1.00	0.07	179	16	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	449.16	756.84	2.87	0.98	1480.50
7/28/17 10:15 AM	92.58	30,373.40	5	91.0	32.8	1.00	0.07	193	17	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	558.70	941.42	5.19	1.35	1485.69
8/1/17 11:00 AM	96.75	30,470.15	4.8	96.0	35.6	1.00	0.07	150	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	465.09	783.67	3.48	0.86	1489.17
8/4/17 8:30 AM	69.50	30,539.65	5.2	82.0	27.8	1.00	0.07	175	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	329.43	555.09	2.12	0.73	1491.29
8/7/17 3:55 PM	79.42	30,619.07	4.6	101.0	38.3	1.00	0.07	172	15	14	1.50	0.86	99.35	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	504.84	850.66	3.53	1.07	1494.82

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_20)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_20) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
8/11/17 11:10 AM	91.25	30,710.32	5	91.0	32.8	1.00	0.07	174	15	14	1.00	0.57	99.35	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	346.40	583.68	2.86	0.75	1497.68
8/18/17 9:25 AM	166.25	30,876.57	5.1	81.0	27.2	1.00	0.07	184	16	15	25.00	14.25	82.14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	318.66	536.94	5.16	0.75	1502.84
8/21/17 10:10 AM	72.75	30,949.32	5	75.0	23.9	1.00	0.07	180	16	15	55.00	31.35	52.17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	264.69	446.01	1.86	0.61	1504.70
8/25/17 9:45 AM	95.58	31,044.90	5.1	84.0	28.9	1.00	0.07	175	15	15	62.00	35.34	55.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	316.90	533.98	2.79	0.70	1507.49
8/28/17 7:50 AM	70.08	31,114.98	5	80.0	26.7	1.00	0.07	180	16	15	65.00	37.05	56.08	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	148.0	84.36	0.00	0.00	0.00	100.00	337.49	568.68	2.26	0.77	1509.75
9/1/17 11:35 AM	99.75	31,214.73	5.5	95.0	35.0	1.00	0.07	181	16	15	130.00	74.10	27.78	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	399.37	672.93	3.72	0.90	1513.47
9/4/17 9:25 AM	69.83	31,284.57	5.1	85.0	29.4	1.00	0.07	178	15	15	105.00	59.85	19.23	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	130.0	74.10	0.00	0.00	0.00	100.00	293.73	494.93	1.92	0.66	1515.39
9/8/17 12:00 PM	98.58	31,383.15	5	85.0	29.4	1.00	0.07	190	17	16	155.00	88.35	11.43	2.00	1.14	98.86	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	395.40	666.25	3.89	0.95	1519.28
9/11/17 1:15 PM	73.25	31,456.40	4.8	91.0	32.8	1.00	0.07	185	16	15	110.00	62.70	9.84	18.00	10.26	85.25	0.00	0.00	100.00	0.00	0.00	100.00	122.0	69.54	0.00	0.00	0.00	100.00	272.65	459.41	1.92	0.63	1521.20
9/15/17 9:40 AM	92.42	31,548.82	5.1	71.0	21.7	1.00	0.07	190	17	16	88.00	50.16	7.37	25.00	14.25	73.68	0.00	0.00	100.00	0.00	0.00	100.00	95.0	54.15	0.00	0.00	0.00	100.00	220.31	371.22	2.09	0.54	1523.28
9/18/17 12:35 PM	74.92	31,623.73	4.7	87.0	30.6	1.00	0.07	178	15	15	220.00	125.40	12.00	105.00	59.85	58.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	562.79	948.31	3.93	1.26	1527.21
9/22/17 12:15 PM	95.67	31,719.40	5	73.0	22.8	1.00	0.07	195	17	17	205.00	116.85	2.38	115.00	65.55	45.24	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	485.17	817.51	4.87	1.22	1532.09
9/25/17 11:16 AM	71.02	31,790.42	4.8	80.0	26.7	1.00	0.07	194	17	16	210.00	119.70	16.00	150.00	85.50	40.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	570.09	960.61	4.17	1.41	1536.25
9/29/17 2:47 PM	99.52	31,889.93	4.8	95.0	35.0	0.80	0.06	212	18	17	195.00	111.15	7.14	180.00	102.60	14.29	0.00	0.00	100.00	0.00	0.00	100.00	210.0	119.70	0.00	0.00	0.00	100.00	465.93	785.09	5.06	1.22	1541.32
10/2/17 11:13 AM	68.43	31,958.37	5.20	75.0	23.9	0.80	0.06	191	17	16	215.00	122.55	6.52	155.00	88.35	32.61	6.00	3.42	97.39	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	529.39	892.02	3.70	1.30	1545.01
10/6/17 10:35 AM	95.37	32,053.73	5.40	74.0	23.3	0.80	0.06	191	17	16	215.00	122.55	6.52	200.00	114.00	13.04	19.50	11.12	91.52	0.00	0.00	100.00	230.0	131.10	0.00	0.00	0.00	100.00	530.38	893.69	5.16	1.30	1550.18
10/9/17 10:30 AM	71.92	32,125.65	5.80	73.0	22.8	0.80	0.06	207	18	18	195.00	111.15	18.75	195.00	111.15	18.75	38.00	21.66	84.17	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	554.48	934.30	4.44	1.48	1554.62
10/13/17 10:55 AM	96.42	32,222.07	5.60	72.0	22.2	0.80	0.06	190	17	16	230.00	131.10	20.69	175.00	99.75	39.66	60.00	34.20	79.31	0.00	0.00	100.00	290.0	165.30	0.00	0.00	0.00	100.00	671.26	1131.07	6.60	1.64	1561.22
10/16/17 9:45 AM	70.83	32,292.90	5.40	65.0	18.3	0.80	0.06	200	17	17	220.00	125.40	10.20	155.00	88.35	36.73	58.00	33.06	76.33	0.00	0.00	100.00	245.0	139.65	0.00	0.00	0.00	100.00	574.66	968.31	4.43	1.50	1565.65
2/13/18 8:30 AM	0.00	32,292.90	4.80	57.0	13.9	1.70	0.12	225	20	20	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.6	0.34	0.00	0.00	0.00	100.00	1.43	2.41	0.00	0.00	1565.65
2/16/18 10:53 AM	74.38	32,367.28	4.50	62.0	16.7	1.00	0.07	197	17	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	97.5	55.58	0.00	0.00	0.00	100.00	230.01	387.56	1.85	0.60	1567.50
2/19/18 11:03 AM	72.17	32,439.45	--	48.0	8.9	1.00	0.07	201	17	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	120.0	68.40	0.00	0.00	0.00	100.00	290.89	490.15	2.38	0.79	1569.88
2/26/18 12:25 PM	169.37	32,608.82	3.60	55.0	12.8	1.00	0.07	207	18	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	1569.88
3/2/18 11:15 AM	94.83	32,703.65	4.60	49.0	9.4	1.00	0.07	207	18	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	375.00	631.87	4.14	1.05	1574.02
3/5/18 10:55 AM	71.67	32,775.32	4.40	61.0	16.1	1.00	0.07	215	19	19	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	128.0	72.96	0.00	0.00	0.00	100.00	302.54	509.78	2.56	0.86	1576.59
3/9/18 10:10 AM	95.25	32,870.57	4.50	69.0	20.6	1.00	0.07	204	18	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	120.0	68.40	0.00	0.00	0.00	100.00	279.34	470.68	2.94	0.74	1579.52
3/12/18 7:25 AM	69.25	32,939.82	4.60	51.0	10.6	1.00	0.07	194	17	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	373.53	629.40	2.81	0.97	1582.33
3/16/18 12:45 PM	101.33	33,041.15	8.50	53.0	11.7	0.75	0.05	141	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	1582.33
3/19/18 9:40 AM	68.92	33,110.07	9.00	51.0	10.6	0.80	0.06	182	16	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	301.23	507.58	2.12	0.74	1584.45
3/23/18 9:50 AM	96.17	33,206.23	9.00	46.0	7.8	0.80	0.06	175	15	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	1584.45
3/26/18 9:25 AM	71.58	33,277.82	9.50	47.0	8.3	0.80	0.06	150	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	45.5	25.94	0.00	0.00	0.00	100.00	110.51	186.22	0.67	0.22	1585.12
3/30/18 8:40 AM	95.25	33,373.07	9.00	61.0	16.1	0.80	0.06	157	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	70.0	39.90	0.00	0.00	0.00	100.00	165.45	278.78	1.36	0.34	1586.49
4/2/18 10:34 AM	73.90	33,446.97	4.40	68.0	20.0	1.00	0.07	211	18	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	135.0	76.95	0.00	0.00	0.00	100.00	314.85	530.52	2.66	0.86	1589.14
4/6/18 1:05 PM	98.52	33,545.48	4.30	69.0	20.6	1.00	0.07	206	18	18	1.50	0.86	98.86	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	132.0	75.24	0.00	0.00	0.00	100.00	307.27	517.75	3.37	0.82	1592.52
4/9/18 11:58 AM	70.88	33,616.37	4.30	75.0	23.9	1.00	0.07	239	21	20	14.50	8.27	91.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	402.80	678.71	3.65	1.24	1596.17
4/13/18 12:00 PM	96.03	33,712.40	4.80	71.0	21.7	1.00	0.07	209	18	18	19.50	11.12	88.66	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	172.0	98.04	0.00	0.00	0.00	100.00	398.87	672.11	4.32	1.08	1600.49
4/16/18 11:30 AM	71.50	33,783.90	4.50	71.0	21.7	1.00	0.07	226	20	19	22.00	12.54	87.06	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	394.24	664.29	3.43	1.15	1603.92
4/20/18 10:45 AM	95.25	33,879.15	4.70	70.0	21.1	1.00	0.07	179	16	15	47.70	27.19	66.05	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.5	80.09	0.00	0.00	0.00	100.00	326.44	550.05	3.01	0.76	1606.93
4/23/18 8:45 AM	70.00	33,949.15	4.80	70.0	21.1	1.00	0.07	199	17	17	48.00	27.36	54.29	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	243.96	411.07	1.84	0.63	1608.77
4/27/18 9:25 AM	96.67	34,045.82	5.20	60.0	15.6	1.00	0.07	197	17	17	108.00	61.56	41.62	2.00	1.14	98.92	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	438.10	738.21	4.60	1.14	1613.36
4/30/18 2:45 PM	77.33	34,123.15	4.20	72.0	22.2	1.00	0.07	196	17	17	47.00	26.79	69.68	6.00	3.42	96.13	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	358.77	604.54	2.93	0.91	1616.29
5/4/18 8:45 AM	90.00	34,213.15	5.00	68.0	20.0	1.00	0.07	186	16	16	95.00	54.15	13.64	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	110.0	62.70	0.00	0.00	0.00	100.00	256.54	432.28	2.33	0.62	1618.62
5/7/18 7:08 AM	70.38	34,283.53	5.00	60.0	15.6	1.00	0.07	208	18	18	118.00	67.26	32.57	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	414.42	698.30	3.34	1.14	1621.97
5/11/18 2:25 PM	103.28	34,386.82	4.60	83.0	28.3	1.00	0.07	212	18	18	45.00	25.65	70.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	340.16	573.18	3.93	0.91	1625.90
5/14/18 2:25 PM	72.00	34,458.82	5.00	85.0	29.4	1.00	0.07	216	19	18	65.00	37.05	59.38	8.50	4.85	94.69	0.00	0.00	100.00	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	361.51	609.14	2.95	0.98	1628.85
5/18/18 4:14 PM	97.82	34,556.63	4.80	86.0	30.0	1.00	0.07	214	19	18	75.00	42.75	51.61	14.00	7.98	90.97	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	349.57	589.03	3.84	0.94	1632.69
5/21/18 10:50 AM	66.60	34,623.23	4.90	71.0	21.7	0.80	0.06	198	17	17	68.00	38.76	35.24	14.00	7.98	86.67	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	243.50	410.30	1.73	0.62	1634.42
5/25/18 11:00 AM	96.17	34,719.40	5.50	62.0	16.7	0.80	0.06	218	19	19	108.00	61.56	38.29	45.00	25.65	74.29	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	412.83	695.63	4.75	1.18	1639.16
5/28/18 11:05 AM	72.08	34,791.48	5.00	86.0	30.0	1.00	0.07	189	16	16	58.00	33.06	63.75	25.00	14.25	84.38	0.00	0.00	100.00	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	360.85	608.03	2.57	0.86	1641.74
6/1/18 1:26 PM	98.35	34,889.83	5.40	81.0	27.2	1.00	0.07	217	19	18	65.00	37.05	56.67	32.00	18.24	78.67	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	341.42	575.30	3.86	0.94	1645.60

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
6/4/18 7:14 AM	65.80	34,955.63	5.00	72.0	22.2	0.80	0.06	205	18	17	75.00	42.75	28.57	60.00	34.20	42.86	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	243.04	409.53	1.76	0.64	1647.36
6/8/18 1:50 PM	102.60	35,058.23	5.00	88.0	31.1	0.80	0.06	208	18	17	75.00	42.75	46.43	38.00	21.66	72.86	1.00	0.57	99.29	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	314.59	530.08	3.50	0.82	1650.86
6/25/18 3:57 PM	0.00	35,058.23	5.00	98.0	36.7	0.80	0.06	218	19	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	8.0	4.56	0.00	0.00	0.00	100.00	17.65	29.75	0.00	0.00	1650.86
6/30/18 6:56 AM	110.98	35,169.22	5.00	74.0	23.3	0.70	0.05	202	18	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	345.90	582.84	4.15	0.90	1655.01
7/2/18 6:53 AM	47.95	35,217.17	4.80	69.0	20.6	0.80	0.06	194	17	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	360.81	607.97	1.82	0.91	1656.83
7/7/18 9:45 AM	122.87	35,340.03	5.00	88.0	31.1	0.80	0.06	204	18	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	460.65	776.19	6.01	1.17	1662.84
7/10/18 6:39 AM	68.90	35,408.93	5.00	72.0	22.2	0.80	0.06	201	17	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	198.0	112.86	0.00	0.00	0.00	100.00	458.31	772.25	3.42	1.19	1666.26
7/13/18 8:53 AM	74.23	35,483.17	5.40	85.0	29.4	0.80	0.06	205	18	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	350.21	590.11	2.80	0.90	1669.05
7/16/18 9:39 AM	72.77	35,555.93	5.40	86.0	30.0	0.80	0.06	200	17	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	383.40	646.03	2.92	0.96	1671.98
7/20/18 7:01 AM	93.37	35,649.30	5.50	74.0	23.3	0.80	0.06	201	18	17	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	392.02	660.56	3.95	1.01	1675.92
7/23/18 7:00 AM	71.98	35,721.28	5.60	74.0	23.3	1.00	0.07	191	17	16	1.00	0.57	99.40	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	168.0	95.76	0.00	0.00	0.00	100.00	387.41	652.78	2.85	0.95	1678.77
7/27/18 6:56 AM	95.93	35,817.22	5.60	75.0	23.9	0.80	0.06	194	17	16	26.00	14.82	86.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	448.83	756.28	4.46	1.12	1683.23
7/30/18 7:00 AM	72.07	35,889.28	5.60	71.0	21.7	0.80	0.06	211	18	18	50.00	28.50	74.36	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	452.21	761.98	3.70	1.23	1686.93
8/3/18 7:04 AM	96.07	35,985.35	4.50	98.0	36.7	0.70	0.05	189	16	15	58.00	33.06	62.58	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	342.05	576.35	3.18	0.79	1690.11
8/6/18 2:50 PM	79.77	36,065.12	4.80	98.0	36.7	1.00	0.07	209	18	17	65.50	37.34	61.01	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	168.0	95.76	0.00	0.00	0.00	100.00	370.74	624.69	3.17	0.95	1693.29
8/10/18 6:58 AM	88.13	36,153.25	4.90	74.0	23.3	0.80	0.06	202	18	17	56.00	31.92	51.30	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	265.19	446.85	2.52	0.69	1695.81
8/13/18 8:03 AM	73.08	36,226.33	4.80	76.0	24.4	0.80	0.06	207	18	18	52.00	29.64	69.41	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	390.56	658.09	3.16	1.04	1698.97
8/17/18 2:45 PM	102.70	36,329.03	4.80	103.0	39.4	0.80	0.06	181	16	15	105.00	59.85	38.24	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	371.82	626.51	3.52	0.82	1702.49
8/20/18 10:04 AM	67.32	36,396.35	5.00	86.0	30.0	0.80	0.06	212	18	18	82.00	46.74	50.30	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	372.12	627.03	2.78	0.99	1705.26
8/24/18 4:48 PM	102.73	36,499.08	4.60	94.0	34.4	0.80	0.06	225	20	18	105.00	59.85	30.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	333.41	561.79	3.98	0.93	1709.25
8/27/18 10:50 AM	66.03	36,565.12	5.00	81.0	27.2	0.80	0.06	211	18	18	55.00	31.35	56.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	284.52	479.41	2.10	0.76	1711.35
8/31/18 1:12 PM	98.37	36,663.48	5.00	86.0	30.0	0.80	0.06	214	19	18	85.00	48.45	43.33	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	338.29	570.03	3.73	0.91	1715.08
9/3/18 3:47 PM	74.58	36,738.07	4.80	99.0	37.2	0.80	0.06	203	18	16	105.00	59.85	34.38	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	352.45	593.88	2.73	0.88	1717.80
9/7/18 10:38 AM	90.85	36,828.92	5.00	86.0	30.0	0.80	0.06	216	19	18	75.00	42.75	40.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	281.91	475.02	2.90	0.77	1720.70
9/10/18 9:02 AM	70.40	36,899.32	5.00	74.0	23.3	0.80	0.06	209	18	18	75.00	42.75	56.40	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	172.0	98.04	0.00	0.00	0.00	100.00	396.63	668.33	3.12	1.07	1723.83
9/14/18 11:03 AM	98.02	36,997.33	4.00	77.0	25.0	0.80	0.06	195	17	16	95.00	54.15	29.63	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	135.0	76.95	0.00	0.00	0.00	100.00	309.57	521.63	3.16	0.77	1726.98
9/17/18 9:23 AM	70.33	37,067.67	4.00	69.0	20.6	0.80	0.06	204	18	17	95.00	54.15	26.92	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	130.0	74.10	0.00	0.00	0.00	100.00	302.62	509.91	2.34	0.80	1729.33
9/21/18 2:12 PM	100.82	37,168.48	4.40	97.0	36.1	0.80	0.06	204	18	17	120.00	68.40	17.24	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	320.55	540.14	3.39	0.81	1732.72
9/24/18 12:10 PM	69.97	37,238.45	4.00	89.0	31.7	0.80	0.06	216	19	18	98.00	55.86	32.41	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	325.23	548.01	2.57	0.88	1735.28
9/28/18 12:34 PM	96.40	37,334.85	4.00	92.0	33.3	0.80	0.06	211	18	17	110.00	62.70	22.54	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	142.0	80.94	0.00	0.00	0.00	100.00	316.77	533.76	3.34	0.83	1738.63
10/1/18 9:00 AM	68.43	37,403.28	4.00	68.0	20.0	0.80	0.06	204	18	18	95.00	54.15	13.64	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	110.0	62.70	0.00	0.00	0.00	100.00	256.54	432.28	1.94	0.68	1740.57
10/5/18 9:10 AM	96.17	37,499.45	4.00	62.0	16.7	0.80	0.06	203	18	18	65.00	37.05	18.75	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	80.0	45.60	0.00	0.00	0.00	100.00	188.72	318.00	2.01	0.50	1742.58
10/8/18 8:05 AM	70.92	37,570.37	3.90	57.0	13.9	0.60	0.04	220	19	19	110.00	62.70	38.89	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	428.74	722.42	3.70	1.25	1746.28
10/12/18 8:29 AM	96.40	37,666.77	4.00	58.0	14.4	0.80	0.06	227	20	20	70.00	39.90	26.32	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	95.0	54.15	0.00	0.00	0.00	100.00	225.84	380.54	2.73	0.68	1749.00
10/15/18 11:03 AM	74.57	37,741.33	4.40	77.0	25.0	0.80	0.06	219	19	19	78.00	44.46	25.71	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	240.78	405.71	2.10	0.68	1751.10
10/22/18 2:40 PM	0.00	37,741.33	6.00	84.5	29.2	0.80	0.06	177	15	15	72.00	41.04	52.00	3.00	1.71	98.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	339.23	571.60	0.00	0.00	1751.10
10/26/18 11:10 AM	92.50	37,833.83	6.40	74.0	23.3	0.80	0.06	199	17	17	105.00	59.85	32.69	4.50	2.57	97.12	0.00	0.00	100.00	0.00	0.00	100.00	156.0	88.92	0.00	0.00	0.00	100.00	359.74	606.16	3.54	0.92	1754.64
10/29/18 10:57 AM	71.78	37,905.62	6.80	69.0	20.6	0.80	0.06	184	16	16	100.00	57.00	61.54	7.50	4.28	97.12	0.00	0.00	100.00	0.00	0.00	100.00	260.0	148.20	0.00	0.00	0.00	100.00	605.23	1019.82	4.31	1.44	1758.96
11/2/18 2:13 PM	99.27	38,004.88	6.20	80.0	26.7	0.80	0.06	170	15	14	172.00	98.04	33.85	12.50	7.13	95.19	0.00	0.00	100.00	0.00	0.00	100.00	260.0	148.20	0.00	0.00	0.00	100.00	592.89	999.03	5.29	1.28	1764.24
11/5/18 3:00 PM	72.78	38,077.67	6.40	78.0	25.6	0.80	0.06	181	16	15	175.00	99.75	22.22	25.00	14.25	88.89	0.00	0.00	100.00	0.00	0.00	100.00	225.0	128.25	0.00	0.00	0.00	100.00	514.99	867.76	3.60	1.19	1767.84
11/23/18 9:25 AM	0.00	38,077.67	6.80	55.0	12.8	0.70	0.05	183	16	16	145.00	82.65	-383.33	10.50	5.99	65.00	0.00	0.00	100.00	0.00	0.00	100.00	30.0	17.10	0.00	0.00	0.00	100.00	71.73	120.87	0.00	0.00	1767.84
11/26/18 8:40 AM	71.25	38,148.92	6.70	56.5	13.6	0.70	0.05	205	18	18	132.00	75.24	24.57	20.00	11.40	88.57	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	417.23	703.04	3.38	1.14	1771.22
11/30/18 3:18 PM	102.63	38,251.55	6.40	65.5	18.6	0.80	0.06	194	17	17	145.00	82.65	19.44	50.00	28.50	72.22	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	421.80	710.73	4.57	1.07	1775.79
12/3/18 12:10 PM	68.87	38,320.42	5.80	62.8	17.1	0.80	0.06	197	17	17	150.00	85.50	1.32	45.00	25.65	70.39	0.00	0.00	100.00	0.00	0.00	100.00	152.0	86.64	0.00	0.00	0.00	100.00	358.03	603.28	2.65	0.93	1778.44
12/7/18 3:25 PM	0.00	38,320.42	7.40	59.5	15.3	0.80	0.06	195	17	17	155.00	88.35	-222.92	52.00	29.64	-8.33	0.00	0.00	100.00	0.00	0.00	100.00	48.0	27.36	0.00	0.00	0.00	100.00	113.78	191.72	0.00	0.00	1778.44
12/10/18 3:24 PM	71.98	38,392.40	6.00	57.3	14.1	0.70	0.05	167	15	15	165.00	94.05	26.67	80.00	45.60	64.44	0.00	0.00	100.00	0.00	0.00	100.00	225.0	128.25	0.00	0.00	0.00	100.00	535.61	902.51	3.56	1.19	1782.00
12/14/18 10:44 AM	91.33	38,483.73	6.20	61.8	16.6	0.80	0.06	184	16	16	168.00	95.76	13.85	65.00	37.05	66.67	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	460.19	775.42	4.24	1.11	1786.24
12/17/18 9:15 AM	70.52	38,554.25	6.60	55.2	12.9	0.80	0.06	171	15	15	186.00	106.02	9.27	105.00	59.85	48.78	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	489.99	825.64	3.28	1.12	1789.52
12/21/18 2:20 PM	101.08	38,655.33	7.50	56.2	13.4	0.80	0.06	184	16	16	175.00	99.75	3.85	90.00	51.30	50.55	0.00	0.00	100.00	0.00	0.00	100.00	182.0	103.74	0.00	0.00	0.00	100.00	434.17	731.58	4.49	1.07	1794.00
12/24/18 9:20 AM	67.00	38,722.33	6.50	62.5	16.9	0.80	0.06	153	13	13	170.00	96.90	-9.68	110.00	62.70	29.03	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	365.30	615.54	2.05	0.73	1796.05

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data									System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
12/28/18 12:20 PM	99.00	38,821.33	7.50	50.0	10.0	0.70	0.05	163	14	15	160.00	91.20	-10.34	120.00	68.40	17.24	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	350.12	589.95	3.18	0.77	1799.23
12/31/18 1:09 PM	72.82	38,894.15	8.00	55.3	12.9	0.70	0.05	164	14	14	145.00	82.65	-3.57	110.00	62.70	21.43	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	334.56	563.74	2.22	0.73	1801.45
1/4/19 2:13 PM	97.07	38,991.22	7.80	64.1	17.8	0.70	0.05	154	13	13	100.00	57.00	-8.70	60.00	34.20	34.78	0.00	0.00	100.00	0.00	0.00	100.00	92.0	52.44	0.00	0.00	0.00	100.00	216.16	364.23	1.77	0.44	1803.21
1/7/19 3:10 PM	72.95	39,064.17	7.50	66.8	19.3	0.70	0.05	140	12	12	135.00	76.95	-58.82	105.00	59.85	-23.53	0.00	0.00	100.00	0.00	0.00	100.00	85.0	48.45	0.00	0.00	0.00	100.00	198.69	334.79	1.10	0.36	1804.31
1/11/19 11:59 AM	92.82	39,156.98	8.00	64.7	18.2	0.80	0.06	155	13	13	150.00	85.50	3.23	125.00	71.25	19.35	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	363.77	612.95	2.85	0.74	1807.16
1/14/19 12:52 PM	72.88	39,229.87	8.00	51.7	10.9	0.70	0.05	156	14	14	160.00	91.20	20.00	150.00	85.50	25.00	2.50	1.43	98.75	0.00	0.00	100.00	200.0	114.00	0.00	0.00	0.00	100.00	481.31	811.01	3.06	1.01	1810.23
1/18/19 10:55 AM	94.05	39,323.92	9.00	65.0	18.3	0.60	0.04	146	13	13	168.00	95.76	-46.09	155.00	88.35	-34.78	45.00	25.65	60.87	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	269.74	454.51	2.02	0.52	1812.25
1/28/19 11:31 AM	59.52	39,383.44	9.00	61.9	16.6	0.40	0.03	182	16	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	353.92	596.36	2.10	0.00	1814.35
2/1/19 8:21 AM	92.83	39,476.27	8.80	54.5	12.5	0.40	0.03	143	12	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	430.82	725.94	3.17	0.82	1817.51
2/4/19 12:29 PM	76.13	39,552.40	8.00	61.4	16.3	0.50	0.04	144	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	342.46	577.04	2.05	0.65	1819.57
2/8/19 12:06 PM	95.62	39,648.02	8.50	55.0	12.8	0.60	0.04	146	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	135.0	76.95	0.00	0.00	0.00	100.00	322.80	543.92	2.51	0.63	1822.07
2/13/19 11:22 AM	119.27	39,767.29	8.00	58.5	14.7	0.60	0.04	147	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	368.12	620.29	3.56	0.72	1825.63
2/15/19 12:33 PM	49.18	39,816.47	9.00	54.5	12.5	0.50	0.04	137	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	10.0	5.70	0.00	0.00	0.00	100.00	23.93	40.33	0.09	0.04	1825.72
2/20/19 9:38 AM	117.08	39,933.55	8.50	48.6	9.2	0.50	0.04	164	14	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	363.19	611.97	3.92	0.80	1829.64
2/22/19 10:05 AM	48.45	39,982.00	7.50	54.1	12.3	0.60	0.04	161	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	5.0	2.85	0.00	0.00	0.00	100.00	11.98	20.18	0.05	0.03	1829.69
2/25/19 10:45 AM	72.67	40,054.67	9.00	65.8	18.8	0.60	0.00	150	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.0	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	1829.69
3/1/19 10:10 AM	95.42	40,150.09	7.50	65.9	18.8	0.60	0.04	133	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	70.0	39.90	0.00	0.00	0.00	100.00	163.91	276.19	1.13	0.28	1830.82
3/4/19 3:30 PM	77.33	40,227.42	8.00	63.4	17.4	0.80	0.06	139	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	68.0	38.76	0.00	0.00	0.00	100.00	159.99	269.58	0.94	0.29	1831.76
3/8/19 11:18 AM	91.80	40,319.22	8.50	59.0	15.0	0.70	0.05	128	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	15.0	8.55	0.00	0.00	0.00	100.00	35.59	59.97	0.23	0.06	1831.99
3/11/19 11:20 AM	72.03	40,391.25	10.00	55.1	12.8	0.70	0.05	125	11	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	18.0	10.26	0.00	0.00	0.00	100.00	43.03	72.51	0.21	0.07	1832.20
3/15/19 3:30 PM	100.17	40,491.42	9.50	69.3	20.7	0.70	0.05	136	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	50.0	28.50	0.00	0.00	0.00	100.00	116.32	196.01	0.86	0.21	1833.06
3/18/19 12:40 PM	69.17	40,560.59	8.50	76.0	24.4	0.70	0.05	142	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	287.17	483.89	1.51	0.52	1834.57
3/22/19 11:45 AM	95.08	40,655.67	9.00	69.3	20.7	0.70	0.05	141	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	95.0	54.15	0.00	0.00	0.00	100.00	221.02	372.41	1.60	0.40	1836.17
3/25/19 10:45 AM	71.00	40,726.67	8.00	73.5	23.1	0.70	0.05	214	19	18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	346.22	583.39	2.82	0.95	1838.99
3/28/19 11:00 AM	72.25	40,798.92	8.00	64.4	18.0	0.70	0.05	176	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	130.0	74.10	0.00	0.00	0.00	100.00	305.27	514.38	2.12	0.70	1841.11
4/1/19 12:35 PM	97.58	40,896.50	8.40	84.5	29.2	0.70	0.05	144	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	339.23	571.60	2.50	0.62	1843.62
4/5/19 11:38 AM	95.05	40,991.55	0.70	68.7	20.4	7.50	0.55	142	12	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	244.56	412.08	1.84	0.46	1845.46
4/8/19 1:43 PM	74.08	41,065.64	9.50	83.6	28.7	7.50	0.55	140	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	283.16	477.12	1.60	0.52	1847.06
4/12/19 3:45 PM	98.03	41,163.67	9.50	70.7	21.5	0.70	0.05	150	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	243.64	410.53	1.93	0.47	1848.99
4/15/19 3:10 PM	71.42	41,235.09	9.50	78.2	25.7	0.70	0.05	138	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	331.76	559.02	1.74	0.58	1850.72
4/19/19 1:05 PM	93.92	41,329.00	9.50	91.1	32.8	0.80	0.06	125	11	10	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	335.16	564.75	2.04	0.52	1852.76
4/22/19 2:10 PM	73.08	41,402.09	9.50	85.6	29.8	0.75	0.05	137	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	282.12	475.37	1.48	0.49	1854.24
4/26/19 10:34 AM	92.40	41,494.49	9.00	90.6	32.6	0.80	0.06	148	13	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	105.0	59.85	0.00	0.00	0.00	100.00	234.83	395.68	1.66	0.43	1855.91
4/30/19 1:26 PM	98.87	41,593.35	9.00	80.2	26.8	0.80	0.06	136	12	11	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	108.5	61.85	0.00	0.00	0.00	100.00	247.33	416.75	1.76	0.43	1857.66
5/3/19 10:38 AM	69.20	41,662.55	8.50	73.7	23.2	0.80	0.06	138	12	12	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	145.0	82.65	0.00	0.00	0.00	100.00	334.56	563.73	1.71	0.59	1859.37
5/6/19 10:45 AM	72.12	41,734.67	7.50	75.3	24.1	0.80	0.06	154	13	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	140.0	79.80	0.00	0.00	0.00	100.00	322.06	542.67	1.91	0.64	1861.28
5/10/19 4:23 PM	101.63	41,836.30	7.50	74.5	23.6	6.50	0.47	169	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	357.10	601.71	3.37	0.80	1864.66
5/13/19 1:25 PM	69.03	41,905.34	7.50	85.2	29.6	0.75	0.05	146	13	12	2.00	1.14	98.86	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	395.25	666.01	2.09	0.73	1866.75
5/17/19 10:45 AM	93.33	41,998.67	7.80	61.7	16.5	0.60	0.04	163	14	14	1.50	0.86	99.23	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	460.28	775.57	3.84	0.99	1870.60
5/20/19 7:35 AM	68.83	42,067.50	7.50	55.5	13.1	0.60	0.04	150	13	13	22.00	12.54	90.83	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	240.0	136.80	0.00	0.00	0.00	100.00	573.31	966.04	3.28	1.14	1873.87
5/24/19 1:20 PM	101.75	42,169.25	7.50	81.4	27.4	0.70	0.05	144	12	12	22.50	12.83	86.36	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	375.29	632.36	2.89	0.68	1876.77
5/27/19 11:00 AM	69.67	42,238.92	9.50	65.5	18.6	0.60	0.04	143	12	12	45.00	25.65	72.73	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	386.65	651.50	2.10	0.72	1878.87
5/31/19 10:32 AM	95.53	42,334.45	9.50	78.6	25.9	0.60	0.04	145	13	12	55.00	31.35	57.69	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	130.0	74.10	0.00	0.00	0.00	100.00	297.22	500.81	2.19	0.55	1881.06
6/3/19 4:25 PM	77.88	42,412.34	9.50	94.7	34.8	0.70	0.05	145	13	12	18.00	10.26	84.35	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	255.29	430.16	1.48	0.46	1882.54
6/7/19 7:42 AM	87.28	42,499.62	8.50	63.4	17.4	0.60	0.04	146	13	13	55.00	31.35	69.44	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	423.49	713.59	2.94	0.81	1885.48
6/10/19 3:20 PM	79.63	42,579.25	7.20	104.5	40.3	0.80	0.06	160	14	13	15.00	8.55	91.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	381.73	643.22	2.46	0.74	1887.95
6/14/19 8:40 AM	89.33	42,668.59	7.80	75.7	24.3	0.70	0.05	155	13	13	45.00	25.65	66.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	135.0	76.95	0.00	0.00	0.00	100.00	310.32	522.89	2.29	0.62	1890.24
6/17/19 6:14 AM	69.57	42,738.15	7.50	69.4	20.8	0.70	0.05	151	13	13	55.00	31.35	68.57	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	407.06	685.90	2.30	0.79	1892.54
6/21/19 7:32 AM	97.30	42,835.45	7.50	67.1	19.5	0.65	0.05	154	13	13	65.00	37.05	64.86	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	432.20	728.26	3.51	0.87	1896.05
6/24/19 8:05 AM	72.55	42,908.00	7.80	78.8	26.0	0.70	0.05	168	15	14	68.50	39.05	58.48	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	377.10	635.41	2.44	0.81	1898.50

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data									System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. H_2O)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in H_2O) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
6/28/19 6:40 AM	94.58	43,002.59	7.80	64.1	17.8	0.60	0.04	170	15	15	98.00	55.86	60.80	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	250.0	142.50	0.00	0.00	0.00	100.00	587.40	989.77	5.14	1.30	1903.63
7/1/19 3:30 PM	80.83	43,083.42	7.20	97.0	36.1	0.70	0.05	162	14	13	36.00	20.52	78.18	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	364.77	614.64	2.45	0.73	1906.08
7/5/19 7:08 AM	87.63	43,171.05	7.20	71.2	21.8	0.70	0.05	160	14	14	105.00	59.85	40.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	405.68	683.57	3.07	0.84	1909.15
7/8/19 7:17 AM	72.15	43,243.20	7.50	66.6	19.2	0.70	0.05	157	14	13	120.00	68.40	39.39	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	198.0	112.86	0.00	0.00	0.00	100.00	463.01	780.17	2.84	0.95	1911.99
7/12/19 2:45 PM	103.47	43,346.67	7.80	97.4	36.3	8.00	0.58	163	14	14	45.00	25.65	70.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	331.37	558.36	2.96	0.69	1914.95
7/15/19 4:32 PM	73.78	43,420.45	7.50	102.9	39.4	0.80	0.06	156	14	13	55.00	31.35	66.05	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	162.0	92.34	0.00	0.00	0.00	100.00	354.38	597.13	2.08	0.68	1917.03
7/19/19 4:00 PM	95.47	43,515.92	8.00	96.3	35.7	7.50	0.55	157	14	13	55.00	31.35	68.57	1.50	0.86	99.14	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	387.36	652.71	3.09	0.78	1920.12
7/22/19 6:59 AM	62.98	43,578.90	7.80	73.5	23.1	0.75	0.05	166	14	14	90.00	51.30	40.00	1.50	0.86	99.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	346.22	583.39	1.94	0.74	1922.06
7/26/19 6:43 AM	95.73	43,674.64	8.30	78.1	25.6	0.70	0.05	161	14	14	75.00	42.75	34.78	10.00	5.70	91.30	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	263.17	443.44	2.16	0.54	1924.22
7/29/19 9:31 AM	74.80	43,749.44	8.50	90.7	32.6	0.80	0.06	157	14	13	58.00	33.06	61.33	10.00	5.70	93.33	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	335.40	565.16	2.05	0.66	1926.26
8/2/19 9:34 AM	96.05	43,845.49	8.40	80.0	26.7	0.80	0.06	168	15	14	68.00	38.76	43.33	12.00	6.84	90.00	0.00	0.00	100.00	0.00	0.00	100.00	120.0	68.40	0.00	0.00	0.00	100.00	273.64	461.09	2.34	0.59	1928.60
8/5/19 4:15 PM	78.68	43,924.17	8.20	99.9	37.7	0.80	0.06	154	13	12	98.50	56.15	42.06	9.20	5.24	94.59	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	373.88	629.98	2.32	0.71	1930.92
8/9/19 10:25 AM	90.17	44,014.34	8.20	81.6	27.6	0.80	0.06	175	15	15	90.00	51.30	50.00	8.50	4.85	95.28	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	409.25	689.59	3.42	0.91	1934.34
8/12/19 4:58 PM	78.55	44,092.89	8.00	97.1	36.2	0.80	0.06	170	15	14	115.80	66.01	40.80	8.00	4.56	95.91	0.00	0.00	100.00	0.00	0.00	100.00	195.6	111.49	0.00	0.00	0.00	100.00	432.34	728.49	2.96	0.90	1937.30
8/16/19 7:30 AM	86.53	44,179.42	7.80	75.5	24.2	0.75	0.05	166	14	14	125.00	71.25	24.24	22.00	12.54	86.67	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	379.42	639.33	2.92	0.81	1940.21
8/19/19 1:20 PM	77.83	44,257.25	8.60	88.5	31.4	0.80	0.06	167	15	14	100.00	57.00	41.18	8.00	4.56	95.29	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	381.65	643.08	2.58	0.80	1942.80
8/23/19 2:18 PM	96.97	44,354.22	8.70	103.7	39.8	0.80	0.06	157	14	13	123.00	70.11	25.45	12.00	6.84	92.73	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	360.43	607.33	2.79	0.69	1945.59
8/26/19 3:47 PM	73.48	44,427.70	8.50	103.1	39.5	0.80	0.06	157	14	13	135.00	76.95	27.03	15.00	8.55	91.89	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	404.55	681.67	2.37	0.77	1947.96
8/30/19 1:00 PM	93.22	44,520.92	8.50	93.4	34.1	0.80	0.06	159	14	13	120.00	68.40	29.41	15.00	8.55	91.18	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	378.27	637.39	2.90	0.75	1950.86
9/2/19 11:52 AM	70.87	44,591.79	8.60	101.2	38.4	0.80	0.06	152	13	12	120.00	68.40	29.41	26.00	14.82	84.71	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	373.01	628.52	2.05	0.70	1952.91
9/6/19 3:16 PM	99.40	44,691.19	8.30	98.4	36.9	0.80	0.06	150	13	12	135.00	76.95	28.19	20.00	11.40	89.36	0.00	0.00	100.00	0.00	0.00	100.00	188.0	107.16	0.00	0.00	0.00	100.00	414.57	698.56	3.16	0.76	1956.07
9/9/19 5:08 PM	73.87	44,765.05	8.00	87.5	30.8	0.80	0.06	158	14	13	150.00	85.50	23.08	19.50	11.12	90.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	438.58	739.00	2.68	0.87	1958.74
9/13/19 3:21 PM	94.22	44,859.27	8.50	101.5	38.6	0.80	0.06	162	14	13	155.00	88.35	20.51	26.00	14.82	86.67	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	427.63	720.57	3.32	0.85	1962.07
9/16/19 5:40 PM	74.32	44,933.59	8.00	75.8	24.3	0.80	0.06	160	14	14	135.00	76.95	25.00	34.00	19.38	81.11	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	413.68	697.06	2.63	0.85	1964.70
9/20/19 2:45 PM	93.08	45,026.67	7.80	84.3	29.1	0.80	0.06	158	14	13	145.00	82.65	9.38	32.00	18.24	80.00	0.00	0.00	100.00	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	361.97	609.93	2.80	0.72	1967.50
9/23/19 11:15 AM	68.50	45,095.17	8.50	87.4	30.8	0.80	0.06	162	14	13	145.00	82.65	11.59	62.00	35.34	62.20	0.00	0.00	100.00	0.00	0.00	100.00	164.0	93.48	0.00	0.00	0.00	100.00	368.92	621.63	2.14	0.75	1969.64
9/27/19 11:35 AM	96.33	45,191.50	8.20	83.5	28.6	0.80	0.06	171	15	14	128.00	72.96	17.42	72.00	41.04	53.55	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	351.18	591.74	3.04	0.76	1972.68
10/4/19 4:45 PM	173.17	45,364.67	8.00	81.7	27.6	0.80	0.06	168	15	14	120.00	68.40	34.07	50.00	28.50	72.53	0.00	0.00	100.00	0.00	0.00	100.00	182.0	103.74	0.00	0.00	0.00	100.00	413.72	697.13	6.37	0.88	1979.04
10/7/19 2:10 PM	69.42	45,434.09	8.00	99.3	37.4	0.70	0.05	175	15	14	98.00	55.86	36.77	65.00	37.05	58.06	2.50	1.43	98.39	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	341.25	575.01	2.11	0.73	1981.15
10/11/19 12:30 PM	94.33	45,528.42	8.00	76.5	24.7	0.80	0.06	173	15	15	115.00	65.55	28.13	65.00	37.05	59.38	4.00	2.28	97.50	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	367.24	618.80	3.20	0.82	1984.36
10/14/19 2:08 PM	73.63	45,602.05	8.00	85.1	29.5	0.80	0.06	175	15	15	110.00	62.70	29.03	75.00	42.75	51.61	8.00	4.56	94.84	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	350.15	590.00	2.36	0.77	1986.72
10/18/19 12:30 PM	94.37	45,696.42	8.00	71.4	21.9	0.80	0.06	169	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	125.0	71.25	0.00	0.00	0.00	100.00	289.66	488.08	2.49	0.63	1989.21
10/21/19 4:00 PM	75.50	45,771.92	8.00	84.5	29.2	0.80	0.06	171	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	339.23	571.60	2.30	0.73	1991.51
10/25/19 1:10 PM	93.17	45,865.09	8.00	88.0	31.1	0.80	0.06	171	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	337.06	567.94	2.81	0.72	1994.32
10/28/19 11:30 AM	70.33	45,935.42	8.00	68.3	20.2	0.80	0.06	172	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	349.63	589.14	2.29	0.78	1996.61
11/1/19 3:23 PM	99.88	46,035.30	8.00	74.5	23.6	0.80	0.06	156	14	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	391.65	659.94	3.27	0.79	1999.89
11/4/19 2:02 PM	70.65	46,105.95	8.00	83.0	28.3	0.80	0.06	155	14	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	351.50	592.28	2.03	0.69	2001.92
11/8/19 3:19 PM	97.28	46,203.24	7.00	77.8	25.4	0.80	0.06	169	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	130.0	74.10	0.00	0.00	0.00	100.00	297.66	501.56	2.60	0.64	2004.52
11/11/19 3:02 PM	71.72	46,274.95	7.20	79.3	26.3	0.80	0.06	173	15	15	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	154.0	87.78	0.00	0.00	0.00	100.00	351.63	592.50	2.31	0.77	2006.83
11/15/19 12:23 PM	93.35	46,368.30	7.50	74.3	23.5	0.80	0.06	170	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	345.71	582.52	2.93	0.75	2009.77
11/18/19 2:45 PM	74.37	46,442.67	7.00	79.6	26.4	0.80	0.06	160	14	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	399.36	672.92	2.52	0.81	2012.29
11/22/19 1:33 PM	94.80	46,537.47	7.50	73.4	23.0	0.75	0.05	158	14	13	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	160.0	91.20	0.00	0.00	0.00	100.00	369.38	622.40	2.97	0.75	2015.26
11/25/19 2:32 PM	72.98	46,610.45	7.20	64.5	18.1	0.70	0.05	158	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	195.0	111.15	0.00	0.00	0.00	100.00	457.82	771.43	2.88	0.95	2018.13
11/29/19 2:45 PM	96.22	46,706.67	7.80	53.2	11.8	0.70	0.05	176	15	16	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	371.93	626.70	3.51	0.88	2021.64
12/2/19 2:15 PM	71.50	46,778.17	7.40	68.5	20.3	0.80	0.06	163	14	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	165.0	94.05	0.00	0.00	0.00	100.00	384.45	647.80	2.43	0.81	2024.07
12/6/19 2:45 PM	96.50	46,874.67	7.50	73.7	23.2	0.80	0.06	170	15	14	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	392.24	660.93	3.45	0.86	2027.52
12/10/19 12:34 PM	93.82	46,968.49	7.50	59.2	15.1	0.75	0.05	152	13	13	2.00	1.14	98.92	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	438.78	739.34	3.45	0.88	2030.98
12/13/19 3:56 PM	75.37	47,043.85	7.20	66.7	19.3	0.75	0.05	166	14	14	8.00	4.56	95.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	175.0	99.75	0.00	0.00	0.00	100.00	409.15	689.41	2.78	0.89	2033.76
12/16/19 1:39 PM	69.72	47,113.57	8.00	65.0	18.3	0.80	0.06	160	14	14	10.00	5.70	94.44	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	180.0	102.60	0.00	0.00	0.00	100.00	422.20	711.41	2.56	0.88	2036.32
12/20/19 11:00 AM	93.35	47,206.92	8.00	60.7	15.9	0.80	0.06	147	13	13	20.00	11.40	88.24	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	402.04	677.44	3.04	0.78	2039.36

Table 7
Soil Vapor Extraction System Summary
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Date	System Operating Parameters										GAC Monitoring VOC Data												System VOC Concentration Data								System VOC Concentration Data		
	Time Operated (hr)	Cumulative System Runtime (hr)	Pre Blower Vacuum (in. $H_2$0)	Chiller Outlet Temp (°F)	Chiller Outlet Temp (°C)	Post Blower Pressure (in $H_2$0) [3]	Post Blower Pressure (psig)	Pre Blower Velocity (afpm)	Vacuum Flow (acfm)	System (Vacuum) Flow (scfm)	Ves D VOCs as Methane (ppmv) [1,2]	Ves D VOCs as PCE (ppmv) [4]	Ves D Control Efficiency (%)	Ves C VOCs as Methane (ppmv)	Ves C VOCs as PCE (ppmv)	Ves C Control Efficiency (%)	Ves B VOCs as Methane (ppmv)	Ves B VOCs as PCE (ppmv)	Ves B Control Efficiency (%)	Ves A VOCs as Methane (ppmv)	Ves A VOCs as PCE (ppmv)	Ves A Control Efficiency (%)	Influent VOCs as Methane (ppmv) [1,2]	Influent VOCs as PCE (ppmv) [4]	Outdoor Ambient VOCs (ppmv)	Effluent VOCs as Methane (ppmv)	Effluent VOCs as PCE (ppmv)	System Control Efficiency (%)	VOCs as Isobutylene (mg/m^3)	VOCs as PCE (mg/m^3)	PCE Mass Removed (lb)	PCE Mass Removal Rate (lb/day)	PCE Cumulative Mass Removed (lb)
12/23/19 2:15 PM	75.25	47,282.17	8.50	49.9	9.9	0.70	0.05	158	14	14	14.00	7.98	92.43	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	185.0	105.45	0.00	0.00	0.00	100.00	446.79	752.84	2.99	0.95	2042.34
12/27/19 12:52 PM	94.62	47,376.79	12.00	59.8	15.4	0.70	0.05	122	11	11	22.00	12.54	85.81	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	155.0	88.35	0.00	0.00	0.00	100.00	367.20	618.74	2.32	0.59	2044.66
12/30/19 2:50 PM	73.97	47,450.75	10.00	54.0	12.2	0.70	0.05	114	10	10	29.00	16.53	82.94	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	170.0	96.90	0.00	0.00	0.00	100.00	407.28	686.28	1.90	0.62	2046.57
1/2/20 11:45 AM	68.92	47,519.67	12.00	57.0	13.9	0.70	0.05	126	11	11	32.00	18.24	78.67	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	357.28	602.02	1.72	0.60	2048.28
1/6/20 12:38 PM	96.88	47,616.55	12.00	57.4	14.1	0.80	0.06	127	11	11	35.00	19.95	79.65	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	172.0	98.04	0.00	0.00	0.00	100.00	409.37	689.78	2.78	0.69	2051.07
1/10/20 1:15 PM	96.62	47,713.17	12.00	61.8	16.6	0.70	0.05	111	10	10	43.00	24.51	62.61	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	115.0	65.55	0.00	0.00	0.00	100.00	271.39	457.30	1.59	0.39	2052.65
1/13/20 12:45 PM	71.50	47,784.67	12.00	61.9	16.6	0.70	0.05	113	10	10	45.00	25.65	59.82	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	112.0	63.84	0.00	0.00	0.00	100.00	264.26	445.29	1.17	0.39	2053.82
1/17/20 11:10 AM	94.42	47,879.09	12.00	57.9	14.4	0.70	0.05	108	9	9	42.00	23.94	23.64	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	55.0	31.35	0.00	0.00	0.00	100.00	130.78	220.36	0.74	0.19	2054.56
1/24/20 12:02 PM	168.87	48,047.95	12.00	64.1	17.8	0.70	0.05	123	11	11	65.00	37.05	24.42	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	86.0	49.02	0.00	0.00	0.00	100.00	202.06	340.48	2.29	0.33	2056.85
1/27/20 2:18 PM	74.27	48,122.22	14.00	64.9	18.3	0.80	0.06	120	10	10	62.00	35.34	32.61	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	92.0	52.44	0.00	0.00	0.00	100.00	215.83	363.68	1.05	0.34	2057.90
3/3/21 2:30 PM	0.00	48,122.22	7.10	66.1	18.9	0.80	0.06	544	47	47	1.00	0.57	100.00	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	100.00	1.0	0.57	0.00	0.00	0.00	100.00	2.34	3.94	0.00	0.00	2057.90
3/8/21 10:54 AM	116.40	48,238.62	7.20	66.5	19.2	0.60	0.04	224	20	19	25.00	14.25	77.27	5.00	2.85	95.45	3.00	1.71	97.27	4.00	2.28	96.36	110.0	62.70	0.00	4.00	2.28	96.36	257.28	433.51	3.65	0.75	2061.55
3/17/21 10:00 AM	215.10	48,453.72	7.00	65.8	18.8	0.78	0.06	221	19	19	55.00	31.35	60.71	0.00	0.00	100.00	0.00	0.00	100.00	2.00	1.14	98.57	140.0	79.80	0.00	2.00	1.14	98.57	327.88	552.48	8.47	0.94	2070.01
3/24/21 9:41 AM	167.68	48,621.40	20.00	72.9	22.7	0.90	0.07	308	27	26	105.00	59.85	19.23	20.00	11.40	84.62	0.00	0.00	100.00	2.00	1.14	98.46	130.0	74.10	0.00	2.00	1.14	98.46	300.40	506.17	8.33	1.19	2078.34
4/1/21 8:35 AM	190.90	48,812.30	6.50	84.3	29.1	0.70	0.05	348	30	29	35.00	19.95	76.67	23.00	13.11	84.67	0.00	0.00	100.00	0.00	0.00	100.00	150.0	85.50	0.00	0.00	0.00	100.00	339.35	571.81	11.85	1.49	2090.19
4/6/21 8:00 AM	119.42	48,931.72	20.00	71.5	21.9	1.50	0.11	446	39	38	73.00	41.61	64.39	34.00	19.38	83.41	0.00	0.00	100.00	0.00	0.00	100.00	205.0	116.85	0.00	0.00	0.00	100.00	474.96	800.30	13.67	2.75	2103.85
4/15/21 9:00 AM	217.00	49,148.72	25.00	74.0	23.3	2.00	0.15	578	50	49	115.00	65.55	17.86	85.00	48.45	39.29	80.00	45.60	42.86	4.00	2.28	97.14	140.0	79.80	0.00	4.00	2.28	97.14	322.84	543.99	21.83	2.41	2125.68
4/21/21 11:00 AM	146.00	49,294.72	25.00	91.5	33.1	2.50	0.18	502	44	42	86.00	49.02	21.82	75.00	42.75	31.82	62.00	35.34	43.64	20.00	11.40	81.82	110.0	62.70	0.00	20.00	11.40	81.82	245.61	413.85	9.42	1.55	2135.10
4/28/21 11:00 AM	168.00	49,462.72	22.00	79.6	26.4	2.30	0.17	433	38	37	145.00	82.65	12.12	132.00	75.24	20.00	125.00	71.25	24.24	69.00	39.33	58.18	165.0	94.05	0.00	69.00	39.33	58.18	376.54	634.47	14.63	2.09	2149.73
5/6/21 11:35 AM	192.58	49,655.30	25.00	79.2	26.2	2.00	0.15	558	49	47	155.00	88.35	17.99	145.00	82.65	23.28	155.00	88.35	17.99	145.00	82.65	23.28	189.0	107.73	0.00	145.00	82.65	23.28	431.63	727.30	24.76	3.09	2174.49

Notes:
-- = No data collected, not applicable
*** = System down; measurements are not representative of actual conditions.*
Historical data verified by others prior to ERM taking ownership January 2014.
Horizontal lines separating measurements indicate system shutdown periods.
1. Photoionization detector is calibrated to 100 ppm isobutylene.
2. Isobutylene conversion factor to methane on photoionization detector is 1 to 1
3. Conversion factor: 1 in. H_2O = 13.70 psig
4. Methane concentration factor to PCE is 0.57.
5. In March 2021, a miscalculation was discovered affecting mass removal data, the data presented represents the corrected data.
AFPM to ACFM Equation:

$$ACFM = AFPM * \pi r^2$$

System (vacuum side) Flowrate Equation:

$$SCFM = ACFM \left(\frac{Gas\ Pressure\ (psia) + 14.7}{14.7}\right)\left(\frac{519}{Gas\ Temperature\ (R)}\right)$$

psig = Pounds per square inch gauge
scfm = Standard cubic feet per minute
Ves = Vessel
VOC = Volatile organic compound

APPENDIX A HISTORICAL GROUNDWATER ELEVATION DATA

Appendix A
Historical Groundwater Elevation Data
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
BIO-01	09/10/2008	287.39	--	--	104.00	183.39
BIO-01	12/02/2008	287.39	--	--	--	--
BIO-01	09/08/2009	287.39	--	--	--	--
BIO-01	06/20/2011	287.39	--	--	100.44	186.95
BIO-01	10/17/2011	287.39	--	--	102.29	185.10
BIO-01	06/18/2012	287.39	--	--	99.72	187.67
BIO-01	11/26/2012	287.39	--	--	102.40	184.99
BIO-01	06/24/2013	287.39	--	--	103.84	183.55
BIO-01	11/18/2013	287.39	104.34*	--	104.10	183.29
BIO-01	05/12/2014	287.39	104.34*	--	104.10	183.29
BIO-01	11/10/2014	287.39	104.34*	--	104.00	183.39
BIO-01	06/22/2015	287.41	104.34*	--	104.00	183.41
BIO-01	09/08/2015	287.41	104.34*	--	103.96	183.45
BIO-01	11/16/2015	287.41	104.34*	--	Dry	--
BIO-01	02/15/2016	287.41	104.34*	--	103.92	183.49
BIO-01	05/09/2016	287.41	104.34*	--	103.98	183.43
BIO-01	08/22/2016	287.41	104.34*	--	103.92	183.49
BIO-01	11/28/2016	287.41	104.34*	--	103.90	183.51
BIO-01	03/06/2017	287.41	104.34*	--	103.96	183.45
BIO-01	05/22/2017	287.41	104.34*	--	Dry	--
BIO-01	06/19/2017	287.41	104.34*	--	Dry	--
BIO-01	08/28/2017	287.41	104.34*	--	Dry	--
BIO-01	12/11/2017	287.41	104.34*	--	103.99	183.42
BIO-01	02/12/2018	287.41	104.34*	--	103.97	183.44
BIO-01	05/21/2018	287.41	104.34*	--	104.02	183.39
BIO-01	07/30/2018	287.41	104.34*	--	Dry	--
BIO-01	10/16/2018	288.41	104.34*	--	103.97	183.44
BIO-01	01/07/2019	288.41	104.34*	--	102.67	184.74
BIO-01	04/22/2019	288.41	104.34*	--	100.84	186.57
BIO-01	07/15/2019	288.41	104.34*	--	100.36	187.05
BIO-01	11/04/2019	287.41	104.34*	--	99.54	187.87
BIO-01	06/15/2020	287.41	104.34*	--	97.60	189.81
IW-01	04/21/2015	288.21	128	103-128	110.00	178.21
IW-01	06/22/2015	288.21	128	103-128	109.30	178.91
IW-01	09/08/2015	288.21	128	103-128	109.89	178.32
IW-01	11/16/2015	288.21	128	103-128	110.45	177.76
IW-01	02/15/2016	288.21	128	103-128	109.75	178.46
IW-01	05/09/2016	288.21	128	103-128	109.37	178.84
IW-01	08/22/2016	288.21	128	103-128	109.70	178.51
IW-01	11/28/2016	288.21	128	103-128	108.39	179.82
IW-01	03/06/2017	288.21	128	103-128	107.30	180.91
IW-01	05/22/2017	288.21	128	103-128	106.64	181.57
IW-01	06/19/2017	288.21	128	103-128	107.30	180.91

Appendix A
Historical Groundwater Elevation Data
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
IW-01	08/28/2017	288.21	128	103-128	107.53	180.68
IW-01	12/11/2017	288.21	128	103-128	107.48	180.73
IW-01	02/12/2018	288.21	128	103-128	106.40	181.81
IW-01	05/21/2018	288.21	128	103-128	105.98	182.23
IW-01	07/30/2018	288.21	128	103-128	105.75	182.46
IW-01	10/16/2018	288.21	128	103-128	104.91	183.30
IW-01	01/07/2019	288.21	128	103-128	103.89	184.32
IW-01	04/22/2019	288.21	128	103-128	101.74	186.47
IW-01	07/15/2019	288.21	128	103-128	101.25	186.96
IW-01	11/04/2019	288.21	128	103-129	100.40	187.81
IW-01	06/15/2020	288.21	128	103-129	98.44	189.77
IW-01	11/09/2020	288.21	128	103-129	98.30	189.91
IW-01	04/05/2021	288.21	128	103-129	97.33	190.88
IW-02	06/22/2015	287.39	131	102.5-127.5	108.52	178.87
IW-02	09/08/2015	287.39	131	102.5-127.5	109.10	178.29
IW-02	11/16/2015	287.39	131	102.5-127.5	109.61	177.78
IW-02	02/15/2016	287.39	131	102.5-127.5	109.00	178.39
IW-02	05/09/2016	287.39	131	102.5-127.5	108.61	178.78
IW-02	08/22/2016	287.39	131	102.5-127.5	108.81	178.58
IW-02	11/28/2016	287.39	131	102.5-127.5	107.60	179.79
IW-02	03/06/2017	287.39	131	102.5-127.5	106.52	180.87
IW-02	05/22/2017	287.39	131	102.5-127.5	105.89	181.50
IW-02	06/19/2017	287.39	131	102.5-127.5	106.50	180.89
IW-02	08/28/2017	287.39	131	102.5-127.5	106.71	180.68
IW-02	12/11/2017	287.39	131	102.5-127.5	106.64	180.75
IW-02	02/12/2018	287.39	131	102.5-127.5	105.63	181.76
IW-02	05/21/2018	287.39	131	102.5-127.5	105.20	182.19
IW-02	07/30/2018	287.39	131	102.5-127.5	104.94	182.45
IW-02	10/16/2018	287.39	131	102.5-127.5	104.10	183.29
IW-02	01/07/2019	287.39	131	102.5-127.5	102.84	184.55
IW-02	04/22/2019	287.39	131	102.5-127.5	100.94	186.45
IW-02	07/15/2019	287.39	131	102.5-127.5	100.48	186.91
IW-02	11/04/2019	287.39	131	102.5-127.6	99.61	187.78
IW-02	06/15/2020	287.39	131	102.5-127.6	97.62	189.77
IW-02	11/09/2020	287.39	131	102.5-127.6	97.50	189.89
IW-02	04/05/2021	287.39	131	102.5-127.6	96.59	190.80
IW-03	04/21/2015	287.48	140	105-140	109.32	178.16
IW-03	06/22/2015	287.48	140	105-140	108.53	178.95
IW-03	09/08/2015	287.48	140	105-140	109.18	178.30
IW-03	11/16/2015	287.48	140	105-140	109.65	177.83
IW-03	02/15/2016	287.48	140	105-140	109.06	178.42
IW-03	05/09/2016	287.48	140	105-140	108.69	178.79
IW-03	08/22/2016	287.48	140	105-140	109.00	178.48

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
IW-03	11/28/2016	287.48	140	105-140	107.69	179.79
IW-03	03/06/2017	287.48	140	105-140	106.50	180.98
IW-03	05/22/2017	287.48	140	105-140	105.96	181.52
IW-03	06/19/2017	287.48	140	105-140	106.62	180.86
IW-03	08/28/2017	287.48	140	105-140	106.85	180.63
IW-03	12/11/2017	287.48	140	105-140	106.76	180.72
IW-03	02/12/2018	287.48	140	105-140	105.72	181.76
IW-03	05/21/2018	287.48	140	105-140	105.31	182.17
IW-03	07/30/2018	287.48	140	105-140	105.01	182.47
IW-03	10/16/2018	287.48	140	105-140	104.17	183.31
IW-03	01/07/2019	287.48	140	105-140	102.91	184.57
IW-03	04/22/2019	287.48	140	105-140	100.97	186.51
IW-03	07/15/2019	287.48	140	105-140	100.48	187.00
IW-03	11/04/2019	287.48	140	105-141	99.64	187.84
IW-03	06/15/2020	287.48	140	105-141	97.68	189.80
IW-03	11/09/2020	287.48	140	105-141	97.56	189.92
IW-03	04/05/2021	287.48	140	105-141	96.65	190.83
IW-04	06/22/2015	287.33	140	105-140	108.40	178.93
IW-04	09/08/2015	287.33	140	105-140	109.00	178.33
IW-04	11/16/2015	287.33	140	105-140	109.47	177.86
IW-04	02/15/2016	287.33	140	105-140	108.94	178.39
IW-04	05/09/2016	287.33	140	105-140	108.52	178.81
IW-04	08/22/2016	287.33	140	105-140	108.85	178.48
IW-04	11/28/2016	287.33	140	105-140	107.51	179.82
IW-04	03/06/2017	287.33	140	105-140	106.48	180.85
IW-04	05/22/2017	287.33	140	105-140	105.84	181.49
IW-04	06/19/2017	287.33	140	105-140	106.52	180.81
IW-04	08/28/2017	287.33	140	105-140	106.69	180.64
IW-04	12/11/2017	287.33	140	105-140	106.63	180.70
IW-04	02/12/2018	287.33	140	105-140	105.82	181.51
IW-04	05/21/2018	287.33	140	105-140	105.02	182.31
IW-04	07/30/2018	287.33	140	105-140	104.87	182.46
IW-04	10/16/2018	287.33	140	105-140	104.05	183.28
IW-04	01/07/2019	287.33	140	105-140	102.82	184.51
IW-04	04/22/2019	287.33	140	105-140	100.89	186.44
IW-04	07/15/2019	287.33	140	105-140	100.38	186.95
IW-04	11/04/2019	287.33	140	105-141	99.52	187.81
IW-04	06/15/2020	287.33	140	105-141	97.55	189.78
IW-04	11/09/2020	287.33	140	105-141	97.45	189.88
IW-04	04/05/2021	287.33	140	105-141	96.51	190.82
IW-05	04/21/2015	287.30	139.5	104.5-139.5	109.22	178.08
IW-05	06/22/2015	287.30	139.5	104.5-139.5	108.42	178.88
IW-05	09/08/2015	287.30	139.5	104.5-139.5	109.05	178.25

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
IW-05	11/16/2015	287.30	139.5	104.5-139.5	109.49	177.81
IW-05	02/15/2016	287.30	139.5	104.5-139.5	109.32	177.98
IW-05	05/09/2016	287.30	139.5	104.5-139.5	108.53	178.77
IW-05	08/22/2016	287.30	139.5	104.5-139.5	108.81	178.49
IW-05	11/28/2016	287.30	139.5	104.5-139.5	107.50	179.80
IW-05	03/06/2017	287.30	139.5	104.5-139.5	106.48	180.82
IW-05	05/22/2017	287.30	139.5	104.5-139.5	105.87	181.43
IW-05	06/19/2017	287.30	139.5	104.5-139.5	106.48	180.82
IW-05	08/28/2017	287.30	139.5	104.5-139.5	106.66	180.64
IW-05	12/11/2017	287.30	139.5	104.5-139.5	106.61	180.69
IW-05	02/12/2018	287.30	139.5	104.5-139.5	105.59	181.71
IW-05	05/21/2018	287.30	139.5	104.5-139.5	105.02	182.28
IW-05	07/30/2018	287.30	139.5	104.5-139.5	104.81	182.49
IW-05	10/16/2018	287.30	139.5	104.5-139.5	104.01	183.29
IW-05	01/07/2019	287.30	139.5	104.5-139.5	102.77	184.53
IW-05	04/22/2019	287.30	139.5	104.5-139.5	100.85	186.45
IW-05	07/15/2019	287.30	139.5	104.5-139.5	100.31	186.99
IW-05	11/04/2019	287.30	139.5	104.5-139.6	99.46	187.84
IW-05	06/15/2020	287.30	139.5	104.5-139.6	97.51	189.79
IW-05	11/09/2020	287.30	139.5	104.5-139.6	97.41	189.89
IW-05	04/05/2021	287.30	139.5	104.5-139.6	96.48	190.82
IW-06	04/21/2015	287.51	140	105-140	109.51	178.00
IW-06	06/22/2015	287.51	140	105-140	108.40	179.11
IW-06	09/08/2015	287.51	140	105-140	109.30	178.21
IW-06	11/16/2015	287.51	140	105-140	109.77	177.74
IW-06	02/15/2016	287.51	140	105-140	109.20	178.31
IW-06	05/09/2016	287.51	140	105-140	108.79	178.72
IW-06	08/22/2016	287.51	140	105-140	109.12	178.39
IW-06	11/28/2016	287.51	140	105-140	107.75	179.76
IW-06	03/06/2017	287.51	140	105-140	106.75	180.76
IW-06	05/22/2017	287.51	140	105-140	106.10	181.41
IW-06	06/19/2017	287.51	140	105-140	106.78	180.73
IW-06	08/28/2017	287.51	140	105-140	106.95	180.56
IW-06	12/11/2017	287.51	140	105-140	106.89	180.62
IW-06	02/12/2018	287.51	140	105-140	105.87	181.64
IW-06	05/21/2018	287.51	140	105-140	105.25	182.26
IW-06	07/30/2018	287.51	140	105-140	105.07	182.44
IW-06	10/16/2018	287.51	140	105-140	104.22	183.29
IW-06	01/07/2019	287.51	140	105-140	103.12	184.39
IW-06	04/22/2019	287.51	140	105-140	101.18	186.33
IW-06	07/15/2019	287.51	140	105-140	100.62	186.89
IW-06	11/04/2019	287.51	140	105-140	99.73	187.78
IW-06	06/15/2020	287.51	140	105-140	97.76	189.75

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
IW-06	11/09/2020	287.51	140	105-140	97.66	189.85
IW-06	04/05/2021	287.51	140	105-140	96.75	190.76
IW-07	04/21/2015	287.14	140	105-140	109.19	177.95
IW-07	06/22/2015	287.14	140	105-140	108.35	178.79
IW-07	09/08/2015	287.14	140	105-140	108.92	178.22
IW-07	11/16/2015	287.14	140	105-140	109.41	177.73
IW-07	02/15/2016	287.14	140	105-140	108.84	178.30
IW-07	05/09/2016	287.14	140	105-140	108.43	178.71
IW-07	08/22/2016	287.14	140	105-140	109.42	177.72
IW-07	11/28/2016	287.14	140	105-140	107.40	179.74
IW-07	03/06/2017	287.14	140	105-140	106.37	180.77
IW-07	05/22/2017	287.14	140	105-140	105.78	181.36
IW-07	06/19/2017	287.14	140	105-140	106.42	180.72
IW-07	08/28/2017	287.14	140	105-140	106.56	180.58
IW-07	12/11/2017	287.14	140	105-140	106.54	180.60
IW-07	02/12/2018	287.14	140	105-140	105.50	181.64
IW-07	05/21/2018	287.14	140	105-140	104.80	182.34
IW-07	07/30/2018	287.14	140	105-140	104.71	182.43
IW-07	10/16/2018	287.14	140	105-140	103.90	183.24
IW-07	01/07/2019	287.14	140	105-140	102.52	184.62
IW-07	04/22/2019	287.14	140	105-140	100.77	186.37
IW-07	07/15/2019	287.14	140	105-140	100.22	186.92
IW-07	11/04/2019	287.14	140	105-140	99.53	187.61
IW-07	06/15/2020	287.14	140	105-140	97.38	189.76
IW-07	11/09/2020	287.14	140	105-140	97.28	189.86
IW-07	04/05/2021	287.14	140	105-140	96.37	190.77
IW-08	04/21/2015	287.40	140	105-140	109.50	177.90
IW-08	06/22/2015	287.40	140	105-140	108.61	178.79
IW-08	09/08/2015	287.40	140	105-140	109.15	178.25
IW-08	11/16/2015	287.40	140	105-140	109.65	177.75
IW-08	02/15/2016	287.40	140	105-140	109.84	177.56
IW-08	05/09/2016	287.40	140	105-140	108.70	178.70
IW-08	08/22/2016	287.40	140	105-140	109.08	178.32
IW-08	11/28/2016	287.40	140	105-140	107.68	179.72
IW-08	03/06/2017	287.40	140	105-140	106.61	180.79
IW-08	05/22/2017	287.40	140	105-140	106.01	181.39
IW-08	06/19/2017	287.40	140	105-140	106.69	180.71
IW-08	08/28/2017	287.40	140	105-140	106.81	180.59
IW-08	12/11/2017	287.40	140	105-140	106.78	180.62
IW-08	02/12/2018	287.40	140	105-140	105.76	181.64
IW-08	05/21/2018	287.40	140	105-140	105.12	182.28
IW-08	07/30/2018	287.40	140	105-140	104.94	182.46
IW-08	10/16/2018	287.40	140	105-140	104.12	183.28

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
IW-08	01/07/2019	287.40	140	105-140	102.96	184.44
IW-08	04/22/2019	287.40	140	105-140	101.14	186.26
IW-08	07/15/2019	287.40	140	105-140	100.49	186.91
IW-08	11/04/2019	287.40	140	105-140	99.62	187.78
IW-08	06/15/2020	287.40	140	105-140	97.66	189.74
IW-08	11/09/2020	287.40	140	105-140	97.59	189.81
IW-08	04/05/2021	287.40	140	105-140	96.69	190.71
MW-01	09/03/1996	287.45	106	86-106	91.15	196.30
MW-01	12/17/1997	287.45	106	86-106	86.67	200.78
MW-01	03/20/1998	287.45	106	86-106	84.21	203.24
MW-01	06/22/1998	287.45	106	86-106	84.75	202.70
MW-01	09/23/1998	287.45	106	86-106	88.69	198.76
MW-01	12/30/1998	287.45	106	86-106	84.86	202.59
MW-01	03/27/1999	287.45	106	86-106	84.76	202.69
MW-01	06/25/1999	287.45	106	86-106	88.01	199.44
MW-01	09/20/1999	287.45	106	86-106	92.02	195.43
MW-01	12/17/1999	287.45	106	86-106	86.17	201.28
MW-01	03/29/2000	287.45	106	86-106	82.12	205.33
MW-01	05/25/2000	287.45	106	86-106	83.44	204.01
MW-01	09/25/2000	287.45	106	86-106	90.25	197.20
MW-01	12/07/2000	287.45	106	86-106	88.65	198.80
MW-01	02/27/2001	287.45	106	86-106	83.69	203.76
MW-01	05/10/2001	287.45	106	86-106	83.12	204.33
MW-01	09/18/2001	287.45	106	86-106	89.57	197.88
MW-01	11/08/2001	287.45	106	86-106	92.27	195.18
MW-01	03/04/2002	287.45	106	86-106	86.26	201.19
MW-01	05/31/2002	287.45	106	86-106	87.65	199.80
MW-01	10/01/2002	287.45	106	86-106	93.20	194.25
MW-01	11/19/2002	287.45	106	86-106	92.75	194.70
MW-01	02/27/2003	287.45	106	86-106	91.82	195.63
MW-01	06/06/2003	287.45	106	86-106	93.22	194.23
MW-01	08/21/2003	287.45	106	86-106	96.69	190.76
MW-01	12/31/2003	287.45	106	86-106	96.23	191.22
MW-01	02/05/2004	287.45	106	86-106	94.90	192.55
MW-01	03/17/2004	287.45	106	86-106	95.51	191.94
MW-01	05/19/2004	287.45	106	86-106	96.63	190.82
MW-01	08/26/2004	287.45	106	86-106	98.07	189.38
MW-01	11/17/2004	287.45	106	86-106	95.88	191.57
MW-01	05/12/2005	287.45	106	86-106	92.12	195.33
MW-01	08/03/2005	287.45	106	86-106	98.98	188.47
MW-01	11/22/2005	287.45	106	86-106	98.04	189.41
MW-01	06/05/2006	287.45	106	86-106	96.17	191.28
MW-01	11/06/2006	287.45	106	86-106	101.65	185.80

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-01	05/23/2007	287.45	106	86-106	102.00	185.45
MW-01	11/28/2007	287.45	106	86-106	--	--
MW-01	06/09/2008	287.45	106	86-106	--	--
MW-01	09/10/2008	287.45	106	86-106	--	--
MW-01	12/02/2008	287.45	106	86-106	--	--
MW-01	09/08/2009	287.45	106	86-106	--	--
MW-01	06/28/2010	287.45	106	86-106	103.90	183.55
MW-01	12/13/2010	287.45	106	86-106	--	--
MW-01	06/20/2011	287.45	106	86-106	100.52	186.93
MW-01	12/08/2011	287.45	106	86-106	101.40	186.05
MW-01	06/18/2012	287.45	106	86-106	99.75	187.70
MW-01	11/26/2012	287.45	106	86-106	102.52	184.93
MW-01	06/24/2013	287.45	106	86-106	104.16	183.29
MW-01	11/18/2013	287.45	106	86-106	104.35	183.10
MW-01	05/12/2014	287.45	106	86-106	104.32	183.13
MW-01	11/10/2014	287.45	106	86-106	104.30	183.15
MW-01	06/22/2015	287.42	106	86-106	--	--
MW-01	09/08/2015	287.42	106	86-106	--	--
MW-01	11/16/2015	287.42	106	86-106	Dry	--
MW-01	02/15/2016	287.42	106	86-106	104.29	183.13
MW-01	05/09/2016	287.42	106	86-106	Dry	--
MW-01	08/22/2016	287.42	106	86-106	Dry	--
MW-01	11/28/2016	287.42	106	86-106	Dry	--
MW-01	03/06/2017	287.42	106	86-106	Dry	--
MW-01	05/22/2017	287.42	106	86-106	Dry	--
MW-01	06/19/2017	287.42	106	86-106	Dry	--
MW-01	08/28/2017	287.42	106	86-106	Dry	--
MW-01	12/11/2017	287.42	106	86-106	Dry	--
MW-01	02/12/2018	287.42	106	86-106	104.34	183.08
MW-01	05/21/2018	287.42	106	86-106	108.36	179.06
MW-01	07/30/2018	287.42	106	86-106	Dry	--
MW-01	10/16/2018	287.42	106	86-106	104.21	183.21
MW-01	01/07/2019	287.42	106	86-106	102.81	184.61
MW-01	04/22/2019	287.42	106	86-106	100.90	186.52
MW-01	07/15/2019	287.42	106	86-106	100.45	186.97
MW-01	11/04/2019	287.42	106	86-106	99.62	187.80
MW-01	06/15/2020	287.42	106	86-106	97.75	189.67
MW-01D	12/13/2010	287.55	195	176-186	103.50	184.05
MW-01D	06/20/2011	287.55	195	176-186	100.64	186.91
MW-01D	10/17/2011	287.55	195	176-186	102.12	185.43
MW-01D	06/18/2012	287.55	195	176-186	100.20	187.35
MW-01D	11/26/2012	287.55	195	176-186	102.70	184.85
MW-01D	06/24/2013	287.55	195	176-186	104.40	183.15

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-01D	11/18/2013	287.55	195	176-186	106.50	181.05
MW-01D	05/12/2014	287.55	195	176-186	106.87	180.68
MW-01D	11/10/2014	287.55	195	176-186	107.81	179.74
MW-01D	06/22/2015	287.48	195	176-186	108.64	178.84
MW-01D	09/08/2015	287.48	195	176-186	108.95	178.53
MW-01D	11/16/2015	287.48	195	176-186	109.37	178.11
MW-01D	02/15/2016	287.48	195	176-186	109.38	178.10
MW-01D	05/09/2016	287.48	195	176-186	108.96	178.52
MW-01D	08/22/2016	287.48	195	176-186	109.09	178.39
MW-01D	11/28/2016	287.48	195	176-186	107.87	179.61
MW-01D	03/06/2017	287.48	195	176-186	106.51	180.97
MW-01D	05/22/2017	287.48	195	176-186	105.83	181.65
MW-01D	06/19/2017	287.48	195	176-186	106.57	180.91
MW-01D	08/28/2017	287.48	195	176-186	106.69	180.79
MW-01D	12/11/2017	287.48	195	176-186	106.66	180.82
MW-01D	02/12/2018	287.48	195	176-186	105.45	182.03
MW-01D	05/21/2018	287.48	195	176-186	105.24	182.24
MW-01D	07/30/2018	287.48	195	176-186	104.97	182.51
MW-01D	10/16/2018	287.48	195	176-186	104.24	183.24
MW-01D	01/07/2019	287.48	195	176-186	102.84	184.64
MW-01D	04/22/2019	287.48	195	176-186	100.97	186.51
MW-01D	07/15/2019	287.48	195	176-186	100.52	186.96
MW-01D	11/04/2019	287.48	195	176-186	99.69	187.79
MW-01D	06/15/2020	287.48	195	176-186	97.74	189.74
MW-02	12/17/1997	286.26	105	85-105	85.41	200.85
MW-02	03/20/1998	286.26	106	85-105	82.98	203.28
MW-02	06/22/1998	286.26	107	85-105	82.20	204.06
MW-02	09/23/1998	286.26	108	85-105	87.50	198.76
MW-02	12/30/1998	286.26	109	85-105	83.48	202.78
MW-02	03/27/1999	286.26	110	85-105	83.42	202.84
MW-02	06/25/1999	286.26	111	85-105	86.80	199.46
MW-02	09/20/1999	286.26	112	85-105	90.86	195.40
MW-02	12/17/1999	286.26	113	85-105	84.12	202.14
MW-02	03/29/2000	286.26	114	85-105	80.88	205.38
MW-02	05/25/2000	286.26	115	85-105	82.12	204.14
MW-02	09/25/2000	286.26	116	85-105	89.14	197.12
MW-02	12/07/2000	286.26	117	85-105	87.49	198.77
MW-02	02/27/2001	286.26	118	85-105	82.46	203.80
MW-02	05/10/2001	286.26	119	85-105	81.92	204.34
MW-02	09/18/2001	286.26	120	85-105	88.27	197.99
MW-02	11/08/2001	286.26	121	85-105	91.13	195.13
MW-02	03/04/2002	286.26	122	85-105	85.01	201.25
MW-02	03/11/2002	286.26	123	85-105	--	--

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-02	05/31/2002	286.26	124	85-105	86.51	199.75
MW-02	10/01/2002	286.26	125	85-105	92.00	194.26
MW-02	11/19/2002	286.26	126	85-105	91.60	194.66
MW-02	02/27/2003	286.26	127	85-105	91.72	194.54
MW-02	06/06/2003	286.26	128	85-105	92.14	194.12
MW-02	08/21/2003	286.26	129	85-105	95.53	190.73
MW-02	12/31/2003	286.26	130	85-105	95.00	191.26
MW-02	02/05/2004	286.26	131	85-105	93.61	192.65
MW-02	03/17/2004	286.26	132	85-105	94.44	191.82
MW-02	05/19/2004	286.26	133	85-105	95.43	190.83
MW-02	08/26/2004	286.26	134	85-105	96.81	189.45
MW-02	11/17/2004	286.26	135	85-105	94.82	191.44
MW-02	05/12/2005	286.26	136	85-105	96.41	189.85
MW-02	08/03/2005	286.26	137	85-105	97.32	188.94
MW-02	11/22/2005	286.26	138	85-105	96.71	189.55
MW-02	06/05/2006	286.26	139	85-105	94.99	191.27
MW-02	11/06/2006	286.26	140	85-105	--	--
MW-02	05/23/2007	286.26	141	85-105	--	--
MW-02	11/28/2007	286.26	142	85-105	--	--
MW-02	06/09/2008	286.26	143	85-105	--	--
MW-02	09/10/2008	286.26	144	85-105	--	--
MW-02	12/02/2008	286.26	145	85-105	--	--
MW-02	09/08/2009	286.26	146	85-105	--	--
MW-02	06/28/2010	286.26	147	85-105	--	--
MW-02	12/13/2010	286.26	148	85-105	--	--
MW-02	06/20/2011	286.26	149	85-105	--	--
MW-02	12/08/2011	286.26	150	85-105	--	--
MW-02	06/18/2012	286.26	151	85-105	--	--
MW-02	11/26/2012	286.26	152	85-105	--	--
MW-02	06/24/2013	286.26	153	85-105	--	--
MW-02	11/18/2013	286.26	153	85-105	Dry	--
MW-02	05/12/2014	286.26	153	85-105	Dry	--
MW-02	11/10/2014	286.26	153	85-105	98.48	187.78
MW-02	06/22/2015	286.24	153	85-105	--	--
MW-02	09/08/2015	286.24	153	85-105	--	--
MW-02	11/16/2015	286.24	153	85-105	Dry	--
MW-02	02/15/2016	286.24	153	85-105	Dry	--
MW-02	05/09/2016	286.24	153	85-105	Dry	--
MW-02	08/22/2016	286.24	153	85-105	Dry	--
MW-02	11/28/2016	286.24	153	85-105	Dry	--
MW-02	03/06/2017	286.24	153	85-105	Dry	--
MW-02	05/22/2017	286.24	153	85-105	Dry	--
MW-02	06/19/2017	286.24	153	85-105	Dry	--

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-02	08/28/2017	286.24	153	85-105	Dry	--
MW-02	12/11/2017	286.24	153	85-105	Dry	--
MW-02	02/12/2018	286.24	153	85-105	98.32	187.92
MW-02	05/21/2018	286.24	153	85-105	103.23	183.01
MW-02	07/30/2018	286.24	153	85-105	Dry	--
MW-02	10/16/2018	286.24	153	85-105	Dry	--
MW-02	01/07/2019	286.24	153	85-105	Dry	--
MW-02	04/22/2019	286.24	153	85-105	98.43	187.81
MW-02	07/15/2019	286.24	153	85-105	98.43	187.81
MW-02	11/04/2019	286.24	153	85-105	98.42	187.82
MW-02	06/15/2020	286.24	153	85-105	96.51	189.73
MW-02	11/09/2020	286.24	153	85-105	96.48	189.76
MW-02	04/05/2021	286.24	153	85-105	95.52	190.72
MW-03	09/03/1996	288.43	107	87-107	91.92	196.51
MW-03	12/17/1997	288.43	107	87-107	87.51	200.92
MW-03	03/20/1998	288.43	107	87-107	84.97	203.46
MW-03	06/22/1998	288.43	107	87-107	84.28	204.15
MW-03	09/23/1998	288.43	107	87-107	89.35	199.08
MW-03	12/30/1998	288.43	107	87-107	85.50	202.93
MW-03	03/27/1999	288.43	107	87-107	85.45	202.98
MW-03	06/25/1999	288.43	107	87-107	88.50	199.93
MW-03	09/20/1999	288.43	107	87-107	92.52	195.91
MW-03	12/17/1999	288.43	107	87-107	85.45	202.98
MW-03	03/29/2000	288.43	107	87-107	82.86	205.57
MW-03	05/25/2000	288.43	107	87-107	84.10	204.33
MW-03	09/25/2000	288.43	107	87-107	90.83	197.60
MW-03	12/07/2000	288.43	107	87-107	89.12	199.31
MW-03	02/27/2001	288.43	107	87-107	84.25	204.18
MW-03	05/10/2001	288.43	107	87-107	83.93	204.50
MW-03	09/18/2001	288.43	107	87-107	90.29	198.14
MW-03	11/08/2001	288.43	107	87-107	92.93	195.50
MW-03	03/04/2002	288.43	107	87-107	87.15	201.28
MW-03	05/31/2002	288.43	107	87-107	88.43	200.00
MW-03	10/01/2002	288.43	107	87-107	94.00	194.43
MW-03	11/19/2002	288.43	107	87-107	93.30	195.13
MW-03	02/27/2003	288.43	107	87-107	90.68	197.75
MW-03	06/06/2003	288.43	107	87-107	93.18	195.25
MW-03	08/21/2003	288.43	107	87-107	97.46	190.97
MW-03	12/31/2003	288.43	107	87-107	96.91	191.52
MW-03	02/05/2004	288.43	107	87-107	95.55	192.88
MW-03	03/17/2004	288.43	107	87-107	96.19	192.24
MW-03	05/19/2004	288.43	107	87-107	97.32	191.11
MW-03	08/26/2004	288.43	107	87-107	99.03	189.40

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-03	11/17/2004	288.43	107	87-107	96.64	191.79
MW-03	05/12/2005	288.43	107	87-107	93.24	195.19
MW-03	08/03/2005	288.43	107	87-107	99.25	189.18
MW-03	11/22/2005	288.43	107	87-107	98.84	189.59
MW-03	06/05/2006	288.43	107	87-107	97.00	191.43
MW-03	11/06/2006	288.43	107	87-107	102.60	185.83
MW-03	05/23/2007	288.43	107	87-107	102.90	185.53
MW-03	11/28/2007	288.43	107	87-107	--	--
MW-03	06/09/2008	288.43	107	87-107	--	--
MW-03	09/10/2008	288.43	107	87-107	103.45	184.98
MW-03	12/02/2008	288.43	107	87-107	--	--
MW-03	09/08/2009	288.43	107	87-107	--	--
MW-03	06/28/2010	288.43	107	87-107	103.25	185.18
MW-03	12/13/2010	288.43	107	87-107	--	--
MW-03	06/20/2011	288.43	107	87-107	101.20	187.23
MW-03	12/08/2011	288.43	107	87-107	102.12	186.31
MW-03	06/18/2012	288.43	107	87-107	100.65	187.78
MW-03	11/26/2012	288.43	107	87-107	103.20	185.23
MW-03	06/24/2013	288.43	107	87-107	103.35	185.08
MW-03	11/18/2013	288.43	107	87-107	103.55	184.88
MW-03	05/12/2014	288.43	107	87-107	103.55	184.88
MW-03	11/10/2014	288.43	107	87-107	Dry	--
MW-03	06/22/2015	288.38	107	87-107	--	--
MW-03	09/08/2015	288.38	107	87-107	--	--
MW-03	11/16/2015	288.38	107	87-107	Dry	--
MW-03	02/15/2016	288.38	107	87-107	Dry	--
MW-03	05/09/2016	288.38	107	87-107	Dry	--
MW-03	08/22/2016	288.38	107	87-107	Dry	--
MW-03	11/28/2016	288.38	107	87-107	Dry	--
MW-03	03/06/2017	288.38	107	87-107	Dry	--
MW-03	05/22/2017	288.38	107	87-107	Dry	--
MW-03	06/19/2017	288.38	107	87-107	Dry	--
MW-03	08/28/2017	288.38	107	87-107	Dry	--
MW-03	12/11/2017	288.38	107	87-107	Dry	--
MW-03	02/12/2018	288.38	107	87-107	103.55	184.83
MW-03	05/21/2018	288.38	107	87-107	103.70	184.68
MW-03	07/30/2018	288.38	107	87-107	Dry	--
MW-03	10/16/2018	288.38	107	87-107	Dry	--
MW-03	01/07/2019	288.38	107	87-107	Dry	--
MW-03	04/22/2019	288.38	107	87-107	100.94	187.44
MW-03	07/15/2019	288.38	107	87-107	100.55	187.83
MW-03	11/04/2019	288.38	107	87-107	99.73	188.65
MW-03	06/15/2020	288.38	107	87-107	Dry	--

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-04	10/01/2002	288.32	112	87-112	94.40	193.92
MW-04	11/19/2002	288.32	112	87-112	94.10	194.22
MW-04	02/27/2003	288.32	112	87-112	93.06	195.26
MW-04	06/06/2003	288.32	112	87-112	94.44	193.88
MW-04	08/21/2003	288.32	112	87-112	97.88	190.44
MW-04	12/31/2003	288.32	112	87-112	97.59	190.73
MW-04	02/05/2004	288.32	112	87-112	96.10	192.22
MW-04	03/17/2004	288.32	112	87-112	97.10	191.22
MW-04	05/19/2004	288.32	112	87-112	97.86	190.46
MW-04	08/26/2004	288.32	112	87-112	99.14	189.18
MW-04	11/17/2004	288.32	112	87-112	97.15	191.17
MW-04	05/12/2005	288.32	112	87-112	93.15	195.17
MW-04	08/03/2005	288.32	112	87-112	99.60	188.72
MW-04	11/22/2005	288.32	112	87-112	99.18	189.14
MW-04	06/05/2006	288.32	112	87-112	97.31	191.01
MW-04	11/06/2006	288.32	112	87-112	102.81	185.51
MW-04	05/23/2007	288.32	112	87-112	103.09	185.23
MW-04	11/28/2007	288.32	112	87-112	108.13	180.19
MW-04	06/09/2008	288.32	112	87-112	107.64	180.68
MW-04	09/10/2008	288.32	112	87-112	--	--
MW-04	12/02/2008	288.32	112	87-112	--	--
MW-04	09/08/2009	288.32	112	87-112	--	--
MW-04	06/28/2010	288.32	112	87-112	--	--
MW-04	12/13/2010	288.32	112	87-112	--	--
MW-04	06/20/2011	288.32	112	87-112	102.73	185.59
MW-04	10/17/2011	288.32	112	87-112	103.83	184.49
MW-04	06/18/2012	288.32	112	87-112	101.40	186.92
MW-04	11/26/2012	288.32	112	87-112	104.20	184.12
MW-04	06/24/2013	288.32	112	87-112	104.06	184.26
MW-04	11/18/2013	288.32	112	87-112	104.30	184.02
MW-04	05/12/2014	288.32	112	87-112	Dry	--
MW-04	11/10/2014	288.32	112	87-112	Dry	--
MW-04	06/22/2015	288.78	112	87-112	--	--
MW-04	09/08/2015	288.78	112	87-112	--	--
MW-04	11/16/2015	288.78	112	87-112	Dry	--
MW-04	02/15/2016	288.78	112	87-112	Dry	--
MW-04	05/09/2016	288.78	112	87-112	Dry	--
MW-04	08/22/2016	288.78	112	87-112	Dry	--
MW-04	11/28/2016	288.78	112	87-112	Dry	--
MW-04	03/06/2017	288.78	112	87-112	Dry	--
MW-04	05/22/2017	288.78	112	87-112	Dry	--
MW-04	06/19/2017	288.78	112	87-112	Dry	--
MW-04	08/28/2017	288.78	112	87-112	Dry	--

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-04	12/11/2017	288.78	112	87-112	Dry	--
MW-04	02/12/2018	288.78	112	87-112	104.11	184.67
MW-04	05/21/2018	288.78	112	87-112	104.60	184.18
MW-04	07/30/2018	288.78	112	87-112	Dry	--
MW-04	10/16/2018	288.78	112	87-112	104.59	184.19
MW-04	01/07/2019	288.78	112	87-112	104.06	184.72
MW-04	04/22/2019	288.78	112	87-112	102.11	186.67
MW-04	07/15/2019	288.78	112	87-112	101.70	187.08
MW-04	11/04/2019	288.78	112	87-112	100.92	187.86
MW-04	06/15/2020	288.78	112	87-112	99.00	189.78
MW-05D	06/28/2010	285.79	202	180-190	102.29	183.50
MW-05D	12/13/2010	285.79	202	180-190	104.30	181.49
MW-05D	06/20/2011	285.79	202	180-190	99.19	186.60
MW-05D	10/17/2011	285.79	202	180-190	101.08	184.71
MW-05D	06/18/2012	285.79	202	180-190	98.10	187.69
MW-05D	11/26/2012	285.79	202	180-190	101.65	184.14
MW-05D	06/24/2013	285.79	202	180-190	103.05	182.74
MW-05D	11/18/2013	285.79	202	180-190	105.20	180.59
MW-05D	05/12/2014	285.79	202	180-190	105.91	179.88
MW-05D	11/10/2014	285.79	202	180-190	106.47	179.32
MW-05D	06/22/2015	285.75	202	180-190	106.99	178.76
MW-05D	09/08/2015	285.75	202	180-190	107.63	178.12
MW-05D	11/16/2015	285.75	202	180-190	108.14	177.61
MW-05D	02/15/2016	285.75	202	180-190	107.50	178.25
MW-05D	05/09/2016	285.75	202	180-190	107.11	178.64
MW-05D	08/22/2016	285.75	202	180-190	107.81	177.94
MW-05D	11/28/2016	285.75	202	180-190	106.30	179.45
MW-05D	03/06/2017	285.75	202	180-190	105.11	180.64
MW-05D	05/22/2017	285.75	202	180-190	104.42	181.33
MW-05D	06/19/2017	285.75	202	180-190	105.12	180.63
MW-05D	08/28/2017	285.75	202	180-190	105.00	180.75
MW-05D	12/11/2017	285.75	202	180-190	105.13	180.62
MW-05D	02/12/2018	285.75	202	180-190	103.49	182.26
MW-05D	05/21/2018	285.75	202	180-190	103.31	182.44
MW-05D	07/30/2018	285.75	202	180-190	103.21	182.54
MW-05D	10/16/2018	285.75	202	180-190	102.45	183.30
MW-05D	01/07/2019	285.75	202	180-190	101.23	184.52
MW-05D	04/22/2019	285.75	202	180-190	99.31	186.44
MW-05D	07/15/2019	285.75	202	180-190	98.79	186.96
MW-05D	11/04/2019	285.75	202	180-190	97.90	187.85
MW-05D	06/15/2020	285.75	202	180-190	--	--
MW-05D	11/09/2020	285.75	202	180-190	--	--
MW-05D	04/05/2021	285.75	202	180-190	--	--

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-05S	03/11/2002	285.79	112	87-112	--	--
MW-05S	10/01/2002	285.79	112	87-112	91.90	193.89
MW-05S	11/19/2002	285.79	112	87-112	92.20	193.59
MW-05S	02/27/2003	285.79	112	87-112	90.96	194.83
MW-05S	06/06/2003	285.79	112	87-112	92.34	193.45
MW-05S	08/21/2003	285.79	112	87-112	95.32	190.47
MW-05S	12/31/2003	285.79	112	87-112	95.04	190.75
MW-05S	02/05/2004	285.79	112	87-112	93.31	192.48
MW-05S	03/17/2004	285.79	112	87-112	94.74	191.05
MW-05S	05/19/2004	285.79	112	87-112	95.46	190.33
MW-05S	08/26/2004	285.79	112	87-112	96.13	189.66
MW-05S	11/17/2004	285.79	112	87-112	94.88	190.91
MW-05S	05/12/2005	285.79	112	87-112	90.99	194.80
MW-05S	08/03/2005	285.79	112	87-112	97.11	188.68
MW-05S	11/22/2005	285.79	112	87-112	96.08	189.71
MW-05S	06/05/2006	285.79	112	87-112	94.61	191.18
MW-05S	11/06/2006	285.79	112	87-112	99.81	185.98
MW-05S	05/23/2007	285.79	112	87-112	100.57	185.22
MW-05S	11/28/2007	285.79	112	87-112	106.44	179.35
MW-05S	06/09/2008	285.79	112	87-112	109.13	176.66
MW-05S	09/10/2008	285.79	112	87-112	107.33	178.46
MW-05S	12/02/2008	285.79	112	87-112	105.72	180.07
MW-05S	09/08/2009	285.79	112	87-112	104.10	181.69
MW-05S	06/28/2010	285.79	112	87-112	102.01	183.78
MW-05S	12/13/2010	285.79	112	87-112	104.19	181.60
MW-05S	06/20/2011	285.79	112	87-112	99.04	186.75
MW-05S	10/17/2011	285.79	112	87-112	101.01	184.78
MW-05S	06/18/2012	285.79	112	87-112	98.00	187.79
MW-05S	11/26/2012	285.79	112	87-112	101.37	184.42
MW-05S	06/24/2013	285.79	112	87-112	103.05	182.74
MW-05S	11/18/2013	285.79	112	87-112	104.62	181.17
MW-05S	05/12/2014	285.79	112	87-112	105.89	179.90
MW-05S	11/10/2014	285.79	112	87-112	106.31	179.48
MW-05S	04/21/2015	285.93	112	87-112	108.35	177.58
MW-05S	06/22/2015	285.93	112	87-112	107.14	178.79
MW-05S	09/08/2015	285.93	112	87-112	107.60	178.33
MW-05S	11/16/2015	285.93	112	87-112	107.97	177.96
MW-05S	02/15/2016	285.93	112	87-112	107.75	178.18
MW-05S	05/09/2016	285.93	112	87-112	107.32	178.61
MW-05S	08/22/2016	285.93	112	87-112	107.81	178.12
MW-05S	11/28/2016	285.93	112	87-112	106.55	179.38
MW-05S	03/06/2017	285.93	112	87-112	104.83	181.10
MW-05S	05/22/2017	285.93	112	87-112	104.34	181.59

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-05S	06/19/2017	285.93	112	87-112	105.10	180.83
MW-05S	08/28/2017	285.93	112	87-112	105.01	180.92
MW-05S	12/11/2017	285.93	112	87-112	105.11	180.82
MW-05S	02/12/2018	285.93	112	87-112	104.05	181.88
MW-05S	05/21/2018	285.93	112	87-112	101.81	184.12
MW-05S	07/30/2018	285.93	112	87-112	101.78	184.15
MW-05S	10/16/2018	285.93	112	87-112	102.53	183.40
MW-05S	01/07/2019	285.93	112	87-112	101.84	184.09
MW-05S	04/22/2019	285.93	112	87-112	99.37	186.56
MW-05S	07/15/2019	285.93	112	87-112	98.85	187.08
MW-05S	11/04/2019	285.93	112	87-112	97.96	187.97
MW-05S	06/15/2020	285.93	112	87-112	96.10	189.83
MW-05S	11/09/2020	285.93	112	87-112	--	--
MW-05S	04/05/2021	285.93	112	87-112	--	--
MW-06	10/01/2002	286.54	112	87-112	92.80	193.74
MW-06	11/19/2002	286.54	112	87-112	93.20	193.34
MW-06	02/27/2003	286.54	112	87-112	91.97	194.57
MW-06	06/06/2003	286.54	112	87-112	93.25	193.29
MW-06	08/21/2003	286.54	112	87-112	96.16	190.38
MW-06	12/31/2003	286.54	112	87-112	96.03	190.51
MW-06	02/05/2004	286.54	112	87-112	94.36	192.18
MW-06	03/17/2004	286.54	112	87-112	95.66	190.88
MW-06	05/19/2004	286.54	112	87-112	96.41	190.13
MW-06	08/26/2004	286.54	112	87-112	97.00	189.54
MW-06	11/17/2004	286.54	112	87-112	95.84	190.70
MW-06	05/12/2005	286.54	112	87-112	91.81	194.73
MW-06	08/03/2005	286.54	112	87-112	97.80	188.74
MW-06	11/22/2005	286.54	112	87-112	97.13	189.41
MW-06	06/05/2006	286.54	112	87-112	95.43	191.11
MW-06	11/06/2006	286.54	112	87-112	100.77	185.77
MW-06	05/23/2007	286.54	112	87-112	101.22	185.32
MW-06	11/28/2007	286.54	112	87-112	107.30	179.24
MW-06	06/09/2008	286.54	112	87-112	105.06	181.48
MW-06	09/10/2008	286.54	112	87-112	108.05	178.49
MW-06	12/02/2008	286.54	112	87-112	106.55	179.99
MW-06	09/08/2009	286.54	112	87-112	104.80	181.74
MW-06	06/28/2010	286.54	112	87-112	103.02	183.52
MW-06	12/13/2010	286.54	112	87-112	105.26	181.28
MW-06	06/20/2011	286.54	112	87-112	100.13	186.41
MW-06	10/17/2011	286.54	112	87-112	102.10	184.44
MW-06	06/18/2012	286.54	112	87-112	98.83	187.71
MW-06	11/26/2012	286.54	112	87-112	102.23	184.31
MW-06	06/24/2013	286.54	112	87-112	103.77	182.77

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-06	11/18/2013	286.54	112	87-112	105.10	181.44
MW-06	05/12/2014	286.54	112	87-112	106.55	179.99
MW-06	11/10/2014	286.54	112	87-112	107.02	179.52
MW-06	04/21/2015	286.54	112	87-112	108.86	177.68
MW-06	06/22/2015	286.54	112	87-112	107.73	178.81
MW-06	09/08/2015	286.54	112	87-112	108.32	178.22
MW-06	11/16/2015	286.54	112	87-112	108.56	177.98
MW-06	02/15/2016	286.54	112	87-112	108.92	177.62
MW-06	05/09/2016	286.54	112	87-112	108.46	178.08
MW-06	08/22/2016	286.54	112	87-112	109.24	177.30
MW-06	11/28/2016	286.54	112	87-112	107.60	178.94
MW-06	03/06/2017	286.54	112	87-112	106.20	180.34
MW-06	05/22/2017	286.54	112	87-112	106.03	180.51
MW-06	06/19/2017	286.54	112	87-112	107.14	179.40
MW-06	08/28/2017	286.54	112	87-112	106.90	179.64
MW-06	12/11/2017	286.54	112	87-112	107.26	179.28
MW-06	02/12/2018	286.54	112	87-112	104.89	181.65
MW-06	05/21/2018	286.54	112	87-112	104.23	182.31
MW-06	07/30/2018	286.54	112	87-112	103.99	182.55
MW-06	10/16/2018	286.54	112	87-112	103.21	183.33
MW-06	01/07/2019	286.54	112	87-112	--	--
MW-06	04/22/2019	286.54	112	87-112	--	--
MW-06	07/15/2019	286.54	112	87-112	--	--
MW-06	11/04/2019	286.54	112	87-112	98.67	187.87
MW-06	06/15/2020	286.54	112	87-112	Dry	--
MW-07	10/01/2002	287.58	114	89-114	93.90	193.68
MW-07	11/19/2002	287.58	114	89-114	94.25	193.33
MW-07	02/27/2003	287.58	114	89-114	92.95	194.63
MW-07	06/06/2003	287.58	114	89-114	94.02	193.56
MW-07	08/21/2003	287.58	114	89-114	97.00	190.58
MW-07	12/31/2003	287.58	114	89-114	97.22	190.36
MW-07	02/05/2004	287.58	114	89-114	95.82	191.76
MW-07	03/17/2004	287.58	114	89-114	96.77	190.81
MW-07	05/19/2004	287.58	114	89-114	97.66	189.92
MW-07	08/26/2004	287.58	114	89-114	98.31	189.27
MW-07	11/17/2004	287.58	114	89-114	96.99	190.59
MW-07	05/12/2005	287.58	114	89-114	92.46	195.12
MW-07	08/03/2005	287.58	114	89-114	98.38	189.20
MW-07	11/22/2005	287.58	114	89-114	98.67	188.91
MW-07	06/05/2006	287.58	114	89-114	96.20	191.38
MW-07	11/06/2006	287.58	114	89-114	101.90	185.68
MW-07	05/23/2007	287.58	114	89-114	102.00	185.58
MW-07	11/28/2007	287.58	114	89-114	108.10	179.48

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-07	06/09/2008	287.58	114	89-114	106.15	181.43
MW-07	09/10/2008	287.58	114	89-114	108.76	178.82
MW-07	12/02/2008	287.58	114	89-114	107.17	180.41
MW-07	09/08/2009	287.58	114	89-114	105.90	181.68
MW-07	06/28/2010	287.58	114	89-114	104.39	183.19
MW-07	12/13/2010	287.58	114	89-114	106.39	181.19
MW-07	06/20/2011	287.58	114	89-114	101.81	185.77
MW-07	10/17/2011	287.58	114	89-114	103.65	183.93
MW-07	06/18/2012	287.58	114	89-114	100.22	187.36
MW-07	11/26/2012	287.58	114	89-114	103.29	184.29
MW-07	06/24/2013	287.58	114	89-114	104.61	182.97
MW-07	11/18/2013	287.58	114	89-114	106.03	181.55
MW-07	05/12/2014	287.58	114	89-114	107.35	180.23
MW-07	11/10/2014	287.58	114	89-114	107.90	179.68
MW-07	06/22/2015	287.57	114	89-114	108.70	178.87
MW-07	09/08/2015	287.57	114	89-114	109.28	178.29
MW-07	11/16/2015	287.57	114	89-114	109.74	177.83
MW-07	02/15/2016	287.57	114	89-114	--	--
MW-07	05/09/2016	287.57	114	89-114	108.82	178.75
MW-07	08/22/2016	287.57	114	89-114	109.00	178.57
MW-07	11/28/2016	287.57	114	89-114	107.69	179.88
MW-07	03/06/2017	287.57	114	89-114	106.85	180.72
MW-07	05/22/2017	287.57	114	89-114	106.19	181.38
MW-07	06/19/2017	287.57	114	89-114	106.86	180.71
MW-07	08/28/2017	287.57	114	89-114	106.95	180.62
MW-07	12/11/2017	287.57	114	89-114	106.88	180.69
MW-07	02/12/2018	287.57	114	89-114	106.01	181.56
MW-07	05/21/2018	287.57	114	89-114	105.14	182.43
MW-07	07/30/2018	287.57	114	89-114	104.94	182.63
MW-07	10/16/2018	287.57	114	89-114	104.17	183.40
MW-07	01/07/2019	287.57	114	89-114	103.05	184.52
MW-07	04/22/2019	287.57	114	89-114	101.19	186.38
MW-07	07/15/2019	287.57	114	89-114	100.43	187.14
MW-07	11/04/2019	287.57	114	89-114	99.42	188.15
MW-07	06/15/2020	287.57	114	89-114	97.51	190.06
MW-08	12/31/2003	286.03	113	88-113	95.54	190.49
MW-08	02/05/2004	286.03	113	88-113	93.66	192.37
MW-08	03/17/2004	286.03	113	88-113	95.14	190.89
MW-08	05/19/2004	286.03	113	88-113	96.02	190.01
MW-08	08/26/2004	286.03	113	88-113	96.22	189.81
MW-08	11/17/2004	286.03	113	88-113	95.50	190.53
MW-08	05/12/2005	286.03	113	88-113	90.80	195.23
MW-08	08/03/2005	286.03	113	88-113	97.30	188.73

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-08	11/22/2005	286.03	113	88-113	96.37	189.66
MW-08	06/05/2006	286.03	113	88-113	94.84	191.19
MW-08	11/06/2006	286.03	113	88-113	100.02	186.01
MW-08	05/23/2007	286.03	113	88-113	100.68	185.35
MW-08	11/28/2007	286.03	113	88-113	106.90	179.13
MW-08	06/09/2008	286.03	113	88-113	104.42	181.61
MW-08	09/10/2008	286.03	113	88-113	107.70	178.33
MW-08	12/02/2008	286.03	113	88-113	106.36	179.67
MW-08	09/08/2009	286.03	113	88-113	104.35	181.68
MW-08	06/28/2010	286.03	113	88-113	103.01	183.02
MW-08	12/13/2010	286.03	113	88-113	105.08	180.95
MW-08	06/20/2011	286.03	113	88-113	99.71	186.32
MW-08	12/08/2011	286.03	113	88-113	100.55	185.48
MW-08	06/18/2012	286.03	113	88-113	98.22	187.81
MW-08	11/26/2012	286.03	113	88-113	101.95	184.08
MW-08	06/24/2013	286.03	113	88-113	103.49	182.54
MW-08	11/18/2013	286.03	113	88-113	105.30	180.73
MW-08	05/12/2014	286.03	113	88-113	106.35	179.68
MW-08	11/10/2014	286.03	113	88-113	106.58	179.45
MW-08	04/21/2015	285.94	113	88-113	108.57	177.37
MW-08	06/22/2015	285.94	113	88-113	107.40	178.54
MW-08	09/08/2015	285.94	113	88-113	107.95	177.99
MW-08	11/16/2015	285.94	113	88-113	108.39	177.55
MW-08	02/15/2016	285.94	113	88-113	--	--
MW-08	05/09/2016	285.94	113	88-113	107.48	178.46
MW-08	08/22/2016	285.94	113	88-113	107.98	177.96
MW-08	11/28/2016	285.94	113	88-113	106.38	179.56
MW-08	03/06/2017	285.94	113	88-113	105.31	180.63
MW-08	05/22/2017	285.94	113	88-113	104.72	181.22
MW-08	06/19/2017	285.94	113	88-113	105.48	180.46
MW-08	08/28/2017	285.94	113	88-113	105.23	180.71
MW-08	12/11/2017	285.94	113	88-113	105.45	180.49
MW-08	02/12/2018	285.94	113	88-113	104.41	181.53
MW-08	05/21/2018	285.94	113	88-113	103.60	182.34
MW-08	07/30/2018	285.94	113	88-113	103.49	182.45
MW-08	10/16/2018	285.94	113	88-113	102.71	183.23
MW-08	01/07/2019	285.94	113	88-113	101.62	184.32
MW-08	04/22/2019	285.94	113	88-113	99.75	186.19
MW-08	07/15/2019	285.94	113	88-113	99.03	186.91
MW-08	11/04/2019	285.94	113	88-113	98.15	187.79
MW-08	06/15/2020	285.94	113	88-113	96.23	189.71
MW-08	11/09/2020	285.94	113	88-113	96.28	189.66
MW-08	04/05/2021	285.94	113	88-113	95.46	190.48

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-09	12/31/2003	284.54	115	90-115	93.95	190.59
MW-09	02/05/2004	284.54	115	90-115	92.19	192.35
MW-09	03/17/2004	284.54	115	90-115	93.99	190.55
MW-09	05/19/2004	284.54	115	90-115	94.54	190.00
MW-09	08/26/2004	284.54	115	90-115	94.37	190.17
MW-09	11/17/2004	284.54	115	90-115	94.38	190.16
MW-09	05/12/2005	284.54	115	90-115	89.18	195.36
MW-09	08/03/2005	284.54	115	90-115	96.44	188.10
MW-09	11/22/2005	284.54	115	90-115	94.29	190.25
MW-09	06/05/2006	284.54	115	90-115	93.45	191.09
MW-09	11/06/2006	284.54	115	90-115	98.12	186.42
MW-09	05/23/2007	284.54	115	90-115	99.55	184.99
MW-09	11/28/2007	284.54	115	90-115	105.81	178.73
MW-09	06/09/2008	284.54	115	90-115	102.87	181.67
MW-09	09/10/2008	284.54	115	90-115	106.75	177.79
MW-09	12/02/2008	284.54	115	90-115	105.47	179.07
MW-09	09/08/2009	284.54	115	90-115	102.90	181.64
MW-09	06/28/2010	284.54	115	90-115	101.92	182.62
MW-09	12/13/2010	284.54	115	90-115	103.97	180.57
MW-09	06/20/2011	284.54	115	90-115	98.07	186.47
MW-09	10/17/2011	284.54	115	90-115	100.01	184.53
MW-09	06/18/2012	284.54	115	90-115	96.68	187.86
MW-09	11/26/2012	284.54	115	90-115	100.84	183.70
MW-09	06/24/2013	284.54	115	90-115	102.13	182.41
MW-09	11/18/2013	284.54	115	90-115	103.21	181.33
MW-09	05/12/2014	284.54	115	90-115	104.89	179.65
MW-09	11/10/2014	284.54	115	90-115	105.28	179.26
MW-09	06/22/2015	284.67	115	90-115	106.03	178.64
MW-09	09/08/2015	284.67	115	90-115	106.60	178.07
MW-09	11/16/2015	284.67	115	90-115	107.05	177.62
MW-09	02/15/2016	284.67	115	90-115	106.50	178.17
MW-09	05/09/2016	284.67	115	90-115	106.05	178.62
MW-09	08/22/2016	284.67	115	90-115	106.68	177.99
MW-09	11/28/2016	284.67	115	90-115	105.14	179.53
MW-09	03/06/2017	284.67	115	90-115	103.81	180.86
MW-09	05/22/2017	284.67	115	90-115	103.28	181.39
MW-09	06/19/2017	284.67	115	90-115	104.18	180.49
MW-09	08/28/2017	284.67	115	90-115	103.81	180.86
MW-09	12/11/2017	284.67	115	90-115	103.99	180.68
MW-09	02/12/2018	284.67	115	90-115	102.88	181.79
MW-09	05/21/2018	284.67	115	90-115	102.09	182.58
MW-09	07/30/2018	284.67	115	90-115	101.98	182.69
MW-09	10/16/2018	284.67	115	90-115	101.16	183.51

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-09	01/07/2019	284.67	115	90-115	100.11	184.56
MW-09	04/22/2019	284.67	115	90-115	98.29	186.38
MW-09	07/15/2019	284.67	115	90-115	97.64	187.03
MW-09	11/04/2019	284.67	115	90-115	96.68	187.99
MW-09	06/15/2020	284.67	115	90-115	94.85	189.82
MW-09	11/09/2020	284.67	115	90-115	94.98	189.69
MW-09	04/05/2021	284.67	115	90-115	94.12	190.55
MW-10	12/31/2003	284.61	115	90-115	93.02	191.59
MW-10	02/05/2004	284.61	115	90-115	91.11	193.50
MW-10	03/17/2004	284.61	115	90-115	92.93	191.68
MW-10	05/19/2004	284.61	115	90-115	93.96	190.65
MW-10	08/26/2004	284.61	115	90-115	94.63	189.98
MW-10	11/17/2004	284.61	115	90-115	93.26	191.35
MW-10	05/12/2005	284.61	115	90-115	89.75	194.86
MW-10	08/03/2005	284.61	115	90-115	96.05	188.56
MW-10	11/22/2005	284.61	115	90-115	93.97	190.64
MW-10	06/05/2006	284.61	115	90-115	93.32	191.29
MW-10	11/06/2006	284.61	115	90-115	98.25	186.36
MW-10	05/23/2007	284.61	115	90-115	99.42	185.19
MW-10	11/28/2007	284.61	115	90-115	105.20	179.41
MW-10	06/09/2008	284.61	115	90-115	102.92	181.69
MW-10	09/10/2008	284.61	115	90-115	106.24	178.37
MW-10	12/02/2008	284.61	115	90-115	104.47	180.14
MW-10	09/08/2009	284.61	115	90-115	103.10	181.51
MW-10	06/28/2010	284.61	115	90-115	103.31	181.30
MW-10	12/13/2010	284.61	115	90-115	102.40	182.21
MW-10	06/20/2011	284.61	115	90-115	97.08	187.53
MW-10	12/08/2011	284.61	115	90-115	97.91	186.70
MW-10	06/18/2012	284.61	115	90-115	96.36	188.25
MW-10	11/26/2012	284.61	115	90-115	99.68	184.93
MW-10	06/24/2013	284.61	115	90-115	102.19	182.42
MW-10	11/18/2013	284.61	115	90-115	103.45	181.16
MW-10	05/12/2014	284.61	115	90-115	105.29	179.32
MW-10	11/10/2014	284.61	115	90-115	106.38	178.23
MW-10	06/22/2015	284.56	115	90-115	105.91	178.65
MW-10	09/08/2015	284.56	115	90-115	106.75	177.81
MW-10	11/16/2015	284.56	115	90-115	107.10	177.46
MW-10	02/15/2016	284.56	115	90-115	106.48	178.08
MW-10	05/09/2016	284.56	115	90-115	106.19	178.37
MW-10	08/22/2016	284.56	115	90-115	106.61	177.95
MW-10	11/28/2016	284.56	115	90-115	105.04	179.52
MW-10	03/06/2017	284.56	115	90-115	103.65	180.91
MW-10	05/22/2017	284.56	115	90-115	103.10	181.46

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-10	06/19/2017	284.56	115	90-115	103.87	180.69
MW-10	08/28/2017	284.56	115	90-115	103.74	180.82
MW-10	12/11/2017	284.56	115	90-115	104.20	180.36
MW-10	02/12/2018	284.56	115	90-115	102.72	181.84
MW-10	05/21/2018	284.56	115	90-115	102.10	182.46
MW-10	07/30/2018	284.56	115	90-115	102.12	182.44
MW-10	10/16/2018	284.56	115	90-115	101.40	183.16
MW-10	01/07/2019	284.56	115	90-115	100.05	184.51
MW-10	04/22/2019	284.56	115	90-115	98.28	186.28
MW-10	07/15/2019	284.56	115	90-115	97.80	186.76
MW-10	11/04/2019	284.56	115	90-115	96.96	187.60
MW-10	06/15/2020	284.56	115	90-115	95.27	189.29
MW-10	11/09/2020	284.56	115	90-115	95.22	189.34
MW-10	04/05/2021	284.56	115	90-115	94.39	190.17
MW-11	12/31/2003	288.60	115	90-115	97.80	190.80
MW-11	02/05/2004	288.60	115	90-115	96.56	192.04
MW-11	03/17/2004	288.60	115	90-115	97.35	191.25
MW-11	05/19/2004	288.60	115	90-115	98.19	190.41
MW-11	08/26/2004	288.60	115	90-115	99.54	189.06
MW-11	11/17/2004	288.60	115	90-115	97.38	191.22
MW-11	05/12/2005	288.60	115	90-115	93.68	194.92
MW-11	08/03/2005	288.60	115	90-115	99.47	189.13
MW-11	11/22/2005	288.60	115	90-115	99.77	188.83
MW-11	06/05/2006	288.60	115	90-115	97.43	191.17
MW-11	11/06/2006	288.60	115	90-115	103.09	185.51
MW-11	05/23/2007	288.60	115	90-115	103.12	185.48
MW-11	11/28/2007	288.60	115	90-115	108.84	179.76
MW-11	06/09/2008	288.60	115	90-115	107.16	181.44
MW-11	09/10/2008	288.60	115	90-115	109.45	179.15
MW-11	12/02/2008	288.60	115	90-115	107.75	180.85
MW-11	09/08/2009	288.60	115	90-115	106.80	181.80
MW-11	06/28/2010	288.60	115	90-115	104.82	183.78
MW-11	12/13/2010	288.60	115	90-115	106.50	182.10
MW-11	06/20/2011	288.60	115	90-115	102.18	186.42
MW-11	10/17/2011	288.60	115	90-115	104.00	184.60
MW-11	06/18/2012	288.60	115	90-115	101.20	187.40
MW-11	11/26/2012	288.60	115	90-115	103.90	184.70
MW-11	06/24/2013	288.60	115	90-115	105.41	183.19
MW-11	11/18/2013	288.60	115	90-115	106.39	182.21
MW-11	05/12/2014	288.60	115	90-115	108.20	180.40
MW-11	11/10/2014	288.60	115	90-115	108.83	179.77
MW-11	04/21/2015	288.59	115	90-115	110.47	178.12
MW-11	06/22/2015	288.59	115	90-115	109.71	178.88

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-11	09/08/2015	288.59	115	90-115	110.14	178.45
MW-11	11/16/2015	288.59	115	90-115	110.57	178.02
MW-11	02/15/2016	288.59	115	90-115	110.42	178.17
MW-11	05/09/2016	288.59	115	90-115	109.69	178.90
MW-11	08/22/2016	288.59	115	90-115	110.30	178.29
MW-11	11/28/2016	288.59	115	90-115	108.72	179.87
MW-11	03/06/2017	288.59	115	90-115	107.64	180.95
MW-11	05/22/2017	288.59	115	90-115	107.00	181.59
MW-11	06/19/2017	288.59	115	90-115	108.73	179.86
MW-11	08/28/2017	288.59	115	90-115	107.88	180.71
MW-11	12/11/2017	288.59	115	90-115	107.72	180.87
MW-11	02/12/2018	288.59	115	90-115	106.77	181.82
MW-11	05/21/2018	288.59	115	90-115	106.25	182.34
MW-11	07/30/2018	288.59	115	90-115	106.06	182.53
MW-11	10/16/2018	288.59	115	90-115	105.25	183.34
MW-11	01/07/2019	288.59	115	90-115	104.01	184.58
MW-11	04/22/2019	288.59	115	90-115	102.12	186.47
MW-11	07/15/2019	288.59	115	90-115	101.60	186.99
MW-11	11/04/2019	288.59	115	90-115	100.80	187.79
MW-11	06/15/2020	288.59	115	90-115	98.70	189.89
MW-11	11/09/2020	288.59	115	90-115	98.52	190.07
MW-11	04/05/2021	288.59	115	90-115	97.58	191.01
MW-12	09/10/2008	287.64	150	105-125	108.60	179.04
MW-12	12/02/2008	287.64	150	105-125	106.74	180.90
MW-12	09/08/2009	287.64	150	105-125	105.75	181.89
MW-12	06/28/2010	287.64	150	105-125	103.20	184.44
MW-12	12/13/2010	287.64	150	105-125	105.06	182.58
MW-12	06/20/2011	287.64	150	105-125	100.68	186.96
MW-12	12/08/2011	287.64	150	105-125	101.50	186.14
MW-12	06/18/2012	287.64	150	105-125	99.92	187.72
MW-12	11/26/2012	287.64	150	105-125	102.71	184.93
MW-12	06/24/2013	287.64	150	105-125	104.47	183.17
MW-12	11/18/2013	287.64	150	105-125	105.60	182.04
MW-12	05/12/2014	287.64	150	105-125	107.35	180.29
MW-12	11/10/2014	287.64	150	105-125	108.90	178.74
MW-12	04/21/2015	287.54	150	105-125	109.40	178.14
MW-12	06/22/2015	287.54	150	105-125	108.46	179.08
MW-12	09/08/2015	287.54	150	105-125	109.17	178.37
MW-12	11/16/2015	287.54	150	105-125	109.74	177.80
MW-12	02/15/2016	287.54	150	105-125	109.04	178.50
MW-12	05/09/2016	287.54	150	105-125	108.71	178.83
MW-12	08/22/2016	287.54	150	105-125	109.11	178.43
MW-12	11/28/2016	287.54	150	105-125	107.83	179.71

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-12	03/06/2017	287.54	150	105-125	106.59	180.95
MW-12	05/22/2017	287.54	150	105-125	106.00	181.54
MW-12	06/19/2017	287.54	150	105-125	106.58	180.96
MW-12	08/28/2017	287.54	150	105-125	106.74	180.80
MW-12	12/11/2017	287.54	150	105-125	106.74	180.80
MW-12	02/12/2018	287.54	150	105-125	105.62	181.92
MW-12	05/21/2018	287.54	150	105-125	105.09	182.45
MW-12	07/30/2018	287.54	150	105-125	104.69	182.85
MW-12	10/16/2018	287.54	150	105-125	104.25	183.29
MW-12	01/07/2019	287.54	150	105-125	102.90	184.64
MW-12	04/22/2019	287.54	150	105-125	101.02	186.52
MW-12	07/15/2019	287.54	150	105-125	100.55	186.99
MW-12	11/04/2019	287.54	150	105-125	99.71	187.83
MW-12	06/15/2020	287.54	150	105-125	97.78	189.76
MW-13	09/10/2008	287.86	150	105-125	108.85	179.01
MW-13	12/02/2008	287.86	150	105-125	107.04	180.82
MW-13	09/08/2009	287.86	150	105-125	106.75	181.11
MW-13	06/28/2010	287.86	150	105-125	103.50	184.36
MW-13	12/13/2010	287.86	150	105-125	105.40	182.46
MW-13	06/20/2011	287.86	150	105-125	101.04	186.82
MW-13	10/17/2011	287.86	150	105-125	102.87	184.99
MW-13	06/18/2012	287.86	150	105-125	100.21	187.65
MW-13	11/26/2012	287.86	150	105-125	102.97	184.89
MW-13	06/24/2013	287.86	150	105-125	104.71	183.15
MW-13	11/18/2013	287.86	150	105-125	105.80	182.06
MW-13	05/12/2014	287.86	150	105-125	107.53	180.33
MW-13	11/10/2014	287.86	150	105-125	108.19	179.67
MW-13	04/21/2015	287.78	150	105-125	109.78	178.00
MW-13	06/22/2015	287.78	150	105-125	108.80	178.98
MW-13	09/08/2015	287.78	150	105-125	109.37	178.41
MW-13	11/16/2015	287.78	150	105-125	109.96	177.82
MW-13	02/15/2016	287.78	150	105-125	109.30	178.48
MW-13	05/09/2016	287.78	150	105-125	108.93	178.85
MW-13	08/22/2016	287.78	150	105-125	109.31	178.47
MW-13	11/28/2016	287.78	150	105-125	108.05	179.73
MW-13	03/06/2017	287.78	150	105-125	106.83	180.95
MW-13	05/22/2017	287.78	150	105-125	106.26	181.52
MW-13	06/19/2017	287.78	150	105-125	106.85	180.93
MW-13	08/28/2017	287.78	150	105-125	107.00	180.78
MW-13	12/11/2017	287.78	150	105-125	106.99	180.79
MW-13	02/12/2018	287.78	150	105-125	105.90	181.88
MW-13	05/21/2018	287.78	150	105-125	105.33	182.45
MW-13	07/30/2018	287.78	150	105-125	105.29	182.49

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-13	10/16/2018	287.78	150	105-125	104.53	183.25
MW-13	01/07/2019	287.78	150	105-125	103.15	184.63
MW-13	04/22/2019	287.78	150	105-125	101.31	186.47
MW-13	07/15/2019	287.78	150	105-125	100.81	186.97
MW-13	11/04/2019	287.78	150	105-125	99.94	187.84
MW-13	06/15/2020	287.78	150	105-125	98.01	189.77
MW-14D	06/28/2010	287.99	206	184-194	104.28	183.71
MW-14D	12/13/2010	287.99	206	184-194	106.10	181.89
MW-14D	06/20/2011	287.99	206	184-194	101.75	186.24
MW-14D	12/08/2011	287.99	206	184-194	102.41	185.58
MW-14D	06/18/2012	287.99	206	184-194	100.66	187.33
MW-14D	11/26/2012	287.99	206	184-194	103.58	184.41
MW-14D	06/24/2013	287.99	206	184-194	105.11	182.88
MW-14D	11/18/2013	287.99	206	184-194	106.31	181.68
MW-14D	05/12/2014	287.99	206	184-194	107.67	180.32
MW-14D	11/10/2014	287.99	206	184-194	108.31	179.68
MW-14D	06/22/2015	287.85	206	184-194	109.93	177.92
MW-14D	09/08/2015	287.85	206	184-194	109.63	178.22
MW-14D	11/16/2015	287.85	206	184-194	110.11	177.74
MW-14D	02/15/2016	287.85	206	184-194	109.54	178.31
MW-14D	05/09/2016	287.85	206	184-194	109.14	178.71
MW-14D	08/22/2016	287.85	206	184-194	109.42	178.43
MW-14D	11/28/2016	287.85	206	184-194	108.18	179.67
MW-14D	03/06/2017	287.85	206	184-194	107.20	180.65
MW-14D	05/22/2017	287.85	206	184-194	106.51	181.34
MW-14D	06/19/2017	287.85	206	184-194	107.55	180.30
MW-14D	08/28/2017	287.85	206	184-194	107.41	180.44
MW-14D	12/11/2017	287.85	206	184-194	107.24	180.61
MW-14D	02/12/2018	287.85	206	184-194	106.20	181.65
MW-14D	05/21/2018	287.85	206	184-194	105.57	182.28
MW-14D	07/30/2018	287.85	206	184-194	105.36	182.49
MW-14D	10/16/2018	287.85	206	184-194	104.56	183.29
MW-14D	01/07/2019	287.85	206	184-194	103.32	184.53
MW-14D	04/22/2019	287.85	206	184-194	101.42	186.43
MW-14D	07/15/2019	287.85	206	184-194	100.93	186.92
MW-14D	11/04/2019	287.85	206	184-194	100.06	187.79
MW-14D	06/15/2020	287.85	206	184-194	98.07	189.78
MW-14D	11/09/2020	287.85	206	184-194	97.95	189.90
MW-14D	04/05/2021	287.85	206	184-194	97.09	190.76
MW-14S	06/28/2010	287.96	135	120-135	104.16	183.80
MW-14S	12/13/2010	287.96	135	120-135	106.10	181.86
MW-14S	06/20/2011	287.96	135	120-135	101.65	186.31
MW-14S	10/17/2011	287.96	135	120-135	103.51	184.45

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-14S	12/08/2011	287.96	135	120-135	102.41	185.55
MW-14S	06/18/2012	287.96	135	120-135	100.53	187.43
MW-14S	11/26/2012	287.96	135	120-135	103.42	184.54
MW-14S	06/24/2013	287.96	135	120-135	104.95	183.01
MW-14S	11/18/2013	287.96	135	120-135	106.10	181.86
MW-14S	05/12/2014	287.96	135	120-135	107.67	180.29
MW-14S	11/10/2014	287.96	135	120-135	108.25	179.71
MW-14S	04/21/2015	287.82	135	120-135	109.80	178.02
MW-14S	06/22/2015	287.82	135	120-135	108.95	178.87
MW-14S	09/08/2015	287.82	135	120-135	109.62	178.20
MW-14S	11/16/2015	287.82	135	120-135	110.09	177.73
MW-14S	02/15/2016	287.82	135	120-135	109.48	178.34
MW-14S	05/09/2016	287.82	135	120-135	108.11	179.71
MW-14S	08/22/2016	287.82	135	120-135	109.42	178.40
MW-14S	11/28/2016	287.82	135	120-135	108.10	179.72
MW-14S	03/06/2017	287.82	135	120-135	107.06	180.76
MW-14S	05/22/2017	287.82	135	120-135	106.45	181.37
MW-14S	06/19/2017	287.82	135	120-135	107.10	180.72
MW-14S	08/28/2017	287.82	135	120-135	107.28	180.54
MW-14S	12/11/2017	287.82	135	120-135	102.28	185.54
MW-14S	02/12/2018	287.82	135	120-135	--	--
MW-14S	05/21/2018	287.82	135	120-135	105.55	182.27
MW-14S	07/30/2018	287.82	135	120-135	104.34	183.48
MW-14S	10/16/2018	287.82	135	120-135	104.36	183.46
MW-14S	01/07/2019	287.82	135	120-135	103.35	184.47
MW-14S	04/22/2019	287.82	135	120-135	101.48	186.34
MW-14S	07/15/2019	287.82	135	120-135	100.91	186.91
MW-14S	11/04/2019	287.82	135	120-135	100.05	187.77
MW-14S	06/15/2020	287.82	135	120-135	98.05	189.77
MW-14S	09/11/2020	287.82	135	120-135	97.96	189.86
MW-14S	04/05/2021	287.82	135	120-135	97.09	190.73
MW-15D	06/28/2010	285.74	210	188-198	--	--
MW-15D	12/13/2010	285.74	211	188-198	105.50	180.24
MW-15D	06/20/2011	285.74	212	188-198	99.05	186.69
MW-15D	10/17/2011	285.74	213	188-198	100.20	185.54
MW-15D	06/18/2012	285.74	214	188-198	98.02	187.72
MW-15D	11/26/2012	285.74	215	188-198	102.89	182.85
MW-15D	06/24/2013	285.74	216	188-198	103.13	182.61
MW-15D	11/18/2013	285.74	216	188-198	105.98	179.76
MW-15D	05/12/2014	285.74	216	188-198	106.00	179.74
MW-15D	11/10/2014	285.74	216	188-198	107.75	177.99
MW-15D	06/22/2015	285.85	216	188-198	107.10	178.75
MW-15D	09/08/2015	285.85	216	188-198	107.79	178.06

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-15D	11/16/2015	285.85	216	188-198	108.33	177.52
MW-15D	02/15/2016	285.85	216	188-198	107.61	178.24
MW-15D	05/09/2016	285.85	216	188-198	107.14	178.71
MW-15D	08/22/2016	285.85	216	188-198	107.91	177.94
MW-15D	11/28/2016	285.85	216	188-198	106.42	179.43
MW-15D	03/06/2017	285.85	216	188-198	104.93	180.92
MW-15D	05/22/2017	285.85	216	188-198	104.40	181.45
MW-15D	06/19/2017	285.85	216	188-198	105.13	180.72
MW-15D	08/28/2017	285.85	216	188-198	105.00	180.85
MW-15D	12/11/2017	285.85	216	188-198	105.19	180.66
MW-15D	02/12/2018	285.85	216	188-198	103.22	182.63
MW-15D	05/21/2018	285.85	216	188-198	103.28	182.57
MW-15D	07/30/2018	285.85	216	188-198	103.21	182.64
MW-15D	10/16/2018	285.85	216	188-198	102.43	183.42
MW-15D	01/07/2019	285.85	216	188-198	101.20	184.65
MW-15D	04/22/2019	285.85	216	188-198	99.42	186.43
MW-15D	07/15/2019	285.85	216	188-198	98.87	186.98
MW-15D	11/04/2019	285.85	216	188-198	97.92	187.93
MW-15D	06/15/2020	285.85	216	188-198	95.78	190.07
MW-15D	11/09/2020	285.85	216	188-198	96.23	189.62
MW-15D	04/05/2021	285.85	216	188-198	95.44	190.41
MW-15D01	12/13/2010	285.31	315	310-315	106.13	179.18
MW-15D01	06/20/2011	285.31	315	310-315	98.64	186.67
MW-15D01	10/17/2011	285.31	315	310-315	100.21	185.10
MW-15D01	06/18/2012	285.31	315	310-315	97.68	187.63
MW-15D01	11/26/2012	285.31	315	310-315	104.02	181.29
MW-15D01	06/24/2013	285.31	315	310-315	102.48	182.83
MW-15D01	11/18/2013	285.31	315	310-315	106.59	178.72
MW-15D01	05/12/2014	285.31	315	310-315	105.28	180.03
MW-15D01	11/10/2014	285.31	315	310-315	108.73	176.58
MW-15D01	06/22/2015	285.27	315	310-315	106.60	178.67
MW-15D01	09/08/2015	285.27	315	310-315	107.48	177.79
MW-15D01	11/16/2015	285.27	315	310-315	107.94	177.33
MW-15D01	02/15/2016	285.27	315	310-315	107.25	178.02
MW-15D01	05/09/2016	285.27	315	310-315	106.73	178.54
MW-15D01	08/22/2016	285.27	315	310-315	107.52	177.75
MW-15D01	11/28/2016	285.27	315	310-315	106.13	179.14
MW-15D01	03/06/2017	285.27	315	310-315	104.52	180.75
MW-15D01	05/22/2017	285.27	315	310-315	104.04	181.23
MW-15D01	06/19/2017	285.27	315	310-315	104.60	180.67
MW-15D01	08/28/2017	285.27	315	310-315	104.61	180.66
MW-15D01	12/11/2017	285.27	315	310-315	104.76	180.51
MW-15D01	02/12/2018	285.27	315	310-315	103.64	181.63

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-15D01	05/21/2018	285.27	315	310-315	102.40	182.87
MW-15D01	07/30/2018	285.27	315	310-315	102.79	182.48
MW-15D01	10/16/2018	285.27	315	310-315	101.97	183.30
MW-15D01	01/07/2019	285.27	315	310-315	100.73	184.54
MW-15D01	04/22/2019	285.27	315	310-315	98.97	186.30
MW-15D01	07/15/2019	285.27	315	310-315	98.43	186.84
MW-15D01	11/04/2019	285.27	315	310-315	97.51	187.76
MW-15D01	06/15/2020	285.27	315	310-315	96.12	189.15
MW-15D01	11/09/2020	285.27	315	310-315	95.82	189.45
MW-15D01	04/05/2021	285.27	315	310-315	95.04	190.23
MW-15S	06/28/2010	285.37	135	120-135	102.42	182.95
MW-15S	12/13/2010	285.37	135	120-135	104.40	180.97
MW-15S	06/20/2011	285.37	135	120-135	98.65	186.72
MW-15S	10/17/2011	285.37	135	120-135	100.68	184.69
MW-15S	06/18/2012	285.37	135	120-135	97.42	187.95
MW-15S	11/26/2012	285.37	135	120-135	101.33	184.04
MW-15S	06/24/2013	285.37	135	120-135	103.06	182.31
MW-15S	11/18/2013	285.37	135	120-135	104.50	180.87
MW-15S	05/12/2014	285.37	135	120-135	105.87	179.50
MW-15S	11/10/2014	285.37	135	120-135	106.09	179.28
MW-15S	06/22/2015	285.40	135	120-135	106.85	178.55
MW-15S	09/08/2015	285.40	135	120-135	107.43	177.97
MW-15S	11/16/2015	285.40	135	120-135	107.98	177.42
MW-15S	02/15/2016	285.40	135	120-135	107.28	178.12
MW-15S	05/09/2016	285.40	135	120-135	106.89	178.51
MW-15S	08/22/2016	285.40	135	120-135	107.46	177.94
MW-15S	11/28/2016	285.40	135	120-135	105.82	179.58
MW-15S	03/06/2017	285.40	135	120-135	104.64	180.76
MW-15S	05/22/2017	285.40	135	120-135	104.10	181.30
MW-15S	06/19/2017	285.40	135	120-135	104.97	180.43
MW-15S	08/28/2017	285.40	135	120-135	104.62	180.78
MW-15S	12/11/2017	285.40	135	120-135	104.84	180.56
MW-15S	02/12/2018	285.40	135	120-135	103.66	181.74
MW-15S	05/21/2018	285.40	135	120-135	102.92	182.48
MW-15S	07/30/2018	285.40	135	120-135	102.81	182.59
MW-15S	10/16/2018	285.40	135	120-135	102.07	183.33
MW-15S	01/07/2019	285.40	135	120-135	100.95	184.45
MW-15S	04/22/2019	285.40	135	120-135	99.13	186.27
MW-15S	07/15/2019	285.40	135	120-135	98.42	186.98
MW-15S	11/04/2019	285.40	135	120-135	97.55	187.85
MW-15S	06/15/2020	285.40	135	120-135	95.75	189.65
MW-15S	11/09/2020	285.40	135	120-135	95.90	189.50
MW-15S	04/06/2021	285.40	135	120-135	95.13	190.27

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-16D	06/28/2010	285.15	182	152-162	102.38	182.77
MW-16D	12/13/2010	285.15	182	152-162	104.30	180.85
MW-16D	06/20/2011	285.15	182	152-162	99.04	186.11
MW-16D	10/17/2011	285.15	182	152-162	100.89	184.26
MW-16D	06/18/2012	285.15	182	152-162	97.49	187.66
MW-16D	11/26/2012	285.15	182	152-162	101.51	183.64
MW-16D	06/24/2013	285.15	182	152-162	102.49	182.66
MW-16D	11/18/2013	285.15	182	152-162	104.12	181.03
MW-16D	05/12/2014	285.15	182	152-162	105.28	179.87
MW-16D	11/10/2014	285.15	182	152-162	105.83	179.32
MW-16D	06/22/2015	285.17	182	152-162	106.50	178.67
MW-16D	09/08/2015	285.17	182	152-162	107.06	178.11
MW-16D	11/16/2015	285.17	182	152-162	107.63	177.54
MW-16D	02/15/2016	285.17	182	152-162	107.05	178.12
MW-16D	05/09/2016	285.17	182	152-162	106.59	178.58
MW-16D	08/22/2016	285.17	182	152-162	107.10	178.07
MW-16D	11/28/2016	285.17	182	152-162	105.60	179.57
MW-16D	03/06/2017	285.17	182	152-162	104.48	180.69
MW-16D	05/22/2017	285.17	182	152-162	103.90	181.27
MW-16D	06/19/2017	285.17	182	152-162	106.64	178.53
MW-16D	08/28/2017	285.17	182	152-162	104.42	180.75
MW-16D	12/11/2017	285.17	182	152-162	104.55	180.62
MW-16D	02/12/2018	285.17	182	152-162	103.54	181.63
MW-16D	05/21/2018	285.17	182	152-162	102.71	182.46
MW-16D	07/30/2018	285.17	182	152-162	102.55	182.62
MW-16D	10/16/2018	285.17	182	152-162	101.71	183.46
MW-16D	01/07/2019	285.17	182	152-162	100.70	184.47
MW-16D	04/22/2019	285.17	182	152-162	98.88	186.29
MW-16D	07/15/2019	285.17	182	152-162	98.14	187.03
MW-16D	11/04/2019	285.17	182	152-162	97.22	187.95
MW-16D	06/15/2020	285.17	182	152-162	95.26	189.91
MW-16D	11/09/2020	285.17	182	152-162	95.39	189.78
MW-16D	04/05/2021	285.17	182	152-162	94.63	190.54
MW-17D	06/28/2010	285.96	202	189-199	103.29	182.67
MW-17D	12/13/2010	285.96	202	189-199	105.30	180.66
MW-17D	06/20/2011	285.96	202	189-199	99.50	186.46
MW-17D	10/17/2011	285.96	202	189-199	101.35	184.61
MW-17D	06/18/2012	285.96	202	189-199	98.30	187.66
MW-17D	11/26/2012	285.96	202	189-199	101.23	184.73
MW-17D	06/24/2013	285.96	202	189-199	103.26	182.70
MW-17D	11/18/2013	285.96	202	189-199	104.89	181.07
MW-17D	05/12/2014	285.96	202	189-199	106.09	179.87
MW-17D	11/10/2014	285.96	202	189-199	106.86	179.10

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-17D	06/22/2015	285.87	202	189-199	107.20	178.67
MW-17D	09/08/2015	285.87	202	189-199	107.82	178.05
MW-17D	11/16/2015	285.87	202	189-199	108.39	177.48
MW-17D	02/15/2016	285.87	202	189-199	107.76	178.11
MW-17D	05/09/2016	285.87	202	189-199	107.33	178.54
MW-17D	08/22/2016	285.87	202	189-199	108.16	177.71
MW-17D	11/28/2016	285.87	202	189-199	106.58	179.29
MW-17D	03/06/2017	285.87	202	189-199	105.20	180.67
MW-17D	05/22/2017	285.87	202	189-199	104.67	181.20
MW-17D	06/19/2017	285.87	202	189-199	105.31	180.56
MW-17D	08/28/2017	285.87	202	189-199	105.21	180.66
MW-17D	12/11/2017	285.87	202	189-199	105.32	180.55
MW-17D	02/12/2018	285.87	202	189-199	104.23	181.64
MW-17D	05/21/2018	285.87	202	189-199	103.51	182.36
MW-17D	07/30/2018	285.87	202	189-199	103.34	182.53
MW-17D	10/16/2018	285.87	202	189-199	102.60	183.27
MW-17D	01/07/2019	285.87	202	189-199	101.41	184.46
MW-17D	04/22/2019	285.87	202	189-199	99.62	186.25
MW-17D	07/15/2019	285.87	202	189-199	98.98	186.89
MW-17D	11/04/2019	285.87	202	189-199	98.12	187.75
MW-17D	06/15/2020	285.87	202	189-199	96.44	189.43
MW-17D	11/09/2020	285.87	202	189-199	96.61	189.26
MW-17D	04/05/2021	285.87	202	189-199	95.43	190.44
MW-17S	06/28/2010	285.99	120	105-120	103.06	182.93
MW-17S	12/13/2010	285.99	120	105-120	104.77	181.22
MW-17S	06/20/2011	285.99	120	105-120	99.49	186.50
MW-17S	10/17/2011	285.99	120	105-120	101.52	184.47
MW-17S	06/18/2012	285.99	120	105-120	98.22	187.77
MW-17S	11/26/2012	285.99	120	105-120	101.82	184.17
MW-17S	06/24/2013	285.99	120	105-120	103.45	182.54
MW-17S	11/18/2013	285.99	120	105-120	104.88	181.11
MW-17S	05/12/2014	285.99	120	105-120	106.22	179.77
MW-17S	11/10/2014	285.99	120	105-120	106.54	179.45
MW-17S	04/21/2015	285.92	120	105-120	108.63	177.29
MW-17S	06/22/2015	285.92	120	105-120	107.26	178.66
MW-17S	09/08/2015	285.92	120	105-120	107.83	178.09
MW-17S	11/16/2015	285.92	120	105-120	108.39	177.53
MW-17S	02/15/2016	285.92	120	105-120	107.79	178.13
MW-17S	05/09/2016	285.92	120	105-120	107.39	178.53
MW-17S	08/22/2016	285.92	120	105-120	107.92	178.00
MW-17S	11/28/2016	285.92	120	105-120	106.35	179.57
MW-17S	03/06/2017	285.92	120	105-120	105.28	180.64
MW-17S	05/22/2017	285.92	120	105-120	104.69	181.23

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-17S	06/19/2017	285.92	120	105-120	105.42	180.50
MW-17S	08/28/2017	285.92	120	105-120	105.20	180.72
MW-17S	12/11/2017	285.92	120	105-120	105.35	180.57
MW-17S	02/12/2018	285.92	120	105-120	104.29	181.63
MW-17S	05/21/2018	285.92	120	105-120	103.54	182.38
MW-17S	07/30/2018	285.92	120	105-120	103.42	182.50
MW-17S	10/16/2018	285.92	120	105-120	102.61	183.31
MW-17S	01/07/2019	285.92	120	105-120	101.52	184.40
MW-17S	04/22/2019	285.92	120	105-120	99.69	186.23
MW-17S	07/15/2019	285.92	120	105-120	99.03	186.89
MW-17S	11/04/2019	285.92	120	105-120	98.08	187.84
MW-17S	06/15/2020	285.92	120	105-120	96.21	189.71
MW-17S	11/09/2020	285.92	120	105-120	96.26	189.66
MW-17S	04/05/2021	285.92	120	105-120	95.44	190.48
MW-18D	12/13/2010	286.57	195	170-180	105.14	181.43
MW-18D	06/20/2011	286.57	195	170-180	100.11	186.46
MW-18D	10/17/2011	286.57	195	170-180	101.63	184.94
MW-18D	06/18/2012	286.57	195	170-180	99.93	186.64
MW-18D	11/26/2012	286.57	195	170-180	102.40	184.17
MW-18D	06/24/2013	286.57	195	170-180	104.63	181.94
MW-18D	11/18/2013	286.57	195	170-180	106.28	180.29
MW-18D	05/12/2014	286.57	195	170-180	107.10	179.47
MW-18D	11/10/2014	286.57	195	170-180	107.08	179.49
MW-18D	06/22/2015	286.57	195	170-180	108.07	178.50
MW-18D	09/08/2015	286.57	195	170-180	108.28	178.29
MW-18D	11/16/2015	286.57	195	170-180	108.72	177.85
MW-18D	02/15/2016	286.57	195	170-180	108.31	178.26
MW-18D	05/09/2016	286.57	195	170-180	107.92	178.65
MW-18D	08/22/2016	286.57	195	170-180	108.52	178.05
MW-18D	11/28/2016	286.57	195	170-180	107.05	179.52
MW-18D	03/06/2017	286.57	195	170-180	105.60	180.97
MW-18D	05/22/2017	286.57	195	170-180	105.24	181.33
MW-18D	06/19/2017	286.57	195	170-180	105.94	180.63
MW-18D	08/28/2017	286.57	195	170-180	105.86	180.71
MW-18D	12/11/2017	286.57	195	170-180	105.94	180.63
MW-18D	02/12/2018	286.57	195	170-180	104.89	181.68
MW-18D	05/21/2018	286.57	195	170-180	104.16	182.41
MW-18D	07/30/2018	286.57	195	170-180	104.04	182.53
MW-18D	10/16/2018	286.57	195	170-180	103.28	183.29
MW-18D	01/07/2019	286.57	195	170-180	102.10	184.47
MW-18D	04/22/2019	286.57	195	170-180	99.82	186.75
MW-18D	07/15/2019	286.57	195	170-180	99.60	186.97
MW-18D	11/04/2019	286.57	195	170-180	99.14	187.43

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-18D	06/15/2020	286.57	195	170-180	--	--
MW-18S	12/13/2010	286.16	136	120-135	104.60	181.56
MW-18S	06/20/2011	286.16	136	120-135	99.60	186.56
MW-18S	10/17/2011	286.16	136	120-135	101.59	184.57
MW-18S	06/18/2012	286.16	136	120-135	98.52	187.64
MW-18S	11/26/2012	286.16	136	120-135	101.84	184.32
MW-18S	06/24/2013	286.16	136	120-135	103.44	182.72
MW-18S	11/18/2013	286.16	136	120-135	104.79	181.37
MW-18S	05/12/2014	286.16	136	120-135	106.29	179.87
MW-18S	11/10/2014	286.16	136	120-135	106.60	179.56
MW-18S	04/21/2015	286.11	136	120-135	108.50	177.61
MW-18S	06/22/2015	286.11	136	120-135	107.32	178.79
MW-18S	09/08/2015	286.11	136	120-135	107.95	178.16
MW-18S	11/16/2015	286.11	136	120-135	108.46	177.65
MW-18S	02/15/2016	286.11	136	120-135	107.90	178.21
MW-18S	05/09/2016	286.11	136	120-135	107.49	178.62
MW-18S	08/22/2016	286.11	136	120-135	108.00	178.11
MW-18S	11/28/2016	286.11	136	120-135	106.52	179.59
MW-18S	03/06/2017	286.11	136	120-135	105.41	180.70
MW-18S	05/22/2017	286.11	136	120-135	104.82	181.29
MW-18S	06/19/2017	286.11	136	120-135	105.52	180.59
MW-18S	08/28/2017	286.11	136	120-135	105.39	180.72
MW-18S	12/11/2017	286.11	136	120-135	105.51	180.60
MW-18S	02/12/2018	286.11	136	120-135	104.44	181.67
MW-18S	05/21/2018	286.11	136	120-135	107.71	178.40
MW-18S	07/30/2018	286.11	136	120-135	103.60	182.51
MW-18S	10/16/2018	286.11	136	120-135	102.84	183.27
MW-18S	01/07/2019	286.11	136	120-135	101.70	184.41
MW-18S	04/22/2019	286.11	136	120-135	100.23	185.88
MW-18S	07/15/2019	286.11	136	120-135	99.16	186.95
MW-18S	11/04/2019	286.11	136	120-135	98.32	187.79
MW-18S	06/15/2020	286.11	136	120-135	--	--
MW-19D	12/13/2010	285.67	255	215-225	104.80	180.87
MW-19D	06/20/2011	285.67	255	215-225	99.02	186.65
MW-19D	10/17/2011	285.67	255	215-225	100.48	185.19
MW-19D	06/18/2012	285.67	255	215-225	98.62	187.05
MW-19D	11/26/2012	285.67	255	215-225	102.47	183.20
MW-19D	06/24/2013	285.67	255	215-225	102.91	182.76
MW-19D	11/18/2013	285.67	255	215-225	105.00	180.67
MW-19D	05/12/2014	285.67	255	215-225	106.21	179.46
MW-19D	11/10/2014	285.67	255	215-225	107.04	178.63
MW-19D	06/22/2015	285.68	255	215-225	106.90	178.78
MW-19D	09/08/2015	285.68	255	215-225	107.70	177.98

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-19D	11/16/2015	285.68	255	215-225	108.01	177.67
MW-19D	02/15/2016	285.68	255	215-225	107.93	177.75
MW-19D	05/09/2016	285.68	255	215-225	107.15	178.53
MW-19D	08/22/2016	285.68	255	215-225	107.92	177.76
MW-19D	11/28/2016	285.68	255	215-225	106.34	179.34
MW-19D	03/06/2017	285.68	255	215-225	105.50	180.18
MW-19D	05/22/2017	285.68	255	215-225	104.91	180.77
MW-19D	06/19/2017	285.68	255	215-225	104.97	180.71
MW-19D	08/28/2017	285.68	255	215-225	104.92	180.76
MW-19D	12/11/2017	285.68	255	215-225	104.94	180.74
MW-19D	02/12/2018	285.68	255	215-225	103.45	182.23
MW-19D	05/21/2018	285.68	255	215-225	103.42	182.26
MW-19D	07/30/2018	285.68	255	215-225	103.08	182.60
MW-19D	10/16/2018	285.68	255	215-225	102.31	183.37
MW-19D	01/07/2019	285.68	255	215-225	101.08	184.60
MW-19D	04/22/2019	285.68	255	215-225	99.24	186.44
MW-19D	07/15/2019	285.68	255	215-225	98.71	186.97
MW-19D	11/04/2019	285.68	255	215-225	97.79	187.89
MW-19D	06/15/2020	285.68	255	215-225	96.02	189.66
MW-19D	11/09/2020	285.68	255	215-225	96.02	189.66
MW-19D	04/05/2021	285.68	255	215-225	95.21	190.47
MW-19S	12/13/2010	285.32	136	120-135	104.50	180.82
MW-19S	06/20/2011	285.32	136	120-135	98.67	186.65
MW-19S	10/17/2011	285.32	136	120-135	100.67	184.65
MW-19S	06/18/2012	285.32	136	120-135	97.50	187.82
MW-19S	11/26/2012	285.32	136	120-135	101.20	184.12
MW-19S	06/24/2013	285.32	136	120-135	102.86	182.46
MW-19S	11/18/2013	285.32	136	120-135	104.35	180.97
MW-19S	05/12/2014	285.32	136	120-135	105.59	179.73
MW-19S	11/10/2014	285.32	136	120-135	106.45	178.87
MW-19S	06/22/2015	285.32	136	120-135	106.68	178.64
MW-19S	09/08/2015	285.32	136	120-135	107.39	177.93
MW-19S	11/16/2015	285.32	136	120-135	107.83	177.49
MW-19S	02/15/2016	285.32	136	120-135	107.19	178.13
MW-19S	05/09/2016	285.32	136	120-135	106.78	178.54
MW-19S	08/22/2016	285.32	136	120-135	107.35	177.97
MW-19S	11/28/2016	285.32	136	120-135	105.71	179.61
MW-19S	03/06/2017	285.32	136	120-135	104.60	180.72
MW-19S	05/22/2017	285.32	136	120-135	103.93	181.39
MW-19S	06/19/2017	285.32	136	120-135	104.79	180.53
MW-19S	08/28/2017	285.32	136	120-135	104.59	180.73
MW-19S	12/11/2017	285.32	136	120-135	104.75	180.57
MW-19S	02/12/2018	285.32	136	120-135	103.64	181.68

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-19S	05/21/2018	285.32	136	120-135	102.92	182.40
MW-19S	07/30/2018	285.32	136	120-135	102.94	182.38
MW-19S	10/16/2018	285.32	136	120-135	102.03	183.29
MW-19S	01/07/2019	285.32	136	120-135	100.82	184.50
MW-19S	04/22/2019	285.32	136	120-135	99.03	186.29
MW-19S	07/15/2019	285.32	136	120-135	98.41	186.91
MW-19S	11/04/2019	285.32	136	120-135	97.53	187.79
MW-19S	06/15/2020	285.32	136	120-135	95.71	189.61
MW-19S	11/09/2020	285.32	136	120-135	95.76	189.56
MW-19S	04/05/2021	285.32	136	120-135	94.89	190.43
MW-20D	12/13/2010	284.36	290	267-277	110.35	174.01
MW-20D	06/20/2011	284.36	290	267-277	97.65	186.71
MW-20D	10/17/2011	284.36	290	267-277	99.20	185.16
MW-20D	06/18/2012	284.36	290	267-277	96.60	187.76
MW-20D	11/26/2012	284.36	290	267-277	109.00	175.36
MW-20D	06/24/2013	284.36	290	267-277	101.71	182.65
MW-20D	11/18/2013	284.36	290	267-277	110.75	173.61
MW-20D	05/12/2014	284.36	290	267-277	105.20	179.16
MW-20D	11/10/2014	284.36	290	267-277	113.42	170.94
MW-20D	06/22/2015	284.43	290	267-277	106.41	178.02
MW-20D	09/08/2015	284.43	290	267-277	106.60	177.83
MW-20D	11/16/2015	284.43	290	267-277	107.24	177.19
MW-20D	02/15/2016	284.43	290	267-277	106.65	177.78
MW-20D	05/09/2016	284.43	290	267-277	106.84	177.59
MW-20D	08/22/2016	284.43	290	267-277	106.83	177.60
MW-20D	11/28/2016	284.43	290	267-277	105.90	178.53
MW-20D	03/06/2017	284.43	290	267-277	103.45	180.98
MW-20D	05/22/2017	284.43	290	267-277	103.09	181.34
MW-20D	06/19/2017	284.43	290	267-277	103.74	180.69
MW-20D	08/28/2017	284.43	290	267-277	103.68	180.75
MW-20D	12/11/2017	284.43	290	267-277	103.92	180.51
MW-20D	02/12/2018	284.43	290	267-277	102.73	181.70
MW-20D	05/21/2018	284.43	290	267-277	102.31	182.12
MW-20D	07/30/2018	284.43	290	267-277	101.82	182.61
MW-20D	10/16/2018	284.43	290	267-277	100.99	183.44
MW-20D	01/07/2019	284.43	290	267-277	99.78	184.65
MW-20D	04/22/2019	284.43	290	267-277	98.14	186.29
MW-20D	07/15/2019	284.43	290	267-277	97.57	186.86
MW-20D	11/04/2019	284.43	290	267-277	96.58	187.85
MW-20D	06/15/2020	284.43	290	267-277	96.59	187.84
MW-20D	11/09/2020	284.43	290	267-277	95.14	189.29
MW-20D	04/05/2021	284.43	290	267-277	95.14	189.29
MW-20D01	12/13/2010	284.43	325	305-315	110.60	173.83

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-20D01	06/20/2011	284.43	325	305-315	97.64	186.79
MW-20D01	10/17/2011	284.43	325	305-315	99.10	185.33
MW-20D01	06/18/2012	284.43	325	305-315	96.55	187.88
MW-20D01	11/26/2012	284.43	325	305-315	108.80	175.63
MW-20D01	06/24/2013	284.43	325	305-315	101.55	182.88
MW-20D01	11/18/2013	284.43	325	305-315	111.54	172.89
MW-20D01	05/12/2014	284.43	325	305-315	104.51	179.92
MW-20D01	11/10/2014	284.43	325	305-315	113.45	170.98
MW-20D01	06/22/2015	284.46	325	305-315	105.81	178.65
MW-20D01	09/08/2015	284.46	325	305-315	106.70	177.76
MW-20D01	11/16/2015	284.46	325	305-315	107.21	177.25
MW-20D01	02/15/2016	284.46	325	305-315	106.47	177.99
MW-20D01	05/09/2016	284.46	325	305-315	105.91	178.55
MW-20D01	08/22/2016	284.46	325	305-315	106.88	177.58
MW-20D01	11/28/2016	284.46	325	305-315	105.50	178.96
MW-20D01	03/06/2017	284.46	325	305-315	103.65	180.81
MW-20D01	05/22/2017	284.46	325	305-315	103.18	181.28
MW-20D01	06/19/2017	284.46	325	305-315	103.77	180.69
MW-20D01	08/28/2017	284.46	325	305-315	103.75	180.71
MW-20D01	12/11/2017	284.46	325	305-315	103.92	180.54
MW-20D01	02/12/2018	284.46	325	305-315	102.69	181.77
MW-20D01	05/21/2018	284.46	325	305-315	101.99	182.47
MW-20D01	07/30/2018	284.46	325	305-315	101.91	182.55
MW-20D01	10/16/2018	284.46	325	305-315	101.03	183.43
MW-20D01	01/07/2019	284.46	325	305-315	99.89	184.57
MW-20D01	04/22/2019	284.46	325	305-315	98.16	186.30
MW-20D01	07/15/2019	284.46	325	305-315	97.60	186.86
MW-20D01	11/04/2019	284.46	325	305-315	96.59	187.87
MW-20D01	06/15/2020	284.46	325	305-315	94.96	189.50
MW-20S	12/13/2010	284.33	136	120-135	103.82	180.51
MW-20S	06/20/2011	284.33	136	120-135	97.50	186.83
MW-20S	10/17/2011	284.33	136	120-135	99.46	184.87
MW-20S	06/18/2012	284.33	136	120-135	96.22	188.11
MW-20S	11/26/2012	284.33	136	120-135	107.78	176.55
MW-20S	06/24/2013	284.33	136	120-135	102.20	182.13
MW-20S	11/18/2013	284.33	136	120-135	103.97	180.36
MW-20S	05/12/2014	284.33	136	120-135	105.02	179.31
MW-20S	11/10/2014	284.33	136	120-135	105.43	178.90
MW-20S	06/22/2015	284.36	136	120-135	106.00	178.36
MW-20S	09/08/2015	284.36	136	120-135	106.73	177.63
MW-20S	11/16/2015	284.36	136	120-135	107.09	177.27
MW-20S	02/15/2016	284.36	136	120-135	106.42	177.94
MW-20S	05/09/2016	284.36	136	120-135	106.01	178.35

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-20S	08/22/2016	284.36	136	120-135	106.81	177.55
MW-20S	11/28/2016	284.36	136	120-135	105.00	179.36
MW-20S	03/06/2017	284.36	136	120-135	103.68	180.68
MW-20S	05/22/2017	284.36	136	120-135	103.14	181.22
MW-20S	06/19/2017	284.36	136	120-135	104.13	180.23
MW-20S	08/28/2017	284.36	136	120-135	103.60	180.76
MW-20S	12/11/2017	284.36	136	120-135	103.90	180.46
MW-20S	02/12/2018	284.36	136	120-135	107.68	176.68
MW-20S	05/21/2018	284.36	136	120-135	101.92	182.44
MW-20S	07/30/2018	284.36	136	120-135	101.90	182.46
MW-20S	10/16/2018	284.36	136	120-135	101.12	183.24
MW-20S	01/07/2019	284.36	136	120-135	99.96	184.40
MW-20S	04/22/2019	284.36	136	120-135	98.23	186.13
MW-20S	07/15/2019	284.36	136	120-135	97.56	186.80
MW-20S	11/04/2019	284.36	136	120-135	96.62	187.74
MW-20S	06/15/2020	284.36	136	120-135	94.91	189.45
MW-20S	11/09/2020	284.36	136	120-135	95.10	189.26
MW-20S	04/05/2021	284.36	136	120-135	94.27	190.09
MW-21D	11/18/2013	284.43	200.5	185-200	106.33	178.10
MW-21D	05/12/2014	284.43	200.5	185-200	107.35	177.08
MW-21D	11/10/2014	284.43	200.5	185-200	108.42	176.01
MW-21D	06/22/2015	287.77	200.5	185-200	108.98	178.79
MW-21D	09/08/2015	287.77	200.5	185-200	109.60	178.17
MW-21D	11/16/2015	287.77	200.5	185-200	109.75	178.02
MW-21D	02/15/2016	287.77	200.5	185-200	109.50	178.27
MW-21D	05/09/2016	287.77	200.5	185-200	109.31	178.46
MW-21D	08/22/2016	287.77	200.5	185-200	109.30	178.47
MW-21D	11/28/2016	287.77	200.5	185-200	108.13	179.64
MW-21D	03/06/2017	287.77	200.5	185-200	107.61	180.16
MW-21D	05/22/2017	287.77	200.5	185-200	106.44	181.33
MW-21D	06/19/2017	287.77	200.5	185-200	107.04	180.73
MW-21D	08/28/2017	287.77	200.5	185-200	107.27	180.50
MW-21D	12/11/2017	287.77	200.5	185-200	107.19	180.58
MW-21D	02/12/2018	287.77	200.5	185-200	--	--
MW-21D	05/21/2018	287.77	200.5	185-200	106.11	181.66
MW-21D	07/30/2018	287.77	200.5	185-200	105.31	182.46
MW-21D	10/16/2018	287.77	200.5	185-200	104.53	183.24
MW-21D	01/07/2019	287.77	200.5	185-200	103.35	184.42
MW-21D	04/22/2019	287.77	200.5	185-200	101.11	186.66
MW-21D	07/15/2019	287.77	200.5	185-200	100.81	186.96
MW-21D	11/04/2019	287.77	200.5	185-200	99.96	187.81
MW-21D	06/15/2020	287.77	200.5	185-200	97.95	189.82
MW-21S	11/18/2013	284.43	145	120-135	105.90	178.53

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-21S	05/12/2014	284.43	145	120-135	107.32	177.11
MW-21S	11/10/2014	284.43	145	120-135	107.85	176.58
MW-21S	04/21/2015	287.38	145	120-135	109.52	177.86
MW-21S	06/22/2015	287.38	145	120-135	108.62	178.76
MW-21S	09/08/2015	287.38	145	120-135	109.28	178.10
MW-21S	11/16/2015	287.38	145	120-135	109.78	177.60
MW-21S	02/15/2016	287.38	145	120-135	109.14	178.24
MW-21S	05/09/2016	287.38	145	120-135	108.77	178.61
MW-21S	08/22/2016	287.38	145	120-135	109.08	178.30
MW-21S	11/28/2016	287.38	145	120-135	107.72	179.66
MW-21S	03/06/2017	287.38	145	120-135	106.75	180.63
MW-21S	05/22/2017	287.38	145	120-135	106.09	181.29
MW-21S	06/19/2017	287.38	145	120-135	106.78	180.60
MW-21S	08/28/2017	287.38	145	120-135	106.89	180.49
MW-21S	12/11/2017	287.38	145	120-135	106.44	180.94
MW-21S	02/12/2018	287.38	145	120-135	105.83	181.55
MW-21S	05/21/2018	287.38	145	120-135	105.18	182.20
MW-21S	07/30/2018	287.38	145	120-135	104.94	182.44
MW-21S	10/16/2018	287.38	145	120-135	104.20	183.18
MW-21S	01/07/2019	287.38	145	120-135	103.02	184.36
MW-21S	04/22/2019	287.38	145	120-135	101.42	185.96
MW-21S	07/15/2019	287.38	145	120-135	100.41	186.97
MW-21S	11/04/2019	287.38	145	120-135	99.62	187.76
MW-21S	06/15/2020	287.38	145	120-135	97.65	189.73
MW-21S	11/09/2020	287.38	145	120-135	97.60	189.78
MW-21S	04/05/2021	287.38	145	120-135	96.72	190.66
MW-22S	11/18/2013	284.43	160	120-135	107.85	176.58
MW-22S	05/12/2014	284.43	160	120-135	109.20	175.23
MW-22S	11/10/2014	284.43	160	120-135	109.80	174.63
MW-22S	04/21/2015	289.31	160	120-135	111.41	177.90
MW-22S	06/22/2015	289.31	160	120-135	110.54	178.77
MW-22S	09/08/2015	289.31	160	120-135	111.13	178.18
MW-22S	11/16/2015	289.31	160	120-135	111.61	177.70
MW-22S	02/15/2016	289.31	160	120-135	111.09	178.22
MW-22S	05/09/2016	289.31	160	120-135	110.64	178.67
MW-22S	08/22/2016	289.31	160	120-135	110.88	178.43
MW-22S	11/28/2016	289.31	160	120-135	109.59	179.72
MW-22S	03/06/2017	289.31	160	120-135	108.66	180.65
MW-22S	05/22/2017	289.31	160	120-135	108.13	181.18
MW-22S	06/19/2017	289.31	160	120-135	108.73	180.58
MW-22S	08/28/2017	289.31	160	120-135	108.84	180.47
MW-22S	12/11/2017	289.31	160	120-135	108.77	180.54
MW-22S	02/12/2018	289.31	160	120-135	107.94	181.37

Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
MW-22S	05/21/2018	289.31	160	120-135	107.04	182.27
MW-22S	07/30/2018	289.31	160	120-135	106.82	182.49
MW-22S	10/16/2018	289.31	160	120-135	106.06	183.25
MW-22S	01/07/2019	289.31	160	120-135	104.92	184.39
MW-22S	04/22/2019	289.31	160	120-135	103.02	186.29
MW-22S	07/15/2019	289.31	160	120-135	102.35	186.96
MW-22S	11/04/2019	289.31	160	120-135	101.47	187.84
MW-22S	06/15/2020	289.31	160	120-135	99.49	189.82
MW-22S	11/09/2020	289.31	160	120-135	99.43	189.88
MW-22S	04/05/2021	289.31	160	120-135	98.55	190.76
MW-23	04/21/2015	287.57	130	105-130	109.59	177.98
MW-23	06/22/2015	287.57	130	105-130	108.66	178.91
MW-23	09/08/2015	287.57	130	105-130	109.32	178.25
MW-23	11/16/2015	287.57	130	105-130	109.84	177.73
MW-23	02/15/2016	287.57	130	105-130	109.20	178.37
MW-23	05/09/2016	287.57	130	105-130	108.80	178.77
MW-23	08/22/2016	287.57	130	105-130	109.17	178.40
MW-23	11/28/2016	287.57	130	105-130	107.80	179.77
MW-23	03/06/2017	287.57	130	105-130	106.78	180.79
MW-23	05/22/2017	287.57	130	105-130	106.13	181.44
MW-23	06/19/2017	287.57	130	105-130	106.87	180.70
MW-23	08/28/2017	287.57	130	105-130	106.96	180.61
MW-23	12/11/2017	287.57	130	105-130	107.03	180.54
MW-23	02/12/2018	287.57	130	105-130	105.93	181.64
MW-23	05/21/2018	287.57	130	105-130	105.60	181.97
MW-23	07/30/2018	287.57	130	105-130	105.15	182.42
MW-23	10/16/2018	287.57	130	105-130	104.28	183.29
MW-23	01/07/2019	287.57	130	105-130	103.41	184.16
MW-23	04/22/2019	287.57	130	105-130	101.19	186.38
MW-23	07/15/2019	287.57	130	105-130	100.64	186.93
MW-23	11/04/2019	287.57	130	105-130	99.77	187.80
MW-23	06/15/2020	287.57	130	105-130	97.82	189.75
MW-23	11/09/2020	287.57	130	105-130	97.72	189.85
MW-23	04/05/2021	287.57	130	105-130	96.77	190.80
OB-07	09/10/2008	287.43	147	142-147	108.50	178.93
OB-07	12/02/2008	287.43	147	142-147	106.65	180.78
OB-07	09/08/2009	287.43	147	142-147	105.43	182.00
OB-07	06/28/2010	287.43	147	142-147	104.03	183.40
OB-07	12/13/2010	287.43	147	142-147	--	--
OB-07	06/20/2011	287.43	147	142-147	100.51	186.92
OB-07	12/08/2011	287.43	147	142-147	101.38	186.05
OB-07	06/18/2012	287.43	147	142-147	99.77	187.66
OB-07	11/26/2012	287.43	147	142-147	102.52	184.91

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
OB-07	06/24/2013	287.43	147	142-147	104.35	183.08
OB-07	11/18/2013	287.43	147	142-147	105.57	181.86
OB-07	05/12/2014	287.43	147	142-147	107.24	180.19
OB-07	11/10/2014	287.43	147	142-147	107.71	179.72
OB-07	06/22/2015	287.40	147	142-147	108.27	179.13
OB-07	09/08/2015	287.40	147	142-147	109.02	178.38
OB-07	11/16/2015	287.40	147	142-147	109.57	177.83
OB-07	02/15/2016	287.40	147	142-147	109.00	178.40
OB-07	05/09/2016	287.40	147	142-147	108.55	178.85
OB-07	08/22/2016	287.40	147	142-147	108.97	178.43
OB-07	11/28/2016	287.40	147	142-147	107.69	179.71
OB-07	03/06/2017	287.40	147	142-147	106.47	180.93
OB-07	05/22/2017	287.40	147	142-147	105.84	181.56
OB-07	06/19/2017	287.40	147	142-147	106.50	180.90
OB-07	08/28/2017	287.40	147	142-147	106.64	180.76
OB-07	12/11/2017	287.40	147	142-147	106.63	180.77
OB-07	02/12/2018	287.40	147	142-147	105.52	181.88
OB-07	05/21/2018	287.40	147	142-147	105.05	182.35
OB-07	07/30/2018	287.40	147	142-147	104.91	182.49
OB-07	10/16/2018	287.40	147	142-147	104.16	183.24
OB-07	01/07/2019	287.40	147	142-147	102.78	184.62
OB-07	04/22/2019	287.40	147	142-147	100.88	186.52
OB-07	07/15/2019	287.40	147	142-147	100.43	186.97
OB-07	11/04/2019	287.40	147	142-147	99.57	187.83
OB-07	06/15/2020	287.40	147	142-147	97.68	189.72
OB-08	09/10/2008	286.65	135	90-130	108.37	178.28
OB-08	12/02/2008	286.65	135	90-130	105.85	180.80
OB-08	09/08/2009	286.65	135	90-130	104.90	181.75
OB-08	06/28/2010	286.65	135	90-130	102.40	184.25
OB-08	12/13/2010	286.65	135	90-130	104.10	182.55
OB-08	06/20/2011	286.65	135	90-130	99.54	187.11
OB-08	12/08/2011	286.65	135	90-130	100.41	186.24
OB-08	06/18/2012	286.65	135	90-130	98.82	187.83
OB-08	11/26/2012	286.65	135	90-130	101.65	185.00
OB-08	06/24/2013	286.65	135	90-130	103.50	183.15
OB-08	11/18/2013	286.65	135	90-130	104.80	181.85
OB-08	05/12/2014	286.65	135	90-130	106.40	180.25
OB-08	11/10/2014	286.65	135	90-130	106.85	179.80
OB-08	04/21/2015	286.42	135	90-130	108.44	177.98
OB-08	06/22/2015	286.42	135	90-130	107.41	179.01
OB-08	09/08/2015	286.42	135	90-130	108.20	178.22
OB-08	11/16/2015	286.42	135	90-130	108.72	177.70
OB-08	02/15/2016	286.42	135	90-130	108.15	178.27

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
OB-08	05/09/2016	286.42	135	90-130	107.71	178.71
OB-08	08/22/2016	286.42	135	90-130	108.15	178.27
OB-08	11/28/2016	286.42	135	90-130	106.83	179.59
OB-08	03/06/2017	286.42	135	90-130	105.60	180.82
OB-08	05/22/2017	286.42	135	90-130	104.98	181.44
OB-08	06/19/2017	286.42	135	90-130	105.68	180.74
OB-08	08/28/2017	286.42	135	90-130	105.75	180.67
OB-08	12/11/2017	286.42	135	90-130	105.74	180.68
OB-08	02/12/2018	286.42	135	90-130	104.25	182.17
OB-08	05/21/2018	286.42	135	90-130	104.31	182.11
OB-08	07/30/2018	286.42	135	90-130	104.04	182.38
OB-08	10/16/2018	286.42	135	90-130	103.28	183.14
OB-08	01/07/2019	286.42	135	90-130	101.92	184.50
OB-08	04/22/2019	286.42	135	90-130	100.02	186.40
OB-08	07/15/2019	286.42	135	90-130	99.79	186.63
OB-08	11/04/2019	286.42	135	90-130	98.72	187.70
OB-08	06/15/2020	286.42	135	90-130	96.81	189.61
T01-01	05/23/2007	286.04	114	94-114	100.84	185.20
T01-01	11/28/2007	286.04	114	94-114	106.64	179.40
T01-01	06/09/2008	286.04	114	94-114	104.26	181.78
T01-01	09/10/2008	286.04	114	94-114	107.50	178.54
T01-01	12/02/2008	286.04	114	94-114	105.81	180.23
T01-01	09/08/2009	286.04	114	94-114	104.35	181.69
T01-01	06/28/2010	286.04	114	94-114	102.18	183.86
T01-01	12/13/2010	286.04	114	94-114	104.10	181.94
T01-01	06/20/2011	286.04	114	94-114	99.10	186.94
T01-01	10/17/2011	286.04	114	94-114	101.15	184.89
T01-01	06/18/2012	286.04	114	94-114	98.23	187.81
T01-01	11/26/2012	286.04	114	94-114	101.38	184.66
T01-01	06/24/2013	286.04	114	94-114	103.30	182.74
T01-01	11/18/2013	286.04	114	94-114	104.55	181.49
T01-01	05/12/2014	286.04	114	94-114	106.09	179.95
T01-01	11/10/2014	286.04	114	94-114	106.50	179.54
T01-01	06/22/2015	285.98	114	94-114	107.20	178.78
T01-01	09/08/2015	285.98	114	94-114	107.85	178.13
T01-01	11/16/2015	285.98	114	94-114	108.37	177.61
T01-01	02/15/2016	285.98	114	94-114	107.69	178.29
T01-01	05/09/2016	285.98	114	94-114	107.32	178.66
T01-01	08/22/2016	285.98	114	94-114	107.82	178.16
T01-01	11/28/2016	285.98	114	94-114	106.32	179.66
T01-01	03/06/2017	285.98	114	94-114	105.16	180.82
T01-01	05/22/2017	285.98	114	94-114	104.58	181.40
T01-01	06/19/2017	285.98	114	94-114	105.25	180.73

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
T01-01	08/28/2017	285.98	114	94-114	105.19	180.79
T01-01	12/11/2017	285.98	114	94-114	105.32	180.66
T01-01	02/12/2018	285.98	114	94-114	104.20	181.78
T01-01	05/21/2018	285.98	114	94-114	103.58	182.40
T01-01	07/30/2018	285.98	114	94-114	103.60	182.38
T01-01	10/16/2018	285.98	114	94-114	102.81	183.17
T01-01	01/07/2019	285.98	114	94-114	101.45	184.53
T01-01	04/22/2019	285.98	114	94-114	99.63	186.35
T01-01	07/15/2019	285.98	114	94-114	99.11	186.87
T01-01	11/04/2019	285.98	114	94-114	98.22	187.76
T01-01	06/15/2020	285.98	114	94-114	96.41	189.57
T01-01	11/09/2020	285.98	114	94-114	96.34	189.64
T01-01	04/05/2021	285.98	114	94-114	95.43	190.55
T01-02	05/23/2007	273.62	102	82-102	88.05	185.57
T01-02	11/28/2007	273.62	102	82-102	93.77	179.85
T01-02	06/09/2008	273.62	102	82-102	92.08	181.54
T01-02	09/10/2008	273.62	102	82-102	94.35	179.27
T01-02	12/02/2008	273.62	102	82-102	92.60	181.02
T01-02	09/08/2009	273.62	102	82-102	91.60	182.02
T01-02	06/28/2010	273.62	102	82-102	89.49	184.13
T01-02	12/13/2010	273.62	102	82-102	91.27	182.35
T01-02	06/20/2011	273.62	102	82-102	87.11	186.51
T01-02	12/08/2011	273.62	102	82-102	87.89	185.73
T01-02	06/18/2012	273.62	102	82-102	86.15	187.47
T01-02	11/26/2012	273.62	102	82-102	88.75	184.87
T01-02	06/24/2013	273.62	102	82-102	90.35	183.27
T01-02	11/18/2013	273.62	102	82-102	92.03	181.59
T01-02	05/12/2014	273.62	102	82-102	93.12	180.50
T01-02	11/10/2014	273.62	102	82-102	95.68	177.94
T01-02	04/21/2015	273.58	102	82-102	95.10	178.48
T01-02	06/22/2015	273.58	102	82-102	94.31	179.27
T01-02	09/08/2015	273.58	102	82-102	94.96	178.62
T01-02	11/16/2015	273.58	102	82-102	95.44	178.14
T01-02	02/15/2016	273.58	102	82-102	95.00	178.58
T01-02	05/09/2016	273.58	102	82-102	94.28	179.30
T01-02	08/22/2016	273.58	102	82-102	94.84	178.74
T01-02	11/28/2016	273.58	102	82-102	93.66	179.92
T01-02	03/06/2017	273.58	102	82-102	92.53	181.05
T01-02	05/22/2017	273.58	102	82-102	91.96	181.62
T01-02	06/19/2017	273.58	102	82-102	92.50	181.08
T01-02	08/28/2017	273.58	102	82-102	92.75	180.83
T01-02	12/11/2017	273.58	102	82-102	92.67	180.91
T01-02	02/12/2018	273.58	102	82-102	91.65	181.93

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
T01-02	05/21/2018	273.58	102	82-102	91.09	182.49
T01-02	07/30/2018	273.58	102	82-102	90.71	182.87
T01-02	10/16/2018	273.58	102	82-102	90.19	183.39
T01-02	01/07/2019	273.58	102	82-102	88.83	184.75
T01-02	04/22/2019	273.58	102	82-102	86.92	186.66
T01-02	07/15/2019	273.58	102	82-102	86.39	187.19
T01-02	11/04/2019	273.58	102	82-102	85.36	188.22
T01-02	06/15/2020	273.58	102	82-102	83.61	189.97
T01-03	06/09/2008	288.40	150	128-148	107.13	181.27
T01-03	09/10/2008	288.40	150	128-148	109.00	179.40
T01-03	12/02/2008	288.40	150	128-148	107.10	181.30
T01-03	09/08/2009	288.40	150	128-148	106.30	182.10
T01-03	06/28/2010	288.40	150	128-148	104.15	184.25
T01-03	12/13/2010	288.40	150	128-148	106.10	182.30
T01-03	06/20/2011	288.40	150	128-148	107.45	180.95
T01-03	10/17/2011	288.40	150	128-148	104.21	184.19
T01-03	06/18/2012	288.40	150	128-148	101.29	187.11
T01-03	11/26/2012	288.40	150	128-148	103.62	184.78
T01-03	06/24/2013	288.40	150	128-148	104.97	183.43
T01-03	11/18/2013	288.40	150	128-148	106.07	182.33
T01-03	05/12/2014	288.40	150	128-148	107.56	180.84
T01-03	11/10/2014	288.40	150	128-148	107.98	180.42
T01-03	06/22/2015	288.20	150	128-148	109.00	179.20
T01-03	09/08/2015	288.20	150	128-148	109.30	178.90
T01-03	11/16/2015	288.20	150	128-148	110.17	178.03
T01-03	02/15/2016	288.20	150	128-148	109.65	178.55
T01-03	05/09/2016	288.20	150	128-148	109.21	178.99
T01-03	08/22/2016	288.20	150	128-148	109.48	178.72
T01-03	11/28/2016	288.20	150	128-148	108.33	179.87
T01-03	03/06/2017	288.20	150	128-148	107.42	180.78
T01-03	05/22/2017	288.20	150	128-148	106.76	181.44
T01-03	06/19/2017	288.20	150	128-148	107.28	180.92
T01-03	08/28/2017	288.20	150	128-148	107.70	180.50
T01-03	12/11/2017	288.20	150	128-148	107.43	180.77
T01-03	02/12/2018	288.20	150	128-148	106.54	181.66
T01-03	05/21/2018	288.20	150	128-148	105.92	182.28
T01-03	07/30/2018	288.20	150	128-148	105.74	182.46
T01-03	10/16/2018	288.20	150	128-148	104.92	183.28
T01-03	01/07/2019	288.20	150	128-148	103.71	184.49
T01-03	04/22/2019	288.20	150	128-148	101.68	186.52
T01-03	07/15/2019	288.20	150	128-148	101.04	187.16
T01-03	11/04/2019	288.20	150	128-148	100.22	187.98
T01-03	06/15/2020	288.20	150	128-148	98.10	190.10

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
T02-01	06/09/2008	287.23	155	135-150	105.81	181.42
T02-01	09/10/2008	287.23	155	135-150	108.73	178.50
T02-01	12/02/2008	287.23	155	135-150	107.10	180.13
T02-01	09/08/2009	287.23	155	135-150	105.50	181.73
T02-01	06/28/2010	287.23	155	135-150	104.58	182.65
T02-01	12/13/2010	287.23	155	135-150	106.32	180.91
T02-01	06/20/2011	287.23	155	135-150	101.60	185.63
T02-01	12/08/2011	287.23	155	135-150	102.28	184.95
T02-01	06/18/2012	287.23	155	135-150	99.93	187.30
T02-01	11/26/2012	287.23	155	135-150	103.35	183.88
T02-01	06/24/2013	287.23	155	135-150	104.40	182.83
T02-01	11/18/2013	287.23	155	135-150	106.02	181.21
T02-01	05/12/2014	287.23	155	135-150	107.15	180.08
T02-01	11/10/2014	287.23	155	135-150	107.69	179.54
T02-01	06/22/2015	287.22	155	135-150	108.51	178.71
T02-01	09/08/2015	287.22	155	135-150	109.09	178.13
T02-01	11/16/2015	287.22	155	135-150	109.67	177.55
T02-01	02/15/2016	287.22	155	135-150	109.04	178.18
T02-01	05/09/2016	287.22	155	135-150	108.68	178.54
T02-01	08/22/2016	287.22	155	135-150	108.80	178.42
T02-01	11/28/2016	287.22	155	135-150	107.50	179.72
T02-01	03/06/2017	287.22	155	135-150	106.65	180.57
T02-01	05/22/2017	287.22	155	135-150	106.00	181.22
T02-01	06/19/2017	287.22	155	135-150	106.69	180.53
T02-01	08/28/2017	287.22	155	135-150	106.73	180.49
T02-01	12/11/2017	287.22	155	135-150	106.71	180.51
T02-01	02/12/2018	287.22	155	135-150	--	--
T02-01	05/21/2018	287.22	155	135-150	104.87	182.35
T02-01	07/30/2018	287.22	155	135-150	--	--
T02-01	10/16/2018	287.22	155	135-150	--	--
T02-01	01/07/2019	287.22	155	135-150	102.75	184.47
T02-01	04/22/2019	287.22	155	135-150	100.91	186.31
T02-01	07/15/2019	287.22	155	135-150	100.17	187.05
T02-01	11/04/2019	287.22	155	135-150	99.14	188.08
T02-01	06/15/2020	287.22	155	135-150	97.28	189.94
T02-02	06/09/2008	290.05	160	135-150	109.06	180.99
T02-02	09/10/2008	290.05	160	135-150	111.05	179.00
T02-02	12/02/2008	290.05	160	135-150	109.20	180.85
T02-02	09/08/2009	290.05	160	135-150	108.35	181.70
T02-02	06/28/2010	290.05	160	135-150	106.76	183.29
T02-02	12/13/2010	290.05	160	135-150	108.72	181.33
T02-02	06/20/2011	290.05	160	135-150	104.74	185.31
T02-02	12/08/2011	290.05	160	135-150	105.41	184.64

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
T02-02	06/18/2012	290.05	160	135-150	103.18	186.87
T02-02	11/26/2012	290.05	160	135-150	105.88	184.17
T02-02	06/24/2013	290.05	160	135-150	106.86	183.19
T02-02	11/18/2013	290.05	160	135-150	108.05	182.00
T02-02	05/12/2014	290.05	160	135-150	109.45	180.60
T02-02	11/10/2014	290.05	160	135-150	110.36	179.69
T02-02	06/22/2015	290.14	160	135-150	111.00	179.14
T02-02	09/08/2015	290.14	160	135-150	111.36	178.78
T02-02	11/16/2015	290.14	160	135-150	112.14	178.00
T02-02	02/15/2016	290.14	160	135-150	111.72	178.42
T02-02	05/09/2016	290.14	160	135-150	111.17	178.97
T02-02	08/22/2016	290.14	160	135-150	111.28	178.86
T02-02	11/28/2016	290.14	160	135-150	110.11	180.03
T02-02	03/06/2017	290.14	160	135-150	109.41	180.73
T02-02	05/22/2017	290.14	160	135-150	108.77	181.37
T02-02	06/19/2017	290.14	160	135-150	109.30	180.84
T02-02	08/28/2017	290.14	160	135-150	109.62	180.52
T02-02	12/11/2017	290.14	160	135-150	109.32	180.82
T02-02	02/12/2018	290.14	160	135-150	108.52	181.62
T02-02	05/21/2018	290.14	160	135-150	107.71	182.43
T02-02	07/30/2018	290.14	160	135-150	107.41	182.73
T02-02	10/16/2018	290.14	160	135-150	106.60	183.54
T02-02	01/07/2019	290.14	160	135-150	105.44	184.70
T02-02	04/22/2019	290.14	160	135-150	103.54	186.60
T02-02	07/15/2019	290.14	160	135-150	102.78	187.36
T02-02	11/04/2019	290.14	160	135-150	101.92	188.22
T02-02	06/15/2020	290.14	160	135-150	99.77	190.37
T02-02D	06/28/2010	290.17	188	178-188	107.05	183.12
T02-02D	12/13/2010	290.17	188	178-188	108.61	181.56
T02-02D	06/20/2011	290.17	188	178-188	104.74	185.43
T02-02D	12/08/2011	290.17	188	178-188	105.51	184.66
T02-02D	06/18/2012	290.17	188	178-188	104.23	185.94
T02-02D	11/26/2012	290.17	188	178-188	105.93	184.24
T02-02D	06/24/2013	290.17	188	178-188	106.83	183.34
T02-02D	11/18/2013	290.17	188	178-188	108.13	182.04
T02-02D	05/12/2014	290.17	188	178-188	109.55	180.62
T02-02D	11/10/2014	290.17	188	178-188	109.95	180.22
T02-02D	06/22/2015	290.15	188	178-188	111.10	179.05
T02-02D	09/08/2015	290.15	188	178-188	111.52	178.63
T02-02D	11/16/2015	290.15	188	178-188	111.82	178.33
T02-02D	02/15/2016	290.15	188	178-188	111.78	178.37
T02-02D	05/09/2016	290.15	188	178-188	111.32	178.83
T02-02D	08/22/2016	290.15	188	178-188	111.32	178.83

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
T02-02D	11/28/2016	290.15	188	178-188	110.18	179.97
T02-02D	03/06/2017	290.15	188	178-188	109.33	180.82
T02-02D	05/22/2017	290.15	188	178-188	108.80	181.35
T02-02D	06/19/2017	290.15	188	178-188	107.30	182.85
T02-02D	08/28/2017	290.15	188	178-188	109.65	180.50
T02-02D	12/11/2017	290.15	188	178-188	109.42	180.73
T02-02D	02/12/2018	290.15	188	178-188	108.67	181.48
T02-02D	05/21/2018	290.15	188	178-188	107.74	182.41
T02-02D	07/30/2018	290.15	188	178-188	107.42	182.73
T02-02D	10/16/2018	290.15	188	178-188	106.56	183.59
T02-02D	01/07/2019	290.15	188	178-188	106.05	184.10
T02-02D	04/22/2019	290.15	188	178-188	103.58	186.57
T02-02D	07/15/2019	290.15	188	178-188	102.94	187.21
T02-02D	11/04/2019	290.15	188	178-188	101.80	188.35
T02-02D	06/15/2020	290.15	188	178-188	99.80	190.35
T02-03	09/10/2008	288.93	155	135-150	109.75	179.18
T02-03	12/02/2008	288.93	155	135-150	107.70	181.23
T02-03	09/08/2009	288.93	155	135-150	106.95	181.98
T02-03	06/28/2010	288.93	155	135-150	105.62	183.31
T02-03	12/13/2010	288.93	155	135-150	107.42	181.51
T02-03	06/20/2011	288.93	155	135-150	103.87	185.06
T02-03	12/08/2011	288.93	155	135-150	104.52	184.41
T02-03	06/18/2012	288.93	155	135-150	102.28	186.65
T02-03	11/26/2012	288.93	155	135-150	104.73	184.20
T02-03	06/24/2013	288.93	155	135-150	105.49	183.44
T02-03	11/18/2013	288.93	155	135-150	106.94	181.99
T02-03	05/12/2014	288.93	155	135-150	108.05	180.88
T02-03	11/10/2014	288.93	155	135-150	108.71	180.22
T02-03	06/22/2015	288.90	155	135-150	109.60	179.30
T02-03	09/08/2015	288.90	155	135-150	110.30	178.60
T02-03	11/16/2015	288.90	155	135-150	110.82	178.08
T02-03	02/15/2016	288.90	155	135-150	110.38	178.52
T02-03	05/09/2016	288.90	155	135-150	109.92	178.98
T02-03	08/22/2016	288.90	155	135-150	109.90	179.00
T02-03	11/28/2016	288.90	155	135-150	108.85	180.05
T02-03	03/06/2017	288.90	155	135-150	108.27	180.63
T02-03	05/22/2017	288.90	155	135-150	107.59	181.31
T02-03	06/19/2017	288.90	155	135-150	108.04	180.86
T02-03	08/28/2017	288.90	155	135-150	108.52	180.38
T02-03	12/11/2017	288.90	155	135-150	108.24	180.66
T02-03	02/12/2018	288.90	155	135-150	107.40	181.50
T02-03	05/21/2018	288.90	155	135-150	106.54	182.36
T02-03	07/30/2018	288.90	155	135-150	106.20	182.70

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
T02-03	10/16/2018	288.90	155	135-150	106.56	182.34
T02-03	01/07/2019	288.90	155	135-150	104.21	184.69
T02-03	04/22/2019	288.90	155	135-150	102.38	186.52
T02-03	07/15/2019	288.90	155	135-150	101.51	187.39
T02-03	11/04/2019	288.90	155	135-150	100.57	188.33
T02-03	06/15/2020	288.90	155	135-150	98.42	190.48
T03-01D	06/28/2010	286.16	185	160-170	105.83	180.33
T03-01D	12/13/2010	286.16	185	160-170	105.40	180.76
T03-01D	06/20/2011	286.16	185	160-170	101.60	184.56
T03-01D	12/08/2011	286.16	185	160-170	102.24	183.92
T03-01D	06/18/2012	286.16	185	160-170	99.65	186.51
T03-01D	11/26/2012	286.16	185	160-170	102.52	183.64
T03-01D	06/24/2013	286.16	185	160-170	102.83	183.33
T03-01D	11/18/2013	286.16	185	160-170	104.60	181.56
T03-01D	05/12/2014	286.16	185	160-170	105.59	180.57
T03-01D	11/10/2014	286.16	185	160-170	106.73	179.43
T03-01D	06/22/2015	286.20	185	160-170	107.17	179.03
T03-01D	09/08/2015	286.20	185	160-170	107.68	178.52
T03-01D	11/16/2015	286.20	185	160-170	108.52	177.68
T03-01D	02/15/2016	286.20	185	160-170	107.90	178.30
T03-01D	05/09/2016	286.20	185	160-170	105.31	180.89
T03-01D	08/22/2016	286.20	185	160-170	107.19	179.01
T03-01D	11/28/2016	286.20	185	160-170	106.08	180.12
T03-01D	03/06/2017	286.20	185	160-170	106.71	179.49
T03-01D	05/22/2017	286.20	185	160-170	105.11	181.09
T03-01D	06/19/2017	286.20	185	160-170	105.60	180.60
T03-01D	08/28/2017	286.20	185	160-170	105.95	180.25
T03-01D	12/11/2017	286.20	185	160-170	105.74	180.46
T03-01D	02/12/2018	286.20	185	160-170	104.90	181.30
T03-01D	05/21/2018	286.20	185	160-170	105.84	180.36
T03-01D	07/30/2018	286.20	185	160-170	103.41	182.79
T03-01D	10/16/2018	286.20	185	160-170	105.35	180.85
T03-01D	01/07/2019	286.20	185	160-170	101.56	184.64
T03-01D	04/22/2019	286.20	185	160-170	99.63	186.57
T03-01D	07/15/2019	286.20	185	160-170	98.79	187.41
T03-01D	11/04/2019	286.20	185	160-170	97.70	188.50
T03-01D	06/15/2020	286.20	185	160-170	95.71	190.49
VW-01A	09/10/2008	287.93	150	90-125	79.40	208.53
VW-01A	12/02/2008	287.93	150	90-125	--	--
VW-01A	09/08/2009	287.93	150	90-125	--	--
VW-01B	09/10/2008	287.93	150	90-125	109.02	178.91
VW-01B	12/02/2008	287.93	150	90-125	107.29	180.64
VW-01B	09/08/2009	287.93	150	90-125	106.20	181.73
VW-01B	06/28/2010	287.93	150	90-125	103.91	184.02
VW-01B	12/13/2010	287.93	150	90-125	106.88	181.05

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
VW-01B	06/20/2011	287.93	150	90-125	101.68	186.25
VW-01B	10/17/2011	287.93	150	90-125	103.32	184.61
VW-01B	06/18/2012	287.93	150	90-125	100.60	187.33
VW-01B	11/26/2012	287.93	150	90-125	103.54	184.39
VW-01B	06/24/2013	287.93	150	90-125	105.23	182.70
VW-01B	11/18/2013	287.93	150	90-125	106.38	181.55
VW-01B	05/12/2014	287.93	150	90-125	108.32	179.61
VW-01B	11/10/2014	287.93	150	90-125	108.48	179.45
VW-01B	04/21/2015	288.27	150	90-125	110.08	178.19
VW-01B	06/22/2015	288.27	150	90-125	108.95	179.32
VW-01B	09/08/2015	288.27	150	90-125	109.80	178.47
VW-01B	11/16/2015	288.27	150	90-125	110.30	177.97
VW-01B	02/15/2016	288.27	150	90-125	109.75	178.52
VW-01B	05/09/2016	288.27	150	90-125	109.42	178.85
VW-01B	08/22/2016	288.27	150	90-125	92.60	195.67
VW-01B	11/28/2016	288.27	150	90-125	107.40	180.87
VW-01B	03/06/2017	288.27	150	90-125	107.27	181.00
VW-01B	05/22/2017	288.27	150	90-125	106.70	181.57
VW-01B	06/19/2017	288.27	150	90-125	107.22	181.05
VW-01B	08/28/2017	288.27	150	90-125	107.29	180.98
VW-01B	12/11/2017	288.27	150	90-125	107.50	180.77
VW-01B	02/12/2018	288.27	150	90-125	106.41	181.86
VW-01B	05/21/2018	288.27	150	90-125	105.72	182.55
VW-01B	07/30/2018	288.27	150	90-125	103.90	184.37
VW-01B	10/16/2018	288.27	150	90-125	104.71	183.56
VW-01B	01/07/2019	288.27	150	90-125	103.62	184.65
VW-01B	04/23/2019	288.27	150	90-125	101.59	186.68
VW-01B	07/15/2019	288.27	150	90-125	101.16	187.11
VW-01B	11/04/2019	288.27	150	90-125	100.38	187.89
VW-01B	06/15/2020	288.27	150	90-125	98.47	189.80
VW-02A	09/10/2008	287.34	150	90-125	79.35	207.99
VW-02A	12/02/2008	287.34	150	90-125	--	--
VW-02A	09/08/2009	287.34	150	90-125	--	--
VW-02B	09/10/2008	287.28	150	90-125	108.36	178.92
VW-02B	12/02/2008	287.28	150	90-125	106.69	180.59
VW-02B	09/08/2009	287.28	150	90-125	106.30	180.98
VW-02B	06/28/2010	287.28	150	90-125	103.53	183.75
VW-02B	12/13/2010	287.28	150	90-125	105.30	181.98
VW-02B	06/20/2011	287.28	150	90-125	100.90	186.38
VW-02B	10/17/2011	287.28	150	90-125	102.83	184.45
VW-02B	06/18/2012	287.28	150	90-125	99.80	187.48
VW-02B	11/26/2012	287.28	150	90-125	102.71	184.57
VW-02B	06/24/2013	287.28	150	90-125	104.68	182.60
VW-02B	11/18/2013	287.28	150	90-125	105.92	181.36
VW-02B	05/12/2014	287.28	150	90-125	107.60	179.68

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
VW-02B	11/10/2014	287.28	150	90-125	108.03	179.25
VW-02B	04/21/2015	287.86	150	90-125	109.83	178.03
VW-02B	06/22/2015	287.86	150	90-125	108.41	179.45
VW-02B	09/08/2015	287.86	150	90-125	109.18	178.68
VW-02B	11/16/2015	287.86	150	90-125	109.65	178.21
VW-02B	02/15/2016	287.86	150	90-125	109.10	178.76
VW-02B	05/09/2016	287.86	150	90-125	108.76	179.10
VW-02B	08/22/2016	287.86	150	90-125	109.56	178.30
VW-02B	11/28/2016	287.86	150	90-125	107.76	180.10
VW-02B	03/06/2017	287.86	150	90-125	106.55	181.31
VW-02B	05/22/2017	287.86	150	90-125	106.00	181.86
VW-02B	06/19/2017	287.86	150	90-125	106.50	181.36
VW-02B	08/28/2017	287.86	150	90-125	106.63	181.23
VW-02B	12/11/2017	287.86	150	90-125	106.93	180.93
VW-02B	02/12/2018	287.86	150	90-125	106.90	180.96
VW-02B	05/21/2018	287.86	150	90-125	105.12	182.74
VW-02B	07/30/2018	287.86	150	90-125	105.12	182.74
VW-02B	10/16/2018	287.86	150	90-125	104.24	183.62
VW-02B	01/07/2019	287.86	150	90-125	103.16	184.70
VW-02B	04/22/2019	287.86	150	90-125	100.89	186.97
VW-02B	07/15/2019	287.86	150	90-125	100.56	187.30
VW-02B	11/04/2019	287.86	150	90-125	99.61	188.25
VW-02B	06/15/2020	287.86	150	90-125	97.99	189.87
VW-03A	09/10/2008	287.52	150	90-125	80.20	207.32
VW-03A	12/02/2008	287.52	150	90-125	--	--
VW-03A	09/08/2009	287.52	150	90-125	--	--
VW-03B	09/10/2008	287.41	150	90-125	108.49	178.92
VW-03B	12/02/2008	287.41	150	90-125	106.96	180.45
VW-03B	09/08/2009	287.41	150	90-125	105.60	181.81
VW-03B	06/28/2010	287.41	150	90-125	102.60	184.81
VW-03B	12/13/2010	287.41	150	90-125	104.77	182.64
VW-03B	06/20/2011	287.41	150	90-125	100.58	186.83
VW-03B	10/17/2011	287.41	150	90-125	102.49	184.92
VW-03B	06/18/2012	287.41	150	90-125	99.21	188.20
VW-03B	11/26/2012	287.41	150	90-125	102.53	184.88
VW-03B	06/24/2013	287.41	150	90-125	104.25	183.16
VW-03B	11/18/2013	287.41	150	90-125	105.26	182.15
VW-03B	05/12/2014	287.41	150	90-125	107.19	180.22
VW-03B	11/10/2014	287.41	150	90-125	107.72	179.69
VW-03B	06/22/2015	287.40	150	90-125	108.30	179.10
VW-03B	09/08/2015	287.40	150	90-125	109.02	178.38
VW-03B	11/16/2015	287.40	150	90-125	109.49	177.91
VW-03B	02/15/2016	287.40	150	90-125	109.00	178.40
VW-03B	05/09/2016	287.40	150	90-125	108.61	178.79
VW-03B	08/22/2016	287.40	150	90-125	108.92	178.48

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
VW-03B	11/28/2016	287.40	150	90-125	107.63	179.77
VW-03B	03/06/2017	287.40	150	90-125	106.39	181.01
VW-03B	05/22/2017	287.40	150	90-125	105.88	181.52
VW-03B	06/19/2017	287.40	150	90-125	106.46	180.94
VW-03B	08/28/2017	287.40	150	90-125	106.60	180.80
VW-03B	12/11/2017	287.40	150	90-125	106.80	180.60
VW-03B	02/12/2018	287.40	150	90-125	105.33	182.07
VW-03B	05/21/2018	287.40	150	90-125	105.00	182.40
VW-03B	07/30/2018	287.40	150	90-125	102.33	185.07
VW-03B	10/16/2018	287.40	150	90-125	103.96	183.44
VW-03B	01/07/2019	287.40	150	90-125	102.99	184.41
VW-03B	04/22/2019	287.40	150	90-125	101.04	186.36
VW-03B	07/15/2019	287.40	150	90-125	100.48	186.92
VW-03B	11/04/2019	287.40	150	90-125	99.67	187.73
VW-03B	06/15/2020	287.40	150	90-125	97.80	189.60
VW-04A	09/10/2008	287.02	150	90-125	--	--
VW-04A	12/02/2008	287.02	150	90-125	--	--
VW-04A	09/08/2009	287.02	150	90-125	--	--
VW-04B	09/10/2008	286.91	150	90-125	108.15	178.76
VW-04B	12/02/2008	286.91	150	90-125	106.24	180.67
VW-04B	09/08/2009	286.91	150	90-125	105.50	181.41
VW-04B	06/28/2010	286.91	150	90-125	103.12	183.79
VW-04B	12/13/2010	286.91	150	90-125	105.10	181.81
VW-04B	06/20/2011	286.91	150	90-125	100.65	186.26
VW-04B	10/17/2011	286.91	150	90-125	102.56	184.35
VW-04B	06/18/2012	286.91	150	90-125	99.57	187.34
VW-04B	11/26/2012	286.91	150	90-125	102.59	184.32
VW-04B	06/24/2013	286.91	150	90-125	104.32	182.59
VW-04B	11/18/2013	286.91	150	90-125	105.28	181.63
VW-04B	05/12/2014	286.91	150	90-125	107.12	179.79
VW-04B	11/10/2014	286.91	150	90-125	107.69	179.22
VW-04B	04/21/2015	287.35	150	90-125	109.32	178.03
VW-04B	06/22/2015	287.35	150	90-125	108.31	179.04
VW-04B	09/08/2015	287.35	150	90-125	108.96	178.39
VW-04B	11/16/2015	287.35	150	90-125	109.48	177.87
VW-04B	02/15/2016	287.35	150	90-125	108.86	178.49
VW-04B	05/09/2016	287.35	150	90-125	108.47	178.88
VW-04B	08/22/2016	287.35	150	90-125	108.85	178.50
VW-04B	11/28/2016	287.35	150	90-125	107.54	179.81
VW-04B	03/06/2017	287.35	150	90-125	106.30	181.05
VW-04B	05/22/2017	287.35	150	90-125	105.77	181.58
VW-04B	06/19/2017	287.35	150	90-125	106.38	180.97
VW-04B	08/28/2017	287.35	150	90-125	106.45	180.90
VW-04B	12/11/2017	287.35	150	90-125	106.53	180.82
VW-04B	02/12/2018	287.35	150	90-125	105.47	181.88

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Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
VW-04B	05/21/2018	287.35	150	90-125	105.04	182.31
VW-04B	07/30/2018	287.35	150	90-125	104.68	182.67
VW-04B	10/16/2018	287.35	150	90-125	104.03	183.32
VW-04B	01/07/2019	287.35	150	90-125	102.71	184.64
VW-04B	04/22/2019	287.35	150	90-125	100.18	187.17
VW-04B	07/15/2019	287.35	150	90-125	100.23	187.12
VW-04B	11/04/2019	287.35	150	90-125	99.01	188.34
VW-04B	06/15/2020	287.35	150	90-125	97.56	189.79
VW-05	06/28/2010	286.87	150	90-125	103.24	183.63
VW-05	12/13/2010	286.87	150	90-125	105.40	181.47
VW-05	06/20/2011	286.87	150	90-125	100.64	186.23
VW-05	12/08/2011	286.87	150	90-125	101.41	185.46
VW-05	06/18/2012	286.87	150	90-125	99.60	187.27
VW-05	11/26/2012	286.87	150	90-125	102.65	184.22
VW-05	06/24/2013	286.87	150	90-125	104.34	182.53
VW-05	11/18/2013	286.87	150	90-125	105.58	181.29
VW-05	05/12/2014	286.87	150	90-125	107.12	179.75
VW-05	11/10/2014	286.87	150	90-125	107.60	179.27
VW-05	04/21/2015	287.23	150	90-125	109.32	177.91
VW-05	06/22/2015	287.23	150	90-125	108.22	179.01
VW-05	09/08/2015	287.23	150	90-125	108.86	178.37
VW-05	11/16/2015	287.23	150	90-125	109.48	177.75
VW-05	02/15/2016	287.23	150	90-125	108.88	178.35
VW-05	05/09/2016	287.23	150	90-125	108.49	178.74
VW-05	08/22/2016	287.23	150	90-125	108.91	178.32
VW-05	11/28/2016	287.23	150	90-125	107.52	179.71
VW-05	03/06/2017	287.23	150	90-125	106.40	180.83
VW-05	05/22/2017	287.23	150	90-125	105.78	181.45
VW-05	06/19/2017	287.23	150	90-125	106.58	180.65
VW-05	08/28/2017	287.23	150	90-125	106.43	180.80
VW-05	12/11/2017	287.23	150	90-125	106.57	180.66
VW-05	02/12/2018	287.23	150	90-125	105.52	181.71
VW-05	05/21/2018	287.23	150	90-125	105.90	181.33
VW-05	07/30/2018	287.23	150	90-125	104.65	182.58
VW-05	10/16/2018	287.23	150	90-125	104.00	183.23
VW-05	01/07/2019	287.23	150	90-125	102.76	184.47
VW-05	04/22/2019	287.23	150	90-125	100.09	187.14
VW-05	07/15/2019	287.23	150	90-125	100.20	187.03
VW-05	11/04/2019	287.23	150	90-125	99.39	187.84
VW-05	06/15/2020	287.23	150	90-125	97.38	189.85
VW-06	06/28/2010	286.92	150	90-125	103.38	183.54
VW-06	12/13/2010	286.92	150	90-125	105.56	181.36
VW-06	06/20/2011	286.92	150	90-125	100.72	186.20
VW-06	12/08/2011	286.92	150	90-125	101.50	185.42
VW-06	06/18/2012	286.92	150	90-125	99.59	187.33

Appendix A
Historical Groundwater Elevation Data
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
VW-06	11/26/2012	286.92	150	90-125	102.80	184.12
VW-06	06/24/2013	286.92	150	90-125	104.40	182.52
VW-06	11/18/2013	286.92	150	90-125	105.68	181.24
VW-06	05/12/2014	286.92	150	90-125	107.20	179.72
VW-06	11/10/2014	286.92	150	90-125	107.63	179.29
VW-06	04/21/2015	287.37	150	90-125	109.42	177.95
VW-06	06/22/2015	287.37	150	90-125	108.28	179.09
VW-06	09/08/2015	287.37	150	90-125	108.93	178.44
VW-06	11/16/2015	287.37	150	90-125	109.50	177.87
VW-06	02/15/2016	287.37	150	90-125	108.90	178.47
VW-06	05/09/2016	287.37	150	90-125	108.54	178.83
VW-06	08/22/2016	287.37	150	90-125	109.00	178.37
VW-06	11/28/2016	287.37	150	90-125	107.56	179.81
VW-06	03/06/2017	287.37	150	90-125	106.48	180.89
VW-06	05/22/2017	287.37	150	90-125	105.90	181.47
VW-06	06/19/2017	287.37	150	90-125	106.53	180.84
VW-06	08/28/2017	287.37	150	90-125	106.52	180.85
VW-06	12/11/2017	287.37	150	90-125	106.68	180.69
VW-06	02/12/2018	287.37	150	90-125	105.24	182.13
VW-06	05/21/2018	287.37	150	90-125	104.98	182.39
VW-06	07/30/2018	287.37	150	90-125	104.74	182.63
VW-06	10/16/2018	287.37	150	90-125	104.05	183.32
VW-06	01/07/2019	287.37	150	90-125	102.84	184.53
VW-06	04/22/2019	287.37	150	90-125	100.93	186.44
VW-06	07/15/2019	287.37	150	90-125	100.28	187.09
VW-06	11/04/2019	287.37	150	90-125	99.43	187.94
VW-06	06/15/2020	287.37	150	90-125	97.50	189.87
VW-07	06/28/2010	286.89	150	90-125	103.95	182.94
VW-07	12/13/2010	286.89	150	90-125	105.70	181.19
VW-07	06/20/2011	286.89	150	90-125	100.72	186.17
VW-07	12/08/2011	286.89	150	90-125	101.54	185.35
VW-07	06/18/2012	286.89	150	90-125	99.55	187.34
VW-07	11/26/2012	286.89	150	90-125	102.80	184.09
VW-07	06/24/2013	286.89	150	90-125	104.33	182.56
VW-07	11/18/2013	286.89	150	90-125	105.72	181.17
VW-07	05/12/2014	286.89	150	90-125	107.19	179.70
VW-07	11/10/2014	286.89	150	90-125	107.69	179.20
VW-07	04/21/2015	287.23	150	90-125	109.47	177.76
VW-07	06/22/2015	287.23	150	90-125	108.27	178.96
VW-07	09/08/2015	287.23	150	90-125	108.90	178.33
VW-07	11/16/2015	287.23	150	90-125	109.50	177.73
VW-07	02/15/2016	287.23	150	90-125	108.94	178.29
VW-07	05/09/2016	287.23	150	90-125	108.49	178.74
VW-07	08/22/2016	287.23	150	90-125	109.14	178.09
VW-07	11/28/2016	287.23	150	90-125	107.71	179.52

Appendix A
Historical Groundwater Elevation Data
Former Van Waters & Rogers Inc. Facility
1152 G Street
Fresno, California

Well	Date	Measuring Point Elevation (ft amsl)	Construction Depth (ft bgs)	Screen Interval (ft bgs)	Depth to Groundwater (ft btoc)	Water Elevation (ft amsl)
VW-07	03/06/2017	287.23	150	90-125	106.61	180.62
VW-07	05/22/2017	287.23	150	90-125	106.00	181.23
VW-07	06/19/2017	287.23	150	90-125	106.72	180.51
VW-07	08/28/2017	287.23	150	90-125	106.78	180.45
VW-07	12/11/2017	287.23	150	90-125	106.64	180.59
VW-07	02/12/2018	287.23	150	90-125	107.72	179.51
VW-07	05/21/2018	287.23	150	90-125	105.05	182.18
VW-07	07/30/2018	287.23	150	90-125	104.87	182.40
VW-07	10/16/2018	287.23	150	90-125	104.11	183.12
VW-07	01/07/2019	287.23	150	90-125	102.80	184.43
VW-07	04/22/2019	287.23	150	90-125	100.83	186.40
VW-07	07/15/2019	287.23	150	90-125	100.19	187.04
VW-07	11/04/2019	287.23	150	90-125	99.31	187.92
VW-07	06/15/2020	287.23	150	90-125	97.40	189.83

Notes:
* = Total depth of well measured on 18 November 2013
-- = not measured
dry = No groundwater detected in well
ft amsl = Feet above mean sea level
ft bgs = Feet below ground surface
ft btoc = Feet below top of casing

SUPPLEMENTAL REMEDIAL INVESTIGATION QUARTERLY MONITORING REPORT

California High Speed Train

FB-10-0121 (APN 465-040-21S)

Lamoure's Cleaners

Fresno, California

March 2020

Prepared for:

CALIFORNIA High-Speed Rail Authority

Prepared by:

blackburn consulting

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Geotechnical ▪ Geo-Environmental ▪ Construction Services ▪ Forensics

Blackburn File No. 3252.X
March 9, 2020

Ms. Katie Eastham
on behalf of the California High Speed Rail Authority
Bender Rosenthal, Inc.
2825 Watt Avenue, Suite 200
Sacramento, CA 95821

Subject: **SUPPLEMENTAL REMEDIAL INVESTIGATION (QUARTERLY MONITORING REPORT)**
California High Speed Train
FB-10-0121-1 and FB-10-0121-01 (APN 465-240-21S), Lamoure's Cleaners
1304 G Street
Fresno, California

Dear Ms. Eastham,

Blackburn Consulting (Blackburn) prepared this Supplemental Remedial Investigation (RI) and Quarterly Monitoring Report (Report) for the former Lamoure's Cleaners, identified by HST FB-10-0121-1 and FB-10-0121-01, Assessor Parcel Number (APN) 465-240-21S, located at 1304 G Street in Fresno, California.

This report documents the following:

- Groundwater sampling of MW-1,
- Quarter 2 soil vapor sampling of soil vapor wells SV-12 and SV-13, and
- Quarter 3 soil vapor sampling of soil vapor wells SV-1 through SV-11.

The work was performed by Blackburn at FB-10-0121-1 and FB-10-0121-01 and conducted as required by the Central Valley Regional Water Quality Control Board's letter dated December 6, 2018 that requests additional site assessment to evaluate lateral and vertical extent of soil gas degradation and potential contribution to existing groundwater contamination. This Report was completed in accordance with Blackburn's services identified in Task Order No. BC-17070-9.03 Fresno County.

Thank you for including Blackburn on your team for this important project. Please call if you have questions or require additional information.

Sincerely,
BLACKBURN CONSULTING

Laura Long

Laura Long
Senior Environmental Engineer

REGISTERED PROFESSIONAL ENGINEER
ANDREW HOGAN CAMPBELL
C60412
Expires 6/30/20
CIVIL
STATE OF CALIFORNIA

Andrew Campbell, PE
Senior Engineer

Cc: Mr. Paul Dotson, California Regional Water Quality Control Board, 1685 E. Street, Fresno, CA 93706

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1 INTRODUCTION

In accordance with California High Speed Train (CHST) Task Order No. BC-17070-9.03, Blackburn Consulting (Blackburn) prepared this Quarterly Monitoring Report (Report) to monitor tetrachloroethylene (PCE) levels in soil gas and groundwater at parcels FB-10-10-0121-1 and FB-10-0121-01-01 (collectively referred to as FB-10-0121 in this document or as "Site"). FB-10-0121 is located at 1304 G Street and identified by Assessor Parcel Number (APN) 465-040-21S, in Fresno, California.

The California High Speed Rail Authority (Authority) acquired parcel FB-10-0121 for development as part of the Fresno-to-Bakersfield segment of the CHST corridor in Fresno, California. Figure 1 indicates the site location. This report documents the third quarterly sampling of groundwater monitoring well MW-1 and soil vapor wells SV-1 through SV-11, and second quarterly sampling of soil vapor wells SV-12 and SV-13. Blackburn sampled all wells between January 27 and January 29, 2020. All work was completed as described in the November 15, 2018 Supplemental Remedial Investigation Workplan (Workplan) approved by the Central Valley Regional Water Quality Control Board (Water Board) in a letter dated December 6, 2018.

1.1 Purpose and Objective

Blackburn previously completed a remedial investigation (RI) at FB-10-0121 in June 2018 (Blackburn, Remedial Investigation Report, California High Speed Train, FB-10-0121, dated June 21, 2018). The 2018 investigation concluded elevated concentrations of PCE in soil gas exist beneath and in the vicinity of a former dry-cleaning business operated by Lamoure's Dry Cleaners at FB-10-0121. Elevated concentrations of PCE extend from near surface to approximately 90 feet below ground surface (bgs). The upgradient Univar, USA Inc. (Univar) facility also released PCE and other volatile organic compounds (VOCs) to groundwater. Blackburn's findings indicate that an on-site historical release of PCE may have also impacted groundwater beneath the subject parcel.

Based on the findings of the 2018 RI, the Water Board instructed Blackburn to conduct a Supplemental RI. The objective of the Supplemental RI was to install and sample four off-site soil vapor monitoring wells and complete groundwater and soil vapor quarterly sampling events for a minimum of one year. Blackburn constructed and sampled two off-site wells, (SV-10 and SV-11) in May 2019. An initial 2019 Supplemental RI report to the Water Board documented well installation and the first quarterly monitoring of SV-10 and SV-11 (Blackburn, Supplemental Remedial Investigation, California High Speed Train FB-10-0121, dated September 9, 2019).

The approval process for access agreements delayed the installation of SV-12 and SV-13 until November 2019, when Blackburn constructed and sampled two additional off-site wells (SV-12 and SV-13). A subsequent Supplemental RI report to the Water Board documented well installation and the first quarterly monitoring of SV-12 and SV-13 and second quarterly sampling for SV-10 and SV-11, and third quarterly sampling for SV-1 through SV-9. (Blackburn, Supplemental Remedial Investigation and Quarterly Monitoring Report, California High Speed Train FB-10-0-121, dated December 17, 2019).

1.2 Report Organization

This document presents field and laboratory analytical data from the January 2020 sampling of groundwater (MW-1) and soil vapor wells (SV-1 through SV-13). The document also provides conclusions and recommendations related to the need for additional investigation and remedial action.

2 PROJECT DESCRIPTION

2.1 Site Location and Description

Parcel FB-10-0121 resides in the northeast ¼ of Section 9, Township 14 South, Range 20 East, Mount Diablo Base and Meridian in Fresno, California. A masonry-block structure occupied this rectangle-shaped parcel until recently. The former structure's Portland cement slab-on-grade and surrounding asphalt-paved parking areas remain on the parcel. The former building housed a commercial laundry plant operated by Lamoure's Dry Cleaners. Vacant land bounds the parcel to the northwest and southeast. G Street fronts it to the southwest, and the Southern Pacific Rail alignment forms the northeast boundary. Figure 2 shows the project parcel location and APN parcel boundaries.

2.2 Proposed High Speed Train Development and Timing

The CHST proposes to develop the north half of the subject parcel with at-grade rail guideway facilities. CHST will ultimately uncover the surface of the parcel and demolish pavement outside of the guideway facilities. The on-site slab and paving may remain pending abatement of elevated VOC concentrations in shallow soil. The south half of the parcel will serve as a drainage basin to store and infiltrate the runoff between the HST corridor and G Street. The basin's design accommodates six inches of rainfall. Construction is anticipated to begin in approximately one year.

2.3 Geology and Hydrogeology

2.3.1 Geology

Several parties have studied nearby geology, including Environmental Resources Management (ERM), and Nichols Consulting Engineers (Nichols), who prepared cross-sections and fence diagrams. Blackburn consulted those data in defining the scope of work for this investigation. According to Nichols, shallow stratigraphy consists of alternating layers of silts, clays and sands with no substantial laterally continuous clay units present. Two laterally continuous clay units, approximately 36 feet to 77 feet thick were logged between City of Fresno Wells 9A and 22A in the interval between approximately 176 feet bgs, and 410 feet bgs. The two clay units are separated by approximately 60 feet to 90 feet of alternating layers of sands, silts and clays.

2.3.2 Hydrogeology

Blackburn reviewed groundwater elevation maps made available online (www.water.ca.gov/groundwater) by the California Department of Water Resources (DWR, 2017). These maps indicate that groundwater in the site vicinity is approximately 100 feet below ground surface (bgs). Groundwater flows regionally to the southwest, but water supply wells may influence local flow directions.

The *Fourth Quarter 2019 and Annual Groundwater Monitoring Report*[1] for the Former Van Waters & Rogers Inc. prepared by ERM for Univar, provides site-specific groundwater depth and parameters nearby. This report noted that groundwater monitoring activities included depth-to-water measurements at 60 wells and groundwater sampling at 43 wells as defined in Univar's monitoring and reporting program (MRP). Wells sampled included first encountered water as well as deeper water-bearing zones. First-encountered water was measured at a depth of 98.08 feet below top of casing (ft btoc) in MW-17S, and 98.12 ft btoc in MW-17D, which are located adjacent, southwest of the Lamoure's parcel. ERM's report described the shallow groundwater flow direction as generally to the west-northwest (generally towards the Site) and south in the deeper zone. Vertical gradients ranged from -0.0012 to +0.0077, with positive values meaning downward direction. The gradient at the MW-17S/MW-17D pair was +0.0011. ERM noted that the difference between shallow and deep groundwater elevations at shallow/deep well pairs is generally very small without any apparent seasonal trend in vertical gradients. Referenced monitoring well locations appear on Figure 3.

Previous Univar-related groundwater studies indicate that first-encountered groundwater and deeper water-bearing zones in the area appear to exist in unconfined conditions.

2.4 Site Chronology

2.4.1 Univar

Van Waters & Rogers, Inc formerly operated a facility at 1152 G Street in Fresno, California, approximately 500 feet southeast of the subject parcel. The company later adopted the name Univar, Inc. The facility stored PCE in an above-ground storage tank (AST) from about 1965 to 1987. PCE first appeared in soil samples collected from soil borings near the former PCE AST in 1994. Subsequent soil gas and soil investigations indicated PCE concentrations in most soil samples collected to a maximum concentration of 14 mg/kg. Several subsequent investigations included exploratory borings for collection of grab-groundwater samples and groundwater well installations.

Groundwater monitoring activities associated with the Univar site have occurred since 1996. To date, over 50 groundwater monitoring wells have been installed to monitor shallow groundwater and deeper groundwater-bearing zones. The monitoring wells extend from the former AST area at the Univar facility to north, east and west of the subject parcel and encompass FB-10-0-121.

2.4.2 Lamoure's Dry Cleaner

The Water Board issued a Cleanup and Abatement Order (CAO) to Lamoure's Inc. on October 7, 2011. The CAO required preparation of a work plan for assessment and cleanup of soil and/or groundwater impacted by PCE and other volatile organic constituents which may have been released from the subject parcel.

[1] Accessed at https://geotracker.waterboards.ca.gov/getfile?filename=/esi/uploads/geo_report/3685045719/SL185704255.PDF on March 4, 2020.

2.4.2.1 2015 Soil Gas Investigation – RCC Group, LLC

Subsequent to issuance of the CAO, RCC prepared a Work Plan for soil gas assessment on January 9, 2015 (amended based on Water Board comments) and installed and sampled four nested soil gas wells in June 2015. Each nest including three completion zones with completion depths at 10.5 feet, 30.5 feet, and 45.5 feet bgs. Each completion used ¼-inch diameter Teflon™ tubing with the bottom end connected to a soil gas probe tip. RCC soil gas well locations are indicated on Figure 3. Table 1 summarizes the RCC soil gas and soil sample data.

The Water Board issued a letter to the Authority on December 22, 2017 stating that the June 2015 investigation by RCC indicated a significant source of PCE on the site, in the vicinity of the former dry-cleaning machine, and along the sewer line. The Water Board stated that additional assessment was necessary to delineate the lateral and vertical extent of soil gas degradation so that a remedial option for cleanup of soil can be designed and implemented.

2.4.2.2 2018 Remedial Investigation (RI) - Blackburn

Blackburn submitted a work plan to address the Water Board's concerns on February 16, 2018, and subsequently completed the Remedial Investigation (RI) in June 2018. The RI included installation of one groundwater monitoring well (MW-1) to 123 feet bgs, installation of five nested soil vapor wells (SV-5, SV-6, SV-7, SV-8, and SV-9) to depths of up to 90.4 feet bgs, sampling of existing soil gas wells (SV-1 through SV-4), and sampling of newly installed soil gas wells (SV-5 through SV-9) and the groundwater monitoring well (MW-1). Soil gas well locations (SV-5 through SV-9) and groundwater well (MW-1) appear on Figure 3.

The RI report concluded that elevated PCE concentrations from near surface to approximately 90 feet bgs exceed DTSC commercial screening levels (DTSC-SLs) by up to five orders of magnitude and an on-site historical release of PCE appears to have likely impacted underlying groundwater. Table 2 summarizes the 2018 RI soil gas sampling data.

2.4.2.3 April/May 2019 Supplemental Remedial Investigation (SRI) - Blackburn

After Water Board review and comment on the RI, Blackburn submitted a Supplemental Remedial Investigation Workplan (California High Speed Train, FB-10-0121, Supplemental Remedial Investigation Workplan, November 2018) to the Water Board. The Supplemental Remedial Investigation Work Plan (Work Plan) proposed installation of four off-site soil vapor wells with up to five completion zones to a depth of 90 feet bgs. Figure 3 shows the locations of the four wells (SV-10 through SV-13).

On May 7, 2019, Blackburn installed two off-site nested soil gas wells (SV-10 and SV-11). The following sampling intervals were completed by well cluster location:

- SV-10: Completed in four discrete zones with probes screened to depths of 12.0 feet bgs, 29.0 feet bgs, and 55.0 feet bgs (inside one well vault), and 69.5 feet bgs (inside a second vault).
- SV-11: Completed in four discrete zones with probes screened to depths of 16.0 feet bgs, 29.0 feet bgs, 59.0 feet bgs, and 70.0 feet bgs, all within a single vault.

Blackburn collected thirty-nine (39) samples including one field duplicate from soil vapor wells SV-1 through SV-11 between April 29 and May 14, 2019. Table 3 summarizes the April/May 2019 soil gas sample data.

PCE concentrations at off-site locations (SV-10 and SV-11) to the northwest and southeast are significantly lower than concentrations located on FB-10-0121; indicating a source of PCE in the upper half of the vadose zone from the former dry-cleaning operations at FB-10-0121. The off-site concentrations are consistently lower through all depth intervals when compared to on-site concentrations. PCE vapors in the lower half of the vadose zone appear to have originated from the upper half of the vadose zone as well as the groundwater plume emanating from the Univar site.

Additional constituents (acetone, carbon disulfide, hexane, 1,3-dichlorbenzene, 1,4-dichlorobenzene, trans-1,2-dichloroethene, and toluene) were detected in SV-10 and SV-11 primarily between 50 and 70 feet bgs. These constituents were not reported in SV-1 through SV-9, and Lamoure's has no history of their storage or use. Similar constituents were present in groundwater in Univar monitoring wells VW—03B, VW-07, MW-18S, and T01-02.

Blackburn collected one groundwater sample at MW-1 on May 8, 2019. The reported PCE concentration at MW-1 (140 µg/L) appears to exceed the most recent shallow PCE concentration data available for the Univar site. Groundwater was encountered approximately ten feet below the deepest soil gas sample collected during this investigation.

2.4.2.4 Supplemental Remedial Investigation (October/November 2019)

The Supplemental RI proposed installation of four off-site soil vapor wells with up to five completion zones to a depth of 90 feet bgs. The location of the four wells (SV-10 through SV-13) are indicated on Figure 3. In May 2019, Blackburn installed two soil gas wells (SV-10 and SV-11) at off-site locations north and south of FB-10-0121, however permitting issues prevented installation of SV-12 and SV-13. In November 2019, after permit issues were resolve, Blackburn installed two nested soil gas wells (SV-12 and SV-13). The following sampling intervals were completed by well cluster location:

- SV-12: Completed in four discrete zones with probes screened to depths of 9.5 feet bgs, 17.0 feet bgs, 27.0 feet bgs, and 37 feet bgs.
- SV-13: Completed in two discrete zones with probes screened to depths of 9.5 feet bgs and 74.0 feet bgs.

Blackburn collected seven (7) samples including one field duplicate. Table 4 summarizes the laboratory analysis results.

2.5 Soil Vapor Well SV-1 through SV-13 Quarter 3 Sampling and Analysis

Nested soil gas wells SV-1 through SV-13 were sampled from January 27-29, 2020. SunStar Laboratories, Inc. analyzed the samples on February 4, 2020. The subsections below explain the sampling and analysis methods for these wells. Field sampling logs appear in Appendix A, and laboratory analysis reports appear in Appendix B. Table 5 summarizes the laboratory analysis results for chemicals exceeding the laboratory reporting limit.

2.5.1 Sampling Method

Dedicated sampling manifolds were used at each well. Prior to purging and sampling, the wells were checked for leaks by performing a shut-in test with the down-stream valves, lines, purge, and sampling

Summa canisters in place. With the sampling and purge canisters closed, the system was evacuated by pulling a vacuum of approximately 100 inches of water using a purge pump. Once the system was evacuated, the upstream probe valve was shut, and the in-line vacuum gauge observed for a minimum of one minute for significant drops in vacuum. Care was taken after shut in tests to not alter or disturb the sampling train. Shut-in tests for all wells (excluding SV-9C), were successful. It was discovered after performing the shut-in test and sampling SV-9C that the gauge on the sampling manifold was broken and permanently fixed on a negative pressure reading, making it appear as if the shut-in test was successful. The faulty gauge was discarded.

Following the shut-in tests, the soil gas probes were purged a minimum of three calculated volumes of the probe and tip inner diameters and half of the total volume of the sanded and dry bentonite interval pore spaces (conservatively assuming 50% overall porosity). Purge logs (Appendix A) show that sample flow was regulated to no more than 200 milliliters per minute with a vacuum of less than 100 inches of water using laboratory supplied evacuated steel containers and in-line flow restrictors. Purge times ranged from 8 to 16 minutes. The gas probes were sampled using laboratory-supplied evacuated steel containers. Isopropanol was used as the leak detection compound and was employed by placing a clean cloth dampened with isopropanol near the junction of the well head and sampling container manifold/probe connection. Laboratory analyses included isopropanol in the suite of chemicals.

Blackburn collected forty-six (46) samples including two field duplicates. Due to a lack of extra steel sampling containers, additional duplicate samples could not be taken. Following sampling, the probes were capped, secured, and left in place pending future potential sampling. Soil gas sampling logs are included in Appendix A.

The sample containers were labelled and delivered under continuous chain-of-custody to Sunstar Laboratory for VOCs analysis by USEPA Method TO-15.

2.5.2 Soil Gas Analytical Results

Sunstar Laboratory's analysis report appears in Appendix B and lists all results. Due to high analyte concentrations, SunStar replaced analysis method TO-15 with TO-14 and adjusted their reporting limit accordingly.

Table 5 summarizes the detected concentrations. Applicable screening levels from the US EPA (RSLs), California Department of Toxic Substances Control (SLs), and the California Regional Water Quality Control Board (ESLs) appear on the table for comparison. The RSLs and SLs have been modified with an attenuation factor of 0.03, since they are based on ambient air instead of soil gas.

Reported detections and range of reported concentrations are discussed below.

- Acetone appeared in three samples (SV-5B, SV-6A, and SV-10D) at concentrations ranging from 120 to 240 µg/m³. None of these results exceed RSLs, SLs, or ESLs.
- Chloroform was reported in three samples (SV-12A, SV-13A, and SV-13B) at concentrations ranging from 270 to 580 µg/m³. All these results exceed RSLs and ESLs. DTSC does not provide SLs for chloroform and defers to RSLs.

- 1,3-dichlorobenzene appeared in four samples (SV-10D, SV-11C, SV-11D, and SV-12C) at concentrations ranging from 380 to 1,100 µg/m³. No RSLs, SLs, or ESLs are available for 1,3-dichlorobenzene.
- Cis-1,2-dichloroethane (cis-DCE) was reported in six samples ranging in concentrations from 350 µg/m³ in sample SV-7B, to 3,700 µg/m³ in sample SV-3B. All of these results exceed the residential ESL of 280 µg/m³
- PCE was reported in all 44 samples analyzed at concentrations ranging from 1,100 µg/m³ in sample SV-10B to 1,200,000 µg/m³ in sample SV-3B. All of these results exceed the commercial and residential RSLs, SLs, and ESLs.
- Trichloroethene (TCE) was reported in twenty-three (23) samples ranging in concentrations from 310 µg/m³ in sample SV-7A, to 3,400 µg/m³ in sample SV-13B. All detections exceeded RSLs and ESLs. DTSC does not provide SLs for TCE and defers to RSLs.
- Toluene was reported in one sample, SV-10D, at a concentration of 550 µg/m³. This result is below all applicable screening levels.
- Isopropanol appeared only in sample SV-5B at 870 µg/m³. Isopropanol is a tracer compound that Blackburn brought to the site for quality control purposes as explained in section 3.1.2 below.

Appendix B includes the Analytical Laboratory report and Chain of Custody.

2.6 Groundwater Well WM-1 Quarter 3 Sampling and Analysis

Blackburn sampled MW-1 during the same mobilization to sample the soil vapor wells. Appendix A includes the sampling log. Sunstar Laboratories, Inc. analyzed the sample, and Appendix B includes their report. The analysis results appear on Table 6 along with historic results from MW-1.

2.6.1 Sampling Methodology

Prior to sampling MW-1, the groundwater level in the well was measured and recorded, and the well was purged a minimum of three well volumes, or until field indicator parameters of pH, temperature and electrical conductivity stabilized. Appendix A includes the MW-1 purge log.

Following purging, Blackburn used single-use bailers to extract water samples and containerize them in four, 40-millimeter VOAs) on January 28, 2020. Following collection, the groundwater sample containers were labelled, recorded on a chain-of-custody form, preserved in a chilled ice chest, and transported to SunStar Laboratory with accompanying chain-of-custody documentation.

Purge water was containerized in a DOT-approved 55-gallon drum and secured on site. The drum was appropriately labelled with information concerning the source, content, owner, and contact information pending appropriate off-site disposal.

2.6.2 Groundwater Analytical Results

Sunstar Laboratory analyzed the MW-1 sample for VOCs by USEPA Method 8260. Appendix B includes the laboratory report and chain of custody. SunStar reported PCE at a concentration of 140 µg/l. The laboratory reporting limit was 1.0 µg/l, and no other VOC compounds were reported.

Complete analytical results are in Table 6. Applicable screening levels from the US EPA (RSLs), California Department of Toxic Substances Control (SLs), and the California Regional Water Quality Control Board (ESLs) are included in the table for comparison. PCE exceeds the RSLs, SLs, and ESLs in MW-1.

3 SUMMARY AND EVALUATION

Forty-four soil gas samples and two duplicate samples were collected from soil gas wells in nested configurations with sampling intervals ranging from 10 feet bgs to 90.4 feet bgs. Soil gas well locations were based on known historical site use, former dry-cleaning equipment locations, and sanitary sewer line locations. SV-1 through SV-6 are within the former building footprint to evaluate the vertical profile of PCE in the vicinity of the source area. Soil gas well SV-7 to was located to provide lateral control to the east. Soil gas wells SV-8 and SV-9 were located southwest of the former building to provide lateral control. SV-10 and SV-11 help assess the lateral extent of soil gas impacts to the northwest and southeast, respectively. SV-12 and SV-13 help assess soil gas impacts west and southwest of the former Lamoure's property.

Monitoring well MW-1 provides groundwater samples from the area beneath former dry-cleaning machines.

3.1 Soil Gas

3.1.1 Assessment

Reported concentrations of PCE, chloroform, cis-1,2-dichloroethene and trichloroethene (TCE) exceed DTSC Screening Levels (DTSC-SLs), RWQCB Environmental Screening Levels (ESLs), and/or EPA Regional Screening Levels (RSLs) by a minimum of one order of magnitude. TCE was reported in twenty-three samples in soil gas wells, SV-1, SV-2, SV-3, SV-4, SV-5, SV-7, SV-8, SV-12 and SV-13. Reported acetone, 1,3-dichlorobenzene, and toluene concentrations do not exceed current regulatory screening levels.

The construction of wells SV-12 and SV-13 does not meet their original intent. Although a potentially large void exists in the SV-13 borehole between probes SV-13A and SV-13B, samples from both probes should still represent formation conditions. Purge volumes were relatively small compared to the surrounding formation (1.6 L at SV-13A and 3.2 L at SV-13B), so the potential for short circuiting through the void is minimal.

3.1.1.1 Interaction with PCE Impacts to Groundwater

The underlying groundwater plume is most likely not responsible for most soil vapor impacts. On November 5, 2019, monitoring well MW-17S exhibited a PCE concentration of 37 µg/l in groundwater.[2] Groundwater at MW-17S was at 98.08 feet bgs on November 4, 2019.[3]

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[2] Environmental data access online from GeoTracker at https://geotracker.waterboards.ca.gov/profile_report?cmd=MWEDFResults&global_id=SL185704255&assigned_name=MW%2D17S on March 4, 2020.
[3] Environmental data access online from GeoTracker at https://geotracker.waterboards.ca.gov/linechartxy?global_id=SL185704255&locid=MW-17S&mymatrix=GW&combine=False&SHOWDTW=True on March 4, 2020.

Henry's Law can provide a correlation between PCE in groundwater and vapor at the air-groundwater interface, as follows:

$$K_H = \frac{C_{air}}{C_{water}}$$

Where K_H is the Henry's Law Constant. Rewritten, this is:

$$C_{air} = C_{water} \times K_H$$

For groundwater with 37 µg/l PCE at an assumed temperature of 20 C (293K), the dimensionless form of K_H is 0.58614 (USACE, 2002). Using the above equation,

$$C_{air} = 37\frac{\mu g}{L} \times 0.58614 \times \frac{1000L}{m^3} = 21{,}687\ \frac{\mu g}{m^3}$$

This means a PCE concentration of 21,687 µg/m^3 should exist at the groundwater-air interface at 98.08 feet bgs. Since PCE vapors are actually more concentrated at 71 or 73 feet bgs, then the predominant PCE source must also lie somewhere above the water table.

SV-5E (90.4 ft bgs) and SV-7E (89.0 ft bgs) are the closest samples to the water table. PCE concentrations from them were 100,000 µg/m^3 and 110,000 µg/m^3, respectively. They are near MW-1, which exhibited 140 µg/l in January 2020. Using the same Henry's Law relationship as above, soil gas immediately above the water table at MW-1 should be 82,060 µg/m^3, which is slightly lower than the levels observed in SV-5E and SV-7E. Above those soil vapor wells, SV-5D and SV-7D wells exhibited higher PCE levels of 760,000 µg/m^3 and 300,000 µg/m^3, respectively. Therefore, the impacts at 90 feet bgs may have resulted from soil-based PCE impacts higher up and volatilization from groundwater further below.

3.1.1.2 Temporal PCE Trends

An examination of Figure 5 reveals that the January 2020 event showed mostly reductions to shallow PCE concentrations relative to most of the previous monitoring events.

3.1.1.3 Spatial PCE Trends

Figure 4 shows posted PCE concentrations in plan view. Source-area concentrations (the triangle formed by wells SV-2, SV-3, and SV-5) ranged from 270,000 µg/m^3 to 1,200,000 µg/m^3. This triangle is near the location of the former dry-cleaning equipment and MW-1. Cross sections (Figure 5) show that the most elevated concentrations appeared between 30 and 70 feet.

PCE concentrations in the off-site locations to the northwest and south (SV-10 and SV-11) ranged from 1,100 µg/m^3 to 14,000 µg/m^3. These concentrations remain significantly less than the on-site concentrations for every vertical interval sampled, with little variation based on interval depth. PCE concentrations in the off-site locations to the west and southwest (SV-12 and SV-13) exhibit higher PCE concentrations (35,000 to 500,000 µg/m^3) at all sample depths. This suggests southwestern migration of PCE in soil gas. Underground utilities in in G Street may have provided a migration pathway.

SV-12 and SV-13 are 50 to 60 feet apart. This is relatively close, considering the size of the site and its location within the larger Univar groundwater plume. Together, SV-12 and SV-13 provide five probe depths at 9.5 feet bgs, 17.0 feet bgs, 27.0 feet bgs, 37 feet bgs, and 73 feet bgs. They can provide a reasonable approximation of the vertical soil vapor distribution southwest of the site. This distribution suggests a trend of increasing PCE vapor concentrations with increasing depth. The result of 440,000 µg/m³ at SV-13B (73 feet bgs) is comparable to the result of 430,000 µg/m³ at SV-8D (71 feet bgs). The underlying groundwater plume is most likely not responsible for these soil vapor impacts.

3.1.1.4 Other Constituents

Acetone, chloroform, 1,3-dichlorbenzene, cis-DCE, and toluene appeared in the SV-10 and SV-11 samples, primarily between 50 and 70 feet bgs. These constituents were mostly absent in SV-1 through SV-9, except for cis-DCE, a biological breakdown product of TCE. These constituents have a sporadic history of appearing in the soil vapor well network along with carbon disulfide and 1,4-dichlorobenzene.

Lamoure's has no history of the storage or use of these additional constituents. Similar constituents were present in groundwater in Univar monitoring wells VW—03B, VW-07, MW-18S, and T01-02.

3.1.2 Quality Control

A review of the laboratory QC reports indicates that SunStar analyzed all samples within their 30-day hold times.

Sunstar analyzed three blank samples and reported non-detect results for all analytes. Sunstar also analyzed three duplicates, 0013116-DUP1 and 0020311-DUP1, on internal samples containing PCE, chloroform, 1,3-dichlorobenzene, and TCE. Relative percent differences (RPDs) ranged from 0.779% to 14.5%, indicating acceptable replication of analysis results. The RPD[4] compares two results from duplicate samples, as follows:

$$RPD = \frac{|X_1 - X_2|}{\left(\frac{X_1 + X_2}{2}\right)} \times 100\%$$

where X_1 and X_2 are measurements from replicate samples.

Blackburn collected duplicate samples at SV-4A and SV-12B. Sunstar analyzed both, reporting only PCE.

Location	Original Sample PCE Concentration	Duplicate Sample PCE Concentration	RPD
SV-4A	130,000 µg/m³	120,000 µg/m³	8.0%
SV-12B	85,000 µg/m³	77,000 µg/m³	9.9%

[4] U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods Compendium* (SW-846), Chapter 1, accessed online at https://www.epa.gov/hw-sw846/chapter-one-sw-846-compendium-project-quality-assurance-and-quality-control on March 4, 2020.

The above results indicate an acceptable degree of precision.

Blackburn used isopropanol as a leak tracer compound in accordance with the DTSC Advisory Active Soil Gas Investigations (Advisory). Isopropanol is not a constituent of potential concern at or near the site, so any detections are presumed the result of isopropanol deliberately introduced during vapor sampling. SunStar reported 870 µg/m³ isopropanol in one sample, SV-5B. This result exceeds the laboratory reporting limit by a factor of 870 µg/m³ ÷ 130 µg/m³ = 6.7, which is below 10. According to the Advisory, no corrective action is necessary since the detected concentration of the leak check compound is not greater than or equal to 10 times the reporting limit for the target analyte.

3.2 Groundwater

3.2.1 Assessment

The reported PCE concentration at MW-1 (140 µg/L) appears to exceed recent shallow PCE concentration data available for the Univar site. Groundwater was encountered approximately ten feet below the deepest soil gas sample collected during this investigation. This PCE concentration is consistent with recent measurements in October 2019 (190 µg/L) and May 2019 (140 µg/L). These concentrations remain above the USEPA's maximum contaminant level of 5 µg/L, which is also the ESL.

SunStar also reported 3.7 µg/L bromomethane in the MW-1 sample. No RSL or SL exists for bromomethane, and its ESL is 7.5 µg/L. Bromomethane is also a common laboratory contaminant, which SunStar also found in their method blank.

The Univar site has undergone remediation since 1998. More recently, ISCO applications appear to have reduced constituent concentrations in Univar's monitoring wells. Therefore, the groundwater impacts at MW-1 are not directly comparable to those in Univar's wells.

3.2.2 Quality Control

SunStar Laboratories received the MW-1 sample in good condition and at an acceptable temperature.

SunStar reported adequate recovery of surrogate constituents (4-bromofluorobenzene, dibromo-fluoromethane, and toluene-d8) ranging from 101% to 108%. These recoveries fall within the laboratory's acceptable ranges.

The laboratory blank exhibited non-detect concentrations of all VOCs except 3.65 µg/L bromomethane, a known laboratory contaminant, and the same surrogate constituent spikes. In the blank, the surrogate recoveries ranged from 101% to 112%, also within acceptable ranges.

The laboratory control sample (LCS) and LCS duplicate pair exhibited RPDs for chlorobenzene, 1,1-dichloroethene, TCE, benzene, and toluene ranging from 3.79% to 4.87%. SunStar's RPD limit is 20%. In both samples, spike recoveries for those constituents and the surrogates mentioned above ranged from 94.3% to 121%. These values all fall within acceptable ranges.

4 CONCLUSIONS

PCE, chloroform, TCE, and cis-DCE are present at elevated concentrations in soil gas. PCE concentrations at the subject parcel appear to be elevated at the former dry-cleaning facility from near surface to approximately 90 ft bgs. The PCE concentrations exceed the DTSC commercial/industrial SL and the RWQCB commercial/industrial ESL by four to five orders of magnitude. Further analysis would be necessary to establish the level of risk that PCE concentrations, particularly in near-surface soil, may represent to site workers and the public. The deepest PCE vapor concentrations appear to exist in equilibrium with nearby groundwater impacts at approximately 100 feet bgs, with the highest PCE concentrations appearing between 30 and 70 feet bgs.

In addition to a PCE release from dry cleaning operations, groundwater appears to have transported PCE and other VOCs from the Univar site to FB-10-0121.

PCE vapor concentrations at off-site locations to the northwest and southeast (SV-10 and SV-11) are significantly lower than concentrations located on FB-10-0121. This indicates the source of PCE in the upper half of the vadose zone is from the former dry-cleaning operations at FB-10-0121. The off-site concentrations at SV-10 and SV-11 are consistently lower through all depth intervals when compared to on-site concentrations. PCE vapors in the lower half of the vadose zone appear to have originated from the upper half of the vadose zone as well as the groundwater plume emanating from the Univar site. Remediation by Univar may explain why deeper PCE concentrations are lower in SV-11.

PCE concentrations at off-site locations to the west and southwest (SV-12 and SV-13) appear related to concentrations located on FB-10-0121, indicating the source of PCE in the upper half of the vadose zone is from the former dry-cleaning operations at FB-10-0121, and that buried utilities such as sanitary sewer lines may have acted as a conduit towards the west and southwest. The PCE concentrations at SV-12 and SV-13 at all depth intervals exhibit similar patterns to on-site vertical distributions.

PCE concentrations across G Street at 10 feet are high enough to warrant further investigation into indoor air vapor intrusion inside the Dumont Printing building southwest of G Street and FB-10-0121. Indoor air concentrations of PCE could potentially exceed DTSC's commercial/industrial ambient air screening level of 2 $\mu g/m^3$. Assuming a default, conservative attenuation factor of 0.03, SV-12A's PCE concentration of 35,000 $\mu g/m^3$ would suggest indoor air concentrations as high as 1,050 $\mu g/m^3$. The concentration of 100,000 $\mu g/m^3$ at SV-13A could mean indoor air concentrations are as high as 3,000 $\mu g/m^3$ PCE.

Chloroform and TCE concentrations at SV-12 and SV-13 also exceed regulatory limits. TCE also appeared in SV-1 through SV-9 at most sample depths.

VOCs other than PCE and its potential breakdown products (TCE and cis-1,2-DCE) are not related to impacts from operations at the former Lamoure's Dry Cleaners.

5 RECOMMENDATIONS

Blackburn recommends the following regarding further assessment and mitigation of identified VOCs in soil gas and groundwater at the subject parcel.

- Interim remediation of PCE in on-site soils for the protection of human health. Considering the proposed CHST construction schedule, interim abatement of near surface soil should be conducted in the CHST footprint.
- Remediation of impacts to deeper soil may not be effective until PCE concentrations in groundwater have decreased.
- Continued quarterly sampling of groundwater and selected soil gas wells to monitor attenuation.
- Additional soil vapor assessment closer to Dumont Printing or inside their building should be considered to determine if workers have been exposed to PCE vapors.
- Future reporting should be limited to PCE and its potential breakdown products (TCE, cis-1,2-DCE, and vinyl chloride).

6 LIMITATIONS

Blackburn performed these services in accordance with generally accepted environmental engineering principles and practices currently used in Northern California. We do not warranty our services. Our scope does not include evaluation of hazardous materials or a determination of their potential presence on site, other than as specified herein. Testing of groundwater at other locations or conditions that exist at the exiting on-site groundwater well was not within the scope of this investigation. This report is not a comprehensive site characterization and shall not be so construed. We base the findings presented in this report on limited soil sampling and laboratory analyses. This report has been prepared for the CHST. Others who use the data presented, or rely on the findings, conclusions and recommendations presented herein do so at their own risk and should determine the adequacy of the information for their own purposes. Blackburn makes no claim of the appropriateness for such use and is not responsible for the effect of such uses.

SUPPLEMENTAL REMEDIAL INVESTIGATION QUARTERLY MONITORING REPORT

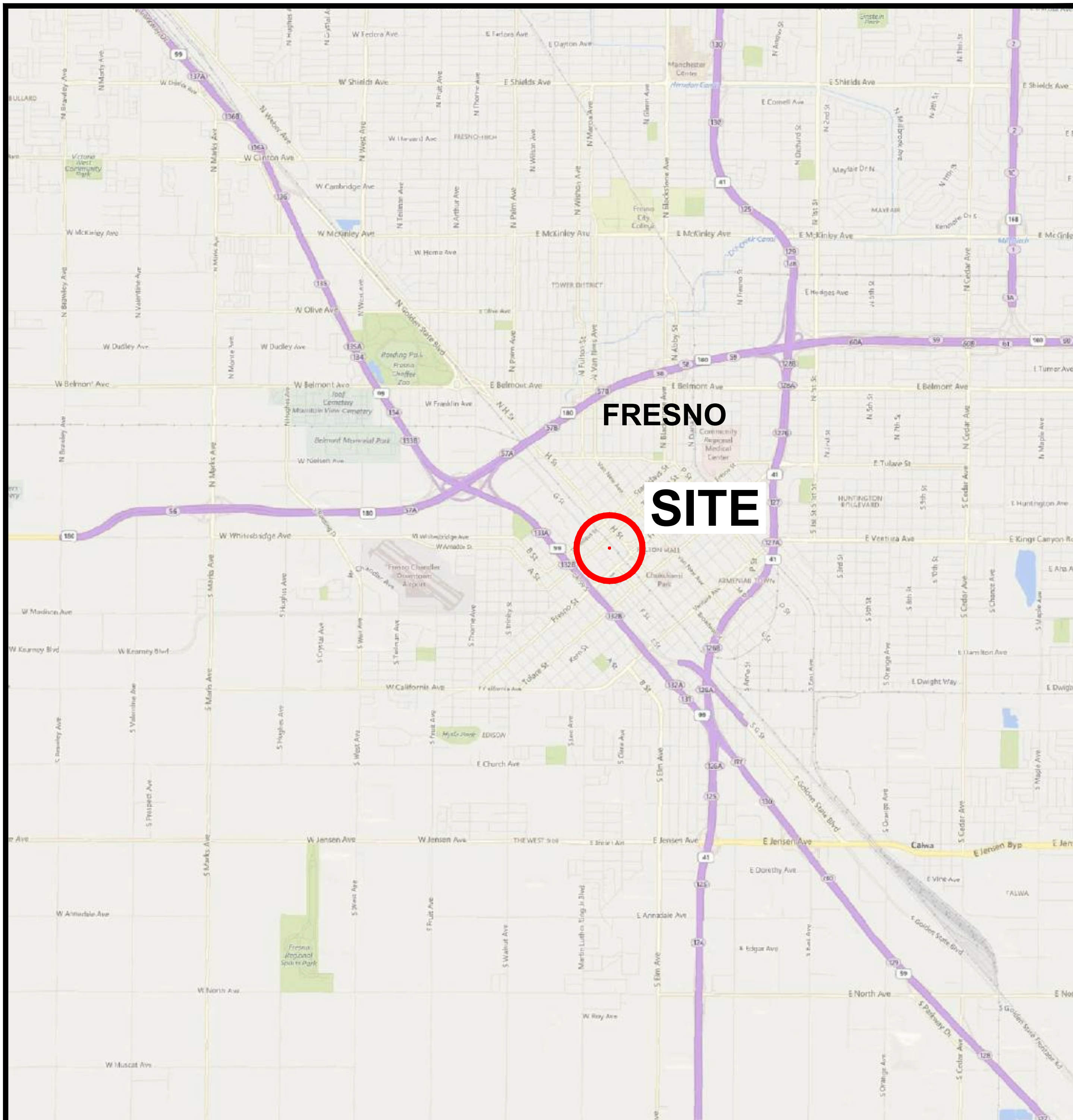
California High Speed Train

FB-10-0121 (APN 465-040-21S)

Lamoure's Cleaners

Fresno, California

FIGURES



SCALE 1"=5,000'

BLACKBURN CONSULTING

VICINITY MAP
California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno County, California

File No. 3252.x

March 2020

Figure 1

9/8/2008 3252.x Fig1 FB-10-0121 Soil Gas Wells.dwg

Drawing Reference Source: RCC Group LLC, June 2015 and HSR Right of Way Appraisal Map 2017.

BLACKBURN CONSULTING

SITE PLAN
California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno County, California

File No. 3252.x	
March 2020	
Figure 2	

3/9/2020 3252.x Fig2 FB-10-0121 Soil Gas Wells.dwg

LEGEND

- Nested Soil Gas Monitoring Well Location (Blackburn 2018 & 2019)
- Groundwater Monitoring Well (Blackburn, 2018)
- Groundwater Monitoring Well (Associated with Former Van Waters & Rodgers, Inc.)
- Nested Soil Gas Well (RCC, 2015)
- Approximate Location of Temporary Soil Gas Well SG-4 (Nichols, 2009)
- Parcel Boundary
- Subsurface Sanitary Sewer Piping (dashed where inferred)
- Floor Level Trench Drains

SCALE 1" = 50'

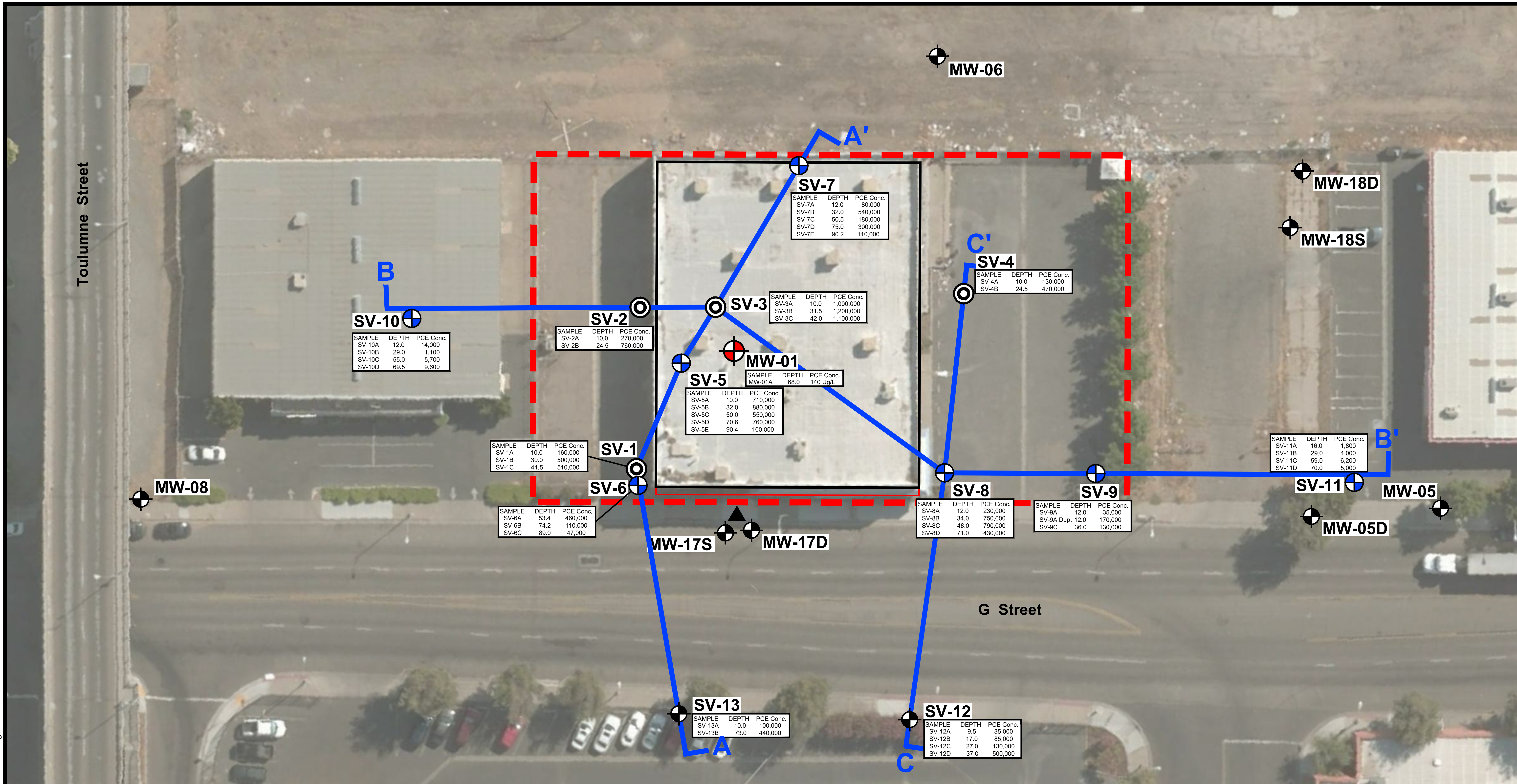
NOTE: Former Van Waters & Rodgers Inc. well locations and RCC soil vapor wells are based on RCC Group LLC and ERM drawing and figures.

9/8/2008 3252.x Fig3 FB-10-0121 Soil Gas Wells.dwg

BLACKBURN CONSULTING

SOIL GAS & GROUNDWATER MONITORING WELL LOCATIONS
California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno, California

File No. 3252.x	
March 2020	
Figure 3	



LEGEND

- Nested Soil Gas Monitoring Well Location (Blackburn 2018 & 2019)
- Groundwater Monitoring Well (Blackburn, 2018)
- Groundwater Monitoring Well (Associated with Former Van Waters & Rodgers, Inc.)
- Nested Soil Gas Well (RCC, 2015)
- Approximate Location of Temporary Soil Gas Well SG-4 (Nichols, 2009)
- Parcel Boundary
- Cross Section Location

SCALE 1" = 40'

NOTE: Former Van Waters & Rodgers Inc. well locations and RCC soil vapor wells are based on RCC Group LLC and ERM drawings and figures. Depth provided in feet below ground surface. PCE concentrations in micrograms per cubic meter (mg/m³).

3/6/2020 3252.x Fig4 FB-10-0121 Soil Gas Wells.dwg

BLACKBURN CONSULTING

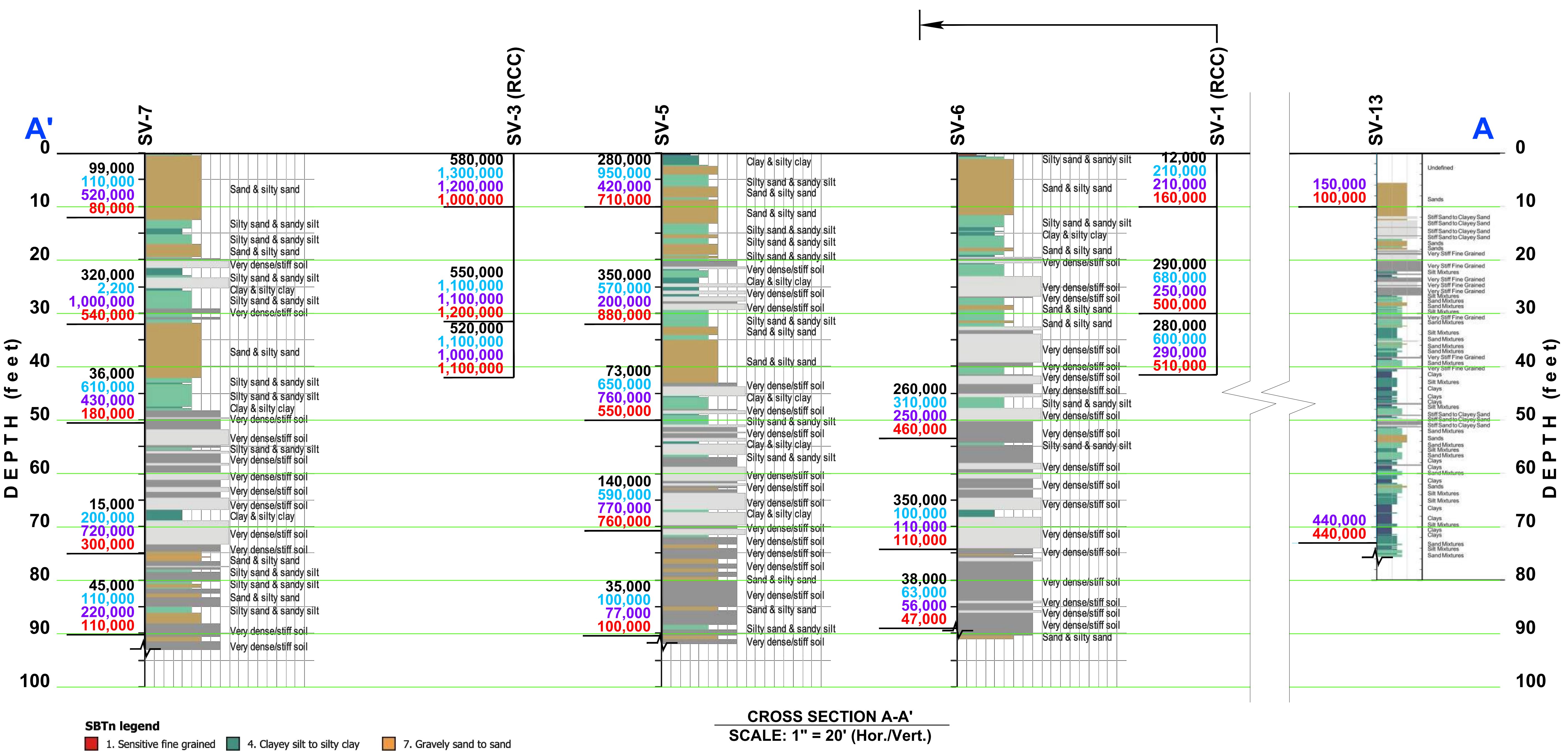
PCE IN SOIL GAS JANUARY 2020

California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno, California

File No. 3252.x

March 2020

Figure 4



SBTn legend

- 1. Sensitive fine grained
- 2. Organic material
- 3. Clay to silty clay
- 4. Clayey silt to silty clay
- 5. Silty sand to sandy silt
- 6. Clean sand to silty sand
- 7. Gravely sand to sand
- 8. Very stiff sand to clayey sand
- 9. Very stiff fine grained

ANALYSIS RESULTS LEGEND

36,000 - Soil Vapor Test Results for 2018

610,000 - Soil Vapor Test Results for May 2019

430,000 - Soil Vapor Test Results for October 2019

180,000 - Soil Vapor Test Results for January 2020

NOTE: Depth provided in feet below ground surface. PCE concentrations in micrograms per cubic meter (mg/m^3).

BLACKBURN CONSULTING

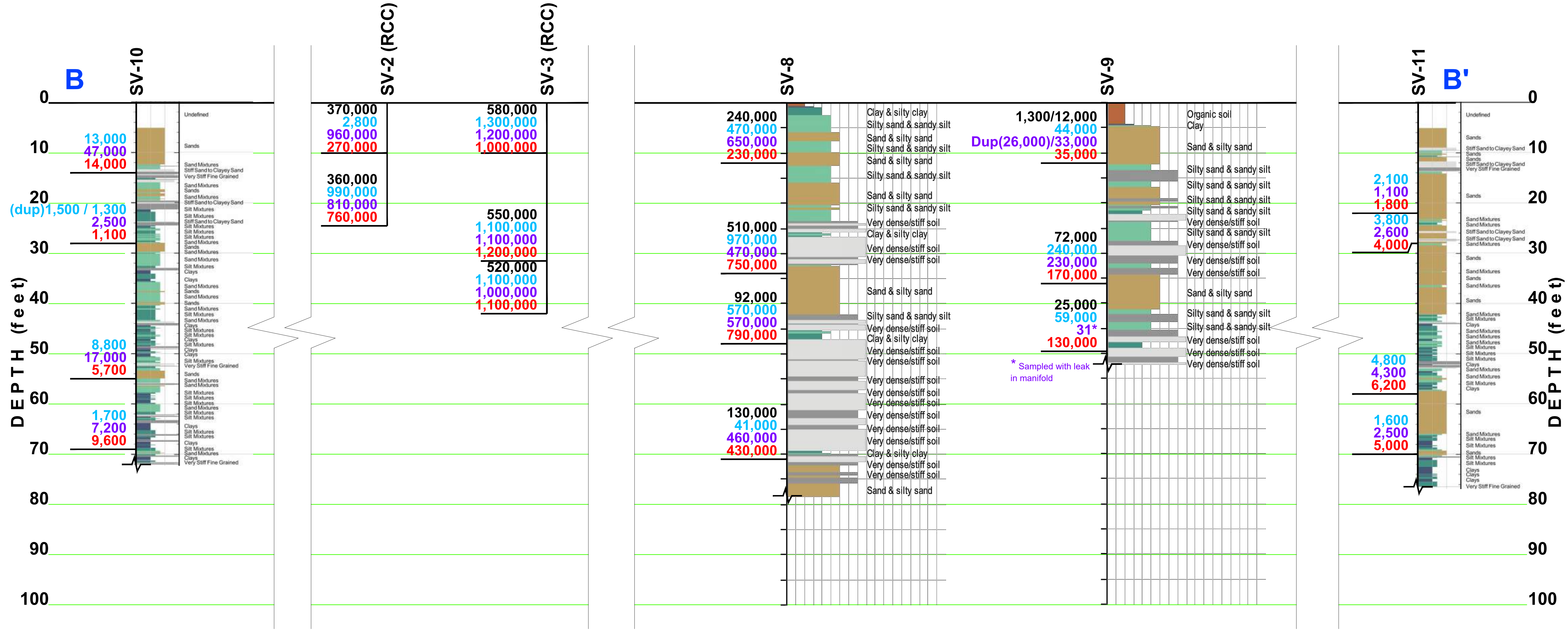
CROSS SECTION A-A' SHOWING PCE IN SOIL GAS 2018, 2019 & 2020
California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno, California

File No. 3252.x

March 2020

Figure 5a

2/27/2020 3252.x Fig5 FB-10-0121 Soil Gas Wells.dwg



CROSS SECTION B-B'
SCALE: 1" = 20' (Vert.)
NO SCALE (Horiz.)

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

ANALYSIS RESULTS LEGEND

36,000 - Soil Vapor Test Results for 2018
610,000 - Soil Vapor Test Results for May 2019
430,000 - Soil Vapor Test Results for October 2019
180,000 - Soil Vapor Test Results for January 2020

NOTE: Depth provided in feet below ground surface. PCE concentrations in micrograms per cubic meter (mg/m^3).

BLACKBURN CONSULTING

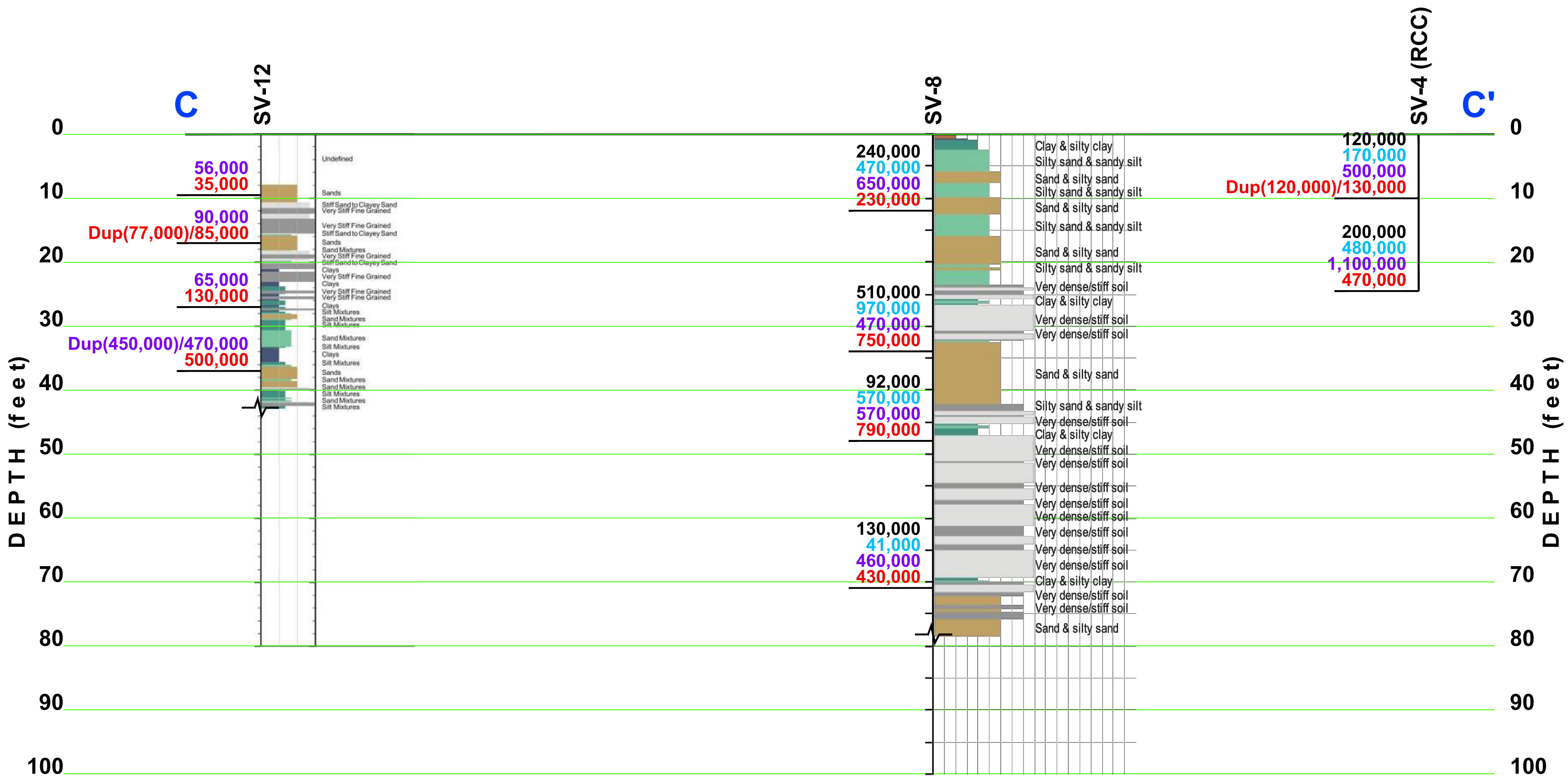
CROSS SECTION B-B' SHOWING PCE IN SOIL GAS 2018, 2019 & 2020
California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno, California

File No. 3252.x

March 2020

Figure 5b

2/27/2020 3252.x Fig5 FB-10-0121 Soil Gas Wells.dwg



CROSS SECTION B-B'
SCALE: 1" = 20' (Vert.)
NO SCALE (Horiz.)

SBTn legend

- 1. Sensitive fine grained
- 2. Organic material
- 3. Clay to silty clay
- 4. Clayey silt to silty clay
- 5. Silty sand to sandy silt
- 6. Clean sand to silty sand
- 7. Gravely sand to sand
- 8. Very stiff sand to clayey sand
- 9. Very stiff fine grained

ANALYSIS RESULTS LEGEND

36,000 - Soil Vapor Test Results for 2018
610,000 - Soil Vapor Test Results for May 2019
430,000 - Soil Vapor Test Results for October 2019
180,000 - Soil Vapor Test Results for January 2020

NOTE: Depth provided in feet below ground surface. PCE concentrations in micrograms per cubic meter (mg/m^3).

BLACKBURN CONSULTING

CROSS SECTION C-C' SHOWING PCE IN SOIL GAS 2018, 2019 & 2020
California High-Speed Train (CHST)
Parcel FB-10-0121, APN 465-040-21S
Lamoure's Cleaners, 1304 G Street
Fresno, California

File No. 3252.x	
March 2020	
Figure 5c	

2/27/2020 3252.x Fig5 FB-10-0121 Soil Gas Wells.dwg

SUPPLEMENTAL REMEDIAL INVESTIGATION QUARTERLY MONITORING REPORT

California High Speed Train

FB-10-0121 (APN 465-040-21S)

Lamoure's Cleaners

Fresno, California

TABLES

TABLE 1

RCC SOIL GAS AND SOIL SAMPLE RESULTS SUMMARY (Detected Compounds)

Soil Vapor Analytical Results						Soil Sample Analytical Results			
Sample Location	Sample Depth (feet bgs)	Sample Date	VOC's			Sample Location	Sample Depth (feet bgs)	Sample Date	VOC's
			PCE	cis-1,2-DCE	IPA (leak detect				PCE
			ug/m3	ug/m3	ug/m3				mg/kg
SV-1A	10.0	7/8/2015	**200,000**	<950	<2,400	SV-1	10.0	6/19/2015	<0.005
SV-1B	30.0	7/8/2015	**310,000**	<1,600	<3,900		30.0	6/19/2015	<0.005
SV-1C	41.5	7/8/2015	**150,000**	<470	<1,200		42.0	6/19/2015	0.087
SV-2A	10.0	7/8/2015	**1,100,000**	<4,700	<12,000	SV-2	10.0	6/1/2015	<0.005
SV-2B	24.5	7/8/2015	**790000.0**	12000.0	<12,000		25.0	6/1/2015	**0.012**
SV-3A	10.0	7/8/2015	**4,300,000.0**	<8,000	**59,000**	SV-3	10.0	6/19/2015	**0.01**
SV-3B	31.5	7/8/2015	**1,700,000**	**9,800**	<23,000		31.0	6/19/2015	**0.63**
SV-3C	42.0	7/8/2015	**2,400,000**	**10,000**	<24,000		42.0	6/19/2015	**0.02**
SV-4A	10.0	7/8/2015	**150,000**	<480	**7,500**	SV-4	10.0	6/1/2015	<0.005
SV-4B	24.5	7/8/2015	**170,000**	<580	<1,400		24.5	6/1/2015	0.005

Notes

PCE=Tetrachloroethene
cis-1,2 DCE=cis-1,2-Dichloroethene
bgs=below ground surface
ug/m3=micrograms per cubic meter
mg/kg=milligrams per kilogram

Table 2 - Soil Vapor Analytical Results April 2018

Sample Location	Sample Depth (feet bgs)	Sample Date	Carbon Disulfide	cis-1,2-Dichloro ethene	Tetrachloro ethene	Trichloro ethene	Toluene	IPA (leak detect)
			ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
SV-1A	10.0	4/23/2018	<160	>200	**12,000**	>270	>190	<130
SV-1B	30.0	4/23/2018	<160	>200	**290,000**	**430**	>190	**8,200**
SV-1C	41.5	4/23/2018	<160	>200	**280,000**	**450**	>190	<130
SV-2A	10.0	4/23/2018	<160	**230**	**370,000**	**730**	>190	<130
SV-2B	24.5	4/23/2018	<160	**2,500**	**360,000**	**1,700**	>190	<130
SV-3A	10.0	4/24/2018	<160	**520**	**580,000**	**2,000**	>190	<130
SV-3B	31.5	4/24/2018	<160	**4,300**	**550,000**	**2,100**	>190	<130
SV-3C	42.0	4/24/2018	<160	**3,900**	**520,000**	**2,200**	>190	<130
SV-4A	10.0	4/24/2018	<160	>200	**120,000**	>270	>190	<130
SV-4B	24.5	4/24/2018	<160	>200	**200,000**	**520**	>190	<130
SV-5A	10.0	4/24/2018	<160	>200	**280,000**	**670**	>190	<130
SV-5B	32.0	4/24/2018	<160	**2,000**	**350,000**	**920**	>190	<130
SV-5C	50.0	4/24/2018	**440**	**300**	**73,000**	>270	>190	<130
SV-5D	70.6	4/24/2018	**350**	>200	**140,000**	>270	**210**	<130
SV-5E	90.4	4/24/2018	<160	>200	**35,000**	>270	>190	<130
SV-6A	53.4	4/24/2018	<160	>200	**260,000**	>270	>190	<130
SV-6B	74.2	4/24/2018	<160	>200	**350,000**	>270	>190	<130
SV-6C	89.0	4/24/2018	**410**	>200	**38000**	>270	>190	**5,500**
SV-7A	12.0	4/24/2018	<160	>200	**99,000**	>270	>190	<130
SV-7B	32.0	4/24/2018	**160**	**710**	**320,000**	**850**	>190	<130
SV-7C	50.5	4/24/2018	**140**	>200	**36,000**	**130**	>190	<130
SV-7D	75.0	4/24/2018	**56**	>200	**15,000**	>270	>190	<130
SV-7E	90.2	4/24/2018	<160	>200	**45,000**	**71**	>190	<130
SV-8A	12.0	4/25/2018	<160	>200	**240,000**	**95**	>190	<130
SV-8B	34.0	4/25/2018	<160	>200	**510,000**	**760**	>190	<130
SV-8C	48.0	4/25/2018	**590**	>200	**92,000**	**69**	>190	<130
SV-8D	71.0	4/25/2018	**460**	>200	**130,000**	**76**	>190	<130
SV-9A	12.0	4/25/2018	<160	>200	**13,000**	>270	>190	<130
SV-9B	36.0	4/25/2018	**240**	>200	**72,000**	>270	>190	<130
SV-9C	49.5	4/25/2018	**310**	>200	**25,000**	>270	>190	<130
SV-9ADUP	12.0	4/25/2018	<160	>200	**12,000**	>270	>190	<130

IPA = Isopropyl Alcohol

ug/m3 = micrograms per cubic meter

bgs = below ground surface

Table 3 - Soil Vapor Analytical Results May 2019

Sample Location	Sample Depth (feet bgs)	Sample Date	VOCs												
			Acetone	Carbon Disulfide	Hexane	1,3-Dichloro benzene	1,4-Dichloro benzene	cis-1,2-Dichloro ethene	trans-1,2-Dichloroe thene	Tetrachloro ethene	Trichloro ethene	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene	Toluene	IPA (leak detect)
			ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
SV-1A	10.0	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**210,000**	>270	>250	>250	>190	<130
SV-1B	30.0	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**680,000**	**740**	>250	>250	>190	<130
SV-1C	41.5	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**600,000**	**670**	>250	>250	>190	<130
SV-2A	10.0	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**2,800**	>270	>250	>250	>190	<130
SV-2B	24.5	4/29/2019	>120	>160	>180	>310	>310	**2,500**	>200	**990,000**	**2,500**	>250	>250	>190	<130
SV-3A	10.0	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**1,300,000**	**2,800**	>250	>250	>190	<130
SV-3B	31.5	4/29/2019	>120	>160	>180	>310	>310	**4,100**	>200	**1,100,000**	**3,300**	>250	>250	>190	<130
SV-3C	42.0	4/29/2019	>120	>160	>180	>310	>310	**3,600**	>200	**1,100,000**	**2,700**	>250	>250	>190	<130
SV-4A	10.0	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**170,000**	>270	>250	>250	>190	<130
SV-4B	24.5	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**480,000**	**1,000**	>250	>250	>190	<130
SV-5A	10.0	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**950,000**	**1,400**	>250	>250	>190	<130
SV-5B	32.0	4/29/2019	**330**	>160	>180	>310	>310	**650**	>200	**570,000**	**900**	>250	>250	>190	**31,000**
SV-5C	50.0	4/29/2019	>120	>160	>180	>310	>310	**820**	>200	**650,000**	**1,400**	>250	>250	>190	<130
SV-5D	70.6	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**590,000**	>270	>250	>250	>190	**31,000**
SV-5E	90.4	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**100,000**	>270	>250	>250	>190	<130
SV-6A	53.4	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**310,000**	>270	>250	>250	>190	**7,500**
SV-6B	74.2	4/29/2019	>120	>160	>180	>310	>310	>200	>200	**100,000**	>270	>250	>250	>190	<130
SV-6C	89.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**63,000**	>270	>250	>250	>190	<130
SV-7A	12.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**110,000**	**310**	>250	>250	>190	<130
SV-7B	32.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**2,200**	>270	>250	>250	>190	<130
SV-7C	50.5	4/30/2019	>120	>160	>180	>310	>310	**240**	>200	**610,000**	**1,200**	>250	>250	>190	<130
SV-7D	75.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**200,000**	**560**	>250	>250	>190	<130
SV-7E	90.2	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**110,000**	>270	>250	>250	>190	<130
SV-8A	12.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**470,000**	>270	>250	>250	>190	<130
SV-8B	34.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**970,000**	**1,100**	>250	>250	>190	<130
SV-8C	48.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**570,000**	**280**	>250	>250	>190	<130
SV-8D	71.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**41,000**	>270	>250	>250	>190	**6,800**
SV-9A	12.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**44,000**	>270	>250	>250	>190	<130
SV-9B	36.0	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**240,000**	>270	>250	>250	>190	<130
SV-9C	49.5	4/30/2019	>120	>160	>180	>310	>310	>200	>200	**59,000**	>270	>250	>250	>190	<130
SV-10A	12.0	5/14/2019	>120	>160	>180	>310	>310	>200	>200	**13,000**	>270	>250	>250	>190	<130
SV-10B	29.0	5/14/2019	>120	>160	>180	>310	>310	>200	>200	**1,300**	>270	**370**	**1,000**	>190	<130
SV-10BDUP	29.0	5/14/2019	>120	>160	>180	>310	>310	>200	>200	**1,500**	>270	**350**	**930**	>190	<130
SV-10C	55.0	5/14/2019	>120	**160**	>180	>310	>310	>200	>200	**8,800**	>270	>250	>250	>190	<130
SV-10D	70.0	5/14/2019	>120	**500**	>180	**2,900**	**3,000**	>200	>200	**1,700**	>270	>250	>250	**400**	<130
SV-11A	16.0	5/14/2019	>120	>160	>180	>310	>310	>200	>200	**2,100**	>270	>250	>250	>190	<130
SV-11B	29.0	5/14/2019	>120	>160	>180	>310	>310	>200	>200	**3,800**	>270	>250	>250	>190	<130
SV-11C	70.0	5/14/2019	>120	>160	>180	**430**	**400**	>200	>200	**4,800**	>270	>250	>250	>190	<130
SV-11D	59.0	5/14/2019	**1,300**	**250**	**210**	**1,100**	**1,100**	>200	**270**	**1,600**	>270	>250	>250	**2,400**	<130

IPA = Isopropyl Alcohol
ug/m3 = micrograms per cubic meter
bgs = below ground surface

Table 4 - Soil Vapor Analytical Results October 2019

Sample Location	Sample Depth (feet bgs)	Sample Date	VOCs															
			Acetone	Carbon Disulfide	Chloroform	Ethylbenzene	Hexane	1,3-Dichloro benzene	1,4-Dichloro benzene	cis-1,2-Dichloro ethene	trans-1,2-Dichloroe thene	Tetrachloro ethene	Trichloro ethene	Trichlorofluoro methane	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene	Toluene	IPA (leak detect)
			ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
SV-1A	10.0	9/30/2019	<120	<160	<250	<220	<180	<310	**1,700**	<200	<200	**210,000**	**430**	<290	<250	<250	<190	<130
SV-1B	30.0	9/30/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**250,000**	**780**	<290	<250	<250	<190	<130
SV-1C	41.5	9/30/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**290,000**	**770**	<290	<250	<250	<190	<130
SV-2A	10.0	9/30/2019	<120	<160	<250	<220	<180	<310	**1,500**	**550**	<200	**960,000**	**4,900**	<290	<250	<250	<190	<130
SV-2B	24.5	9/30/2019	<120	<160	<250	<220	<180	<310	**2,000**	**4,400**	<200	**810,000**	**5,900**	<290	<250	<250	<190	<130
SV-3A	10.0	9/30/2019	<120	<160	<250	<220	<180	<310	**840**	**370**	<200	**1,200,000**	**13,000**	<290	<250	<250	<190	<130
SV-3B	31.5	9/30/2019	<120	<160	**310**	<220	<180	<310	**530**	**9,500**	<200	**1,100,000**	**8,500**	<290	<250	<250	<190	<130
SV-3C	42.0	9/30/2019	<120	<160	<250	<220	<180	<310	**1,200**	**10,000**	<200	**1,000,000**	**8,200**	<290	<250	<250	<190	<130
SV-4A	10.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**500,000**	**410**	<290	<250	<250	<190	<130
SV-4B	24.5	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**1,100,000**	**3,500**	<290	<250	<250	<190	<130
SV-5A	10.0	9/30/2019	<120	<160	<250	<220	<180	<310	**2,400**	<200	<200	**420,000**	**3,300**	<290	<250	<250	<190	<130
SV-5B	32.0	9/30/2019	<120	<160	<250	<220	<180	<310	**1,300**	**360**	<200	**200,000**	**680**	<290	>250	>250	>190	**21,000**
SV-5C	50.0	9/30/2019	<120	<160	<250	<220	<180	<310	**2,200**	**1,200**	<200	**760,000**	**2,500**	<290	>250	>250	>190	<130
SV-5D	70.6	9/30/2019	<120	<160	<250	<220	<180	<310	**3,600**	<200	<200	**770,000**	**1,300**	**290**	>250	>250	>190	<130
SV-5E	90.4	9/30/2019	<120	<160	<250	<220	<180	<310	**1,300**	<200	<200	**77,000**	<270	<290	>250	>250	>190	**6,100**
SV-6A	53.4	9/30/2019	<120	<160	<250	<220	<180	<310	**2,300**	<200	<200	**250,000**	<270	<290	>250	>250	>190	**67,000**
SV-6B	74.2	9/30/2019	<120	<160	<250	<220	<180	<310	**5,300**	<200	<200	**110,000**	<270	<290	>250	>250	>190	**5,400**
SV-6C	89.0	9/30/2019	<120	<160	<250	<220	<180	<310	**510**	<200	<200	**56,000**	<270	<290	<250	<250	<190	<130
SV-7A	12.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**520,000**	**2,300**	<290	<250	<250	<190	<130
SV-7B	32.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	**1,000**	<200	**1,000,000**	**4,700**	<290	<250	<250	<190	<130
SV-7C	50.5	10/1/2019	<120	<160	<250	<220	<180	<310	<310	**280**	<200	**430,000**	**1,400**	<290	<250	<250	<190	<130
SV-7D	75.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**720,000**	**2,200**	<290	<250	<250	<190	<130
SV-7E	90.2	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**220,000**	**420**	<290	<250	<250	<190	<130
SV-8A	12.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**650,000**	**600**	<290	<250	<250	<190	<130
SV-8B	34.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**470,000**	**1,500**	<290	<250	<250	<190	<130
SV-8C	48.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**570,000**	**570**	<290	<250	<250	<190	<130
SV-8D	71.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**460,000**	**460**	<290	<250	<250	<190	<130
SV-9A	12.0	10/2/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**33,000**	<270	<290	<250	<250	<190	<130
SV-9ADUP	12.0	10/2/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**26,000**	<270	<290	<250	<250	<190	<130
SV-9B	36.0	10/2/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**230,000**	<270	<290	<250	<250	<190	<130
SV-9C	49.5	10/2/2019	**23**	<160	<250	<220	<180	<310	<310	<200	<200	**31**	<270	<290	<250	<250	<190	**520**
SV-10A	12.0	10/1/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**47,000**	<270	<290	<250	<250	<190	<130
SV-10B	29.0	10/1/2019	<120	<160	<250	**1,800**	<180	<310	<310	<200	<200	**2,500**	<270	<290	<250	<250	<190	<130
SV-10C	55.0	10/1/2019	<120	<160	<250	<220	<180	<310	**400**	<200	<200	**17,000**	<270	<290	<250	<250	<190	<130
SV-10D	70.0	10/1/2019	<120	**370**	<250	<220	<180	**3,700**	<310	<200	<200	**7,200**	<270	<290	<250	<250	**1,200**	**1,900**
SV-11A	16.0	10/2/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**1,100**	<270	<290	<250	<250	<190	**5,100**
SV-11B	29.0	10/2/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**2,600**	<270	<290	<250	<250	<190	<130
SV-11C	70.0	10/2/2019	<120	<160	<250	<220	<180	<310	<310	<200	<200	**4,300**	<270	<290	<250	<250	<190	<130
SV-11D	59.0	10/2/2019	<120	<160	<250	<220	<180	<310	**400**	<200	<200	**2,500**	<270	<290	<250	<250	<190	<130
													410					

IPA = Isopropyl Alcohol
ug/m3 = micrograms per cubic meter
bgs = below ground surface

Table 5 Soil Vapor Analytical Results January 2020										
			VOCs							
Sample Location	Sample Depth (feet bgs)	Sample Date	Acetone	Chloroform	1,3-Dichloro benzene	cis-1,2-Dichloro ethene	Tetrachloro ethene	Trichloro ethene	Toluene	IPA (leak detect)
			ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
SV-1A	10.0	1/27/2020	<120	<250	<310	<200	**160,000**	<270	<190	<130
SV-1B	30.0	1/27/2020	<120	<250	<310	<200	**500,000**	**760**	<190	<130
SV-1C	41.5	1/27/2020	<120	<250	<310	<200	**510,000**	**850**	<190	<130
SV-2A	10.0	1/27/2020	<120	<250	<310	<200	**270,000**	**670**	<190	<130
SV-2B	24.5	1/27/2020	<120	<250	<310	**1,300**	**760,000**	**2,700**	<190	<130
SV-3A	10.0	1/27/2020	<120	<250	<310	<200	**1,000,000**	**2,300**	<190	<130
SV-3B	31.5	1/27/2020	<120	<250	<310	**3,700**	**1,200,000**	**3,400**	<190	<130
SV-3C	42.0	1/27/2020	<120	<250	<310	**3,600**	**1,100,000**	**2,700**	<190	<130
SV-4A	10.0	1/28/2020	<120	<250	<310	<200	**130,000**	<270	<190	<130
SV-4A DUP	10.0	1/28/2020	<120	<250	<310	<200	**120,000**	<270	<190	<130
SV-4B	24.5	1/28/2020	<120	<250	<310	<200	**470,000**	**1,900**	<190	<130
SV-5A	10.0	1/27/2020	<120	<250	<310	<200	**710,000**	**1,300**	<190	<130
SV-5B	32.0	1/27/2020	**150**	<250	<310	**1,600**	**880,000**	**2,400**	<190	**870**
SV-5C	50.0	1/27/2020	<120	<250	<310	**680**	**550,000**	**1,300**	<190	<130
SV-5D	70.6	1/27/2020	<120	<250	<310	<200	**760,000**	**450**	<190	<130
SV-5E	90.4	1/27/2020	<120	<250	<310	<200	**100,000**	<270	<190	<130
SV-6A	53.4	1/27/2020	**120**	<250	<310	<200	**460,000**	**310**	<190	<130
SV-6B	74.2	1/27/2020	<120	<250	<310	<200	**110,000**	<270	<190	<130
SV-6C	89.0	1/27/2020	<120	<250	<310	<200	**47,000**	<270	<190	<130
SV-7A	12.0	1/28/2020	<120	<250	<310	<200	**80,000**	**310**	<190	<130
SV-7B	32.0	1/28/2020	<120	<250	<310	**350**	**540,000**	**1,800**	<190	<130
SV-7C	50.5	1/28/2020	<120	<250	<310	<200	**180,000**	**600**	<190	<130
SV-7D	75.0	1/28/2020	<120	<250	<310	<200	**300,000**	**1,100**	<190	<130
SV-7E	90.2	1/28/2020	<120	<250	<310	<200	**110,000**	<270	<190	<130
SV-8A	12.0	1/28/2020	<120	<250	<310	<200	**230,000**	<270	<190	<130
SV-8B	34.0	1/28/2020	<120	<250	<310	<200	**750,000**	**1,600**	<190	<130
SV-8C	48.0	1/28/2020	<120	<250	<310	<200	**790,000**	**910**	<190	<130
SV-8D	71.0	1/28/2020	<120	<250	<310	<200	**430,000**	**710**	<190	<130
SV-9A	12.0	1/28/2020	<120	<250	<310	<200	**35,000**	<270	<190	<130
SV-9B	36.0	1/28/2020	<120	<250	<310	<200	**170,000**	**390**	<190	<130
SV-9C	49.5	1/28/2020	<120	<250	<310	<200	**130,000**	<270	<190	<130
SV-10A	12.0	1/27/2020	<120	<250	<310	<200	**14,000**	<270	<190	<130
SV-10B	29.0	1/27/2020	<120	<250	<310	<200	**1,100**	<270	<190	<130
SV-10C	55.0	1/27/2020	<120	<250	<310	<200	**5,700**	<270	<190	<130
SV-10D	70.0	1/27/2020	**240**	<250	**1,100**	<200	**9,600**	<270	**550**	<130
SV-11A	16.0	1/29/2020	<120	<250	<310	<200	**1,800**	<270	<190	<130
SV-11B	29.0	1/29/2020	<120	<250	<310	<200	**4,000**	<270	<190	<130
SV-11C	70.0	1/29/2020	<120	<250	**430**	<200	**6,200**	<270	<190	<130
SV-11D	59.0	1/29/2020	<120	<250	**380**	<200	**5,000**	<270	<190	<130
SV-12A	9.5	1/29/2020	<120	**270**	<310	<200	**35,000**	<270	<190	<130
SV-12B	17.0	1/29/2020	<120	<250	<310	<200	**85,000**	<270	<190	<130
SV-12B DUP	17.0	1/29/2020	<120	<250	<310	<200	**77,000**	<270	<190	<130
SV-12C	27.0	1/29/2020	<120	<250	**550**	<200	**130,000**	<270	<190	<130
SV-12D	37.0	1/29/2020	<120	<250	<310	<200	**500,000**	**670**	<190	<130
SV-13A	10.0	1/29/2020	<120	**580**	<310	<200	**100,000**	<270	<190	<130
SV-13B	73.0	1/29/2020	<120	**310**	<310	<200	**440,000**	**380**	<190	<130

IPA = Isopropyl Alcohol
ug/m3 = micrograms per cubic meter
bgs = below ground surface

Table 6					
GROUNDWATER SAMPLE ANALYTICAL RESULTS					
CHST Parcel ID#	Sample #	Volatile Organic Compounds (µg/L)			
		EPA Method 8260B			
		Sample Date	Tetrachloroethene	Trichloroethene	Bromomethane
FB-10-0121	**MW-1**	01/28/2020	**140**	ND	**3.7**
	MW-1	10/1/2019	**190**	**1.1**	ND
	MW-1	5/14/2019	**140**	ND	ND
	DRUM	5/14/2019	**42**	ND	ND
	MW-1	5/1/2018	**68**	ND	ND
Reporting Limit			1.0	1.0	1.0
EPA Region 9 RSLs	**MCL**		5.0	5.0	--
DTSC - SLs	**Screen Levels (Tap Water)**		0.083	--	--
RWQCB ESLs	**Direct Exposure MCL Priority**		5.0	5.0	7.5

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Site Reconnaissance Questionnaire

Rincon Project Number: 21-11580 **Date:** October 23, 2021

Site Name: Van Ness Water Main

Site Address: Van Ness Ave between Merced St and Divisadero St

Rincon Representative: Courtney Montgomery

Person Accompanying Rincon Representative:

Name: Sabdy Jimenez Franco

Title: Field Technician

Contact Information: sabdyguzman@gmail.com

LBP & Asbestos Operations and Maintenance Plan Available: ______________________

Visual Asbestos or LBP onsite: ______________________

Adjoining Properties. Are these located nearby? If so locate them with corresponding numbers on drawing.

1) single-family homes
2) apartments
3) retail
4) offices
5) restaurant
6) gasoline station
7) motor repair facility
8) commercial printing facility
9) dry cleaners
10) laundromat
11) photo developing laboratory
12) junkyard or landfill
13) agricultural use
14) open space
15) other (explain: ______________________)

<u>Use the back of this sheet for other necessary drawings (Site Map)</u>

Describe Adjacent Properties

Direction and Property Characteristics

North

East

South

West

Current Land Use of Subject Property

Commercial development

Operations at the Facility (describe general operations, site conditions, equipment used, etc.)

Multiple uses. Apartment builings, retail, boutique shops, commercial uses. Site consists of alley ways and roadways. The alley ways consisted of dumpsters, utility manholes, trash, staining, and one homeless emcampment.

Subject Property Occupants (List All)

Age of Onsite Structures and Previous Structures

Between 1940s to present

When did Current Ownership begin? N/A

Previous Owner: N/A

Onsite Utilities

Water Service Provider: City of Fresno

Sewer Service Provider: City of Fresno

Electrical Service Provider: Pacific Gas and Electric

Natural Gas Service Provider: Pacific Gas and Electric

Solid Waste Hauler: ?

Storm Water Run-off (describe)

Onsite Groundwater Supply Wells or Monitoring Wells (describe and list any contaminants reported)

All Hazardous Substances Onsite

Hazardous Substance	Quantity Onsite	Quantity Used (per mo. or per yr.)	Use/Purpose	Location

Wastes Generated at Facility

Waste Generated	Quantity Onsite	Quantity Generated (per mo. or per yr.)	Method/Frequency of Disposal

Onsite Observed Leaks or Stains (indicate where and likely source)

Stains on pavement/concrete observed in alley ways near dumpsters, likely do to overflow or leak from dumpster. Some oil stains were observed in parking areas.

Onsite Above or Below Ground Tanks (Total Number of Tanks 0______)

Size ______________________

Location ______________________

Use ______________________

Age ______________________

Substance ______________________

Secondary ______________________

Permits ______________________

Issues/Problems

Size ______________________

Location ______________________

Use ______________________

Age ______________________

Substance ______________________

Secondary ______________________

Permits ______________________

Issues/Problems

Size ____________________
Location ____________________
Use ____________________
Age ____________________
Substance ____________________
Secondary ____________________
Permits ____________________

Issues/Problems

Size ____________________
Location ____________________
Use ____________________
Age ____________________
Substance ____________________
Secondary ____________________
Permits ____________________

Issues/Problems

Onsite Transformers Check here if owned by ☐ SCE ☐ SDG&E if neither, specify below

Owner	Location	Indication of Release?	Maintained By

Hydraulic Equipment (elevators, trash compactors, etc.)

Location	Maintained By	Age	Evidence of Leakage?	PCB Oil

Other Indications of PCB Oil

Environmental Permits

Other Environmental Concerns (yes/no) – if yes, describe below:

Pipelines and easements (public utilities, natural gas, petroleum, etc.)	☐ YES	■ NO
Damages or discarded automotive or industrial batteries	☐ YES	■ NO
Pesticides	☐ YES	■ NO
Paint Containers	☐ YES	■ NO
Spray paint cans	☐ YES	■ NO
Industrial drums	☐ YES	■ NO
Sacks of chemicals	☐ YES	■ NO
Fill dirt	■ YES	☐ NO
Pits, ponds or lagoons	☐ YES	■ NO
Stained (or foul odor emitting) flooring, drains, or walls	■ YES	☐ NO
Vent pipes, fill pipes or other access ways	■ YES	☐ NO
Wetlands	☐ YES	■ NO
Biological waste containers	☐ YES	■ NO
Biological waste refrigerator	☐ YES	■ NO
Diesel operated fire suppression system	☐ YES	■ NO
Flammable storage cabinets	☐ YES	■ NO
High-pressure gas cylinders	☐ YES	■ NO
Propane/other tanks	☐ YES	■ NO
Clarifiers	☐ YES	■ NO
Hydraulic elevators	☐ YES	■ NO
Hydraulic compactors	☐ YES	■ NO
Discharge of wastewater on or adjacent to the property, other than storm water into a storm sewer	☐ YES	■ NO
Wastewater treatment system	☐ YES	■ NO
Other	☐ YES	■ NO

Dumped above grade, buried and/or burned on the property

Hazardous Substances ________________________________

Petroleum Products ________________________________

Unidentified Waste Materials ________________________________

Tires ________________________________

Automotive or Industrial Batteries ________________________________

Additional Notes:

Photograph Log

Photo No.	Photo Description	Direction Facing

This Questionnaire was Completed by:

Name ______________________________

Title ______________________________

Signature ______________________ **Date** ______________

Appendix D: AB 52 Correspondence Record

Van Ness Avenue Water Transmission Grid Main Project Assembly Bill 52 Correspondence

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Big Sandy Rancheria of Western Mono Indians Elizabeth Kipp, Chairperson P.O. Box 337 Auberry, California 93602 Via email: lkipp@bsrnation.com Phone: (559) 374 - 0066 Fax: (559) 374-0055	November 8, 2021 Certified Mail		Certified Mail Receipt 7012 0470 0000 7228 9876 Signed for by Valencia Gievara 11/12/21 No response as of 12/09/21
Cold Springs Rancheria of Mono Indians Jared Aldern P. O. Box 209 Tollhouse, California 93667 Via email: csrepa@netptc.net Phone: (559) 855 - 5043 Fax: (559) 855-4445	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5927 Signed for by Desiree Lewis, 11/15/21 No response as of 12/09/21
Cold Springs Rancheria of Mono Indians Carol Bill, Chairperson P.O. Box 209 Tollhouse, California 93667 Via email: coldsprgstribe@netptc.net Phone: (559) 855 - 5043 Fax: (559) 855-4445	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5910 Signed for by Desiree Lewis, 11/15/21 No response as of 12/09/21
Dumna Wo-Wah Tribal Government Robert Ledger, Chairperson 2191 West Pico Ave. Fresno, California 93705 Via email: ledgerrobert@ymail.com Phone: (559) 540 - 6346	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5859 Signed for by JX, 11/12/21 No response as of 12/09/21

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Kings River Choinumni Farm Tribe Stan Alec 3515 East Fedora Avenue Fresno, California 93726 Phone: (559) 647 - 3227	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5866 Mail Returned
North Valley Yokuts Tribe Katherine Perez, Chairperson P.O. Box 717 Linden, California 95236 Via email: canutes@verizon.net Phone: (209) 887 - 3415	November 8, 2021 Certified Mail		Certified Mail Receipt 7012 0470 0000 7228 9869 Signed for by Raoul Perez 11/15/21 No response as of 12/09/21
North Valley Yokuts Tribe Timothy Perez P.O. Box 717 Linden, California 95236 Via email: huskanam@gmail.com Phone: (209) 662 - 2788	November 8, 2021 Certified Mail		Certified Mail Receipt 7012 0470 0000 7228 9906 Signed for by Raoul Perez 11/15/21 No response as of 12/09/21
Picayune Rancheria of Chukchansi Indians Heather Airey, Tribal Historic Preservation Officer P.O. Box 2226 Oakhurst, California 93644 Via email: hairey@chukchansi-nsn.gov Phone: (559) 795 - 5986	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5934 Signed for by Jared M 11/12/21 No response as of 12/09/21
Picayune Rancheria of Chukchansi Indians Claudia Gonzales, Chairwoman P.O. Box 2226 Oakhurst, California 93644 Via email: cgonzales@chukchansitribe.net Phone: (599) 412 - 5590	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5880 Signed for by Jared M 11/12/21 No response as of 12/09/21

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Table Mountain Rancheria Brenda Lavell, Chairperson P.O. Box 410 Friant, California 93626 Via email: rpennell@tmr.org Phone: (559) 822 - 2587 Fax: (559) 822-2693	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5897 Signed for by Monique No response as of 12/09/21
Table Mountain Rancheria Bob Pennell, Cultural Resource Director P.O. Box 410 Friant, California 93626 Via email: rpennell@tmr.org Phone: (559) 325 - 0351 Fax: (559) 325-0394	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5903 Signed for by Monique Pennell No response as of 12/09/21
Traditional Choinumni Tribe David Alvarez, Chairperson 2415 E. Houston Avenue Fresno, California 93720 Via email: davealvarez@sbcglobal.net Phone: (559) 217 - 0396 Fax: (559) 292-5057	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5873 Signed for C/S No response as of 12/09/21
Tule River Indian Tribe Neil Peyron, Chairperson P.O. Box 589 Porterville, California 93258 Via email: neil.peyron@tulerivertribe-nsn.gov Phone: (559) 781 - 4271 Fax: (559) 781-4610	November 8, 2021 Certified Mail		Certified Mail Receipt 7012 0470 0000 7228 9883 No response or signature as of 12/08/21

Contact List	Date Letter Sent to contact	Date of Response	Comments/Concerns
Tule River Indian Tribe Kerri Vera, Environmental Department P. O. Box 589 Porterville, California 93258 Via email: kerri.vera@tulerivertribe-nsn.gov Phone: (559) 783 - 8892 Fax: (559) 783-8932	November 8, 2021 Certified Mail		Certified Mail Receipt 7012 0470 0000 7228 9845 No response or signature as of 12/07/21
Tule River Indian Tribe Joey Garfield, Tribal Archaeologist P. O. Box 589 Porterville, California 93258 Via email: joey.garfield@tulerivertribensn.gov Phone: (559) 783 - 8892 Fax: (559) 783-8932	November 8, 2021 Certified Mail		Certified Mail Receipt 7021 0350 0000 7938 5842 No response or signature as of 12/07/21
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, California 93906 Via email: kwood8934@aol.com Phone: (831) 443 - 9702	November 8, 2021 Certified Mail		Certified Mail Receipt 7012 0470 0000 7228 9890 Signed for by C/9 (agent) No response as of 12/09/21