Draft
Environmental Impact Report

SCH# 2019011010

Volume 1

Chapters 1 through 11

Johe Ranch Mining Project
By Diatom, LLC

CUP 17, Map 117

Kern County
Planning and Natural Resources Department
Bakersfield, California

November 2020

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Lorelei H. Oviatt, AICP, Director
2700 "M" Street, Suite 100
Bakersfield, CA 93301-2323
Phone: (661) 862-8600
Fax: (661) 862-8601 TTY Relay 1-800-735-2929
Email: planning@kerncounty.com
Web Address: http://kernplanning.com/

PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning
Community Development
Administrative Operations

November 6, 2020 **File:** CUP 17, Map 117

ADDRESSEE LIST (See Distribution List)

Re: Draft Environmental Impact Report for the Johe Ranch Mining Project by Diatom, LLC (PP12316)

Dear Interested Party:

Kern County has prepared a Draft Environmental Impact Report (Draft EIR) for the above-noted land use application to allow for Conditional Use Permit (CUP) for a 93.67-acre surface mining operation and development of a reclamation plan on approximately 331-acre project site, in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975. The project site is located on the north and south sides of State Route 58, 8.5 miles west of the unincorporated community of McKittrick.

The life of the operation is proposed to be 50 years. The maximum annual removal of material is estimated to be 330,000 tons (310,000 tons of diatomaceous earth, 20,000 tons of overburden material), and the maximum total is estimated to be 6,600,000 tons (6,200,000 tons of diatomaceous earth, 400,000 tons of overburden material). Proposed maximum depth of excavation is 162 feet for Mine Area 1, 125 feet for Mine Area 2, and 40 feet for Mine Area 3. Although there are three proposed mine areas, the project consists of a single phase.

The Kern County Planning and Natural Resources Department, as Lead Agency, has determined that preparation of an Environmental Impact Report would be appropriate for the referenced project. Enclosed is a copy of the Draft EIR.

If we have not received a reply from you by **December 21, 2020, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIR.

Should you have any questions regarding this project, please do not hesitate to contact me at (661) 862-8612 or via email at CatesR@kerncounty.com.

Sincerely,

Randall Cates, Planner III
Advanced Planning Division

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CUP #17, Map #117
WO #PP12316
P:\43000-43999\43439 Johe Ranch Surface Mining & Reclamation Plan EIR (Kern County)\Reports\6_DEIR - November 2020\Distribution\eir Johe

City of Arvin
P.O. Box 548
Arvin, CA 93203

Bakersfield City Planning Dept
1715 Chester Avenue
Bakersfield, CA 93301

Bakersfield City Public Works Dept
1501 Truxtun Avenue
Bakersfield, CA 93301

California City Planning Dept
21000 Hacienda Blvd.
California City, CA 93515

Delano City Planning Dept
P.O. Box 3010
Delano, CA 93216

City of Maricopa
P.O. Box 548
Maricopa, CA 93252

City of McFarland
401 West Kern Avenue
McFarland, CA 93250

City of Ridgecrest
100 West California Avenue
Ridgecrest, CA 93555

City of Shafter
336 Pacific Avenue
Shafter, CA 93263

City of Taft
Planning & Building
209 East Kern Street
Taft, CA 93268

City of Tehachapi
Attn: John Schlosser
115 South Robinson Street
Tehachapi, CA 93561-1722

City of Wasco
764 E Street
Wasco, CA 93280

Inyo County Planning Dept
P.O. Drawer "L"
Independence, CA 93526

Kings County Planning Agency
1400 West Lacey Blvd, Bldg 6
Hanford, CA 93230

Los Angeles Co Reg Planning Dept
320 West Temple Street
Los Angeles, CA 90012

San Bernardino Co Planning Dept
385 North Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182

San Luis Obispo Co Planning Dept
Planning and Building
976 Osos Street
San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept
123 East Anapamu Street
Santa Barbara, CA 93101

Tulare County Planning & Dev Dept
5961 South Mooney Boulevard
Visalia, CA 93291

Ventura County RMA Planning Div
800 South Victoria Avenue, L1740
Ventura, CA 93009-1740

U.S. Bureau of Land Management
Caliente/Bakersfield
3801 Pegasus Drive
Bakersfield, CA 93308-6837

U. S. Fish & Wildlife Service
Division of Ecological Services
2800 Cottage Way #W-2605
Sacramento, CA 95825-1846

North West Kern Resource Cons Dist
5080 California Avenue, Suite 150
Bakersfield, CA 93309

Environmental Protection Agency
Region IX Office
75 Hawthorn Street
San Francisco, CA 94105

U.S. Dept of Agriculture/NRCS
5080 California Avenue, Ste 150
Bakersfield, CA 93309-0711

U.S. Army Corps of Engineers
Regulatory Division
1325 "J" Street, #1350
Sacramento, CA 95814-2920

U.S. Postal Service
Address Management Systems
28201 Franklin Parkway
Santa Clarita, CA 91383-9321

So. San Joaquin Valley Arch Info Ctr
California State University of Bkfd
9001 Stockdale Highway
Bakersfield, CA 93311

Caltrans/Dist 6
Planning/Land Bank Bldg.
P.O. Box 12616
Fresno, CA 93778

Caltrans/Dist 9
Planning Department
500 South Main Street
Bishop, CA 93514

State Clearinghouse
Office of Planning and Research
1400 - 10th Street, Room 222
Sacramento, CA 95814

State Dept of Conservation
Director's Office
801 "K" Street, MS 24-01
Sacramento, CA 95814-3528

State Dept of Conservation
Geologic Energy Management Division
4800 Stockdale Highway, Ste 108
Bakersfield, CA 93309

Office of the State Geologist
Headquarters
801 "K" Street, MS 12-30
Sacramento, CA 95814

State Dept of Conservation
Office of Land Conservation
801 "K" Street, MS 18-01
Sacramento, CA 95814

State Dept of Conservation
Office of Mine Reclamation
801 "K" Street MS 09-06
Sacramento, CA 95814-3529

State Dept of Conservation
Div Recycling Cert. Sec.
801 "K" Street, MS 19-01
Sacramento, CA 95814

State Mining and Geology Board
801 K Street, MS 20-15
Sacramento, CA 95814

California State University
Bakersfield - Library
9001 Stockdale Highway
Bakersfield, CA 93309

California Fish & Wildlife
1234 East Shaw Avenue
Fresno, CA 93710

California Highway Patrol
Planning & Analysis Division
P.O. Box 942898
Sacramento, CA 94298-0001

California Regional Water Quality
Control Board/Central Valley Region
1685 E Street
Fresno, CA 93706-2020

Kern County
Agriculture Department

Kern County Administrative Officer

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County
Env Health Services Department

Kern County Fire Dept
David Witt, Fire Chief

Kern County Fire Dept
Cary Wright, Fire Marshall

Kern County Library/Beale
Local History Room

Kern County Library/Beale
Andie Sullivan

Kern County Library
Buttonwillow Branch
116 Buttonwillow Avenue
Buttonwillow, CA 93206

Kern County Parks & Recreation

Kern County Sheriff's Dept
Administration

Kern County Public Works Department/
Building & Development /Development
Review

Kern County Public Works
Department/Operations &
Maintenance/Regulatory Monitoring &
Reporting

Kern County Public Works Department/
Building & Development/Code
Compliance

McKittrick School Dist
P.O. Box 277
McKittrick, CA 93251

Taft Union High School Dist
701 - 7th Street
Taft, CA 93268

Kern High School Dist
5801 Sundale Avenue
Bakersfield, CA 93309

Kern County Superintendent of Schools
Attention School District Facility Services
1300 - 17th Street
Bakersfield, CA 93301

KernCOG
1401 19th Street - Suite 300
Bakersfield, CA 93301

Rosedale-Rio Bravo Water Dist
P.O. Box 20820
Bakersfield, CA 93390-0820

Kern County Water Agency
P.O. Box 58
Bakersfield, CA 93302-0058

West Side Rec & Parks Dist
P.O. Box 1406
Taft, CA 93268

San Joaquin Valley
Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

West Side Mosquito
Abatement Dist.
P.O. Box 205
Taft, CA 93268

Adams, Broadwell, Joseph & Cardozo
Attention: Janet M. Laurain
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Kern Audubon Society
Attn: Frank Bedard, Chairman
4124 Chardonnay Drive
Bakersfield, CA 93306

Center on Race, Poverty
& the Environment
Attn: Marissa Alexander
1999 Harrison Street – Suite 650
San Francisco, CA 94612

Center on Race, Poverty
& the Environmental/
CA Rural Legal Assistance Foundation
1012 Jefferson Street
Delano, CA 93215

Defenders of Wildlife/
Kim Delfino, California Dir
980 - 9th Street, Suite 1730
Sacramento, CA 95814

Native American Heritage Council
of Kern County
Attn: Gene Albitre
3401 Aslin Street
Bakersfield, CA 93312

Pacific Gas & Electric Co
Land Projects
650 "O" Street, First Floor
Fresno, CA 93760-0001

Sierra Club/Kern Kaweah Chapter
P.O. Box 3357
Bakersfield, CA 93385

Southern California Gas Co
35118 McMurtrey Avenue
Bakersfield, CA 93308-9477

Southern California Gas Co
Transportation Dept
9400 Oakdale Avenue
Chatsworth, CA 91313-6511

Chumash Council of Bakersfield
2421 "O" Street
Bakersfield, CA 93301-2441

David Laughing Horse Robinson
P.O. Box 20849
Bakersfield, CA 93390

Kern Valley Indian Council
Attn: Robert Robinson, Chairperson
P.O. Box 401
Weldon, CA 93283

Kern Valley Indian Council
Historic Preservation Office
P.O. Box 401
Weldon, CA 93283

Santa Rosa Rancheria
Ruben Barrios, Chairperson
P.O. Box 8
Lemoore, CA 93245

Tejon Indian Tribe
Kathy Morgan, Chairperson
1731 Hasti-acres Drive, Suite 108
Bakersfield, CA 93309

Kitanemuk & Yowlumne Tejon Indians
Chairperson
115 Radio Street
Bakersfield, CA 93305

Tubatulabals of Kern County
Attn: Robert Gomez, Chairperson
P.O. Box 226
Lake Isabella, CA 93240

Tule River Indian Tribe
Neal Peyron, Chairperson
P.O. Box 589
Porterville, CA 93258

LIUNA
Attn: Danny Zaragoza
2201 "H" Street
Bakersfield, CA 93301

Native American Heritage Commission
1550 Harbor Boulevard
West Sacramento, CA 95691

Leadership Counsel for Justice & Accountability
1527 - 19th Street, Suite 212
Bakersfield, CA 93301

Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

WZI, Inc.
1717 - 28th Street
Bakersfield, CA 93301

Diatom, LLC
Attn: David Cooper
7260 Reward Road
McKittrick, CA 92351

GF Industries
Attn: Steve Gentile
122 North Harbor Boulevard, Suite 201
Fullerton, CA 92832

DRAFT ENVIRONMENTAL IMPACT REPORT
NOTICE OF AVAILABILITY FOR PUBLIC REVIEW

This is to advise that the Kern County Planning and Natural Resources Department has prepared an Environmental Impact Report (EIR) for the project identified below. As mandated by State law, the minimum public review period for this document is 45 days. The document and documents referenced in the Draft EIR are available for review at the Planning Natural Resources Department, 2700 "M" Street, Suite 100, Bakersfield, CA 93301 or on the Departmental website **(https://kernplanning.com/planning/environmental-documents/).**

A public hearing has been scheduled with the Kern County Planning Commission to receive comments on the document on: **January 21, 2021**, at 7:00 p.m. or soon thereafter, Chambers of the Board of Supervisors, First Floor, Kern County Administrative Center, 1115 Truxtun Avenue, Bakersfield, California

The comment period for this document closes on **December 21, 2020**. Testimony at future public hearings may be limited to those issues raised during the public review period either orally or submitted in writing by 5:00 p.m. the day the comment period closes.

Project Title: EIR 09-17; Johe Ranch Mining Project by Diatom, LLC (PP12316); Conditional Use Permit 17, Map 117.

Project Location: North and south sides of State Route 58, 8.5 miles west of the unincorporated community of McKittrick; also being a portion of Section 7 of Township 30 South, Range 21 East, MDBM, County of Kern, State of California.

Project Description: A Conditional Use Permit (CUP) for a 93.67-acre surface mining operation and development of a reclamation plan on an approximately 331-acre project site, in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975.

Access to the site is obtained via State Route 58. The project proponent proposes to employ open pit mining techniques to mine diatomaceous earth (a mineral suitable for industrial uses including the production of cement) and overburden material (earth overlying the diatomaceous earth, proposed to be sold for use as a landfill liner, and to solidify liquid waste after it is deposited in a landfill). As proposed, all overburden material (typically considered as non-marketable waste in the mining industry) which is excavated will be exported from the project site and sold; as such, no waste is proposed to be generated.

The life of the operation is proposed to be 50 years. The maximum annual removal of material is estimated to be 330,000 tons (310,000 tons of diatomaceous earth, 20,000 tons of overburden material), and the maximum total is estimated to be 6,600,000 tons (6,200,000 tons of diatomaceous earth, 400,000 tons of overburden material). Proposed maximum depth of operation is 162 feet for Mine Area 1, 125 feet for Mine Area 2, and 40 feet for Mine Area 3. Although there are three proposed mine areas, the project consists of a single phase. Maximum operational slopes for the mining areas, and the blending and screening site, will be 2:1 (horizontal:vertical). Maximum final reclaimed slopes for the mining areas, and the blending and screening site, will be 3:1 (horizontal:vertical). Maximum operational cut and fill slopes for the proposed access road will be 1:1.75 (horizontal:vertical). Maximum final reclaimed cut and fill slopes for the proposed access road will be 1:1.75 (horizontal:vertical). Operations are scheduled to occur between the hours of 6:00 a.m. to 7:30 p.m., Monday through Friday, with a maximum of ten employees on site at any one time.

The approximately 331-acre project site consists of grazing land and four abandoned wells (all of which are identified as abandoned gas wells with the exception of the well titled Lynn 1) as shown on Figures 3-3a and 3-3b, although none of the aforementioned wells are within the proposed 93.67-acre reclamation plan area. Approximately 1.4 acres of the project site has been previously disturbed as a result of existing roads used in conjunction with ranching operations. A 2.42 acre area is proposed as a blending and screening site for diatomaceous earth, to blend and screen the material as necessary to meet customer demand.

Anticipated Significant Impacts on Environment: Greenhouse Gas Emissions

Document can be viewed online at: https://kernplanning.com/planning/environmental-documents/

For further information, please contact Randall P. Cates, Planner III ((661) 862-8612).

LORELEI H. OVIATT, AICP, Director
Planning and Natural Resources Department

To be published once only on next available date and as soon as possible

TAFT MIDWAY DRILLER

RPC:sc (10/19/20)

cc: County Clerk (2) (with fee)
Environmental Status Board
Sierra Club/Kern Kaweah Chapter
LiUNA
Supervisorial District No. 4
California Native Plant Society/Kern Chapter
Kern County Archaeological Society
Native American Heritage Pres. Council/Kern County
Center on Race, Poverty and Environment (2)

CUP #17, Map #117
WO #PP12316 (EIR - Johe Ranch)
P:\43000-43999\43439 Johe Ranch Surface Mining & Reclamation Plan EIR (Kern County)\Reports\6_DEIR - November 2020\Distribution\eir Johe

156 010 14 00 0
DIATOM LLC
7260 REWARD RD
MC KITTRICK CA 93251-9733

156 070 02 02 1
DONNELL ROY A ET AL
557 FOSTER PT RD
WEST BATH ME 04530

156 070 14 00 8
E & B NATURAL RES MGMT CORP
1608 NORRIS RD
BAKERSFIELD CA 93308-2238

156 070 06 01 4
SHELL CALIFORNIA PIPELINE CO
PO BOX 11164
BAKERSFIELD CA 93389-1164

156 070 05 00 2
SHELL OIL CO
PO BOX 11164
BAKERSFIELD CA 93389-1164

156 010 11 00 1
STEWART ERIC
PO BOX 38
MC KITTRICK CA 93251-0038

156 070 04 00 9
TWISSELMAN KENNETH &
ROSEMARY LIV TR
8775 LOKERN RD
MC KITTRICK CA 93251-9746

156 060 27 00 3
CALIFORNIA RESOURCES
PRODUCTION CORPORATION
27200 TOURNEY RD STE 200
SANTA CLARITA CA 91355-4910

156 070 01 3 **SITE/DUP**
DIATOM LLC
7260 REWARD RD
MC KITTRICK CA 93251-9733

156 070 02 1 **SITE/DUP**
DIATOM LLC
7260 REWARD RD
MC KITTRICK CA 93251-9733

156 070 10 4 **SITE/DUP**
DIATOM LLC
7260 REWARD RD
MC KITTRICK CA 93251-9733

Anitra Kass
Pacific Crest Trail Association
41860 Saint Annes Bay Drive
Bermuda Dunes, CA 92203

Joyce LoBasso
P.O. Box 6003
Bakersfield, CA 93386

LIUNA
Attn: Danny Zaragoza
2201 "H" Street
Bakersfield, CA 93301

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Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2019011010

Project Title: EIR 09-17; Johe Ranch Mining Project by Diatom, LLC

Lead Agency: Kern County Planning and Natural Resources Department | Contact Person: Randall Cates

Mailing Address: 2700 "M" Street Suite 100 | Phone: 661-862-8612

City: Bakersfield | Zip: 93301-2323 | County: Kern

Project Location: County: Kern | City/Nearest Community: McKittrick

Cross Streets: The project site is located on the north and south sides of State Route 58, approximately 8.5 miles west of the unincorporated community of McKittrick, being a portion of Section 7 of T30S, R21E, MDB&M, County of Kern, State of California

Lat. / Long.: 35° 19′56.2655″ N/ 119° 46′4.2659″ W | Total Acres: approximately 331 acres

Assessor's Parcel No.: portions of 156-070-01, 156-070-02 & 156-070-10 | Section: 7 | Twp.: 30S | Range: 21E | Base: MDB&M

Within 2 Miles: State Hwy #: 58 | Waterways: multiple intermittent drainage channels

Airports: N/A | Railways: N/A | Schools: N/A

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☒ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☒ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational ____
☐ Recreational ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☒ Mining: Mineral: diatomaceous earth and overburden material
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☐ Other: ____

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☒ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☒ Flood Plain/Flooding ☒ Forest Land/Fire Hazard ☒ Geologic/Seismic ☒ Minerals ☒ Noise ☒ Population/Housing Balance ☒ Public Services/Facilities
☐ Recreation/Parks ☒ Schools/Universities ☒ Septic Systems ☒ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☒ Water Supply/Groundwater ☒ Wetland/Riparian ☒ Wildlife ☒ Growth Inducing ☒ Land Use ☒ Cumulative Effects
☒ Other Energy, Greenhouse Gas Emissions, Tribal Cultural Resources, Wildfire

Present Land Use/Zoning/General Plan Designation:

Present Land Use: Grazing Land / *Zoning:* A (Exclusive Agriculture) / *Kern County General Plan:* 8.3 (extensive agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)), 8.3/2.4 (extensive agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / steep slope overlay), 8.4 (mineral and petroleum (min. 5 acre parcel size)), 8.4/2.2 (mineral and petroleum (min. 5 acre parcel size) / landslide overlay), 8.4/2.4 (mineral and petroleum (min. 5 acre parcel size) / steep slope overlay)

Project Description: *(please use a separate page if necessary)*

A Conditional Use Permit (CUP) for a 93.67-acre surface mining operation and development of a reclamation plan on approximately 331-acre project site, in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975.

Access to the site is obtained via State Route 58. The project proponent proposes to employ open pit mining techniques to mine diatomaceous earth (a mineral suitable for industrial uses including the production of cement) and overburden material (earth overlying the diatomaceous earth, proposed to be sold for use as a landfill liner, and to solidify liquid waste after it is deposited in a landfill). As proposed, all overburden material (typically considered as non-marketable waste in the mining industry) which is excavated will be exported from the project site and sold; as such, no waste is proposed to be generated.

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Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

_____	Air Resources Board	_____	Office of Emergency Services
_____	Boating & Waterways, Department of	_____	Office of Historic Preservation
S	California Highway Patrol	_____	Office of Public School Construction
_____	CalFire	_____	Parks & Recreation
S	Caltrans District # 6 & 9	_____	Pesticide Regulation, Department of
_____	Caltrans Division of Aeronautics	_____	Public Utilities Commission
_____	Caltrans Planning (Headquarters)	S	Regional WQCB # Central Valley Region
_____	Central Valley Flood Protection Board	_____	Resources Agency
_____	Coachella Valley Mountains Conservancy	_____	S.F. Bay Conservation & Development Commission
_____	Coastal Commission	_____	San Gabriel & Lower L.A. Rivers and Mtns Conservancy
_____	Colorado River Board	_____	San Joaquin River Conservancy
S	Conservation, Department of	_____	Santa Monica Mountains Conservancy
_____	Corrections, Department of	_____	State Lands Commission
_____	Delta Protection Commission	_____	SWRCB: Clean Water Grants
_____	Education, Department of	_____	SWRCB: Water Quality
_____	Energy Commission	_____	SWRCB: Water Rights
S	Fish & Game Region # Fresno	_____	Tahoe Regional Planning Agency
_____	Food & Agriculture, Department of	_____	Toxic Substances Control, Department of
_____	General Services, Department of	_____	Water Resources, Department of
_____	Health Services, Department of		
_____	Housing & Community Development	S	Other So. San Joaquin Arch. Info. Ctr.
_____	Integrated Waste Management Board	S	Other CalGEM - Bakersfield
S	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date November 6, 2020 Ending Date December 21, 2020

Lead Agency (Complete if applicable):

Consulting Firm: _____
Address: _____
City/State/Zip: _____
Contact: _____
Phone: _____

Applicant: _____
Address: _____
City/State/Zip: _____
Phone: _____

Signature of Lead Agency Representative: **/s/** **Date:** October 30, 2020

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

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Draft
Environmental Impact Report

SCH# 2019011010

Volume 1
Chapters 1 through 11

Johe Ranch Mining Project
By Diatom, LLC

CUP 17, Map 117

Kern County Planning and Natural Resources Department
2700 M Street, Suite 100
Bakersfield, CA 93301-2370
(661) 862-8600

Technical Assistance by:

SWCA Environmental Consultants
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401
(805) 543-7095

November 2020

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APPENDICES

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Chapter 1
Executive Summary

1.1 Introduction

The Johe Ranch Mining Project (project) is a proposal by Diatom, LLC (Diatom; the project proponent) for a 93.67-acre surface mining operation and development of a reclamation plan on an approximately 331-acre project site, in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975. It is estimated that up to 330,000 tons of materials would be mined annually (310,000 tons of diatomaceous earth and 20,000 tons of overburden material), and, as proposed, up to 6,600,000 tons of material (6,200,000 tons of diatomaceous earth and 400,000 tons of overburden material) would be mined. The proposed ratio of diatomaceous earth to overburden material (15.5 to 1) is an estimate; the aforementioned 6,600,000-ton quantity represents total proposed quantity of material mined (diatomaceous earth plus overburden material) and is not proposed to be restricted with regards to ratio of diatomaceous earth to overburden material. The project site is identified as portions of Kern County Assessor's Parcel Numbers (APNs) 156-070-01, 156-070-02, and 156-070-10, and is on the north and south sides of State Route (SR) 58, approximately 8.5 miles west of the unincorporated community of McKittrick in Kern County, California (**Figure 1-1,** *Site Vicinity*, and **Figure 1-2,** *Location Map*). The project would disturb 93.67 acres (88 acres of which would be mined, in three open pits) within the 331-acre project site.

Approximately 1.4 acres of the proposed 93.67-acre disturbance area are currently disturbed (consisting of existing ranch roads) and will not be reclaimed, as these roads will be needed in conjunction with grazing operations after the site has been deemed fully reclaimed. As such, reclamation will be required on a 92.27-acre area (93.67 acres of disturbance minus 1.4 acres of existing road access disturbance).

The project proponent proposes to employ open pit mining techniques to mine diatomaceous earth (a mineral suitable for industrial uses including the production of cement) and overburden material (earth overlying the diatomaceous earth, proposed to be sold for use as a landfill liner, and to solidify liquid waste after it is deposited in a landfill). A processing screener would be utilized on an as-needed basis according to customer demand for refined product. Blending of different types of diatomaceous earth mined on the project site would be conducted as necessary with the use of a loader. Trucks would be weighed before leaving the site on a portable scale located within the boundaries of the 2.42-acre blending and screening site. As proposed, all overburden material (typically considered as non-marketable waste in the mining industry) that is excavated will be exported from the project site and sold; as such, no waste is proposed to be generated.

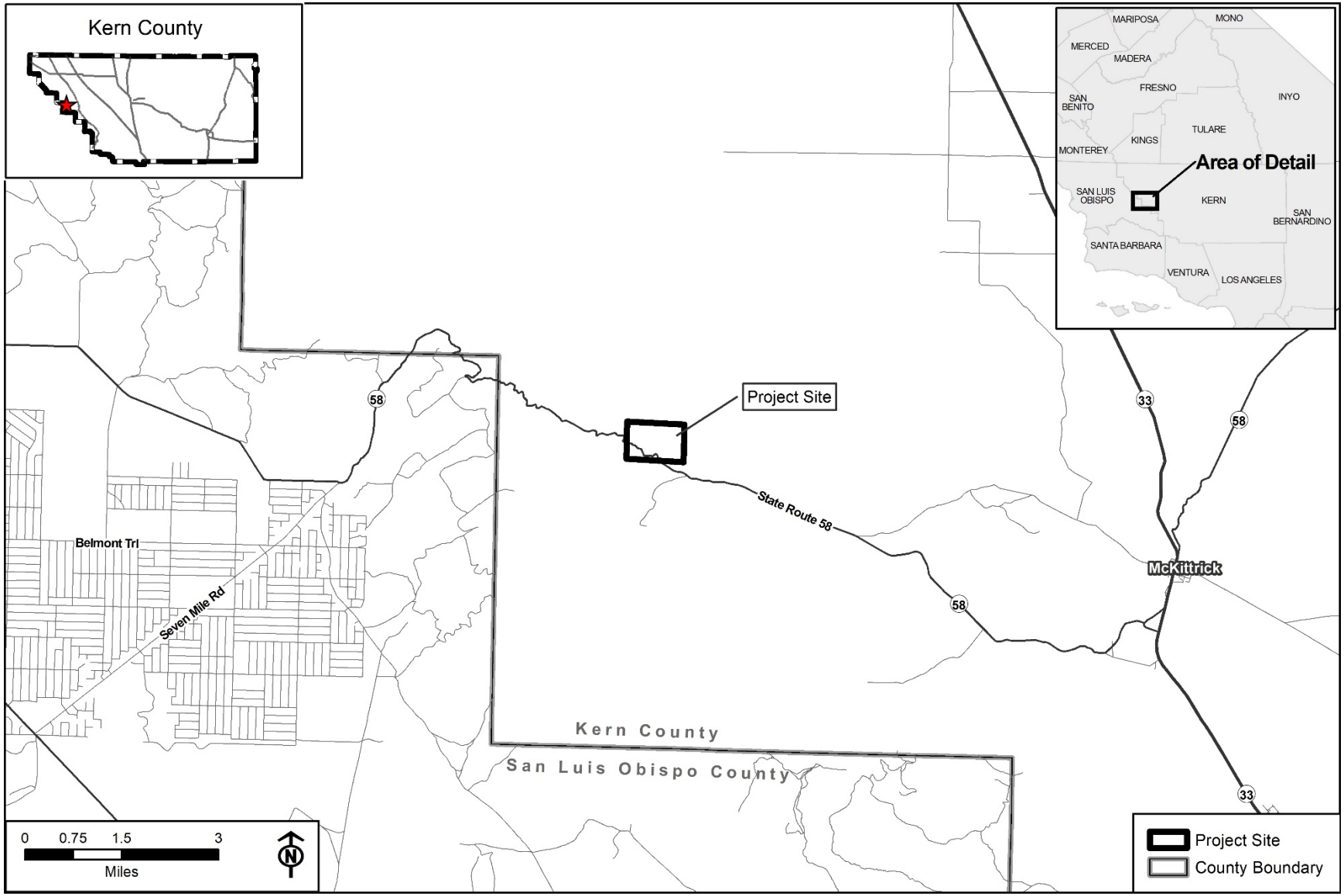


Figure 1-1
Site Vicinity

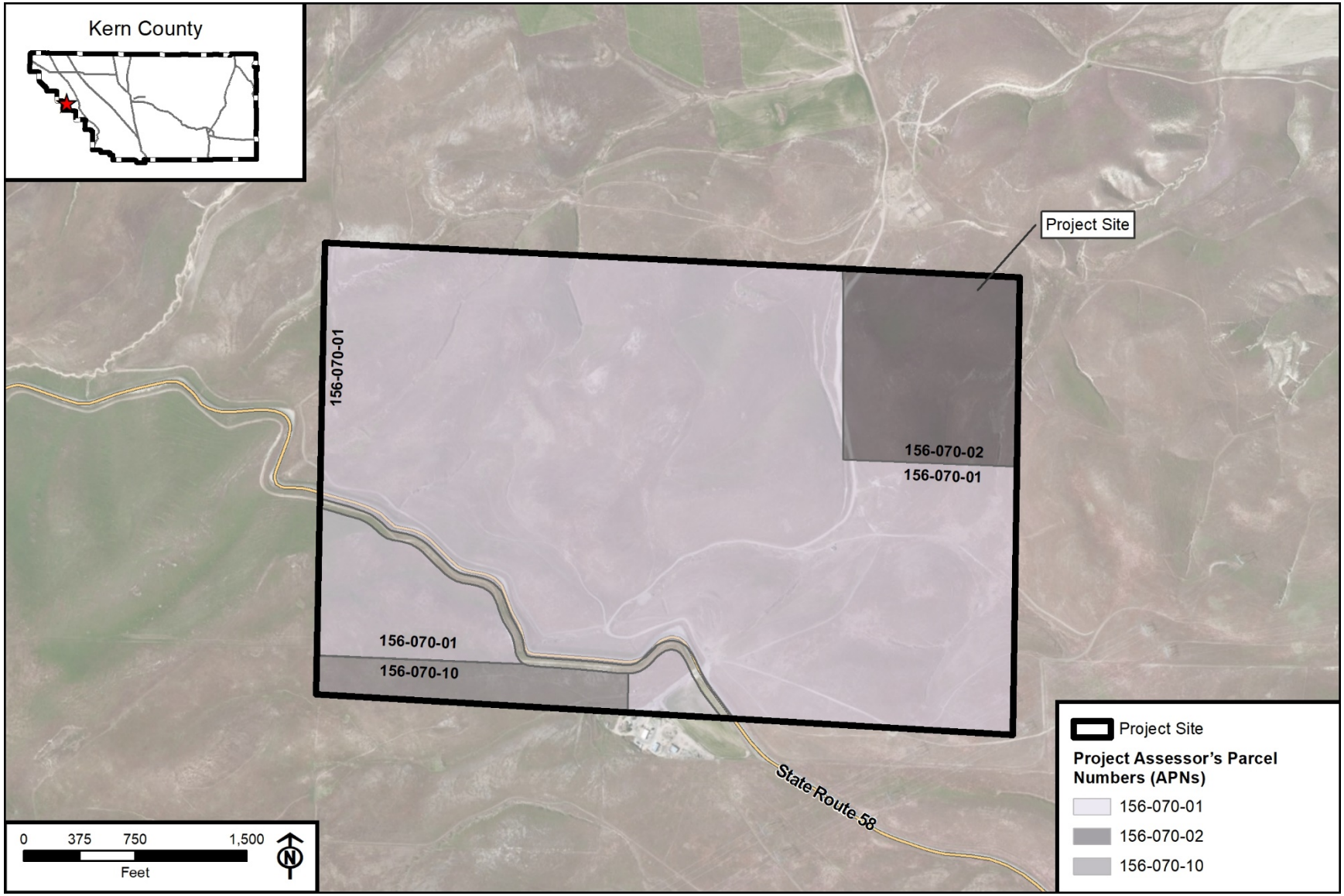


Figure 1-2
Location Map

The life of the operation is proposed to be 50 years. The proposed maximum depth of excavation would be 162 feet for Mine Area 1, 125 feet for Mine Area 2, and 40 feet for Mine Area 3 (**Figure 1-3a,** *Site Plan*, **Figure 1-3b**, *Site Plan*, and **Figure 1-4,** *Mine Areas Map*). Although there are three proposed mine areas, the project consists of a single phase. Maximum proposed slopes are as follows:

- Maximum operational slopes for the mining areas, and the blending and screening site, would be 2:1 (horizontal:vertical [h:v]).
- Maximum final reclaimed slopes for the mining areas, and the blending and screening site, would be 3:1 (h:v).
- Maximum operational slopes for proposed access roads would be 1:1.75 (h:v).
- Maximum final reclaimed slopes for proposed access roads would be 1:1.75 (h:v).

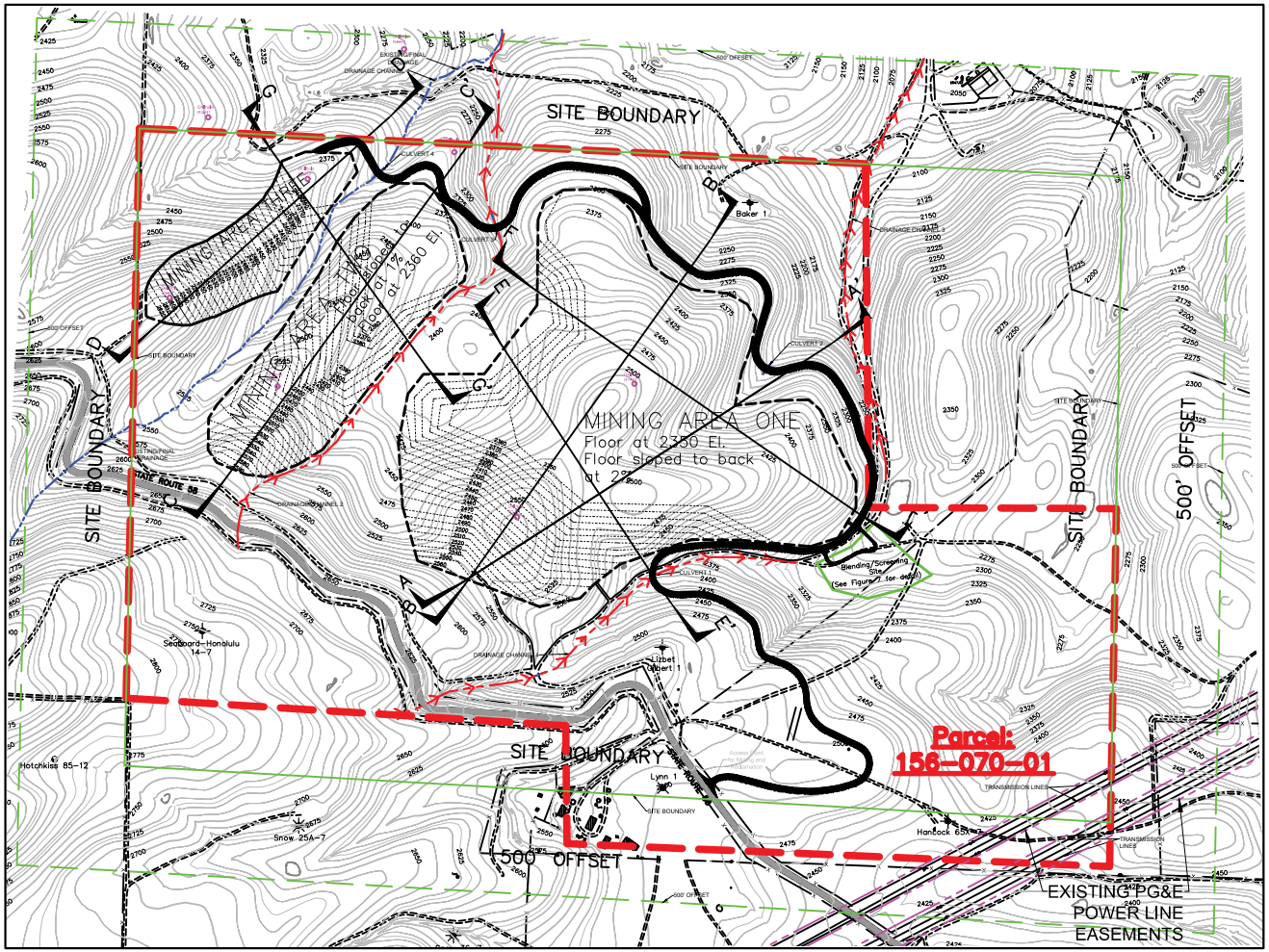
Existing on-site ranch roads are not proposed to be used in conjunction with the proposed project; however, should a request to modify the reclamation plan to use such roads in conjunction with the proposed project be submitted, the Lead Agency would require the final geotechnical study (as recommended per Mitigation Measure MM 4.7-2) to be updated as necessary.

The project site is currently being used for cattle grazing and will be reclaimed to its current use as cattle grazing land following completion of mining activities. During the life of the proposed surface mining and reclamation plan, cattle grazing would continue on the project site (on portions of the project site outside of the active mine and processing areas) as deemed necessary by the property owner. The 1.4 acres of existing access road disturbance would not be reclaimed, as these roads will continue to be needed in conjunction with the grazing operations. As such, reclamation would encompass 92.27 acres (93.67 acres of disturbance minus 1.4 acres of existing road access disturbance).

As discussed in more detail in the following sections, the project proponent is requesting the following discretionary action from Kern County:

(a) A Conditional Use Permit (CUP) for a new surface mining operation and development of a reclamation plan on the project site which is approximately 331 acres in size. Within the approximate 331-acre project site, disturbance would be confined to 93.67 acres. Approximately 1.4 acres of the proposed 93.67-acre disturbance area has already been disturbed as a result of existing roads.

This draft Environmental Impact Report (EIR) has been prepared by Kern County as the Lead Agency under the California Environmental Quality Act (CEQA). The EIR provides information about the environmental setting and impacts of the project and alternatives. It informs the public about the project and its impacts and provides information to meet the needs of federal, state, and local permitting agencies that are required to consider the project. The EIR will be used by Kern County to determine whether to approve the requested project entitlements.



LEGEND

- EXISTING GROUND CONTOUR
- PROPOSED CONTOUR
- EXISTING FENCE LINE
- 500' PROJECT BOUNDARY OFFSET
- MINING DISTURBANCE BOUNDARY
- PROJECT BOUNDARY
- EXISTING RANCH ROAD
- PROPOSED ACCESS ROAD
- INTERMITTENT DRAINAGE CHANNEL
- "BLUE-LINE" WATERCOURSE PER USGS MAP
- ACTIVE DRY GAS WELL
- ABANDONED GAS WELL
- DRILLHOLE
- ABANDONED WELL
- BOUNDARY OF APN 156-070-01

Title Report Items

2e – Pipeline right of way granted to Shell Oil Company in 1961. Right of way has since been abandoned. Recording No. 37984 per Book 3390, Page 863, O.R.

2f – Existing power line easement and right or way granted to PG&E 1969 & 1971:
Recording No. 48864 per Book 4301, Page 992, O.R.
Recording No. 13625 per Book 4563, Page 979, O.R.

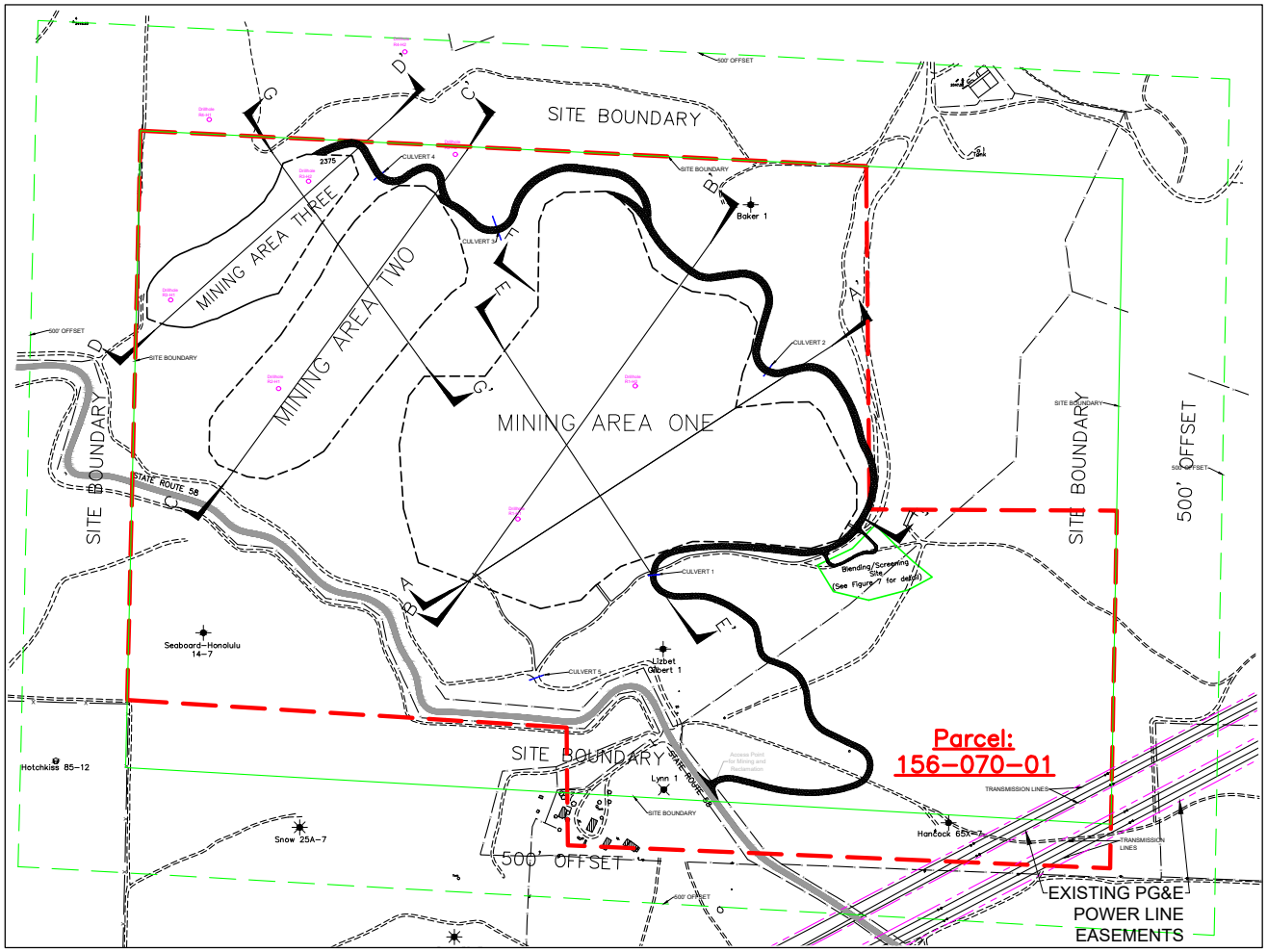
2g – Existing power line easement and right of way granted to PG&E 1969 & 1970:
Recording Nos. 51318, 51319, & 51320 per Book 4305, Pages 483, 488, & 492, O.R.
Recording No. 40723 per Book 4415, Page 760, O.R.
Recording Nos. 41602 & 41603 per Book 4417, Pages 16 & 20, O.R.

2h – Covenants and restrictions imposed by a Land Conservation Contract (Williamson Act) dated 2/17/1976. Contract term was 10 years. Contract has expired. Recording No. 11902 per Book 4939, Page 1484, O.R.

2i – Oil and gas lease from United States Dept. of the Interior BLM to Hunt Oil USA, Inc. 1993. Lease term was 10 years. Lease expired 2003. Recording No. 113429 per Book 6890, Page 156, O.R.

Source: WZI Inc, Bakersfield, 2020.

Figure 1-3a
Site Plan



LEGEND

- EXISTING FENCE LINE
- 500' PROJECT BOUNDARY OFFSET
- MINING DISTURBANCE BOUNDARY
- PROJECT BOUNDARY
- EXISTING RANCH ROAD
- PROPOSED ACCESS ROAD
- ACTIVE DRY GAS WELL
- ABANDONED GAS WELL
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Source: WZI Inc, Bakersfield, 2020.

Figure 1-3b
Site Plan

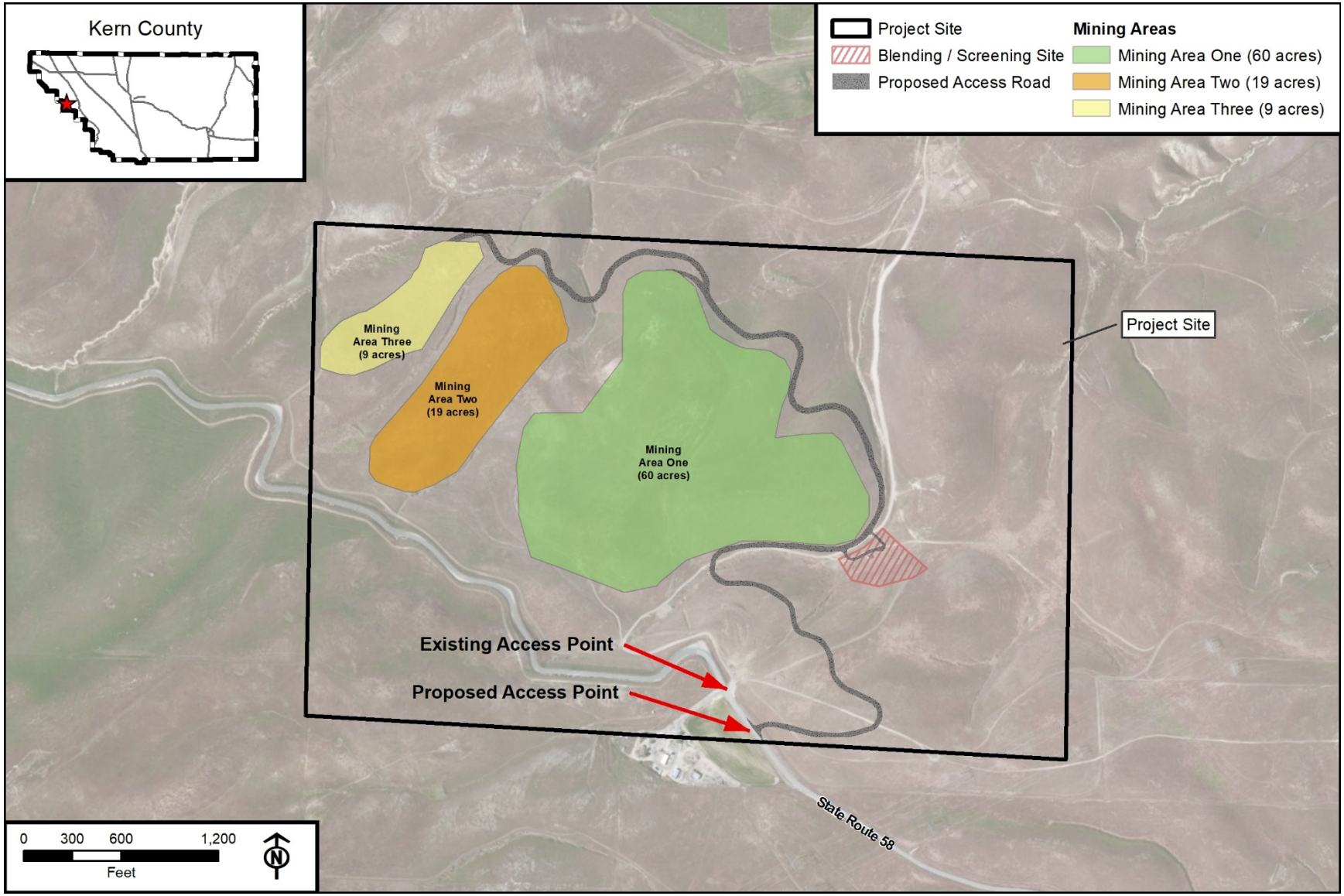

Figure 1-4
Mine Areas Map

This Executive Summary summarizes the requirements of the CEQA Statute and Guidelines, provides an overview of the project and alternatives, identifies the purpose of the draft EIR, outlines the potential impacts of the project and the recommended mitigation measures, and discloses areas of controversy and issues to be resolved.

1.2 Purpose and Use of the Draft EIR

An EIR is a public informational document used for planning and decision-making purposes. The Kern County Planning Commission will consider the information in the EIR, including the public comments and staff response to those comments, during the public hearing process. As a legislative action, the final decision is made by the Planning Commission (unless the decision of the Planning Commission is appealed to the Board of Supervisors), who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

- The significant potential impacts of the project on the environment and indicate the manner in which those significant impacts can be avoided or mitigated;
- Any unavoidable adverse impacts that cannot be mitigated; and
- Reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level.

An EIR also discloses growth-inducing impacts, impacts found not to be significant, and significant cumulative impacts of past, present, and reasonably anticipated future projects. CEQA requires an EIR be prepared that reflects the independent judgment of the Lead Agency regarding the impacts, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to reduce the impacts. A draft EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a draft EIR include sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting counterproposals. Reviewers of a draft EIR are requested to focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental effects.

This draft EIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with Section 15087 of the State CEQA *Guidelines*. The EIR process, including means by which members of the public can comment on the EIR, is discussed further in Chapter 2, *Introduction*.

1.3 Project Overview

This section describes the project location and setting, surrounding land uses, project objectives, and project characteristics. The project is described in further detail in Chapter 3, *Project Description*.

1.3.1 Local and Regional Setting

The project area is in the western portion of unincorporated Kern County, situated in the eastern foothills of the Temblor Mountain Range in the San Joaquin Valley (see **Figure 1-1,** *Vicinity Map*). The project area is located in the Mountain Region of Kern County (per Figure 2 in the Introduction of the *Kern County General Plan*), which is identified as portions of the County which are: (a) above the 1,000-foot mean sea level (msl) contour; and (b) west of the primary alignment of the Los Angeles Aqueduct. The San Joaquin Valley is characterized by relatively low rainfall, averaging less than 10 inches per year, and relatively high average temperatures. Summers are typically cloudless, hot, and dry. Winter is generally mild but occasional freezing temperatures do occur.

The project site is located within the McKittrick Summit, California U.S. Geological Survey (USGS) 7.5-minute quadrangle on Section 7, Township 30 South, Range 21 East, Mount Diablo Base & Meridian. The project site is in a rural area approximately 8.5 miles west of the unincorporated community of McKittrick, Kern County, California (see **Figure 1-2,** *Location Map*).

The project site is currently accessible from SR 58 only via an existing unnamed, unpaved access road that extends north through the site from SR 58. As proposed, during the life of the proposed surface mining and reclamation plan, all mining and reclamation-related access will be limited to the proposed access road that extends north through the site from SR 58 (and the aforementioned existing access road from SR 58 will be maintained only for use by the property owner on an as-needed basis for ranch operations). Upon the project site being deemed fully reclaimed, the project site will be accessible from SR 58 only from the aforementioned existing unpaved, unnamed access road. The access point for the proposed access road is located approximately 250 feet south along SR 58 from the access point for the existing access road. The proposed access road would be composed of native earthen material covered with an oil sand dust suppressant. The existing and proposed access roads are shown on **Figures 1-3a** and **1-3b,** *Site Plan*, and **Figure 1-4,** *Mine Areas Map*.

The existing land use, General Plan Land Use Designations, and Zoning Classifications for the project site and surrounding land are identified in **Table 1-1,** *Existing Uses, Zoning, and Land Use Designations*, and shown on **Figure 3-5,** *Existing Kern County General Plan Designations*, and **Figure 3-6,** *Existing Kern County Zoning Classifications*.

Table 1-1 Existing Uses, Zoning, and Land Use Designations

Parcel	Existing Land Use	General Plan Land Use Designation	Existing Zoning Classification
Project Site			
Portion of the Project Site on APN 156-070-01	Grazing	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.2 (Mineral and Petroleum (min. 5-acre parcel size) / Landslide Overlay) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
Portion of the Project Site on APN 156-070-02	Grazing	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay)	A (Exclusive Agriculture)
Portion of the Project Site on APN 156-070-10	Grazing	8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
Surrounding Parcels			
North	Grazing, diatomaceous earth mining operation	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay)	A (Exclusive Agriculture)
South	Grazing, residence, shop building, agricultural storage buildings, chicken coop	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.2 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Landslide Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.2 (Mineral and Petroleum (min. 5-acre parcel size) / Landslide Overlay) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)

Table 1-1 Existing Uses, Zoning, and Land Use Designations

Parcel	Existing Land Use	General Plan Land Use Designation	Existing Zoning Classification
East	Grazing	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)	A (Exclusive Agriculture)
West	Grazing	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)

The project site is fenced with barbed wire to exclude the public from entering and consists of undeveloped rolling topography with some steep slopes and incised drainages. The elevation of the project site ranges from approximately 2,800 feet above msl near the southwestern corner to approximately 2,100 feet above msl near the northeast corner.

According to the California Department of Conservation Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]), four abandoned wells are located within the 331-acre property, as shown on **Figure 3-3,** *Site Plan*. The four wells are located outside the proposed disturbance areas and described as follows:

1. Baker 1 (abandoned gas well);
2. Seaboard-Honolulu 14-7 (abandoned gas well);
3. Lizbet Gilbert 1 (abandoned gas well); and
4. Lynn 1 (abandoned well).

Additionally, there are six exploratory drill holes on the project site, which were all drilled for diatomite evaluation in 2006 and subsequently backfilled after drilling. No open holes are present on the site. There are two approved surface mining operations located in the vicinity: State Mine ID #91-15-0036 (CUP 14, Map 117), located approximately 2.5 miles east of the project site, and State Mine ID #91-15-0038 (CUP 4, Map 96), located approximately 1.4 miles

north of the project site. There is a residence located south of the project site on the south side of SR 58; this residence is also owned by the property owner of the project site.

1.3.2 Project Objectives

The proposed project is intended to achieve the following objectives as identified by the project proponent:

- Obtain a CUP for a new surface mining operation and development of a reclamation plan.
- Establish a new, long-term supply of diatomaceous earth reserves for industrial uses, which include the production of cement.
- Establish a new, long-term supply of overburden, which may be used as landfill liner and to solidify liquid waste after it is deposited in a landfill.
- Provide for the use of a processing screener on an as-needed basis according to customer demand for refined product.
- Mine materials in a location that contains sufficient land with adequate amounts of surrounding grazing land to serve as a buffer between mining and land uses that are incompatible with mining.

1.4 Environmental Impacts

State CEQA *Guidelines* Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various, possible, new significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Kern County has engaged the public to participate in the scoping of the environmental document.

The contents of this draft EIR were established based on a Notice of Preparation/Initial Study (NOP/IS) prepared in accordance with the State CEQA *Guidelines*, as well as public and agency input that were received during the scoping process. The comments to the NOP/IS are found in Appendix A, *Notice of Preparation/Initial Study*, of this document. Based on the findings of the NOP/IS and the results of scoping, a determination was made that this EIR must contain a comprehensive analysis of all environmental issues identified in Appendix G of the State CEQA *Guidelines*, except and recreation.

1.4.1 Impacts Not Further Considered in this EIR

As discussed in the NOP/IS (see Appendix A of this EIR), the project was determined to have no impact with regard to the following resource area, which is therefore not analyzed in this EIR:

- Recreation

1.4.2 Impacts of the Proposed Project

Sections 4.1 through 4.19 in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, provide a detailed discussion of the environmental setting, impacts associated with the project, and mitigation measures designed to reduce significant impacts to less-than-significant levels, when feasible. The impacts, mitigation measures, and residual impacts for the project are summarized in **Table 1-4,** *Summary of Impacts, Mitigation Measures, and Levels of Significance*, located at the end of this chapter, and are discussed further below.

Impacts related to the following resource areas are evaluated in this EIR for their potential significance

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Noise
- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

Less than Significant Impacts

Potential environmental effects of the project and mitigation measures are discussed in detail in Chapter 4 of this EIR. After full analysis, the following effects were determined to be less than significant without mitigation and no mitigation is required to mitigate a significant impact. (Note that, although not required by CEQA, in some instances the Lead Agency has identified mitigation measures for less-than-significant impacts.)

Table 1-2, *Summary of Project Impacts that are Less than Significant or Less than Significant with Mitigation*, presents those impacts of the project that were determined to be less than significant by themselves, or less than significant with implementation of mitigation measures. Less than significant cumulative impacts are also included in this table. Sections 4.1 through 4.19 of this EIR present detailed analyses of these impacts and describe the means by which the mitigation measures listed in **Table 1-2** would reduce impacts to a less-than-significant level.

Table 1-2 Summary of Project Impacts that are Less than Significant or Less than Significant with Mitigation

Impact	Mitigation Measures
Aesthetics (Project and Cumulative)	MM 4.1-1 through MM 4.1-3
Agriculture and Forest Resources (Project and Cumulative)	MM 4.2-1 through MM 4.2-3
Air Quality (Project and Cumulative)	MM 4.3-1 through MM 4.3-10
Biological Resources (Project and Cumulative)	MM 4.4-1 through MM 4.4-9
Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-3
Energy (Project and Cumulative)	No mitigation required
Geology and Soils (Project and Cumulative)	MM 4.7-1 through MM 4.7-5, MM 4.10-1, and MM 4.10-3.
Greenhouse Gas Emissions (Project)	MM 4.8-1
Hazards and Hazardous Materials (Project and Cumulative)	MM 4.9-1 through MM 4.9-6
Hydrology and Water Quality (Project and Cumulative)	MM 4.10-1 through MM 4.10-3
Land Use and Planning (Project and Cumulative)	MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-10, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3.
Mineral Resources (Project and Cumulative)	No mitigation required
Noise (Project and Cumulative)	MM 4.13-1 and MM 4.13-2
Population and Housing (Project and Cumulative)	No mitigation required
Public Services (Project and Cumulative)	MM 4.15-1
Transportation and Traffic (Project and Cumulative)	MM 4.16-1 through MM 4.16-3
Tribal Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-3
Utilities and Service Systems (Project and Cumulative)	MM 4.10-3 and MM 4.18-1
Wildfire (Project and Cumulative)	MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3

1.4.3 Significant Cumulative Impacts

According to Section 15355 of the State CEQA *Guidelines*, the term cumulative impacts " . . . refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Individual effects that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearly projects, including newly proposed projects, the effects could be cumulatively considerable.

This EIR has considered the potential cumulative effects of the proposed project. Impacts for greenhouse gas (GHG) emissions have been found to be cumulatively considerable. Significant

cumulative impacts are discussed in the applicable section of Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR.

1.4.4 Growth Inducement

Evaluation of the growth-inducing impacts of the project is based on a qualitative analysis of the direct impacts associated with construction and operation of the project and the indirect impacts that could result from the project. This evaluation of potential growth-inducing impacts addresses whether the project would directly or indirectly:

- foster economic, population, or housing growth;
- remove obstacles to growth;
- increase population growth that would tax community service facilities; or
- encourage or facilitate other activities that cause significant environmental impacts.

State CEQA *Guidelines* Section 15126.2(d) states specifically, "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." In other words, growth inducement is not to be considered adverse *per se*; impacts on resources resulting from growth may be too far removed from the actions of the agency to require mitigation by the agency. The goal of the EIR in this regard, therefore, is one of disclosure.

There are no growth-inducing impacts of the proposed project identified in Chapter 5, *Consequences of Project Implementation*, of this EIR.

1.4.5 Irreversible Impacts

State CEQA *Guidelines* Section 15126.2(c) defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from damage caused by environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified. Implementation of the proposed project would irretrievably commit energy to the mining project as proposed. Renewable, nonrenewable, and limited resources that would likely be consumed as a result of project implementation would include, but are not limited to, water, oil, diesel, and gasoline. Additionally, mined aggregate would be utilized for industrial purposes. Irreversible impacts associated with the proposed project are discussed in detail in Chapter 5, *Consequences of Project Implementation*, of this EIR.

1.5 Alternatives to the Proposed Project

State CEQA *Guidelines* Section 15126.6 states that an EIR must address "a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Based on the significant and unavoidable

impacts on GHGs, and in consideration of the objectives of the proposed project, the following alternatives were considered as summarized below and discussed in detail in Chapter 6, *Alternatives*.

1.5.1 Alternatives Eliminated from Further Consideration

Kern County considered several alternatives to reduce the project's environmental impacts. In identifying potential alternatives, Kern County reviewed its General Plan and the California Geological Survey's *Update of Mineral Land Classification: Aggregate Materials in the Bakersfield Production-Consumption Region, Kern County, California* (Special Report 210) (Busch 2009) for potential alternative project locations. The majority of the alternate project sites were considered and rejected due to their locations being potentially more environmentally sensitive, too small to feasibly meet project objectives, or not conducive to mining due to existing geologic conditions.

1.5.2 Alternatives Analyzed in this EIR

The following alternatives have been evaluated for their feasibility and ability to achieve the project objectives while avoiding, reducing, or minimizing the potentially significant and unavoidable impacts identified for the project. These alternatives (with the exception of the No Project Alternative) could meet some of the project objectives. The degree to which these alternatives substantially lower the significant impacts identified for the project is discussed in more detail in Chapter 6, *Alternatives*, of this EIR, and summarized in **Table 1-3,** *Alternatives Impact Comparison Summary.*

Alternative A: No Project

Implementation of Alternative A would mean that the project site would remain unchanged and would continue to be undeveloped grazing land, and the project would not occur. Kern County would not approve a CUP for mining activities. Under this alternative, none of the project objectives discussed above would be met.

Alternative B: Reduced Footprint

Implementation of Alternative B would eliminate Mining Area 3 from the proposed project, thereby reducing the proposed mining footprint in the northwest portion of the project site by approximately 9 acres. This alternative would reduce the availability of access to overall reserves of the project area. The estimated reserves permitted, however, would still meet most of the project's objectives to provide a quality aggregate resource suitable to meet construction specifications for the life of the operation. The impacts from implementing the Reduced Footprint Alternative would be similar to the proposed project but of a lesser intensity (based on the reduced acreage for operations), specifically related to aesthetics.

Alternative C: Reduced Depth of Mining

Implementation of Alternative C would reduce the final pit depths in the project area. Under Alternative C, the mining depths would range from 32 feet for Mine Area 3 to a maximum depth of 129.6 feet in Mine Area 1, compared to the maximum depth of 162 feet in Mine Area 1 as described under the proposed project. Alternative C would result in the production of 5,286,917 tons of diatomaceous earth plus overburden material, 1,313,083 fewer tons compared to the proposed project. This alternative would not change the surface acreage disturbed; however, it would increase the surface area disturbance in proportion to the amount of material excavated. Although this alternative would reduce the amount of material mined and the overall life of operation, it would still achieve the project objectives. However, a reduced depth of mining alternative would not reduce hourly, daily, or annual production and, thus, would not reduce air pollutant emissions for these durations. Nonetheless, this alternative is anticipated to reduce the intensity of impacts, as mining operations are anticipated to cease approximately 10 years earlier under Alternative C than the proposed project, although operations would continue until the proposed quantity of material is fully extracted. The Reduced Depth of Mining Alternative further incorporates all mitigation measures recommended for the proposed project.

Table 1-3 Alternatives Impact Comparison Summary

Resource Area	Alternative A (No Project)	Alternative B (Reduced Footprint)	Alternative C (Reduced Depth of Mining)
Aesthetics	-	-	=
Agriculture and Forest Resources	-	-	=
Air Quality	-	-	-
Biological Resources	-	-	=
Cultural Resources	-	-	-
Energy	-	-	-
Geology and Soils	-	=	=
Greenhouse Gas Emissions	-	-	-
Hazards and Hazardous Materials	-	=	=
Hydrology and Water Quality	-	-	=
Land Use and Planning	-	=	=
Mineral Resources	-	=	=
Noise	-	-	-
Population and Housing	-	=	=
Public Services	-	=	=
Transportation and Traffic	-	-	-
Tribal Cultural Resources	-	-	-
Utilities and Service Systems	-	-	-
Wildfire	-	-	-

1.5.3 Environmentally Superior Alternative

An EIR must identify the environmentally superior alternative to the proposed project. Alternative A, the No-Project Alternative, is environmentally superior to the proposed project and would not result in the physical environmental impacts identified for the proposed project. However, the No Project Alternative would not meet any of the objectives of the proposed project. Under State CEQA *Guidelines* Section 15126.6(e)(2), if the environmentally superior alternative is the No Project Alternative, then an environmentally superior alternative must be identified among the other alternatives.

As described above, Alternative B would reduce environmental impacts related to aesthetics, biological resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, transportation and traffic, and utilities and service systems compared to the proposed project.

Alternative B would result in a disadvantage over the project because it would reduce the amount of reserves and overall life of the project; however, Alternative B would be a feasible alternative that meets all of the project objectives while reducing potential impacts of the proposed project. Alternative B, Reduced Footprint Alternative, is therefore considered to be the environmentally superior alternative for the purposes of this analysis.

1.6 Areas of Controversy

Written agency and public comments received during the public review period for the NOP/IS are included in Appendix A. Although not controversial, key issues were identified during scoping as necessitating further description or evaluation. Those issues are discussed as they relate to the various environmental topics in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*.

1.7 Issues to Be Resolved

State CEQA *Guidelines* Section 15123(b)(3) requires that an EIR include issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. The major issues to be resolved regarding the proposed project include the decisions by the Lead Agency as to whether or not:

- the Draft EIR adequately describes the environmental impacts of the project;
- the recommended mitigation measures should be adopted or modified; or
- additional mitigation measures need to be applied to the project.

1.8 Summary of Environmental Impacts and Mitigation Measures

State CEQA *Guidelines* Section 15123 requires that an EIR contain a brief summary of the proposed actions and its consequences. **Table 1-4,** *Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation*, is a summary of the environmental impacts of the project, mitigation measures, and the impact significance both before and after mitigation. Each is analyzed in Chapter 4 of this EIR.

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
4.1 Aesthetics			
Impact 4.1-1: The project would have a substantial adverse effect on a scenic vista.	Less than significant	Mitigation is not necessary.	Less than significant
Impact 4.1-2: The project would substantially degrade the existing visual character or quality of public views of the site and its surroundings.	Potentially significant	**MM 4.1-1:** Prior to any clearing or ground-disturbing activities, the project proponent/operator shall submit a Maintenance and Trash Abatement/Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The program shall include, but not be limited to, the following: A. The project proponent/operator shall clear debris from the project area at least twice per year once the project is operational. B. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators, such as common ravens, coyotes, and feral dogs. C. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within 2 weeks to resident requests for additional cleanup of debris.	Less than significant
Impact 4.1-3: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	Potentially significant	**MM 4.1-2:** Project facility lighting shall continuously comply with the applicable provisions of the Dark Skies Ordinance (Kern County Zoning Ordinance Chapter 19.81) and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not extend below the shields.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		MM 4.1-3: Prior to the issuance of any required building permits, the project proponent shall submit an Outdoor Lighting Plan for review and approval by the Kern County Public Works Department in accordance with Kern County Zoning Ordinance Chapter 19.81 (Outdoor Lighting "Dark Skies Ordinance"). Additionally, a copy of the approved Outdoor Lighting Plan shall be submitted to the Kern County Planning and Natural Resources Department.	
Impact 4.1-4: The project would contribute to cumulative aesthetic and visual resource impacts.	Potentially significant	Implement Mitigation Measures MM 4.1-1 through MM 4.1-3.	Less than significant
4.2 Agriculture and Forest Resources			
Impact 4.2-1: The project would conflict with existing zoning for agricultural use or Williamson Act contract.	Potentially significant	**MM 4.2-1:** Prior to commencement of operations as authorized by this approval, on those portions of the project site subject to a Williamson Act Contract, the project proponent shall obtain either: A. approval from the Kern County Board of Supervisors of a determination of compatibility for the proposed use of the site in accordance with California Government Code Section 51238.1; or B. approval of a contract cancellation for the affected portion of the project site. **MM 4.2-2:** The project proponent/operator shall ensure that the following note appears on all site plans associated with the proposed project: "The County of Kern encourages operation of properly conducted businesses in agriculture, oil, mining, manufacturing, and other non-residential operations within the County. If the property you are purchasing is located near these businesses, you may be subject to inconveniences or discomforts arising from such operations to the extent allowed by law. This notice does not waive your legal rights."	Less than significant
Impact 4.2-2: The project would 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 forest land to non-forest use.	Less than significant	**MM 4.2-3:** Upon completion of the project, the site shall be reclaimed to an end use of rangeland for livestock, in accordance with the approved surface mining and reclamation plan.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Impact 4.2-3: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code).	No impact	Mitigation is not necessary.	No impact
Impact 4.2-4: The project would contribute to cumulative conversion of farmland to non-agricultural use.	Potentially significant	Implement Mitigation Measures MM 4.2-1 through MM 4.2-3.	Less than significant
4.3 Air Quality			
Impact 4.3-1: The project would conflict with or obstruct implementation of applicable air quality plans.	Potentially significant	**MM 4.3-1**: The project shall comply with any applicable requirement of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Any approvals, waivers, or permits issued by the SJVAPCD shall be submitted to the Kern County Planning and Natural Resources Department and incorporated into the approved surface mining and reclamation plan in accordance with the provisions of the Surface Mining and Reclamation Act (SMARA) of 1975.	Less than significant
Impact 4.3-2: The project would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable Federal or State ambient air quality standard.	Potentially significant	**MM 4.3-2**: The project proponent shall develop and implement a Fugitive Dust Control Plan in compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) fugitive dust suppression regulations to further reduce emissions, during operations, of particulate matter that is 10 microns or less in diameter (PM10) and 2.5 microns or less in diameter (PM2.5). The Fugitive Dust Control Plan shall include: A. Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan. B. Description and location of operation(s). C. Listing of all fugitive dust emissions sources included in the operation. D. The following dust control measures shall be implemented: 1. All on-site unpaved roads shall be effectively stabilized using water or chemical soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		control than California Air Resources Board-approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation. 2. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20% opacity or covered with temporary coverings. 3. Activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes. Such activities may continue if dust suppression measures are used to minimize visible dust plumes. 4. Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday. 5. All hauling materials shall be moist while being loaded into dump trucks. 6. All material on haul trucks shall be effectively contained in accordance with SJVAPCD regulations. 7. Material loads on trucks shall maintain at least 6 inches of freeboard space below the top of the container. 8. Drop heights shall be minimized when loaders dump material into trucks. 9. Gate seals shall be tight on dump trucks.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		10. Traffic speeds on unpaved roads shall be limited to 15 miles per hour. 11. All grading activities shall be suspended when visible dust emissions exceed 20%. 12. Other fugitive dust control measures as necessary to comply with SJVAPCD Rules and Regulations. 13. Disturbed areas shall be minimized. 14. Disturbed areas shall be revegetated as soon as possible after disturbance if area is no longer needed for mining activities. **MM 4.3-3:** Surface disturbance, with the exception of ongoing and permitted agricultural activities, shall be kept to a minimum in advance of mining. Where feasible, disturbed areas shall be seeded with an interim seed mix to minimize fugitive dust emissions from unvegetated areas. At such time as surface mining or associated activities have been completed on an area of disturbed land, reclamation efforts shall be initiated on those portions of the disturbed lands that will not be subject to further disturbance by the surface mining operation or its associated activities. **MM 4.3-4:** Fugitive dust (PM_{10}) emissions shall be minimized during the course of mining and reclamation utilizing the application of water or by presoaking. Haul roads shall be watered or have a palliative applied, depending on weather and road conditions, as necessary to adhere to the requirements of the San Joaquin Valley Air Pollution Control District. **MM 4.3-5:** Mined materials transported off-site shall be covered, effectively wetted to limit visible dust emissions, or employ at least 6 inches of freeboard space to separate material from the top of the container.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		MM 4.3-6: The fleet of diesel engines in off-road vehicles operating at the project site shall comply with the In-Use Off-Road Engine Air Toxic Control Measure (13 California Code of Regulations [CCR] Sections 2449 and 2449.1) and provide copies of annual compliance certification reports made to California Air Resources Board through the DOORS program to Kern County annually. A. All equipment shall be turned off when not in use. Engine idling of all equipment shall be limited to 5 minutes, except under exemptions specified in 13 CCR Section 2449(d)(2). In addition, the facility shall have a written idling policy and distribute it to vehicle operators as required by this regulation. B. All equipment engines shall be maintained in good operating condition and in proper tune per manufacturers' specifications. **MM 4.3-7:** To further reduce emissions of nitrogen oxides from on-road heavy-duty diesel haul vehicles: A. 2007 engines or pre-2007 engines shall comply with California Air Resources Board retrofit requirements set forth in 13 California Code of Regulations (CCR) Section 2025. B. All on-road haul trucks, except those meeting the 2007/California Air Resources Board-certified Level 3 diesel emissions controls, shall meet all applicable California on-road emission standards and shall be licensed in the State of California. This does not apply to worker personal vehicles. C. All on-road haul trucks shall be properly tuned and maintained in accordance with the manufacturers' specifications.	
Impact 4.3-3: The project would expose sensitive receptors to substantial pollutant concentrations.	Potentially significant	**MM 4.3-8**: Prior to ground disturbance activities, the project proponent shall provide a "Valley Fever Training Information Packet" and conduct training sessions for all personnel. A copy of the handout and a schedule of education sessions shall be	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		provided to the Kern County Planning and Natural Resources Department. All evidence of the training session(s) and handout(s) shall be submitted to the Kern County Planning and Natural Resources Department on a monthly basis. Multiple training sessions may be conducted if different work crews come to the site for different stages of work; however, all personnel shall be provided training prior to beginning work. The evidence submitted to the Kern County Planning and Natural Resources Department regarding the "Valley Fever Training Handout" and Session(s) shall include the following: A. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session. B. Distribution of an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever, symptoms of exposure, and instruction for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent symptoms lasting more than 3 days shall be recommended to seek immediate medical advice. C. Training on methods that may help prevent Valley Fever infection. D. A demonstration to employees on how to use personal protective equipment (PPE), such as respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Though use of the equipment is not mandatory during work, the equipment shall be readily available and shall be provided to employees for use during work, if requested by an employee. Proof that the demonstration is included in the training shall be submitted to Kern County. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		MM 4.3-9: At the time of project implementation, a COVID-19 Health and Safety Plan should be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and Safety Plan shall be submitted to the Kern County Planning Department for review and approval. **MM 4.3-10:** Prior to commencement of operations as authorized by this approval, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of $3,200 for public awareness programs.	
Impact 4.3-4: The project would contribute to cumulative air quality impacts.	Potentially significant	Implement Mitigation Measures MM 4.3-1 through MM 4.3-10.	Less than significant
4.4 Biological Resources			
Impact 4.4-1: The project would 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 Wildlife or U.S. Fish and Wildlife Service.	Potentially significant	**MM 4.4-1:** Prior to commencement of operations in any new disturbance area, the project proponent shall develop and submit to the Kern County Planning and Natural Resources Department for review and approval an employee awareness program on the Migratory Bird Treaty Act and the Federal and State endangered species laws and regulations. The program shall provide employees with sufficient information to identify sensitive or protected species that could exist on-site, methods to avoid these species, and protection measures to reduce the potential for incidental take of these species. The employee awareness program shall be implemented by a qualified biologist until such time as reclamation has been completed and the site deemed fully reclaimed by the Kern County Planning and Natural Resources Department. **MM 4.4-2:** The project proponent/operator shall implement the following measures to avoid and/or minimize potential impacts to special-status animal species.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		A. Within no more than 30 days before ground-disturbing activities within the project site, a pre-disturbance survey shall be performed by a qualified biologist within the project site to record existing conditions of the site, determine if conditions have changed since the most recent reconnaissance or botanical surveys were conducted (April 14, 2018), and to determine where sensitive species avoidance buffers will be established for special-status species considered to have the potential to occur within the project site, including but not limited to the following: 1. Tulare grasshopper mouse (Onychomys torridus tularensis); 2. San Joaquin kit fox (*Vulpes macrotis mutica*); 3. nesting birds protected by the MBTA; 4. burrowing owl (*Athene cunicularia*); 5. American badger (*Taxidea taxus*); and 6. San Joaquin whipsnake (*Masticophis flagellum*). This survey will include San Joaquin kit fox den evaluations. If ground-disturbing activities do not commence within 30 days of the initial survey date, surveys shall be repeated to refresh results. B. If any sensitive species are observed, the following buffers shall be established by the qualified biologist to prevent incidental take of any observed sensitive species.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation

Buffers for Sensitive Biological Resources

Biological Resource	Buffer Zone from Disturbance (feet)
American badger: maternity den (pup rearing season: February 15 through July 1)	200
American badger: Non-maternity den	50
Burrowing owl burrow	Dependent on non-breeding or breeding, time of year, and project level impact
Active bird nest	50
San Joaquin coachwhip, silvery legless lizard, coast horned lizard	30
San Joaquin kit fox atypical den	50
San Joaquin kit fox potential den	50
San Joaquin kit fox known den	100
San Joaquin kit fox natal den	Contact California Department of Fish & Wildlife, United States Fish and Wildlife Service
Special-status plants	50

C. The project proponent/operator shall ensure that all employees working on the project site continuously implement the following measures:
    1. A qualified biological monitor shall be present on the project site during any initial vegetation removal/grubbing activities. A biological monitor is not a substitute for an incidental take permit. If any threatened, endangered, or otherwise sensitive species are uncovered during project activities, work will be halted to determine the best course of action.
    2. Keep all trash and food items picked up and removed from the site daily including microtrash (e.g., wrappers, bottle tops, food scraps).
    3. No pets (dogs) shall be allowed on-site.
    4. Vehicle traffic shall use established roadways. Cross-country travel is prohibited.
    5. Conduct a 360-degree vehicle check before moving vehicle from site.
    6. Maintain a speed limit of 15 miles per hour or less on dirt roads.
    7. To the extent practicable, previously disturbed areas are to be used to stockpile excavated materials, storage of equipment, locations of

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		trailers, parking of vehicles, and other surface-disturbing actions. 8. Open excavations or trenches shall be covered at the end of each workday to prevent wildlife entrapment. If an excavation or trench is too large to cover, then a 45-degree escape ramp shall be installed. All excavations and trenches shall be inspected for wildlife prior to the commencement of work. 9. If perimeter fencing is used, then the fencing shall include a 4- to 8-inch (0.1- to 0.2-meter) opening between the fence mesh and the ground or the fence shall be raised 4 inches above the ground to enable San Joaquin kit fox and other wildlife to pass through the project site. 10. All vertical tubes and chain-link fencing piles shall be temporarily or permanently capped to avoid the entrapment and death of special-status wildlife and birds. All pipes 1.5 inches (0.038 meter) or greater in diameter stored overnight on a project location must have end caps or other physical barriers that prevent wildlife from entering the pipe. 11. Any dead or injured special-status wildlife found on the project site shall be left in place and reported to the U.S. Fish and Wildlife Service/California Department of Fish and Wildlife within 48 hours of the discovery for rescue or salvage. Discovery of Federally or State-listed species that are injured or dead shall also be managed consistent with regulatory requirements, including being reported immediately via telephone and within 24 hours in writing, and a copy shall be	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		furnished to the Kern County Planning and Natural Resources Department. 12. All washing of trucks, equipment, or similar activities shall occur in areas where runoff is fully contained for collection and off-site disposal. Wash water may not be discharged from the site and shall be located at least 100 feet (30.48 meters) from any water body or sensitive biological resources. If ground disturbance is intended to be temporary and does not occur on cultivated land, topsoil segregation shall be performed to preserve the seed bank for restoration efforts. Segregated topsoil shall be stored separate from the subsoil and segregated topsoil shall be restored to its original location. This will decrease unwanted invasive plant species (e.g., tumble weed, invasive grasses) from invading the area. 13. Contact a qualified biologist if any dens suitable for San Joaquin kit fox, burrowing owl, and/or American badger (4 inches or greater in diameter) are observed during project activities. 14. If any threatened, endangered, or otherwise sensitive species are encountered during project activities, all work that may harm that species shall stop immediately and a qualified biologist shall be contacted to determine the best course of action. Any threatened, endangered, or otherwise sensitive wildlife species shall be allowed to leave the site of their own accord.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		MM 4.4-3: The project proponent/operator shall implement the following measures to avoid and/or minimize potential impacts to special-status plant species. A. Within no more than 1 year prior to the commencement of operations as authorized by this approval, the project proponent shall retain a qualified botanist who shall conduct and document special-status plant surveys following the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" or those established by the California Native Plant Society. B. If the surveys identify special-status plants, the following measures shall be implemented: 1. A 50-foot buffer shall be established around any occurrences of a special-status plant species as designated by a qualified biologist, when feasible; 2. In areas where it is not feasible to set up buffers, soil conservation will be implemented for areas known to support sensitive plant species. The soil will be stockpiled using straw waddles and a cover to prevent loss of topsoil by wind and soil erosion. The topsoil will be used for areas that will be temporarily disturbed and later restored; 3. Dust control shall be implemented in areas that occur near the rare or listed plant to avoid disturbance to the natural photosynthetic process of the plant. The pooling of water shall be avoided as well; and 4. Large equipment shall be washed at an off-site facility away from native habitat prior to entering the project location to prevent the spread of invasive plant species that may be within the equipment.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		C. If disturbance cannot be avoided, the project proponent shall consult with the California Department of Fish and Wildlife and other regulatory agencies to identify and implement approved measures to effectively mitigate any potential impacts to be less than significant, as appropriate. **MM 4.4-4:** The following measures are based on the recently updated 2012 California Department of Fish and Game [now California Department of Fish and Wildlife] Staff Report on Burrowing Owl Mitigation, and shall be implemented to ensure potential effects on burrowing owl resulting from project implementation will be avoided and minimized to less-than-significant levels: A. A project Lead Biologist shall be on-site during all initial ground-disturbing activities as authorized by this approval, in potential burrowing owl habitat. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-disturbance surveys of the permanent and temporary impact areas, plus a 150-meter (approximately 492-foot) buffer, to locate active breeding or wintering burrowing owl burrows no less than 14 days prior to initial ground-disturbing activities. The survey methodology will be consistent with the methods outlined in the Staff Report and will consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing. As each burrow is investigated, biologists will also look for signs of American badger and kit fox. Copies of the survey results shall be submitted to the California Department of Fish and Wildlife and the Kern County Planning and Natural Resources Department.	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation

B. If burrowing owls are detected, no ground-disturbing activities shall be permitted within the distances listed below in the table titled "Burrowing Owl Burrow Buffers," unless otherwise authorized by California Department of Fish and Wildlife. Burrowing owls shall not be moved or excluded from burrows during the breeding season.

Burrowing Owl Burrow Buffers

Location	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting sites	April 1 – August 15	200 meters	500 meters	500 meters
Nesting sites	August 16 – October 15	200 meters	200 meters	500 meters
Any occupied burrow	October 16 – March 31	50 meters	100 meters	500 meters

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C. If avoidance of active burrows is infeasible, the owls can be passively displaced from their burrows according to recommendations made in the 2012 Staff Report on Burrowing Owl Mitigation. Burrowing owls shall not be excluded from burrows unless or until the following circumstances occur:

1. Occupied burrows shall not be disturbed during the nesting season unless a qualified biologist meeting the Biologist Qualifications set forth in the 2012 Staff Report verifies through noninvasive methods that either: (1) the owls have not begun egg-laying and incubation or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season.
2. A Burrowing Owl Exclusion Plan shall be developed and approved by the applicable local California Department of Fish and Wildlife office and submitted to the Kern County

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Planning and Natural Resources Department. The plan shall include, at a minimum: a. confirmation by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping; b. the type of scope and appropriate timing of scoping to avoid impacts; c. occupancy factors to look for and what will guide determination of vacancy and excavation timing (one-way doors shall be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily, and monitored for evidence that owls are inside and can't escape; i.e., look for sign immediately inside the door); d. how the burrow(s) will be excavated, including excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow); e. removal of other potential owl burrow surrogates or refugia on-site; f. photographs of the excavation and closure of the burrow to demonstrate success and sufficiency; g. monitoring of the site to evaluate success and, if needed, to	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		implement remedial measures to prevent subsequent owl use to avoid take; and h. how the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete. 3. Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the measures described below. 4. Temporary exclusion is mitigated in accordance with the measures described below. 5. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for 1 week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season. 6. Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band resight). D. In accordance with the Burrowing Owl Exclusion Plan a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or burlap bag shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow. Forty-eight hours	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. Alternatively, burrows can be filled to prevent reoccupation. E. During mining activities, monthly and final compliance reports shall be provided to California Department of Fish and Wildlife, the Kern County Planning and Natural Resources Department, and other applicable resource agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project. F. Should burrowing owls be found on-site, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented on-site or off-site in accordance with Burrowing Owl Staff Report guidance and in consultation with the California Department of Fish and Wildlife. At a minimum, the following recommendations shall be implemented: 1. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions, including decompacting soil and revegetating. If restoration is not feasible, then the project proponent shall implement "b" below. 2. Permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat will be mitigated such that the habitat acreage, number of burrows, and burrowing owls impacted are replaced based on a site-specific analysis and shall include permanent conservation of similar vegetation communities (grassland, scrub lands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		area, and with sufficiently large acreage, and presence of fossorial mammals. Conservation shall occur in areas that support burrowing owl habitat and can be enhanced to support more burrowing owls 3. Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project proponent/operator may purchase available burrowing owl conservation bank credits. 4. Develop and implement a mitigation land management plan in accordance with Burrowing Owl Staff Report guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls. 5. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment. 6. Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to California Department of Fish and Wildlife-approved management, monitoring, and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed. 7. Mitigation lands shall be on, adjacent to, or in proximity to the impact site, where feasible,	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		and where habitat is sufficient to support burrowing owls. 8. Consult with California Department of Fish and Wildlife when determining off-site mitigation acreages. **MM 4.4-5:** Active pits with slopes steeper than 2:1 (horizontal:vertical) shall have a minimum of one escape ramp or shall otherwise be fenced or obstructed to prevent wildlife entrapment. **MM 4.4-6:** No more than 10 days prior to ground-disturbing activities, a pre-disturbance survey for active bird nests shall be conducted, if work occurs between February and September when nesting activity is most prevalent. If any active nests are observed, appropriate buffer areas (at least 50 feet) shall be established around each nest for avoidance as appropriate. **MM 4.4-7:** If proposed mining activities are planned to occur during the nesting seasons for raptors and migratory birds (typically March 1 through August 31), the project proponent shall retain a qualified biologist to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 500 feet outside project boundaries, where possible) the disturbance area no more than 30 days before mining activities and at the onset of each phase. These surveys shall be conducted during breeding seasons for any special-status birds potentially present in the disturbance areas. **MM 4.4-8:** If active nests are located during pre-disturbance surveys, U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife shall be notified regarding the status of the nests. If an active golden eagle nest is located within 500 feet of ground-disturbing activities, or if any other active raptor nest is located within 100 feet of ground-disturbing activities, or if	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		an active migratory bird nest is located within 50 feet of ground-disturbing activities protection measures will be applied and enforced. Protection measures would include delaying project activities until the end of the breeding season, or if, project activities must take place during the breeding season, establishing an appropriate avoidance area (buffer zone) around the nest as determined by a qualified biologist in consultation with the appropriate resource agency. A qualified wildlife biologist shall monitor the nest to determine when the young have fledged and submit bi-weekly reports to the Kern County Planning Department throughout the nesting season. The biological monitor shall have the authority to cease mining activities or other activities if sign of distress to the raptor or migratory bird occurs. **MM 4.4-9:** Ground-disturbing activities shall be restricted as necessary to avoid disturbance of a nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal (in consultation with U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife). Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment) or alteration of the schedule for initiation of mining or other activities. No action is necessary if ground disturbance occurs during the raptor and migratory bird nonbreeding season (September 1 through February 28).	
Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.4-3: The project would have a substantial adverse effect on Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Less than significant	Mitigation is not required.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Impact 4.4-4: The project would 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.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.4-6: The project would contribute to cumulative biological resource impacts.	Potentially significant	Implement Mitigation Measures MM 4.1-2, MM 4.1-3, and MM 4.4-1 through MM 4.4-9.	Less than significant
4.5 Cultural Resources			
Impact 4.5-1: The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in State CEQA *Guidelines* Section 15064.5.	Potentially significant	**MM 4.5-1:** The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior 2011), to carry out all mitigation measures related to archaeological and historical resources. A. Prior to the commencement of any ground-disturbing activities, the project proponent shall demonstrate that it has a Worker Environmental Awareness Program (WEAP) in place for all workers at the project site that includes cultural and paleontological resources training. The training shall be prepared and conducted, for all personnel working on the proposed project, by the qualified Lead Archeologist (as defined above) in consultation with the Native American monitor(s). A copy of the WEAP guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. B. The training shall include an overview of potential cultural resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist and Native American Monitor for further evaluation and action, as appropriate; and	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources. C. The project proponent/operator shall ensure all new employees or on-site workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet provisions specified above. D. The Cultural Resources Sensitivity Training guide shall be kept available for all personnel to review and be familiar with, as necessary. **MM 4.5-2:** In the event archaeological or paleontological (fossil) resources are encountered during ground-disturbing activities, the proposed project contractor shall cease any ground-disturbing activities within 50 feet of the find and notify the Kern County Planning and Natural Resources Department. The Lead Archaeologist shall evaluate the significance of the resource(s) and recommend appropriate treatment measures. Per State CEQA *Guidelines* Section 15126.4(b)(3), proposed project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with State CEQA *Guidelines* Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist shall develop additional treatment measures in consultation with Kern County, which may include data recovery or other appropriate measures. Kern County shall consult with the project and appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature; this consultation may also be conducted in advance of earth-disturbing work through a memorandum of agreement and/or an Unanticipated Discoveries Treatment Plan. Archaeological materials recovered during any investigation shall be presented for curation at an accredited curation facility. The Lead Archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Resources Department and to the Southern San Joaquin Valley Information Center.	
Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA *Guidelines* Section 15064.5.	Potentially significant	Implement Mitigation Measures MM 4.5-1 and MM 4.5-2.	Less than significant
Impact 4.5-3: The proposed project would disturb human remains, including those interred outside of dedicated cemeteries.	Potentially significant	**MM 4.5-3:** If human remains are uncovered during the life of the proposed project, the project proponent/operator shall immediately halt work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the State CEQA *Guidelines*. At that time, the project proponent shall contact the Kern County Planning and Natural Resources Department regarding the find. If the Kern County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with California Health and Safety Code Section 7050.5(c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent (MLD) for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (Section 7100 et seq.) directing identification of the next-of-kin will apply. If any human remains are encountered, the Kern County Planning and Natural Resources Department shall be notified.	Less than significant
Impact 4.5-4: The project would contribute to cumulative cultural resources impacts.	Potentially significant	Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
4.6 Energy			
Impact 4.6-1: The project would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.6-2: The project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.6-3: The project would contribute to cumulative energy impacts.	Less than significant	Mitigation is not required.	Less than significant
4.7 Geology and Soils			
Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving: rupture of a known earthquake fault, 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.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking.	Potentially significant	**MM 4.7-1:** Maximum operational slopes for the mining areas, and the blending and screening site, shall be 2:1 (horizontal:vertical [h:v]). Maximum final reclaimed slopes for the mining areas, and the blending and screening site, shall be 3:1 (h:v). Maximum operational slopes for proposed access roads shall be 1:1.75 (h:v). Maximum final reclaimed slopes for proposed access roads shall be 1:1.75 (h:v). Maximum final depth of excavation shall be 162 feet for Mine Area 1, 125 feet for Mine Area 2, and 40 feet for Mine Area 3. Increased slopes and/or depths may be approved in accordance with the provisions of the Surface Mining and Reclamation Act (SMARA) of 1975 and Section 19.100 of the Kern County Zoning Ordinance. **MM 4.7-2:** Prior to commencement of mining operations, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		site and submit for review and approval by the Kern County Public Works Department. A. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not be limited to, the following: 1. Location of fault traces and potential for surface rupture and ground-shaking potential; 2. Maximum considered earthquake and associated ground acceleration; 3. Potential for seismically induced ground shaking, liquefaction, differential settlement, and mudflows; 4. Stability of any existing or proposed cut-and-fill slopes; 5. Collapsible or expansive soils; 6. Potential for wind erosion, water erosion, sedimentation, and flooding; 7. Location and description of unprotected drainage that could be impacted by the proposed development; and 8. Recommendations for placement and design of facilities, and remediation of unstable ground. B. The final geotechnical study shall be submitted for review and approval by the Kern County Public Works Department. Final design requirements shall also be provided to the on-site project supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department. **MM 4.7-3:** Prior to commencement of mining operations, the project proponent shall cause engineered plans to be prepared by a California-licensed civil engineer for the development of flood control facilities and any associated maintenance for the project	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		site and submit them to the Kern County Public Works Department for review and incorporation into the approved surface mining and reclamation plan in accordance with the provisions of the Surface Mining and Reclamation Act (SMARA) of 1975 and Section 19.100 of the Kern County Zoning Ordinance. Said plans shall address flood flows including, but not limited to, the retention of any flows on-site and erosion and sedimentation.	
Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.7-4: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides.	Potentially significant	Implement Mitigation Measures MM 4.7-1 through 4.7-3.	Less than significant
Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.	Potentially significant	Implement Mitigation Measures MM 4.7-1 through MM 4.7-3, MM 4.10-1, and MM 4.10-3.	Less than significant
Impact 4.7-6: The project would 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.	Potentially significant	Implement Mitigation Measures MM 4.7-1 through MM 4.7-3.	Less than significant
Impact 4.7-7: The project would be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (1994), creating substantial risks to life or property.	Less than significant	Implement Mitigation Measure MM 4.7-2.	Less than significant
Impact 4.7-8: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	No impact	Mitigation is not required.	No impact
Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially significant	**MM 4.7-4:** The project proponent/operator shall retain a qualified paleontologist to carry out mitigation measures related to paleontological resources. A qualified paleontologist is defined as an individual with the appropriate education and experience to	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		accomplish tasks in conjunction with the mitigation measures relating to paleontological resources. A. Prior to the start of any ground-disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all personnel working on the proposed project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. The Paleontological Resources Awareness Training guide shall be kept available for all personnel to review and be familiar with. B. Paleontological Resources Awareness Training may be conducted in conjunction with the required Cultural Resources Sensitivity Training. C. Paleontological Resources Awareness Training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. D. The project proponent/operator shall ensure new employees or on-site workers who have not participated in earlier Paleontological Resources Awareness Trainings shall: 1. Participate in Paleontological Resources Awareness Training as described above, and	

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		2. Shall be provided a Paleontological Resources Awareness Training guide for all personnel that is approved by the Lead archaeologist. 3. The Paleontological Resources Awareness Training guide shall be kept available for all personnel to review and be familiar with. **MM 4.7-5:** If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resource(s) and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and presented for donation to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.	
Impact 4.7-10: The project would contribute to cumulative geology and soil resource impacts.	Potentially significant	Implement Mitigation Measures MM 4.7-1 through MM 4.7-5, MM 4.10-1, and MM 4.10-3.	Less than significant
4.8 Greenhouse Gas Emissions			
Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Potentially significant	**MM 4.8-1:** Prior to initiating mining, the project proponent, at its option, shall either: A. Prepare and implement a plan subject to approval of the Kern County Planning and Natural Resources Department that achieves an emissions reduction or offset equal to a 16% reduction in GHG emissions from BAU. Examples of quantifiable measures include electrification of fuel-burning processes, substitution of natural gas-powered vehicles for diesel-powered vehicles, reduction of VMT on- or off-site, white roofs, energy efficiency upgrades, solar panels and other green energy solutions, land dedication, woodland	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		preservation, methane recovery, and market-based offsets or credits. These measures need not be applied on-site; or B. Secure and retire offsets or credits that help achieve an emissions reduction or offset equal to a 16% reduction in GHG emissions from BAU from either: (a) the Climate Action Reserve of the California Climate Action Registry; (b) the American Carbon Registry; (c) The Green Exchange (NYMEX); or (d) any other comparable exchange.	
Impact 4.8-2: The project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.8-3: The project would contribute to cumulative greenhouse gas emissions impacts.	Significant and unavoidable	Implement Mitigation Measure 4.8-1.	Significant and unavoidable
4.9 Hazards and Hazardous Materials			
Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant	**MM 4.9-1:** Prior to commencement of operations as authorized by this approval, the project proponent shall prepare and obtain approval of an Emergency Response Plan from the Kern County Fire Department. **MM 4.9-2:** During the life of the project, the project proponent/operator shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System (CERS) at http://cers.calepa.ca.gov/ for review and approval. The HMBP shall: A. Delineate hazardous material and hazardous waste storage areas B. Describe proper handling, storage, transport, and disposal techniques	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		C. Describe methods to be used to avoid spills and minimize impacts in the event of a spill D. Describe procedures for handling and disposing of unanticipated hazardous materials encountered E. Establish public and agency notification procedures for spills and other emergencies including fires F. Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site. The project proponent/operator shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the approved HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.	
Impact 4.9-2: The project would 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.	Potentially significant	Implement Mitigation Measure MM 4.9-2 and the following additional mitigation measures. **MM 4.9-3:** The project proponent/operator shall continuously comply with the following: A. A. In the event any abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation Division of Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]) shall be contacted for requirements and approval; copies of said approvals shall be submitted to the Kern County Planning and Natural Resources Department. The CalGEM may determine that remedial plugging operations may be required and shall be contacted and brought to the project site to make a proper assessment of the suspect materials.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		MM 4.9-4: Prior to the commencement of ground-disturbing activities, the project proponent or contractor shall provide a site plan that clearly delineates the locations of all known oil and gas wells. A minimum 75-foot radius, within which no ground-disturbing activities shall occur, shall be delineated around all known oil and gas wells. A copy of the map shall be submitted to CalGEM and the Kern County Planning and Natural Resources Department. Prior to initiating any ground-disturbing activities within 75 feet of a known oil or gas well, the project proponent shall consult with CalGEM. **MM 4.9-5:** Prior to commencement of ground-disturbing activities, the project proponent or contractor shall: A. Obtain written approval from the Kern County Planning and Natural Resources Department, for the size, materials, message, and a site plan showing the location of two signs warning of mining and reclamation operations (one at the existing access point to SR-58 and one at the proposed access point to SR-58); B. Install signs as approved by the Kern County Planning and Natural Resources Department; and C. Submit to the Kern County Planning and Natural Resources Department a photograph of each approved sign after installation.	
Impact 4.9-3: The project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	Less than significant	Implement Mitigation Measure MM 4.9-1.	Less than significant
Impact 4.9-4: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, the proposed project would exceed the following qualitative thresholds: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:	Potentially significant	**MM 4.9-6**: All food, garbage, and plastic shall be disposed of in closed containers and regularly removed from the site to minimize attracting animals to the site where they may be harmed.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and ii. Are associated with design, layout, and management of project operations; and iii. Disseminate widely from the property; and iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.			
Impact 4.9-5: The project would contribute to cumulative hazards and hazardous materials impacts.	Potentially significant	Implement Mitigation Measures MM 4.9-1 through MM 4.9-6.	Less than significant
4.10 Hydrology and Water Quality			
Impact 4.10-1: The project would violate water quality standards or waste discharge requirements.	Potentially significant	**MM 4.10-1:** Prior to any ground-disturbing activities, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the Regional Water Quality Control Board—Central Valley Region. The SWPPP shall be designed to minimize runoff and shall specify best management practices to prevent all pollutants from contacting stormwater, with the intent of keeping sedimentation or any other pollutants from moving off-site and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and contracts. Recommended best management practices may include: A. stockpiling and disposing of material properly; B. protecting existing storm drain inlets and stabilizing disturbed areas; C. implementing erosion controls; D. properly managing construction materials; and E. managing waste, aggressively controlling litter, and implementing sediment controls. **MM 4.10-2:** The project proponent shall obtain approval of a Spill Prevention Control and Countermeasures Response Plan from the Kern County Public Health Services Department/Environmental	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		Health Services Division and the California Department of Water Resources.	
Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.10-3: The project would 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 the addition of impervious surfaces, in a manner which would result in substantial erosion and/or sedimentation on-site or off-site.	Potentially significant	In addition to Mitigation Measures MM 4.10-1 and MM 4.10-2, the following measure shall be implemented. **MM 4.10-3:** Prior to commencement of mining, the project proponent shall obtain approval of a detailed Drainage Plan from the Kern County Public Works Department and the California Department of Water Resources. The Drainage Plan shall: (a) identify the exact location of the drainage channels on-site, and (b) include updated calculations to match the channels in the Plan, accounting for the impacts: A. on changes in channel slope; B. to junctions with other channels; C. on backwater effects from downstream culverts; D. caused by a determination of the level of channel maintenance required for the channels to effectively route high flow events through the site; and E. caused by potential head cutting, after mining activities cease.	Less than significant
Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff which would result in flooding on- or off-site.	Potentially significant	Implement Mitigation Measure MM 4.10-3.	Less than significant
Impact 4.10-5: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition	Potentially significant	Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.			
Impact 4.10-6: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.	Potentially significant	Implement Mitigation Measure MM 4.10-3.	Less than significant
Impact 4.10-7: The project would result in flood hazard, tsunami, or seiche zones, the project would risk release of pollutants due to project inundation.	Potentially significant	Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.	Less than significant
Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Potentially significant	Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.	Less than significant
Impact 4.10-9: The project would contribute to cumulative hydrology and/or water quality impacts.	Potentially significant	Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.	Less than significant
4.11 Land Use and Planning			
Impact 4.11-1: The project would 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.	Potentially significant	Implement Mitigation Measures MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-9, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3.	Less than significant
Impact 4.11-2: The project would contribute to cumulative land use and planning impacts.	Less than significant	Implement Mitigation Measures MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-9, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
4.12 Mineral Resources			
Impact 4.12-1: The project would 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.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.12-2: The project would contribute to cumulative mineral resources impacts.	Less than significant	Mitigation is not required.	Less than significant
4.13 Noise			
Impact 4.13-1: The project would generate a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Less than significant	**MM 4.13-1:** The project proponent shall establish a Noise Disturbance Coordinator for the proposed project. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground-disturbing activities. **MM 4.13-2:** A sign, legible at a distance of 50 feet, shall be posted at the project site entrance on State Route 58, stating a Surface Mining and Reclamation Plan (Johe Ranch [Conditional Use Permit 17, Map 117]) has been approved for the site, and a telephone number where noise complaints can be registered with the Noise Disturbance Coordinator. Documentation that the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.	Less than significant
Impact 4.13-2: The project would generate excessive ground borne vibration or ground borne noise levels.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.13-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	Mitigation is not required.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Impact 4.13-4: The project would contribute to cumulative noise impacts.	Less than significant	Implement Mitigation Measures MM 4.13-1 and MM 4.13-2.	Less than significant
4.14 Population and Housing			
Impact 4.14-1: The project would induce substantial unplanned population growth in an area, either directly or indirectly.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.14-2: The project would displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.	No impact	Mitigation is not required.	No impact
Impact 4.14-3: The project would contribute to cumulative population and housing impacts.	Less than significant	Mitigation is not required.	Less than significant
4.15 Public Services			
Impact 4.15-1: The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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.	Less than significant	**MM 4.15-1:** The project proponent shall work with Kern County to determine how the use of sales and use taxes from construction and operation of the project can be maximized. This process shall include the project proponent obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing, and billing purposes and registering this address with the State Board of Equalization. The project proponent shall allow Kern County to use this sales tax information publicly for reporting purposes.	Less than significant
Impact 4.15-2: The project would contribute to cumulative impacts on public services.	Potentially significant	Implement Mitigation Measure MM 4.15-1.	Less than significant
4.16 Transportation and Traffic			
Impact 4.16-1: The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	Potentially significant	**MM 4.16-1:** Prior to commencement of operations as authorized by this approval, the project proponent shall submit verification that an encroachment permit(s), authorizing all proposed access point(s) to State Route 58 to be utilized during the life of the permit, has been granted from Caltrans to the current owner of the project site.	Less than significant
Impact 4.16-2: The project would conflict or be inconsistent with State CEQA *Guidelines* Section 15064.3.	Less than significant	Mitigation is not required.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Impact 4.16-3: The project would substantially increase hazards due to a design feature.	Potentially significant	**MM 4.16-2:** Prior to commencement of operations as authorized by this approval, the project proponent/operator shall submit design plans for the proposed driveway serving mining and reclamation activities that conform to the sight distance requirements specified in Chapter 200 of the Highway Design Manual and other applicable standards necessary to receive an encroachment permit from Caltrans. These plans shall include a sight distance analysis prepared by an appropriately licensed design professional and signage warning of trucks entering the roadway consistent with the California Manual on Uniform Traffic Control Devices.	Less than significant
Impact 4.16-4: The project would result in inadequate emergency access.	Potentially significant	**MM 4.16-3**: Prior to the commencement of operations as authorized by this approval, the project proponent shall contact State and local emergency response agencies (California Highway Patrol, Kern County Sheriff's Office, and Kern County Fire Department) to provide information on the timing and location of any traffic control measures required to complete the project. Emergency response agencies would be notified of any change to traffic control measures as the project proceeds, so that emergency response providers can modify their response routes to ensure that response time would not be affected.	Less than significant
Impact 4.16-5: The project would contribute to cumulative transportation and traffic impacts.	Potentially significant	Implement Mitigation Measures MM 4.16-1 through MM 4.16-3.	Less than significant
4.17 Tribal Cultural Resources			
Impact 4.17-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).	Potentially significant	Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
Impact 4.17-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe.	Potentially significant	Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.	Less than significant
Impact 4.17-2: The proposed project would contribute to cumulative tribal cultural resources impacts.	Potentially significant	Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.	Less than significant
4.18 Utilities and Service Systems			
Impact 4.18-1: The project would 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	Implement Mitigation Measure MM 4.10-3.	Less than significant
Impact 4.18-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.18-3: The project would 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.	Potentially significant	**MM 4.18-1:** During operations as authorized by this approval, debris and waste generated shall be recycled to the extent feasible. A. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance and Trash Abatement/Pest Management Program. B. The Recycling Coordinator shall facilitate the recycling of all construction waste through coordination with contractors, local waste haulers, and/or facilities that recycle construction/demolition wastes.	Less than significant

Table 1-4 Summary of Impacts, Mitigation Measures, and Level of Impacts after Mitigation

Impact	Level of Significance before Mitigation	Mitigation Measure(s)	Level of Significance after Mitigation
		C. The on-site Recycling Coordinator shall also be responsible for ensuring that wastes that require special disposal are handled according to the State and County regulations that are in effect at the time of disposal. D. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to commencement of operations as authorized by this approval.	
Impact 4.18-4: The project would comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.	Potentially significant	Implement Mitigation Measure MM 4.18-1.	Less than significant
Impact 4.18-5: The project would contribute to cumulative impacts to utilities and service systems.	Potentially significant	Implement Mitigation Measures MM 4.10-3 and MM 4.18-1.	Less than significant
4.19 Wildfire			
Impact 4.19-1: The project would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds, and other factors.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.19-2: The project would 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.	Less than significant	Mitigation is not required.	Less than significant
Impact 4.19-3: The project would 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.	Potentially significant	Implement Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3.	Less than significant
Impact 4.19-4: The project would contribute to cumulative wildfire impacts.	Potentially significant	Implement Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3.	Less than significant

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Chapter 2
Introduction

2.1 Intent of the California Environmental Quality Act

The Kern County Planning and Natural Resources Department (Kern County), as Lead Agency, has determined that, based on preliminary analysis in an initial study (included as Appendix A), an environmental impact report (EIR) is the appropriate environmental analysis document pursuant to the California Environmental Quality Act (CEQA) for the proposed Johe Ranch Mining Project (project). The project site comprises approximately 331 acres identified as portions of Kern County Assessor's Parcel Numbers (APNs) 156-070-01, 156-070-02, and 156-070-10, located on the north and south sides of State Route (SR) 58, approximately 8.5 miles west of the unincorporated community of McKittrick in Kern County, California. The project site consists of undeveloped rolling hill topography with some steep slopes and incised drainages and has a history of being used for farming and grazing. The project site is surrounded by undeveloped rural land primarily vacant or used for grazing and diatomaceous earth mining purposes.

The project would allow Diatom, LLC (Diatom; the project proponent) to mine an estimated 330,000 tons of materials (310,000 tons diatomaceous earth and 20,000 tons of overburden) annually (for an estimated total of 6,600,000 tons of material [6,200,000 tons of diatomaceous earth, 400,000 tons of overburden material]) from three open pits and develop a reclamation plan in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975. Reclamation will be required on a 92.27-acre area (93.67 acres of disturbance minus 1.4 acres of existing road access disturbance). No buildings or structures are proposed, and, after completion of the project, all equipment would be removed from the site in accordance with the Surface Mining and Reclamation Plan application (included as Appendix B). The life of the operation is proposed to be 50 years.

As discussed in more detail in the following sections, the project proponent is requesting the following discretionary action from Kern County:

(a) A Conditional Use Permit (CUP) for a new surface mining operation and development of a reclamation plan on the project site, which is approximately 331 acres in size. Within the approximate 331-acre project site, disturbance would be confined to 93.67 acres. Approximately 1.4 acres of the proposed 93.67-acre disturbance area has already been disturbed as a result of existing roads.

2.1.1 Purpose of the California Environmental Quality Act Process

This EIR has been prepared pursuant to the following relevant State and County statutes and guidelines:

- CEQA (California Public Resources Code [PRC], Section 21000 et seq.);
- State CEQA *Guidelines* (California Code of Regulations [CCR], Title 14, Chapter 3, Section 15000 et seq.); and
- Kern County CEQA Implementation Document

The overall purposes of CEQA are to:

- Ensure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns;
- Provide for full disclosure of the project's environmental effects to the public, the agency decision makers who will approve or deny the project, and responsible and trustee agencies charged with managing resources (e.g., wildlife, air quality) that may be affected by the project; and
- Provide a forum for public participation in the decision-making process with respect to environmental effects.

2.2 Purpose of this Environmental Impact Report

An EIR is a public informational document used in the planning and decision-making process. This project-level EIR will analyze the environmental impacts of the proposed project. The Kern County Planning Commission (and the Board of Supervisors if the decision of the Planning Commission is appealed) will consider the information in the EIR, including the public comments and staff response to those comments, during the public hearing process. The final decision is made by the Planning Commission (or the Kern County Board of Supervisors if the decision of the Planning Commission is appealed), which may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

- The significant potential impacts of the project on the environment and indicate the manner in which those significant impacts can be avoided or mitigated;
- Any unavoidable adverse impacts that cannot be mitigated; and
- Reasonable and feasible alternatives to the project that would eliminate any significant environmental impacts or reduce the impacts to a less-than-significant level.

An EIR also discloses growth-inducing impacts, impacts found not to be significant, and significant cumulative impacts of past, present, and reasonably foreseeable future projects.

CEQA requires an EIR to reflect the independent judgment of the Lead Agency with respect to impacts, disclose the level of significance of the impacts both with and without mitigation, and describe mitigation measures proposed to reduce the impacts. An EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The review process gives both agencies and individuals an opportunity to share expertise, discuss agency analyses, check for accuracy, detect omissions, discover public concerns, and solicit mitigation measures and alternatives capable of avoiding or reducing the significant effects of the project while still attaining most of the basic objectives of the project.

Reviewers of an EIR are requested to focus on the sufficiency of the document (i.e., the thoroughness of its identification and analysis of possible impacts on the environment as well as ways to avoid or mitigate such impacts). Comments are most helpful when they suggest better ways to avoid or mitigate significant environmental impacts (e.g., through additional alternatives or mitigation measures).

2.2.1 Issues to Be Resolved

Section 15123(b)(3) of the State CEQA *Guidelines* requires that an EIR contain issues to be resolved, which includes the choices among alternatives and whether or how to mitigate significant impacts. The following major issues are to be resolved:

- Determine whether the Draft EIR adequately describes the environmental impacts of the project;
- Preferred choice among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified, and
- Determine whether additional mitigation measures need to be applied to the project.

2.3 Terminology

The terms listed below are defined to assist reviewers in understanding this EIR:

- *Project* means the whole of an action that has the potential for resulting in a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

- *Environment* means the physical conditions that exist in the area and that would be affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the project. The environment includes both natural and artificial conditions.

- *Impacts* analyzed under CEQA must be related to a physical change. Impacts include:
    - Direct or primary impacts that would be caused by the project and would occur at the same time and place; or
    - Indirect or secondary impacts that would be caused by the project and would be later in time or farther removed in distance but would still be reasonably foreseeable. Indirect or secondary impacts may include growth-inducing impacts and other impacts related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

- *Significant impact on the environment* means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment, but a social or economic change related to a physical change may be considered in determining whether the physical change is significant.

- *Mitigation* consists of measures that avoid or substantially reduce the project's significant environmental impacts by:
    - Avoiding the impact altogether by not taking a certain action or parts of an action;
    - Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
    - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
    - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
    - Compensating for the impact by replacing or providing substitute resources or environments.

- *Cumulative impacts* are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:
    - The individual impacts may be changes resulting from a single project or a number of separate projects.
    - The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

This EIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows:

- *Less than significant.* An impact that is adverse but that does not exceed the defined thresholds of significance. Less-than-significant impacts do not require mitigation.

- *Significant.* An impact that exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less-than-significant level.

- *Significant and unavoidable.* An impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

2.4 Decision-Making Process

CEQA requires Lead Agencies to solicit and consider input from interested agencies, citizen groups, and individual members of the public. CEQA also requires the project to be monitored after it has been permitted to ensure that mitigation measures are carried out.

CEQA requires the Lead Agency to provide the public with a full disclosure of the expected environmental consequences of the project and an opportunity to provide comments. In accordance with CEQA, the following steps constitute the process for public participation in the decision-making process:

- **Notice of Preparation/Initial Study (NOP/IS).** The Lead Agency prepared and circulated an NOP/IS for 30 days to responsible, trustee, and local agencies for review and comment beginning on January 8, 2019. The NOP/IS and comments received during the circulation of the NOP are included in Appendix A of this EIR. In conjunction with this public notice, Kern County held a scoping meeting on January 30, 2019, to provide a forum for public comments on the scope of the EIR.

- **Draft EIR Preparation/Notice of Completion (NOC).** A Draft EIR is circulated for review and comment to appropriate agencies and additional individuals and interest groups who have requested to be notified of EIR projects. Per Section 15105 of the State CEQA *Guidelines*, the Lead Agency will provide for a 45-day public review period on the Draft EIR. The Lead Agency will subsequently respond to each comment on the Draft EIR that is received in writing through a Response to Comments chapter in the Final EIR. The Response to Comments chapter will be provided to each agency or person who provided written comments on the EIR at least 10 days prior to certification of the EIR.

- **Preparation and Certification of Final EIR.** The Kern County Planning Commission and, if appealed, the Board of Supervisors will consider the Final EIR and all public comments on the project itself before final action on the project. The Planning Commission and, if appealed, Board of Supervisors will hold at least one public

hearing to consider the Final EIR, take public testimony, and then approve, conditionally approve, or deny the project.

2.4.1 Notice of Preparation/Initial Study

Pursuant to Section 15082 of the State CEQA *Guidelines*, as amended, the Kern County Planning and Natural Resources Department circulated an NOP/IS to responsible and affected agencies and other interested parties for a 30-day public review period that began on January 8, 2019, and ended on February 7, 2019. The NOP/IS was also posted in the Kern County Clerk's office for 30 days and sent to the State Clearinghouse at the California Governor's Office of Planning and Research to solicit statewide agency participation in determining the scope of the EIR.

The purpose of the NOP/IS is to formally convey that the Kern County Planning and Natural Resources Department, as the Lead Agency under CEQA, solicited input regarding the scope and proposed content of the EIR. The NOP/IS and all comment letters are provided in Appendix A of this EIR.

2.4.2 Scoping Meeting

Pursuant to Section 15082(c)(1) of the State CEQA *Guidelines*, for projects of statewide, regional, or areawide significance, the Lead Agency is required to conduct at least one scoping meeting. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. Kern County hosted a scoping meeting at 1:30 p.m. on January 30, 2019, at the Kern County Planning and Natural Resources Department, 2700 "M" Street, Suite 100, Conference Room 1A, Bakersfield, California.

Notice of Preparation/Initial Study and Scoping Meeting Results

No verbal comments were received at the January 30, 2019, scoping meeting. Specific environmental concerns raised in written comments received during the NOP/IS public review period are discussed below. The NOP/IS and all comments received are included in Appendix A, along with the Summary of Proceedings from the Scoping Meeting.

Notice of Preparation/Initial Study Written Comments

The Kern County Planning and Natural Resources Department received the following specific environmental concerns listed in **Table 2-1,** *Summary of NOP/IS Comments*, in response to the NOP/IS.

Table 2-1 Summary of NOP/IS Comments

Commenter	Summary of Comment
Federal Agencies	
U.S. Army Corps of Engineers, January 24, 2019	The U.S. Army Corps of Engineers (USACE) provided a letter that defines the agency's jurisdiction in the study area and indicates that a wetland delineation is necessary to ascertain the extent of waters on the project site. The letter also recommends that the range of alternatives considered for the project include alternatives that avoid impacts to wetlands or waters of the U.S.
U.S. Bureau of Land Management, February 7, 2019	The U.S. Bureau of Land Management (BLM) provided a letter informing Kern County that the BLM manages the oil and gas mineral estate under the parcels that will be developed by the project. The BLM indicated that, should the leasee of the fluid minerals wish to develop the lease in the future, the BLM oil and gas rights would be superior to the surface mining operations.
State Agencies	
California State Clearinghouse, January 8, 2019	The State Clearinghouse provided transmittal of the NOP to reviewing agencies and reminded the agencies to comment in a timely manner.
California Department of Transportation (District 6), January 17, 2019	The California Department of Transportation (Caltrans), District 6 provided a letter recommending the preparation of a Traffic Impact Study to fully assess the potential impacts to the intersection, given that SR 58 is a two-lane conventional highway that is not planned to be widened. The letter indicates that Caltrans has not located the encroachment permit that authorized the existing access to the State right-of-way and requests the owner provide a copy or submit an application requesting approval for driveway access.
California Native American Heritage Commission, January 25, 2019	The California Native American Heritage Commission (NAHC) provided a letter recommending consultation with California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.
California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, January 31, 2019	The California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) recommends locating, uncovering, leak testing, and surveying the location of wells and implementing re-abandonment operations.
California Department of Fish and Wildlife, February 5, 2019	The California Department of Fish and Wildlife (CDFW) provided a letter indicating the site is known to and/or has high potential to support numerous special-status species, including California Endangered Species Act (CESA)-listed species. Specifically, CDFW indicated that it is concerned about the potential of the project to significantly impact the State fully protected and State and Federally endangered blunt-nosed leopard lizard (*Gambelia sila*), State threatened and Federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), State and Federally endangered giant kangaroo rat (*Dipodomys ingens*), State threatened San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), the Federally endangered Kern mallow (*Eremalche kernensis*), and State Species of Special Concern (SSC) burrowing owl (*Athene cunicularia*) and Le Conte's thrasher (*Toxostoma lecontei*). CDFW recommends that focused, protocol-level surveys for these species be conducted to evaluate impacts of the project on these species.

Table 2-1 Summary of NOP/IS Comments

Commenter	Summary of Comment
California Highway Patrol, February 6, 2019	The California Highway Patrol (CHP) provided a letter indicating there is a significant potential the project will have an impact on traffic and should be further evaluated. The CHP's letter recommends traffic enforcement, education, and additional traffic control measures to mitigate potential increases in traffic collisions.
Local Agencies	
Pacific Gas and Electric Company, January 23, 2019	The Pacific Gas and Electric Company (PG&E) provided a letter that identified the process for developing on land that is adjacent to or within PG&E-owned property and/or easements.
Kern County Public Works Department/ Administration and Engineering Division, January 28, 2019	The Kern County Public Works Department provided a letter requesting a copy of the traffic engineering study for the Draft EIR for this project for review and comment.
Southern California Gas Company/ Transmission Department, February 25, 2019	The Transmission Department of the Southern California Gas Company (SoCalGas) provided a letter indicating that it does not operate any facilities within the project site. However, the Distribution Department of SoCalGas may maintain and operate facilities within the project site; therefore, the Transmission Department recommends contacting the Distribution Department to assure there are no conflicts.
Southern California Gas Company/ Distribution Department, March 1, 2019	The Distribution Department of SoCalGas provided an email indicating that it does not maintain facilities within the project area.

2.4.3 Availability of the Draft EIR

This EIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with Section 15087 of the State CEQA *Guidelines*. This EIR and the full administrative record for the project, including all studies, are available for review during normal business hours, Monday through Friday, at the following location:

Kern County Planning and Natural Resources Department
2700 "M" Street, Suite 100
Bakersfield, CA 93301-2370
Phone: (661) 862-8600, Fax: (661) 862-8601

This EIR is also available on the Kern County Planning and Natural Resources Department website: https://kernplanning.com/planning/environmental-documents/.

Additionally, this EIR is available at the following libraries:

California State University
Bakersfield – Library
9001 Stockdale Highway
Bakersfield, CA 93309

Kern County Library/Beale
Local History Room
701 Truxtun Avenue
Bakersfield, CA 93301

Kern County Library/
Buttonwillow
116 Buttonwillow Avenue
Buttonwillow, CA 93206

2.5 Format and Content

This EIR addresses the potential environmental effects of the project and was prepared with input from the public and the responsible and affected agencies during the EIR scoping process, as discussed previously. The contents of this EIR are based on the findings in the NOP/IS and public agency input. According to the findings of the NOP/IS, a determination was made that an EIR would be required to address potentially significant environmental impacts related to the following resource areas:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Transportation and Traffic
- Utilities and Service Systems

Additionally, based on the latest version of the Kern County Environmental Checklist, which was updated in April 2019 after the NOP/IS for this project was circulated, the following additional resource areas are evaluated in this EIR:

- Energy
- Wildfire

With respect to the following resource area, which was discussed in the NOP/IS, it was determined that no impacts would occur that would require analysis in the EIR:

- Recreation

Additionally, no comments were received during circulation of the NOP/IS indicating that additional impacts would need to be addressed. No further discussion of this resource is warranted. For a complete analysis of this resource, please refer to Appendix A of this EIR.

2.5.1 Required EIR Content and Organization

This EIR includes all the sections required by the State CEQA *Guidelines*, which are listed in **Table 2-2,** *Required EIR Contents*, along with a reference to the chapter in which they can be found within this document.

Table 2-2 Required EIR Contents

Requirement (CEQA/Section)	Location in EIR
Table of Contents (Section 15122)	Table of Contents
Summary (Section 15123)	Chapter 1
Project Description (Section 15124)	Chapter 3
Significant Environmental Impacts (Section 15126.2)	Chapter 4
Environmental Setting (Section 15125)	Chapter 4
Mitigation Measures (Section 15126.4)	Chapter 4
Cumulative Impacts (Section 15130)	Chapter 4
Growth-Inducing Impacts (Section 15126.2)	Chapter 5
Effects Found Not to Be Significant (Section 15128)	Chapters 1, 4, and 5
Significant Irreversible Changes (Section 15126.2)	Chapter 5
Unavoidable Significant Environmental Impacts (Section 15126.2)	Chapters 4 and 5
Alternatives to the Project (Section 15126.6)	Chapter 6
List of Preparers (Section 15129)	Chapter 9
References (Section 15129)	Chapter 10

The content and organization of this EIR is designed to meet the requirements of CEQA and the State CEQA *Guidelines*, and present issues, analyses, mitigation, and other information in a logical and understandable way. This EIR is organized into the sections listed below:

- Chapter 1, *Executive Summary*, provides a summary of the project description and the environmental impacts and mitigation measures that are identified in the EIR.

- Chapter 2, *Introduction*, provides CEQA compliance information, an overview of the decision-making process, information regarding the organization of the EIR, and a responsible and trustee agency list.

- Chapter 3, *Project Description*, provides a description of the location, characteristics, and objectives of the proposed project, as well as its relationship to applicable plans and policies.

- Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, contains a description of the existing conditions and a detailed environmental analysis of the project impacts, mitigation measures, and unavoidable adverse impacts for each environmental category.

- Chapter 5, *Consequences of Project Implementation*, presents an analysis of the project's contribution to cumulative and growth-inducing impacts as well as other CEQA requirements, including significant and unavoidable impacts and irreversible commitments of resources.

- Chapter 6, *Alternatives*, describes a reasonable range of alternatives to the project that could reduce significant environmental effects that cannot be avoided.

- Chapter 7, *Responses to Comments*, is reserved for responses to comments on this EIR.
- Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR.
- Chapter 9, *List of Preparers*, identifies persons involved in the preparation of the EIR.
- Chapter 10, *Bibliography*, identifies reference sources for the EIR.
- Chapter 11, *Appendices* provide information and technical studies that support the environmental analysis contained within the EIR.

The analysis of each environmental category in Chapter 4 is organized as follows:

- *Introduction* provides a brief overview on the purpose of the section being analyzed with regards to the project.
- *Environmental Setting* describes the physical conditions that exist at this time and may influence or affect the topic being analyzed.
- *Regulatory Setting* provides Federal, State, and local laws and the *Kern County General Plan* goals, policies, and implementation measures that apply to the topic being analyzed.
- *Impacts and Mitigation Measures* discusses the impacts of the project in each category, presents the determination of the level of significance, and provides a discussion of feasible mitigation measures to reduce any impacts.
- *Cumulative Setting, Impacts, and Mitigation Measures* provides a discussion of the cumulative geographic area for each resource area, and analysis of whether the proposed project would contribute to a significant cumulative impact, and if so, identifies cumulative mitigation measures.

2.6 Responsible and Trustee Agencies

Projects or actions undertaken by the Lead Agency, in this case Kern County, may require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Other such agencies are referred to as responsible agencies and trustee agencies. Pursuant to Sections 15381 and 15386 of the State CEQA *Guidelines*, as amended, responsible agencies and trustee agencies are defined as follows:

- A *responsible agency* is a public agency that proposes to carry out or approve a project for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, responsible agencies include all public agencies other than the Lead Agency that have discretionary approval power over the project (Section 15381).

- A *trustee agency* is a State agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California (Section 15386).

The various public, private, and political agencies and jurisdictions with a particular interest in the project include, but are not limited to, the following:

- Federal Agencies
  - U.S. Fish and Wildlife Service (USFWS)
  - U.S. Army Corps of Engineers (USACE)
  - U.S. Environmental Protection Agency (USEPA)
- State Agencies
  - California Department of Conservation, Division of Oil, Gas & Geothermal Resources (DOGGR)
  - California Department of Conservation, Division of Mine Reclamation
  - State Water Resources Control Board (SWRCB)
  - California Department of Fish and Wildlife (CDFW)
  - California Department of Transportation (Caltrans)
  - California Air Resources Board (CARB)
  - California Native American Heritage Commission (NAHC)
  - California Governor's Office of Planning and Research (OPR)
- Local Agencies
  - San Joaquin Valley Air Pollution Control District (SJVAPCD)
  - Regional Water Quality Control Board, Central Valley Region (Central Valley RWQCB)
- Kern County
  - Kern County Public Works Department
  - Kern County Public Health Services Department
  - Kern County Fire Department

2.7 Incorporation by Reference

In accordance with Section 15150 of the State CEQA *Guidelines*, to reduce the size of the report, the following documents are hereby incorporated by reference into this EIR and are available for public review at the Kern County Planning and Natural Resources Department. A brief synopsis of the scope and content of these documents is provided below.

2.7.1 Kern County General Plan

The *Kern County General Plan* is a policy document with land use maps and related information. It is designed to give long-range guidance to those Kern County officials who make decisions that affect the growth and resources in unincorporated Kern County, excluding the Metropolitan Bakersfield Planning Area. This document, adopted on June 14, 2004, and last amended on September 22, 2009, helps to ensure that day-to-day decisions conform to the long-range program designed to protect and further the public interest as related to Kern County's growth and development, and to mitigate environmental impacts. The General Plan also serves as a guide to the private sector of the economy so that development initiatives conform to Kern County's public plans, objectives, and policies.

2.7.2 Kern County Zoning Ordinance

According to Chapter 19.02.020, *Purposes*, of the Kern County Zoning Ordinance, Title 19 was adopted to promote and protect the public health, safety, and welfare through the orderly regulation of land uses in unincorporated areas of Kern County. The specific purposes of this title are listed below:

- Provide the economic and social advantages resulting from an orderly planned use of land resources;
- Encourage and guide development consistent with the *Kern County General Plan*;
- Divide Kern County into zoning districts, the number, size, and location of which would be deemed necessary to carry out the purposes of the *Kern County General Plan* and Title 19;
- Regulate the size and use of lots, yards, and other open spaces;
- Regulate the use, location, height, bulk, and size of buildings and structures;
- Regulate the intensity of land use;
- Regulate the density of population in residential areas;
- Establish requirements for off-street parking;
- Regulate signs and billboards; and
- Provide for the enforcement of the regulations of Chapter 19.02.

2.7.3 Kern County Zoning Ordinance, Chapter 19.100, Surface Mining Operations

The purpose of this chapter is to regulate surface mining operations consistent with the requirements of the California Mining and Reclamation Act (PRC Sections 2710 et seq.) and the State Policy for Surface Mining and Reclamation Practice (Title 14 of the California Administrative Code, Sections 3500 et seq.). The requirements of this chapter apply to any

surface mining operation undertaken in unincorporated Kern County, except for those operations specifically exempted by PRC Sections 2714 or 2776.

2.7.4 Regional Transportation Plan and Sustainable Communities Strategy

The latest Regional Transportation Plan (RTP) was adopted on August 16, 2018. The RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between Federal, State, regional, and local agencies. The RTP provides the Sustainable Communities Strategy (SCS) required by California's Sustainable Communities and Climate Protection Act of Senate Bill (SB) 375. The California Air Resources Board (CARB) set Kern County greenhouse gas (GHG) emissions reductions from passenger vehicles and light-duty trucks at 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low-income housing need and transportation planning. The Kern Council of Governments (Kern COG) engaged in the RHNA process concurrently with the development of the RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can provide sufficient housing for all economic segments of the population and ensure that the State's housing goals are met (Kern COG 2018a).

2.8 Sources

This EIR depends on information from many sources. Some sources are studies or reports that have been prepared specifically for this document. Other sources provide background information related to one or more issue areas that are discussed in this document. The sources and references used in the preparation of this EIR are listed in Chapter 10, *Bibliography*, and are available for review during normal business hours at:

Kern County Planning and Natural Resources Department
2700 "M" Street, Suite 100
Bakersfield, California 93301-2370

This EIR is also available on the Kern County Planning and Natural Resources Department website: https://kernplanning.com/planning/environmental-documents.

Chapter 3
Project Description

3.1 Project Overview

This Environmental Impact Report (EIR) has been prepared by the Kern County Planning and Natural Resources Department (Kern County), which is the Lead Agency, to identify and evaluate potential environmental impacts associated with the implementation of the proposed project. Diatom, LLC (Diatom; the project proponent) proposes a Conditional Use Permit (CUP 17, Map 117) for a surface mining operation and development of a reclamation plan (project) in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975. No buildings or structures are proposed, and after completion of the project, all equipment will be removed from the site in accordance with the approved reclamation plan. A copy of the submitted application for Surface Mining Permit and Reclamation Plan is included in Appendix B of this EIR. Disturbed acreage is described as follows:

- 88 acres proposed mine area disturbance (60 acres in Mine Area 1, 19 acres in Mine Area 2, and 9 acres in Mine Area 3)
- 1.4 acres existing access road disturbance
- 1.85 acres proposed access road disturbance
- 2.42 acres proposed blending and screening site disturbance
- 93.67 total acres of disturbance

Of the 93.67 acres of total disturbance, the reclamation plan will encompass 92.27 acres (1.4 acres of existing access road disturbance will not be reclaimed, as these roads will continue to be needed in conjunction with grazing operations after the site has been deemed fully reclaimed).

The proposed project would be in a rural area in western Kern County identified as portions of Kern County Assessor's Parcel Numbers (APNs) 156-070-01, 156-070-02, and 156-070-10. The project proponent is proposing to mine an estimated 330,000 tons of materials (310,000 tons diatomaceous earth and 20,000 tons of overburden) annually (for an estimated total of 6,600,000 tons of material [6,200,000 tons of diatomaceous earth, 400,000 tons of overburden material]) from three open pits. The life of the operation is proposed to be 50 years.

For purposes of the proposed project, the term "construction" refers to:

(a) earthmoving to build/maintain the proposed access road;

(b) earthmoving to prepare the 2.42-acre blending and screening site; and

(c) setup of the equipment that will operate on the blending and screening site (i.e., radial stacker [conveyor], portable screening plant, portable truck scale).

3.2 Project Site

3.2.1 Regional Setting

The project area is in the western portion of unincorporated Kern County, situated in the eastern foothills of the Temblor Mountain Range in the San Joaquin Valley (**Figure 3-1,** *Vicinity Map*). The project area is in the Mountain Region of Kern County (per Figure 2 in the Introduction of *Kern County General Plan*), which is identified as portions of the County which are: (a) above the 1,000-foot mean sea level (msl) contour; and (b) west of the primary alignment of the Los Angeles Aqueduct. The San Joaquin Valley is characterized by relatively low rainfall, averaging less than 10 inches per year, and relatively high average temperatures. Summers are typically cloudless, hot, and dry. Winter is generally mild but occasional freezing temperatures do occur.

3.2.2 Project Location

The project site is located within the McKittrick Summit, California U.S. Geological Survey (USGS) 7.5-minute quadrangle on Section 7, Township 30 South, Range 21 East, Mount Diablo Base & Meridian. The project site is in a rural area approximately 8.5 miles west of the unincorporated community of McKittrick, California (**Figure 3-2,** *Location Map*).

Site Access

The project site is currently accessible from State Route (SR) 58 only via an existing unnamed, unpaved access road that extends north through the site from SR 58. As proposed, during the life of the proposed surface mining and reclamation plan, all mining and reclamation-related access will be limited to the unnamed proposed access road that extends north through the site from SR 58 (and the aforementioned existing access road from SR 58 will be maintained only for use by the property owner on an as-needed basis for ranch operations). Upon the project site being deemed fully reclaimed, the project site will be accessible from SR 58 only from the existing unpaved, unnamed access road. The access point for the proposed access road is located approximately 250 feet south along SR 58 from the access point for the existing access road. The proposed access road would be composed of native earthen material covered with an oil sand dust suppressant. The existing and proposed access roads are shown on **Figure 3-3a,** *Site Plan*, **Figure 3-3b**, *Site Plan*, and **Figure 3-4,** *Mine Areas Map*.

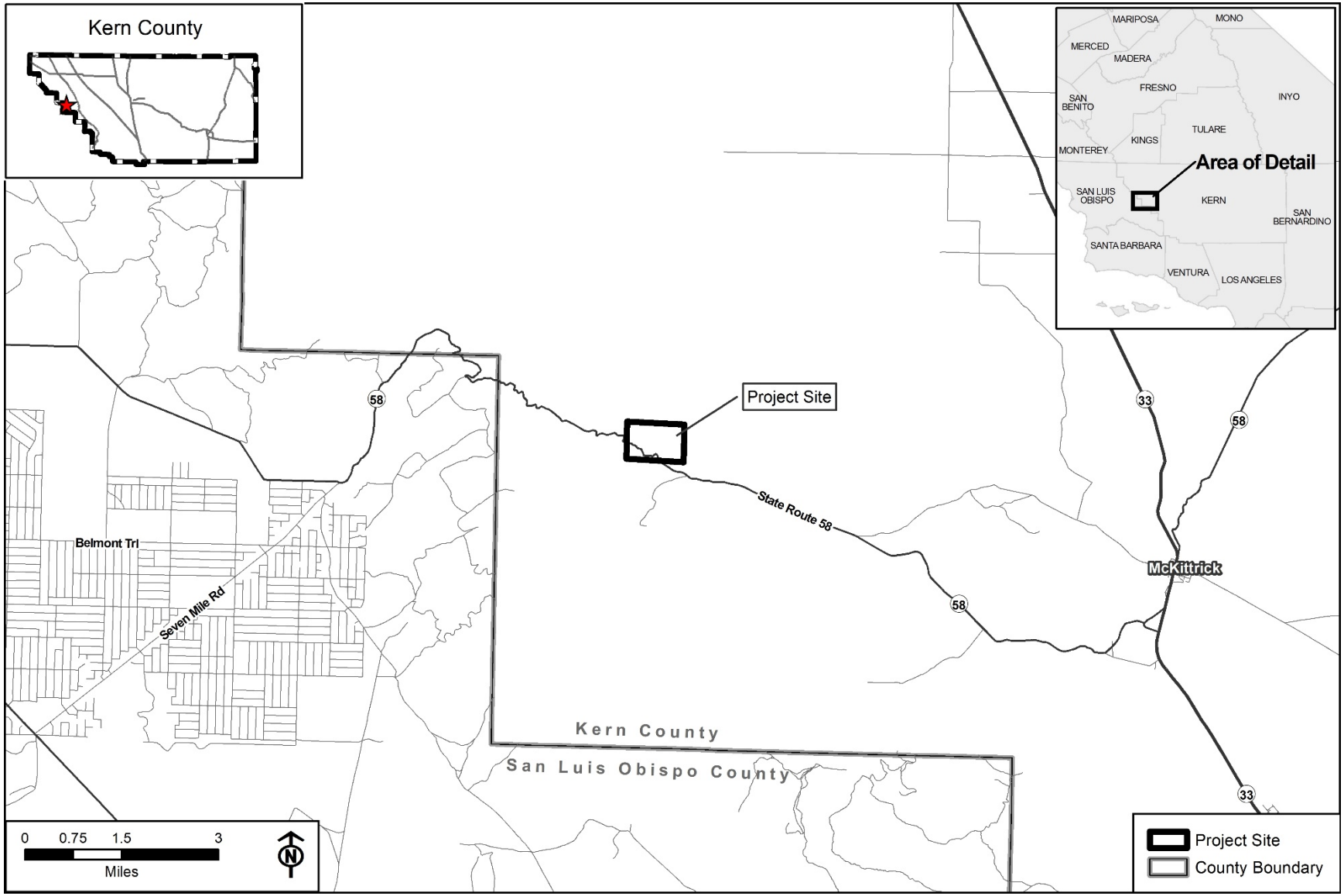


Figure 3-1
Site Vicinity

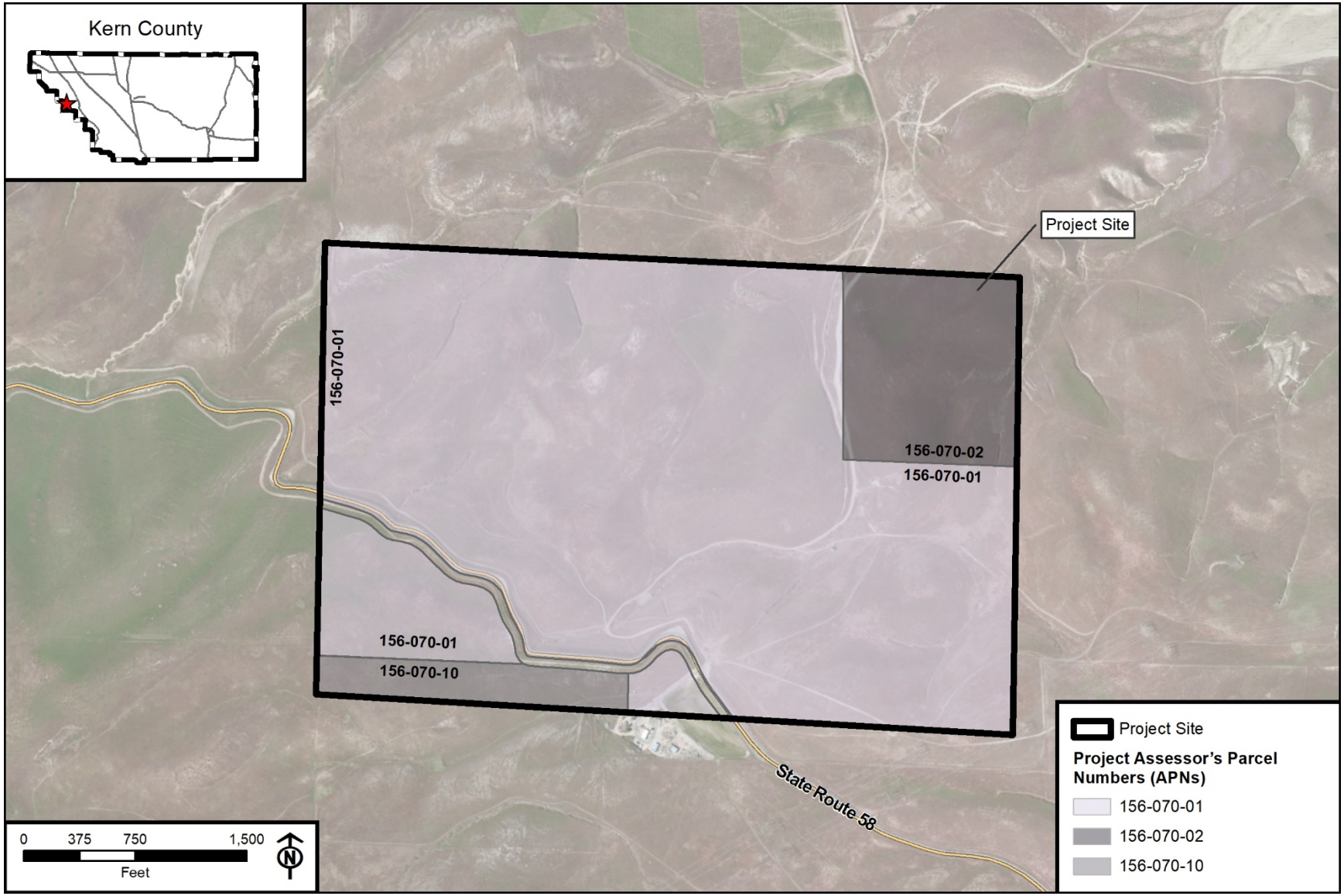
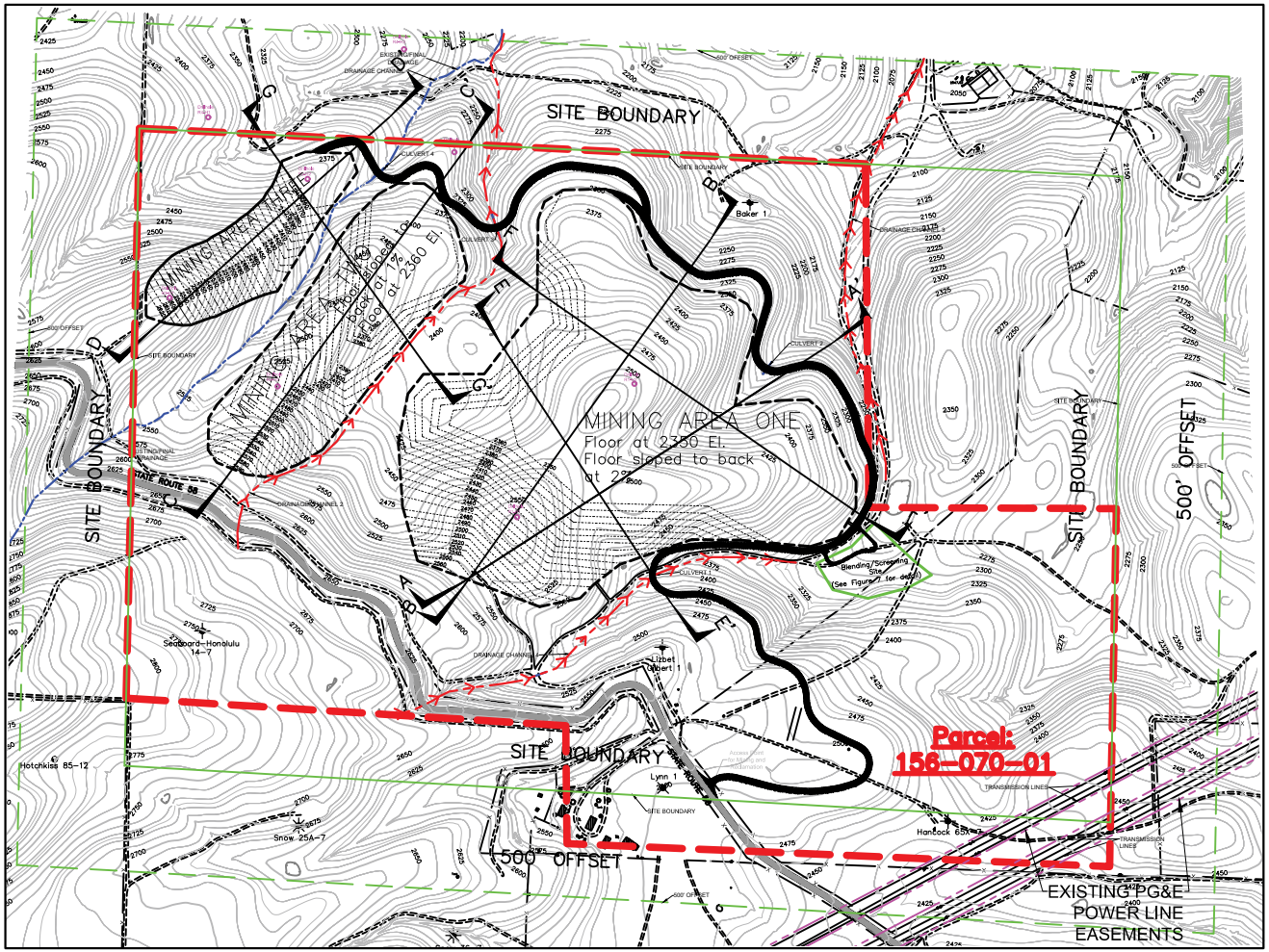


Figure 3-2
Location Map



LEGEND

- EXISTING GROUND CONTOUR
- PROPOSED CONTOUR
- EXISTING FENCE LINE
- 500' PROJECT BOUNDARY OFFSET
- MINING DISTURBANCE BOUNDARY
- PROJECT BOUNDARY
- EXISTING RANCH ROAD
- PROPOSED ACCESS ROAD
- INTERMITTENT DRAINAGE CHANNEL
- "BLUE-LINE" WATERCOURSE PER USGS MAP
- ACTIVE DRY GAS WELL
- ABANDONED GAS WELL
- DRILLHOLE
- ABANDONED WELL
- BOUNDARY OF APN 156-070-01

Title Report Items

2e – Pipeline right of way granted to Shell Oil Company in 1961. Right of way has since been abandoned. Recording No. 37984 per Book 3390, Page 863, O.R.

2f – Existing power line easement and right or way granted to PG&E 1969 & 1971:
Recording No. 48864 per Book 4301, Page 992, O.R.
Recording No. 13625 per Book 4563, Page 979, O.R.

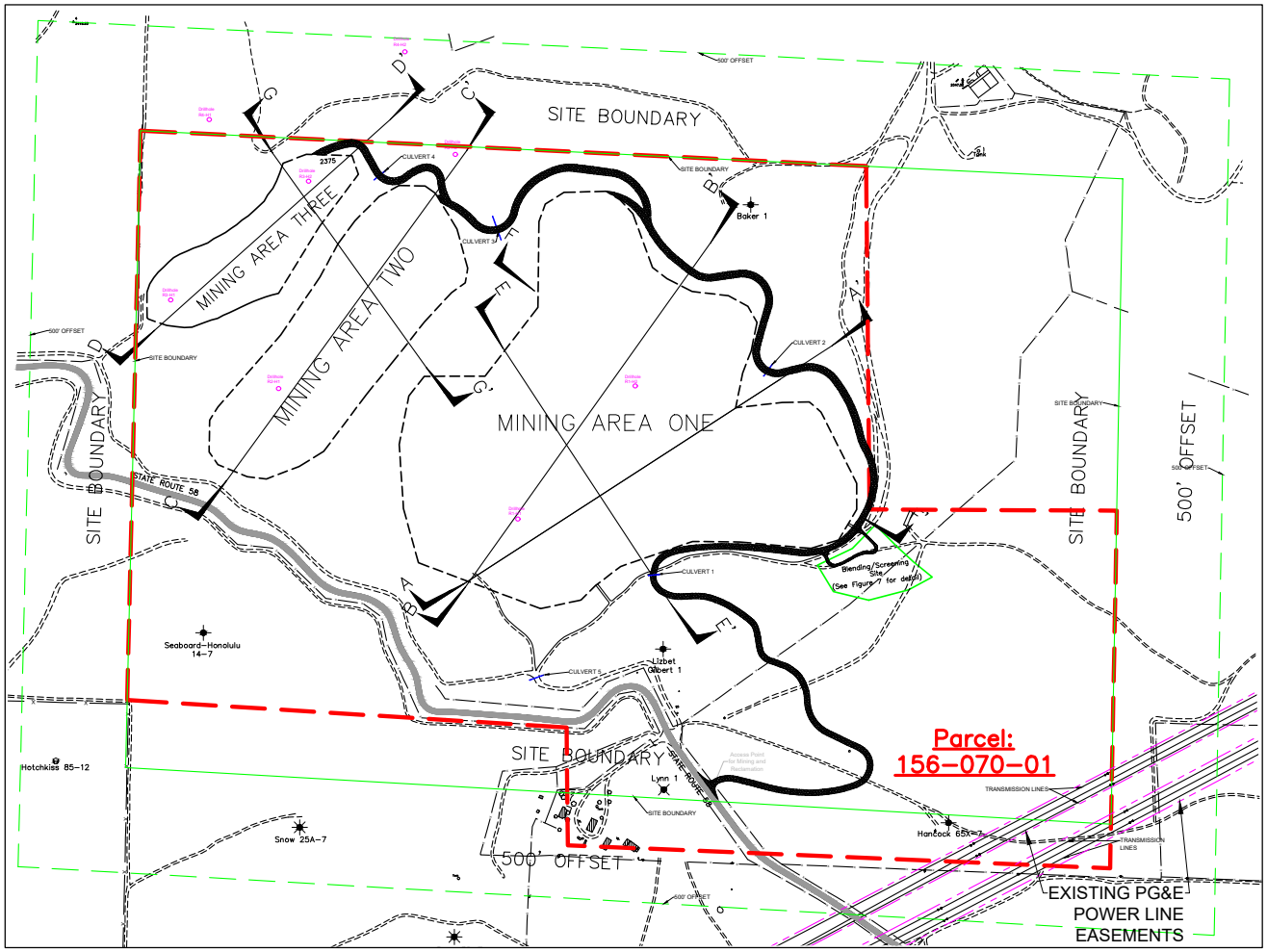
2g – Existing power line easement and right of way granted to PG&E 1969 & 1970:
Recording Nos. 51318, 51319, & 51320 per Book 4305, Pages 483, 488, & 492, O.R.
Recording No. 40723 per Book 4415, Page 760, O.R.
Recording Nos. 41602 & 41603 per Book 4417, Pages 16 & 20, O.R.

2h – Covenants and restrictions imposed by a Land Conservation Contract (Williamson Act) dated 2/17/1976. Contract term was 10 years. Contract has expired. Recording No. 11902 per Book 4939, Page 1484, O.R.

2i – Oil and gas lease from United States Dept. of the Interior BLM to Hunt Oil USA, Inc. 1993. Lease term was 10 years. Lease expired 2003. Recording No. 113429 per Book 6890, Page 156, O.R.

Source: WZI Inc, Bakersfield, 2020.

Figure 3-3a
Site Plan



LEGEND

- EXISTING FENCE LINE
- 500' PROJECT BOUNDARY OFFSET
- MINING DISTURBANCE BOUNDARY
- PROJECT BOUNDARY
- EXISTING RANCH ROAD
- PROPOSED ACCESS ROAD
- ACTIVE DRY GAS WELL
- ABANDONED GAS WELL
- DRILLHOLE
- ABANDONED WELL
- BOUNDARY OF APN 156-070-01

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Source: WZI Inc, Bakersfield, 2020.

Figure 3-3b
Site Plan

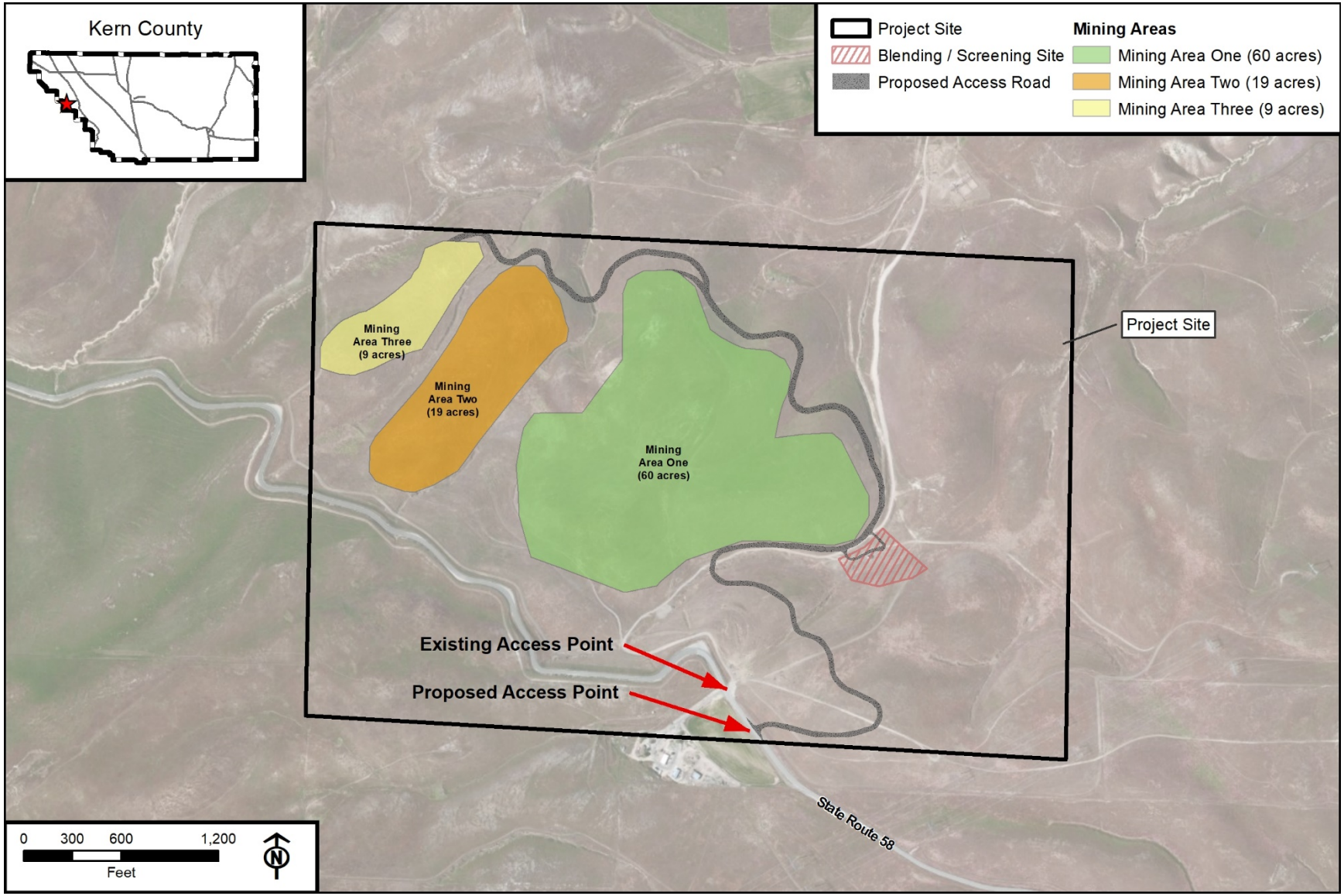


Figure 3-4
Mine Areas Map

General Plan Land Use Map Code Designations, Zone Classifications, and Existing Use

The existing land use, General Plan Land Use Designations, and Zoning Classifications for the project site and surrounding land are identified in **Table 3-1,** *Existing Uses, Zoning, and Land Use Designations*, and shown on **Figure 3-5,** *Existing Kern County General Plan Designations*, and **Figure 3-6,** *Existing Kern County Zoning Classifications*.

Table 3-1 Existing Uses, Zoning, and Land Use Designations

Parcel	Existing Land Use	General Plan Land Use Designation	Existing Zoning Classification
Project Site			
Portion of the Project Site on APN 156-070-01	Grazing	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.2 (Mineral and Petroleum (min. 5-acre parcel size) / Landslide Overlay) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
Portion of the Project Site on APN 156-070-02	Grazing	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay)	A (Exclusive Agriculture)
Portion of the Project Site on APN 156-070-10	Grazing	8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
Surrounding Parcels			
North	Grazing, diatomaceous earth mining operation	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay)	A (Exclusive Agriculture)

Table 3-1 Existing Uses, Zoning, and Land Use Designations

Parcel	Existing Land Use	General Plan Land Use Designation	Existing Zoning Classification
South	Grazing, residence, shop building, agricultural storage buildings, chicken coop	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.2 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Landslide Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.2 (Mineral and Petroleum (min. 5-acre parcel size) / Landslide Overlay) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
East	Grazing	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)	A (Exclusive Agriculture)
West	Grazing	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)

Existing Conditions

The project site is fenced with barbed wire to exclude the public from entering and consists of undeveloped rolling topography with some steep slopes and incised drainages. The elevation of the project site ranges from approximately 2,800 feet above msl near the southwestern corner to approximately 2,100 feet above msl near the northeast corner.

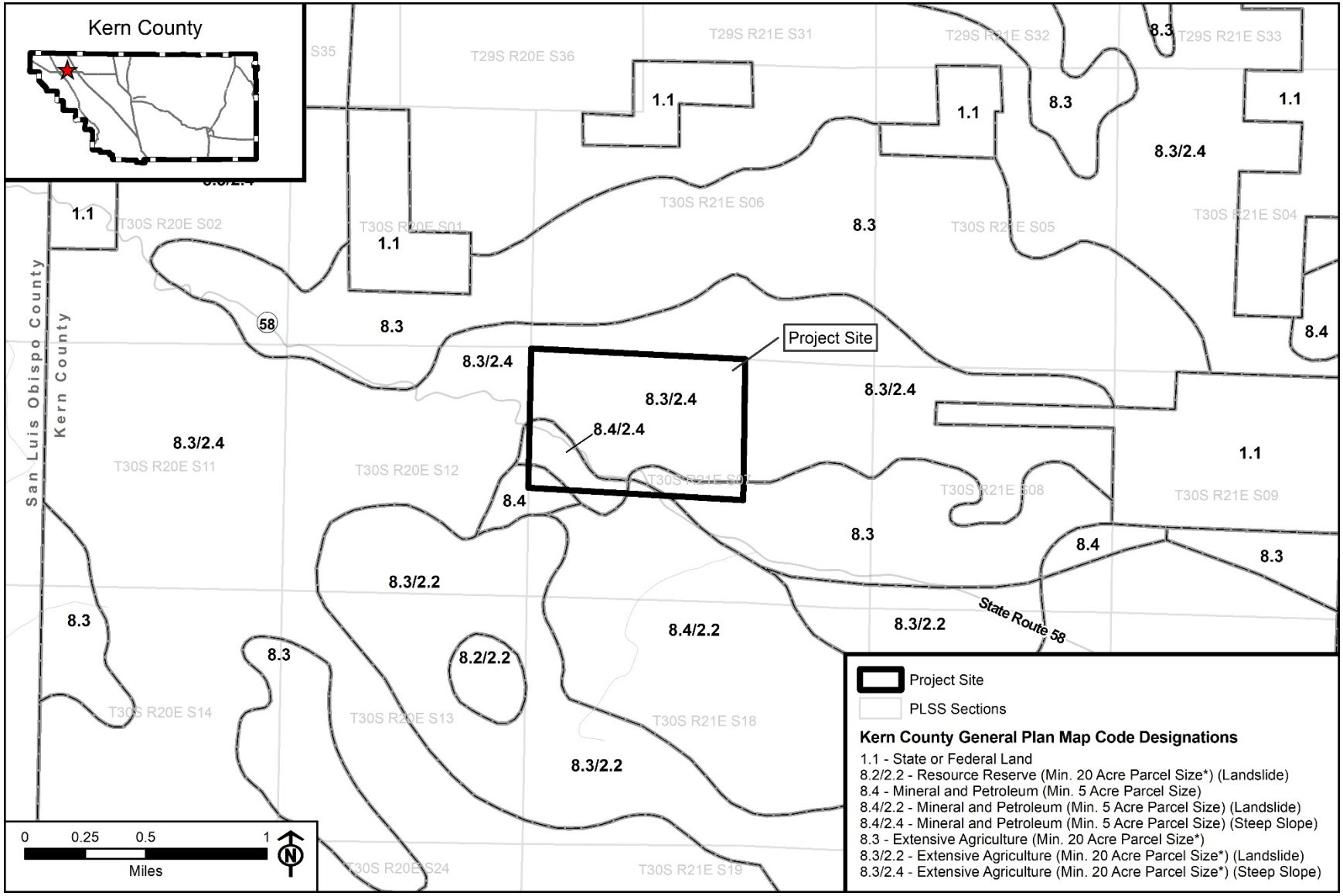


Figure 3-5

Existing Kern County General Plan Designations

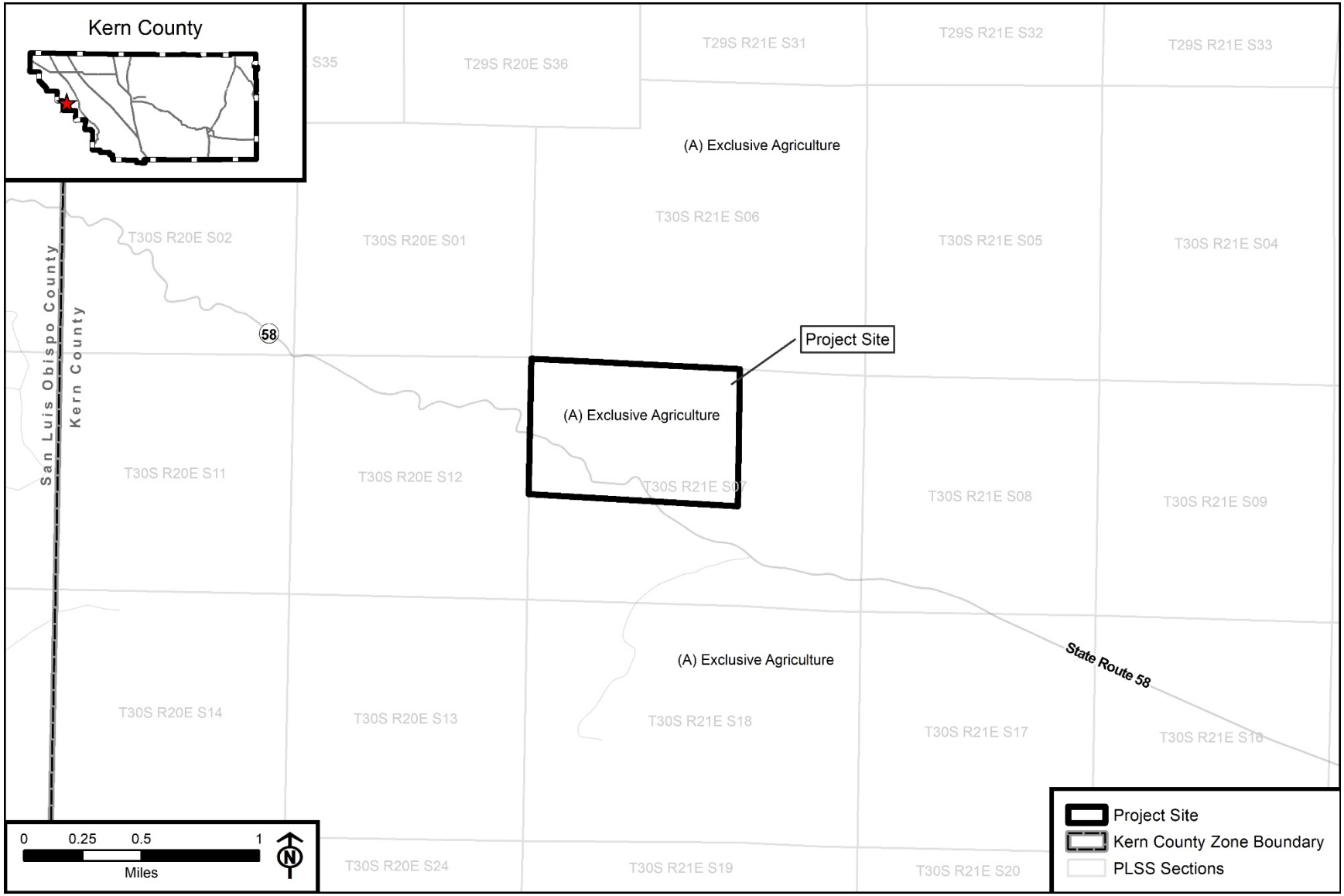


Figure 3-6
Existing Kern County Zoning Classifications

According to the California Department of Conservation Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]), four abandoned wells are located within the 331-acre property, as shown on **Figures 3-3a** and **3-3b,** *Site Plan*. The four wells are located outside the proposed disturbance areas and are described as follows:

1. Baker 1 (abandoned gas well);
2. Seaboard-Honolulu 14-7 (abandoned gas well);
3. Lizbet Gilbert 1 (abandoned gas well); and
4. Lynn 1 (abandoned well).

Additionally, there are six exploratory drill holes on the project site, which were all drilled for diatomite evaluation in 2006 and subsequently backfilled after drilling. No open holes are present on the site.

There are two approved surface mining operations located in the vicinity of the project site, both of which produce aggregates: State Mine ID #91-15-0036 (CUP 14, Map 117), located approximately 2.5 miles east of the project site, and State Mine ID #91-15-0038 (CUP 4, Map 96), located approximately 1.4 miles north of the project site. There is a residence located south of the project site on the south side of SR 58; this residence is also owned by the property owner of the project site.

3.3 Surface Mining and Reclamation Act Process

SMARA (California Public Resources Code [PRC] Sections 2710–2796) provides a comprehensive surface mining and reclamation policy for the regulation of surface mining operations in California. The purpose of SMARA is to ensure that adverse environmental impacts associated with mining activities are minimized and that mined lands are reclaimed to a usable condition. SMARA also encourages the production, conservation, and protection of the State's mineral resources. PRC Section 2207 provides annual reporting requirements for all mines in the State, under which, the State Mining and Geology Board (SMGB) is also granted authority and obligations. SMARA requires the SMGB to adopt policies for the reclamation of mined lands and the conservation of mineral resources. Regulations promulgated by SMGB expound on the requirements of SMARA and can be found in Title 14, Division 2, Chapter 8, Subchapter 1 of the California Code of Regulations (CCR).

City and County Lead Agencies must adopt ordinances for land use permitting and reclamation procedures that comply with SMARA. The Kern County Zoning Ordinance (Chapter 19.100) contains regulations regarding Surface Mining Operations. Combined, the SMARA, SMGB regulations, and Kern County Zoning Ordinance provide the regulatory framework for surface mining and reclamation activities in Kern County.

SMARA Lead Agencies review applications for surface mining and/or reclamation plans (or amendments thereto), submit such applications and financial assurances to the CDOC Division of Mine Reclamation (DMR) for technical review and comment prior to approval, annually

review financial assurances, annually inspect mining and reclamation operations for compliance, and take enforcement actions where necessary. In addition, each mining and reclamation operation is required to maintain a current financial assurance mechanism (FAM) with Kern County in an amount sufficient to cover the cost of reclamation. The amount of the financial assurance is calculated per guidelines provided by the DMR and as necessary updated annually to account for the extent of active mine operations, areas of disturbance, and reclamation progress. If Kern County determines the mine operator is unwilling or unable to complete site reclamation, Kern County can seek forfeiture of the FAM and utilize it to implement reclamation of the mine site. The proposed project is subject to the SMARA, SMGB regulations, and Kern County Zoning Ordinance.

3.4 Project Characteristics

3.4.1 Project Summary

As discussed in more detail in the following sections, the project proponent has submitted an application for the following discretionary action from Kern County:

(a) A CUP for a 93.67-acre surface mining operation and development of a reclamation plan on an approximately 331-acre project site, in accordance with the SMARA.

Within the approximate 331-acre project site, surface disturbance would be confined to 93.67 acres. Approximately 1.4 acres of the proposed 93.67-acre disturbance area are currently disturbed (consisting of existing ranch roads), which would not be reclaimed, as these roads will continue to be needed in conjunction with grazing operations after the site has been deemed fully reclaimed. As such, the reclamation plan will encompass 92.27 acres (93.67 acres of disturbance minus 1.4 acres of existing road access disturbance). A bird's-eye-view site plan is shown on **Figures 3-3a** and **3-3b,** *Site Plan*, along with corresponding site plan cross sections shown on **Figure 3-7,** *Site Plan Cross Sections*.

The project proponent proposes to employ open pit mining techniques to mine diatomaceous earth (a mineral suitable for industrial uses including the production of cement) and overburden material (earth overlying the diatomaceous earth, proposed to be sold for use as a landfill liner and to solidify liquid waste after it is deposited in a landfill). A processing screener would be utilized on an as-needed basis according to customer demand for refined product. Blending of different types of diatomaceous earth mined on the project site would be conducted as necessary with the use of a loader. Trucks would be weighed before leaving the site on a portable scale located within the boundaries of the 2.42-acre blending and screening site (as shown on **Figures 3-3a** and **3-3b,** *Site Plan*, **Figure 3-4,** *Mine Areas Map*, and **Figure 3-8,** *Blending/Screening Plant Detail*). As proposed, all overburden material (typically considered as non-marketable waste in the mining industry) that is excavated will be exported from the project site and sold; as such, no waste is proposed to be generated.

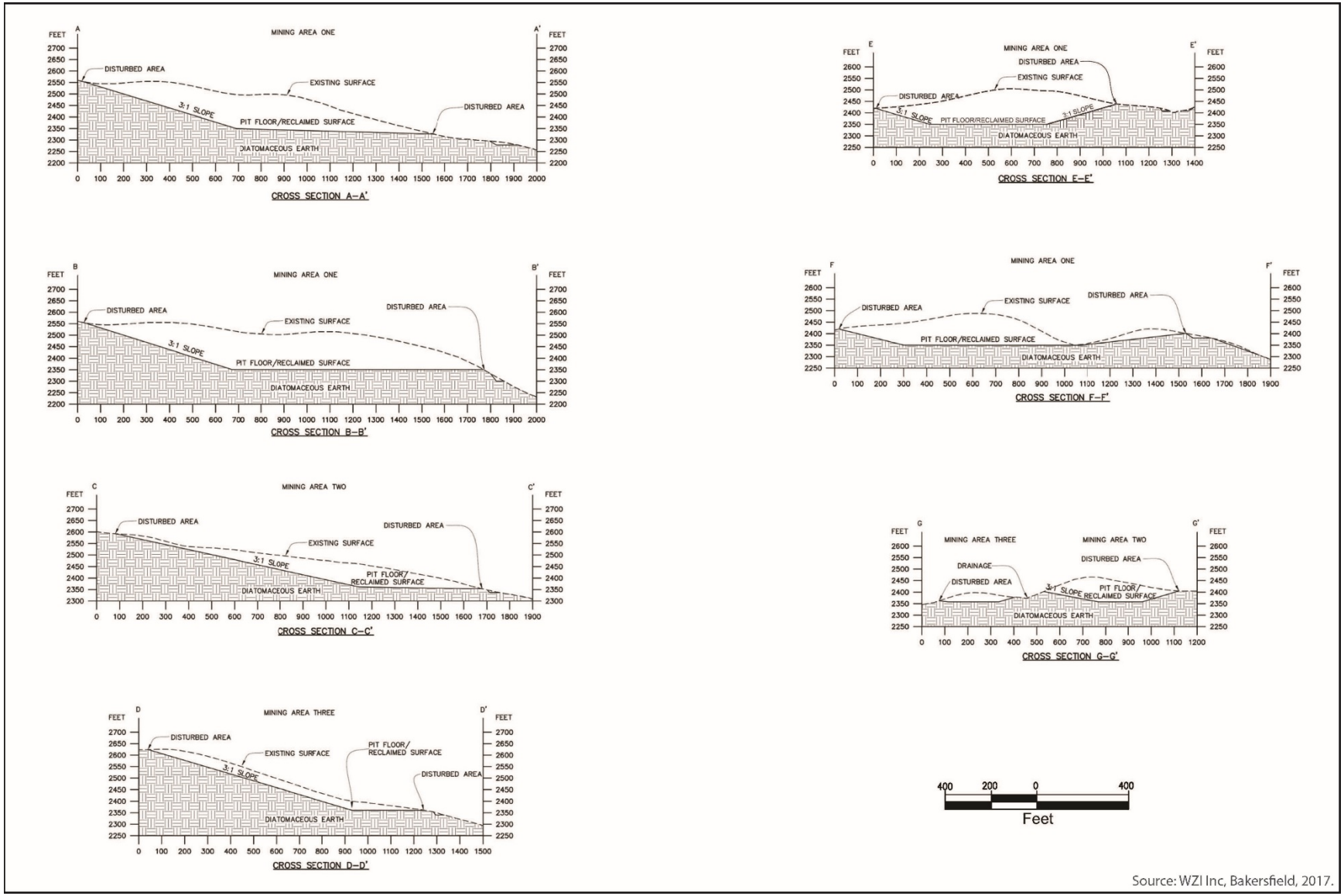


Figure 3-7
Site Plan Cross Sections

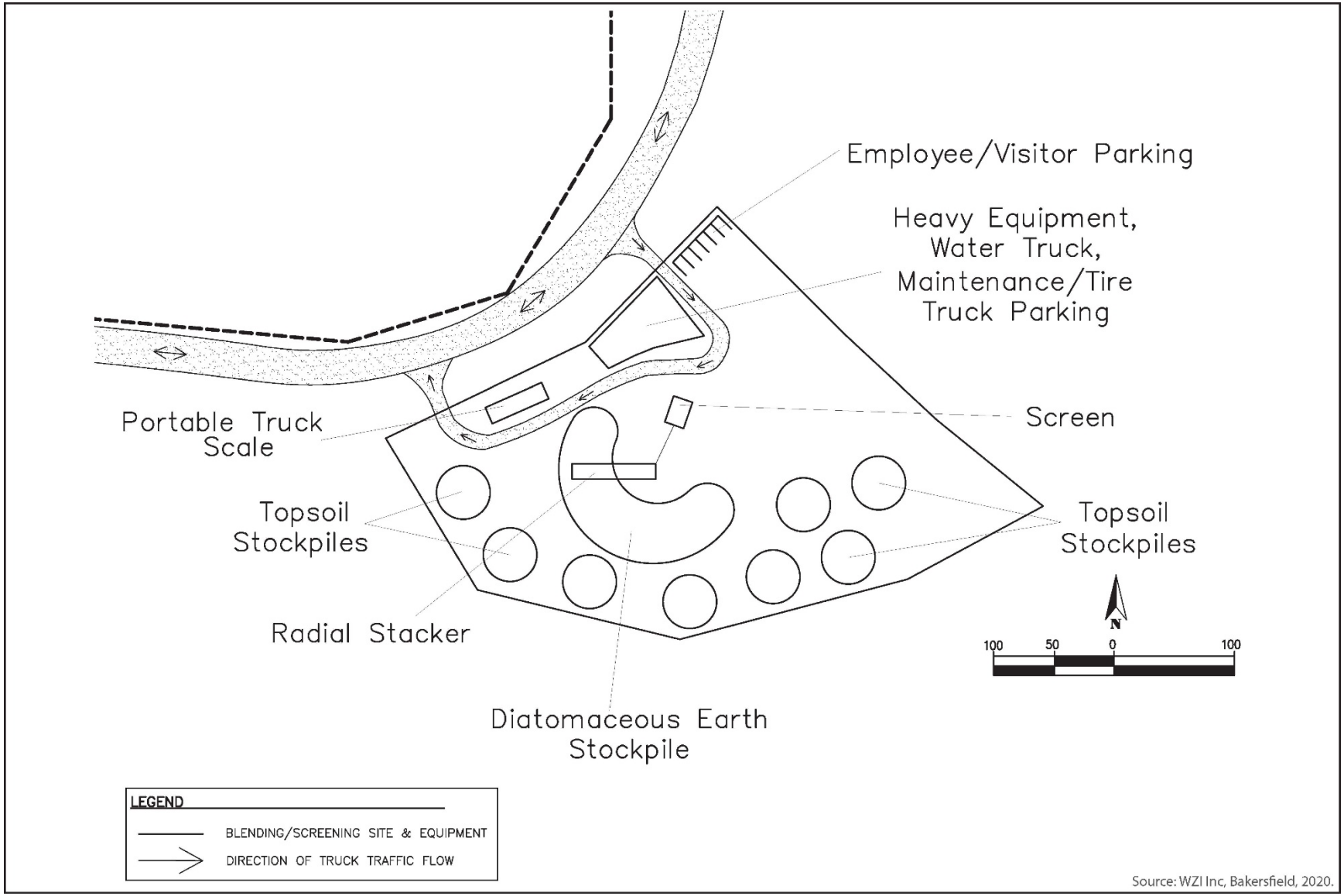


Figure 3-8
Blending/Screening Plant Detail

The life of the operation is proposed to be 50 years. As proposed, the annual mineral extraction would be up to 330,000 tons of material (310,000 tons of diatomaceous earth and 20,000 tons of overburden material), with a maximum mineral extraction quantity of 6,600,000 tons of material. The proposed maximum depth of excavation would be 162 feet for Mine Area 1, 125 feet for Mine Area 2, and 40 feet for Mine Area 3 (see **Figures 3-3a** and **3-3b,** *Site Plan*, and **Figure 3-4,** *Mine Areas Map*). **Figure 3-8,** *Blending/Screening Plant Detail*, shows the blending/screening plant detail. Although there are three proposed mine areas, the project consists of a single phase.

Maximum proposed slopes are as follows:

- Maximum operational slopes for the mine areas, and the blending and screening site, would be 2:1 (horizontal:vertical [h:v]).
- Maximum final reclaimed slopes for the mine areas, and the blending and screening site, would be 3:1 (h:v).
- Maximum operational cut and fill slopes for the proposed access road would be 1:1.75 (h:v).
- Maximum final reclaimed cut and fill slopes for proposed access road would be 1:1.75 (h:v).

The project site is currently being used for cattle grazing and will be reclaimed to its current use as cattle grazing land following completion of mining activities. During the life of the proposed surface mining and reclamation plan, cattle grazing would continue on the project site (on portions of the project site outside of the active mine and processing areas) as deemed necessary by the property owner. The 1.4 acres of existing access road disturbance would not be reclaimed, as these roads will continue to be needed in conjunction with the grazing operations. As such, reclamation would encompass 92.27 acres (93.67 acres of disturbance minus 1.4 acres of existing road access disturbance).

In accordance with the reclamation plan, disturbed areas would be planted and/or seeded with an approved vegetation mix to allow for the proposed end use (cattle grazing). The proposed 92.27-acre area of the project site to be reclaimed would be de-compacted by ripping to depths between 6 and 18 inches below ground surface, each rip spaced no more than 18 inches apart, followed by the site being disked and left in a rough condition prior to seeding. As proposed, less than 6 inches of topsoil would be applied to reclamation areas. The 92.67-acre area would be planted and/or seeded (per the species listed in **Table 3-2,** *Proposed Reclamation Seed Mix*) between October and December to coincide with the onset of winter rains in the vicinity of the project site. Surface mining and reclamation operations would be conducted from 6:00 a.m. to 7:30 p.m., Monday through Friday. The maximum number of employees on-site at any one time would be 10.

3.4.2 Mining Plan

A grader would be utilized for grading of haul roads, grading of a pad for the blending and screening site, and incidental maintenance (e.g., regrading of portions of the haul road affected by heavy rains). Diatomaceous earth and overburden material would be excavated by loader. The loader would either load material directly into dump trucks or move the material so as to form it into small temporary stockpiles before loading it into dump trucks. Two loaders would be located on the project site; however, only one would be operating at any given time. A dozer or ripper would be rented for a short duration to loosen material, as necessary. Diatomaceous earth would undergo processing (i.e., blending and/or screening) as necessary at the 2.42-acre blending and screening site, as previously described, prior to being exported from the project site.

As proposed, the project proponent shall adhere to the following measures, as project design features, to comply with the assumptions made for emissions calculations per the *Air Quality Impact Assessment for the Johe Ranch Mine Project in Kern County, California* (WZI Inc. 2015, updated 2019) included as Appendix C of this EIR; these assumptions are listed on Page 54 of the Air Quality Impact Assessment, and state in part:

9. Maximum exposed land is 20 acres at any given time (SMARA)
    a. Disturbed land not being mined daily (15 acres) will be covered in dust palliative to prevent wind erosion during periods of inactivity
    b. Disturbed land being mined daily (5 acres) will be watered 3x/day

Any product stockpiles made within the mine areas would be a maximum of 20 feet in height and would have a maximum slope of 2:1. Any product stockpiles (for any product that may be processed through the blending and screening site) would be a maximum height of 10 feet and would have a maximum slope of 2:1.

3.4.3 Reclamation Plan

The site is currently used as cattle grazing land and would be returned to that use in accordance with the approved reclamation plan. The public is excluded from entering the project site by barbed wire fencing and a locked gate. The property would remain fenced with barbed wire and locked following completion of the project to prevent the public from entering the site.

The areas to be reclaimed would be de-compacted by ripping to depths between 6 and 18 inches below ground surface, each rip spaced no more than 18 inches apart, followed by the site being disked and left in a rough condition prior to seeding. Prior to mining activities, up to 6 inches of topsoil would be removed. Less than 6 inches of topsoil would be applied to disturbed areas for revegetation. Success criteria for revegetation is: (a) vegetation cover of 67.5%; and (b) a species richness of five species per square meter. Upon final reclamation of the project site, no stockpiles will remain. The proposed reclamation seed mix is identified in **Table 3-2,** *Proposed Reclamation Seed Mix*.

Table 3-2 Proposed Reclamation Seed Mix

Common Name (Seeds)	Species	Pounds Per Acre
Blando brome	*Bromus hordeaceus*	12
rose clover	*Trifolium hirtum*	16
big squirrel tail	*Elymus multisetus*	3
nodding needle grass	*Stipa cernua*	3
lupine	*Lupinus microcarpus*	2

Currently, 1.4 acres of the project site are disturbed due to existing access roads; this 1.4-acre area would not be reclaimed as these roads would continue to be needed in conjunction with grazing operations after the site has been deemed fully reclaimed. The 92.27-acre area to be reclaimed would consist of: (a) 88 acres of proposed mine area disturbance; (b) 1.85 acres of proposed access road disturbance; and (c) 2.42 acres of proposed blending and screening site disturbance.

3.4.4 Schedule and Workforce

The proposed mine is scheduled to operate from 6:00 a.m. to 7:30 p.m., Monday through Friday, with a maximum of 10 employees on-site at any time. The life of the proposed surface mining operation is proposed to be 50 years.

3.4.5 Drainage and Flood Control Measures

The site consists primarily of rolling topography with some steep slopes and incised drainages. The site is not located within a Floodplain Safety Overlay District or Dam Inundation Overlay. The following are drainage channels present within the project site:

1. Blue line drainage channel (channel 1), located between Mine Areas 2 and 3.
2. Intermittent drainage channel (channel 2), located between Mine Areas 2 and 1.
3. Intermittent drainage channel (channel 3), located on the east side just north of Mine Area 1.
4. Intermittent drainage channel (channel 4), located between the project site entrance and Mine Area 1.

As proposed, at a minimum, impacts to drainage channels will be mitigated with the installation of culverts to allow for natural drainage to continue through the project site. There are no diversion structures or erosion control facilities currently on-site.

3.4.6 Utilities

Electrical service is available in the project area through connection to the Pacific Gas & Electric (PG&E) distribution system; however, the project does not require connection to PG&E's electrical distribution system. Powerlines extend through the southeastern corner of the project site. PG&E and the Southern California Gas Company (SoCalGas), a subsidiary of Sempra Energy, are the natural gas providers in Kern County; however, there is no known natural gas service to the project site. The project does not require a connection to natural gas service.

The project proponent would locate and flag the abandoned wells that occur within the proposed project site boundaries. Per comments received from DOGGR in response to the Notice of Preparation/Initial Study (NOP/IS), the four wells within the project site are not abandoned to current DOGGR standards as of August 29, 2018. The comments also make the following general recommendations: (a) maintain physical access to all oil and gas wells; and (b) ensure that the abandonment of all oil and gas wells is to current standards. Additional information regarding wells, including recommendations of the Lead Agency to address wells, is included in Section 4.9, *Hazards and Hazardous Materials*, of this EIR.

3.4.7 Trip Generation and Distribution

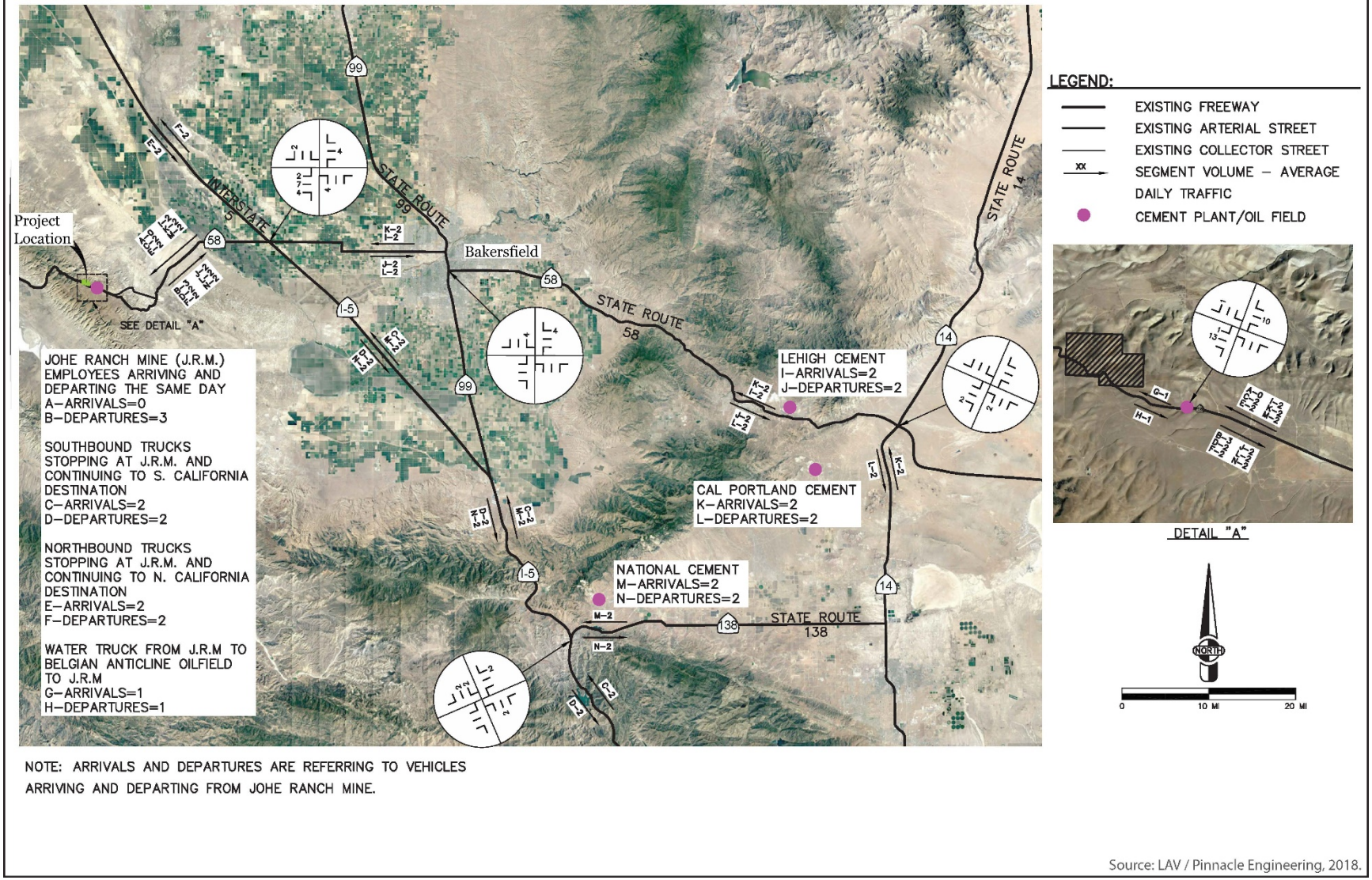
Trip generation from the proposed project would consist of arrivals and departures of employees, water trucks, contractor vehicles servicing portable toilets, and haul trucks that pick up and transport diatomaceous earth and overburden material to customers. As shown in **Table 3-3,** *Proposed Trip Generation: Average Daily Traffic, AM and PM Peak Hour, and Breakdown of Arrivals and Departures*, the project is estimated to generate 118 average daily trips (ADT) (12 ADT resulting from one water truck, six ADT resulting from three employee vehicles, and 100 ADT resulting from 50 haul trucks). Of these ADTs, there would be 26 evening peak hour trips and 26 morning peak hour trips. Additionally, a contractor vehicle will make at most one round-trip (two ADT) to the site per week to service portable toilets.

A significant portion of the weekday trips to and from the project site during the peak hour of adjacent street traffic are anticipated to be primary trips. Therefore, project-generated trips are anticipated to be distributed onto the street network based on the mine's existing transportation records. The anticipated distribution of project traffic generated during the peak hour of the adjacent street network is shown on **Figure 3-9,** *P.M. Project-Generated Traffic*, which illustrates known transportation routes from or to the known destinations shown in **Table 3-3,** *Proposed Trip Generation: Average Daily Traffic, AM and PM Peak Hour, and Breakdown of Arrivals and Departures*.

Table 3-3 Proposed Trip Generation: Average Daily Traffic, AM and PM Peak Hour, and Breakdown of Arrivals and Departures

Origin to Destination	24 Hour Trips – ADT		Peak Hour Trips – AM & PM			
			AM Peak Hour		PM Peak Hour	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
National Cement in Lebec to Johe Ranch Mine	10	0	2	0	2	0
Johe Ranch Mine to National Cement in Lebec	0	10	0	2	0	2
Johe Ranch Mine employees arriving and departing same day	3	3	3	0	0	3
Water trucks arriving and departing same day	6	6	1	1	1	1
Southbound trucks stopping at Johe Ranch Mine and continuing to southern California destinations on same day	10	10	2	2	2	2
Northbound trucks stopping at Johe Ranch Mine and continuing to various northerly destinations on same day	10	10	2	2	2	2
Lehigh Cement in Tehachapi to Johe Ranch Mine	10	0	2	0	2	0
Johe Ranch Mine to Lehigh Cement in Tehachapi	0	10	0	2	0	2
CalPortland Cement in Mojave to Johe Ranch Mine	10	0	2	0	2	0
Johe Ranch Mine to CalPortland Cement in Mojave	0	10	0	2	0	2
Totals	**59**	**59**	**14**	**12**	**12**	**14**
Overall Totals	**118**		**26**		**26**	
Percentage of ADT	**100%**		**22%**		**22%**	

Notes: Since the above trip quantities are taken from transportation logs, there was no reason or other justification to take reductions due to the phenomena known as “capture,” “pass-bys,” or diverted link trips.



NOTE: ARRIVALS AND DEPARTURES ARE REFERRING TO VEHICLES ARRIVING AND DEPARTING FROM JOHE RANCH MINE.

Source: LAV / Pinnacle Engineering, 2018.

Figure 3-9
P.M. Project-Generated Traffic

3.4.8 Water Use

Non-potable water used during mining activities includes produced water from adjacent oil field operations and water from the West Kern Water District, as summarized in **Table 3-4,** *Proposed Water Use*.

Table 3-4 Proposed Water Use

Water Source	Annual Water Usage (Gallons)	Total Water Usage (Gallons)
Produced Water from Adjacent Oil Field Operations	7,800,000	156,000,000 gallons (over project lifespan) obtained from produced water from adjacent oil field operations.
West Kern Water District	325,780	6,515,600 gallons (over the project lifespan) obtained from West Kern Water District.
TOTAL	**8,125,780**	**162,515,600 gallons (over project lifespan).**

Prior to application of produced water from oil field operations on the project site, all necessary permits and approvals would be obtained from the California Regional Water Quality Control Board, Central Valley Region (Central Valley RWQCB). The water obtained from the West Kern Water District would be in accordance with a will-serve letter, obtained from a nearby water supply line, and conveyed to the project site with a water truck. The water obtained from the produced water from adjacent oil field operations would also be conveyed to the project site with a water truck. The domestic drinking water supply would be from bottled water. Portable toilets serviced by a contractor would be used for domestic sewage.

3.4.9 Agricultural Use and Agricultural Preserve Contract

Portions of the site (i.e., those within the boundaries of APN 156-070-01 and 156-070-10) are currently under a Williamson Act Contract, recorded at the Kern County Recorders' Office as Book 4939, Pages 1484–1496 of Official Records. The project site is currently used as cattle grazing land. The property owner is not proposing to cancel the Williamson Act Contract; consequently, reclamation will return the land to its current use as cattle grazing.

3.5 Project Objectives

The proposed project is intended to achieve the following objectives as identified by the project proponent:

- Obtain a CUP for a new surface mining operation and development of a reclamation plan on the project site, which is approximately 331 acres in size.
- Establish a new, long-term supply of diatomaceous earth reserves for industrial uses, which include the production of cement.
- Establish a new, long-term supply of overburden material reserve suitable for use as a landfill liner and solidifying liquid waste after it is deposited in a landfill.

- Provide for the use of a processing screener on an as-needed basis according to customer demand for refined product.
- Provide for a maximum annual production level of 310,000 tons of diatomaceous earth and 20,000 tons of overburden material to meet local and regional market demand.
- Mine materials in a location that contains sufficient land with adequate amounts of surrounding grazing land to serve as a buffer between mining and land uses that are incompatible with mining.

3.6 Proposed Discretionary Actions/Required Approvals

Kern County, as the California Environmental Quality Act (CEQA) Lead Agency for the project, has primary discretionary approval authority over the project. The project would also be required to obtain, at a minimum, the following discretionary permits/approvals included in **Table 3-5,** *Proposed Discretionary Actions/Required Approvals*.

Table 3-5 Proposed Discretionary Actions/Required Approvals

Agency	Required Approval
Local	
Kern County	• Approval of Conditional Use Permit No. 17, Map No. 117 • Consideration and certification of Final EIR with appropriate Findings (15091 and 15093 of the State CEQA *Guidelines*) and Mitigation Monitoring Program, as applicable, by the Kern County Planning Commission and/or Board of Supervisors. • Approval of an Emergency Response Plan from the Kern County Fire Department (KCFD).
Regional	
San Joaquin Valley Air Pollution Control District (SJVAPCD)	• Authority to Construct • Permit to Operate
Regional Water Quality Control Board, Central Valley Region (Central Valley RWQCB)	• Section 401 Water Quality Certification • National Pollution Discharge Elimination System (NPDES) Construction General Permit and Stormwater Pollution Prevention Plan (SWPPP) • Permit to Operate
State	
California Department of Fish and Wildlife (CDFW)	• California Fish and Game Code Section 1602 Streambed Alteration Agreement
State Water Resources Control Board (SWRCB)	• SWPPP for coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit) • Spill Prevention Control and Countermeasures Plan
Federal	
U.S. Fish and Wildlife Service (USFWS)	• Biological Opinion / Incidental Take Statement (if required) • Approval of appropriate permits

3.7 Cumulative Effects Overview

According to Section 15355 of the State CEQA *Guidelines*, the term cumulative impacts "refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Individual effects that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the effects could be cumulatively considerable.

For each environmental resource evaluated, cumulative effects are assessed in a different way. For example, the San Joaquin Valley Air Pollution Control District (SJVAPCD) requires use of a 1-mile radius to identify the cumulative effects of hazardous air pollutant emissions as well as most odor sources. The SJVAPCD also recommends a 1-mile limit for hazardous air pollutants because such emissions primarily affect individuals that reside or work within the immediate vicinity (1 mile) of the emissions source.

However, *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* requires a 6-mile radius to assess cumulative impacts because development in rural areas tend to affect a larger geographical area than development located in urban areas (Kern County 2006). Kern County records were reviewed to determine the number of permitted or planned projects within the 6-mile radius of the project site.

The cumulative analysis in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR is based on a qualitative and quantitative cumulative analysis, which includes all of the projects located within a 6-mile radius of the proposed project, as well as growth projections to the Year 2030. Different resource-specific analyses use this 6-mile radius unless specific methodology deems other supplemental approaches are appropriate.

The *Kern County General Plan* is the primary guide for land development in the vicinity of the proposed project. The Land Use, Open Space, and Conservation Element assumes continued growth in commercial and industrial development similar to the current growth rate and anticipates the future growth rate would parallel the future residential growth rate in the unincorporated areas of the County. The proposed project is considered part of this projected growth. Pending projects within the *Kern County General Plan* area in the vicinity of the proposed project are identified in **Table 3-6,** *Cumulative Projects List*, and on **Figure 3-10,** *Cumulative Projects Map*. These projects were considered when analyzing cumulative conditions and impacts.

Table 3-6 Cumulative Projects List

Map ID	Name	Project Location	Request	Case Type Code*	Acreage	APN	Project Status
Projects Within 6-Mile Radius							
1	Cooper, Stanley & Wanda (Cooper Pit #2)	Section 31, T29S/R21E	Surface Mining and Reclamation Plan	CUP 4, Map 96	40	--	Active
2	White Ash Broadcasting, Inc.	McKittrick Summit (Section 30, T30S/R21E)	Transmitter Tower	CUP 10, Map 117	--	--	Approved
3	ARCO	Section 30, T30S/R21E	110-Foot-High Communications Tower	CUP 9, Map 117	--	--	Approved
4	Anterra Services, Inc.	Reward and Highway 58, Near McKittrick (Section 15, T30S/R21E)	Hazardous Waste Treatment and Recycling Facility (Class II Injection Well)	CUP 15, Map 117	8.13	156-110-10	Approved
5	Switzer Mark by Mcintosh and Associates	2 miles north of Highway 58, 10 NE McKittrick	Surface Mining and Reclamation Plan	CUP	38.35	098-080-040	Active
6	Cooper Stanley and Wanda (Cooper Pit #1)	Sections 10, 14 & 15, T30S/R21E	Mine Expansion and New Mine Development	CUP 14, Map 117	49.20	--	Active
7	McKittrick Ldt/ Dewalt Corp	West of SR 33, South of Reward, CA	Zoning Change to Natural Resource	ZCC 1, Map 117	11.17	--	Active
8	Sprint/Nextel - Debra Gardner Deptratti	499 Franco Western Road, McKittrick (Section 3, T30S/R21E)	50-Foot Communication Monopole	CUP 12, Map 117	--	156-040-03	Active
9	Renia Boudaghian, Esq., AT&T	Reward Road at Franco Western Road (Section 18, T30S/R22E)	145-Foot Wireless Tower with 5-Foot Lightning Rod	CUP 12, Map 118	17.63	157-090-12	Active
Similar Projects in Kern County							
10	Griffith Company	Bitterwater Valley Road (Section 18, T27S/R19E)	Surface Mining and Reclamation Plan	CUP 1, Map 50	10.22	068-110-03	Approved
11	Taft Production Company	Section 28, T32S/R23E	Surface Mining and Reclamation Plan	CUP 15, Map 156	267	--	Active
12	H.M. Holloway	West side of Holloway Road at GP Road	Surface Mining and Reclamation Plan	CUP 1, Map 28	1,515.00	--	Active

Table 3-6 Cumulative Projects List

Map ID	Name	Project Location	Request	Case Type Code*	Acreage	APN	Project Status
13	H.M. Holloway, Inc.	West side of Holloway Road, 2 Miles North of SR 46	Modification of CUP for Surface Mining and Reclamation Plan	CUP 5, Map 29	460.00	--	Active
14	Nestle Purina Petcare	1.5 miles northwest of the intersection of Elkhorn Grade Road and Golden Cat Road	Surface Mining and Reclamation Plan	CUP 3, Map 207	320	--	Active
15	Vulcan Materials Company	1610 Highway 166	SMARA for Expansion of Existing Mine Site; EIR will be Required	CUP 4, Map 205	4,011	--	Project approved by Kern County Board of Supervisors on 12-6-16
16	Vulcan Materials Company	0.5 miles west of the intersection of SR 99 and Interstate 5	Surface Mining and Reclamation Plan	CUP 4, Map 203	420	--	Active
17	Caliente Sand Co./MH Wolfe and Associates	Section 30, T30S/R30E	SMARA for Expansion of Existing Mine Site	CUP 12, Map 126	43.17	179-110-09	Active, not yet approved
18	Kern County Public Works Department Roads Division	Portion of Section 30, T30S/R30E	Surface Mining and Reclamation Plan	CUP 4, Map 126	20.00		Active
19	Hunsaker, Bill/Schaffer Assoc.	Section 24, T25S/R28E	Surface Mining and Reclamation Plan	CUP 2, Map 12	22.00		Active
20	Edison Sand Co./Donald Ward	PTN SEC 17, T30S/R30E	Surface Mining and Reclamation Plan	CUP 11, Map 126	41		Active
21	Granite Construction Co.	One mile west of Section 26, T31S/R30E	Surface Mining and Reclamation Plan	CUP 6, Map 145	245		Active
22	National Cement Co.	PTN Section 22 and 27, T9N/R18W	Surface Mining and Reclamation Plan	CUP 1, 3, 4, 5, & 6, Map 236	Approx. 5,000		Active

* CUP = Conditional Use Permit, GPA = General Plan Amendment, SP = Specific Plan, ZCC = Zoning Code Change, -- = Information not available

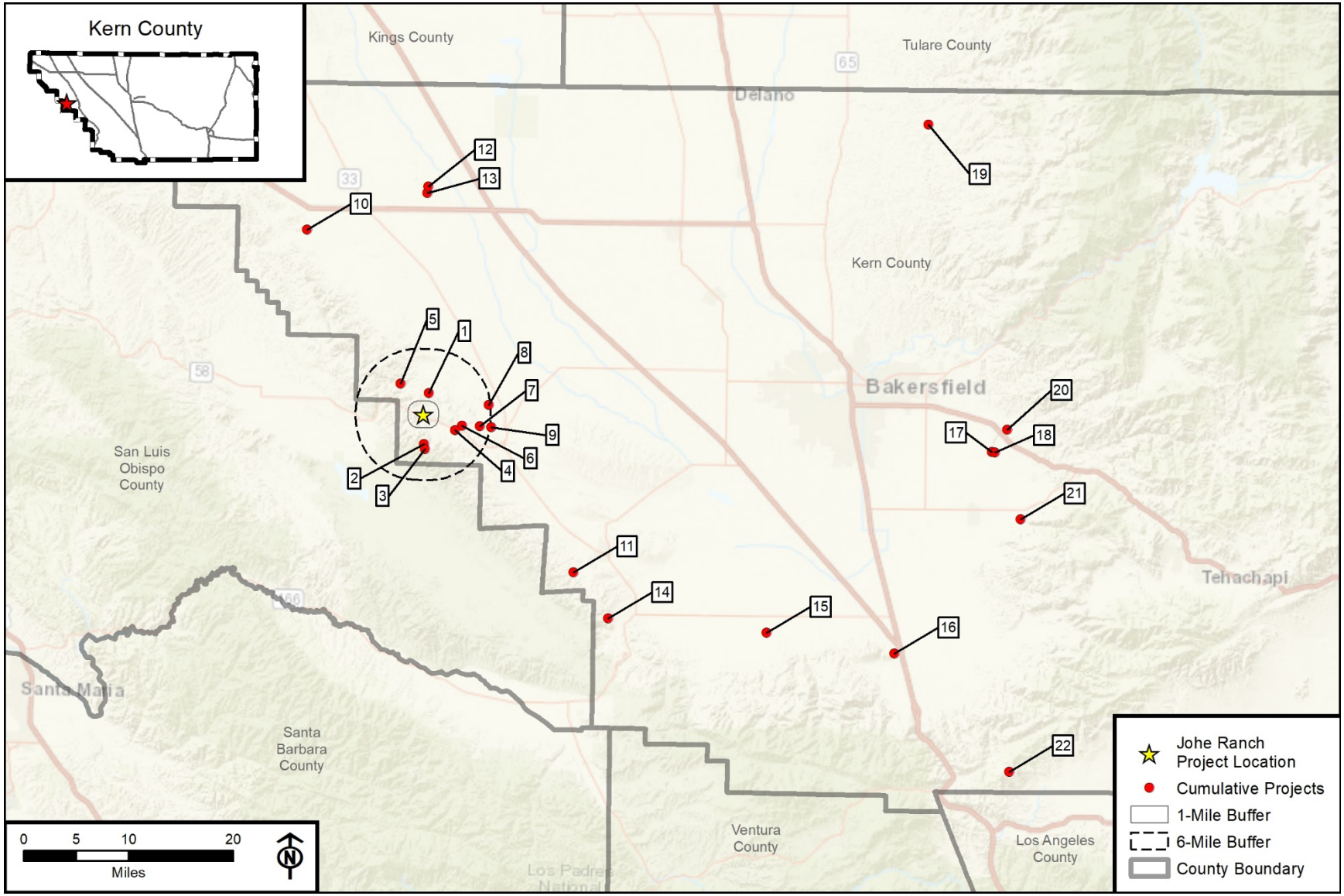


Figure 3-10
Cumulative Projects Map

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Section 4.1
Aesthetics

4.1.1 Introduction

This section of the Environmental Impact Report (EIR) discusses impacts associated with the potential for the proposed project to degrade the existing visual character or quality of the project site and its surroundings through changes in the existing landscape. Potential effects are evaluated relative to important visual features (e.g., scenic highways, scenic features) and the existing visual landscape and its users.

Degradation of the visual character of a site is usually addressed through a qualitative evaluation of the changes to the aesthetic characteristics of the existing environment, and the project-related modifications that would alter the visual setting.

Aesthetics, as addressed in the California Environmental Quality Act (CEQA), refers to visual considerations in the physical environment. Because a person's reaction and attachment to a given viewshed are subjective, visual changes inherently affect viewers differently. Accordingly, aesthetics analysis, or visual resource analysis, is a systematic process to logically assess visible change in the physical environment and the anticipated viewer response to that change. The *Aesthetics* section of this EIR describes the existing landscape character of the project site and surrounding area; existing views of the site from various on-the-ground vantage points; the landscape changes that would be associated with the project, as seen from various vantage points; and the degree to which those changes could adversely affect viewers at these locations.

This analysis uses visual simulations prepared for the proposed project (included as **Figures 4.1-4** through **4.1-28** at the end of this section). Regulatory standards were also investigated and analyzed, including the *Kern County General Plan* and the Kern County Zoning Ordinance.

Visual Resource Terminology and Concepts

When viewing the same landscape, people may have different responses to that landscape and any proposed visual changes, based on their values, familiarity, concern, or expectations for that landscape and its scenic quality. Because each person's attachment to and value for a particular landscape is unique, visual changes to that landscape inherently affect viewers differently. However, generalizations can be made about viewer sensitivity to scenic quality and visual changes. Recreational users (e.g., hikers, equestrians, tourists, people driving for pleasure) are expected to have high concern for scenery and landscape character. People who are commuting daily through the same landscape generally have a moderate concern for scenery, while people working at industrial sites generally have a lower concern for scenic quality or changes to existing landscape character. The visual sensitivity of a landscape is

affected by the viewing distances at which it is seen, such as close-up or far away. The visual sensitivity of a landscape also is affected by the travel speed at which a person is viewing the landscape (high speeds on a highway, low speeds on a hiking trail, or stationary at a residence).

Visual quality, which is a measure of a landscape or view's visual appeal, is evaluated according to the presence and characteristics of seven key components of the landscape:

1. landform,
2. vegetation,
3. water,
4. color,
5. adjacent scenery,
6. scarcity, and
7. cultural modifications.

Visual character is qualitatively defined by four primary components:

1. form,
2. line,
3. color, and
4. texture.

Generally speaking, projects that create a high level of contrast to the existing visual character of a project setting are more likely to generate adverse visual impacts because of visual incompatibility. Conversely, projects that create a low level of contrast to the existing visual character are less likely to generate adverse visual impacts because of inherent visual compatibility. The severity of project-related visual impacts can be quantified by comparing the difference in visual quality ratings from the baseline conditions (before) to post-project conditions (after).

4.1.2 Environmental Setting

Regional Character

Kern County is at the southern end of the San Joaquin Valley and has a diverse range of geography, including mountainous areas, agricultural lands, and desert areas. Kern County is bounded by Kings, Tulare, and Inyo Counties to the north; San Bernardino County to the east; Los Angeles and Ventura Counties to the south; and Santa Barbara and San Luis Obispo Counties to the west. The *Kern County General Plan* identifies the project area as within the Mountain Geographic Region of Kern County, an area which includes the westernmost and central portion of the County above the 1,000-foot mean seal level (msl) contour in the valley and western region of the County (Kern County 2009). The project area is also identified as

part of the Westside Sub-Planning Area, which includes the unincorporated Community of McKittrick and the City of Taft. The economy of the Westside Sub-Area is predominantly resource based. Oil exploration and production represent a large segment of the employment base, with mineral extraction also occurring in the area.

State Route (SR) 58, which passes immediately south of the project site, is a primary east-west transportation corridor across the southern San Joaquin Valley, connecting the Coast Range near Santa Margarita to the Mojave Desert. SR 58 crosses the Temblor Range summit approximately 4 miles west of the project site (**Figure 4.1-1,** *The Temblor Range foothills and valley beyond facing east from SR 58.*).

Figure 4.1-1
The Temblor Range Foothills and Valley beyond Facing East from SR 58

Peaks within the Temblor Range average about 3,500 feet above msl. The highest point is McKittrick Summit at 4,330 feet, located in the center of the range about 35 miles west of Bakersfield. The summit on SR 58 is approximately 3,750 feet above msl.

Lands in the vicinity of the project site are mostly utilized for cattle grazing and mineral extraction, and much of the surrounding area contains active and abandoned oil wells, unpaved access roads, and associated oil exploration, collection, distribution, and production facilities. Much of the upper elevations of the Temblor Range's eastern slopes provide a visual open space backdrop for viewing areas in the valley to the north and east (**Figure 4.1-2,** *The Temblor Range as the western backdrop, as seen from the valley floor*). Scattered ranches are seen along the Temblor Range foothills. The native plant community of the area is defined as primarily California annual grassland and California interior chaparral.

Figure 4.1-2
The Temblor Range as the Western Backdrop, as seen from the Valley Floor

Local Character

The project site is located along SR 58, approximately 8.5 miles west of the unincorporated Community of McKittrick and approximately 2.5 miles east of the Kern County/San Luis Obispo County line. The approximately 331-acre project site consists of rolling hill topography defined by three primary north–south-oriented ridges extending north from SR 58. The ridges, which are generally separated by seasonal drainages, descend in elevation from north to south with elevations ranging from approximately 2,100 to 2,800 feet above msl. The site, which has a history of use as dry-land farming and limited oil exploration, is currently used for cattle grazing. As a result, the landcover is generally treeless and consists of low grasses and forbs, with sections of bare earth. Unpaved ranch roads and post-and-wire perimeter and cross fencing are visible on the site. South of SR 58, across from the project area, an older ranch house and associated structures and trees can be seen.

4.1.3 Regulatory Setting

State

California Environmental Quality Act

State CEQA *Guidelines* Section 15382 defines a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

California State Scenic Highway System

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. The

Caltrans Scenic Highway Coordinators maintain a list of highways that are either eligible for designation as scenic highways or have already been officially designated (Caltrans 2017a). According to the Caltrans list, as accessed in September 2019, the project site is not located in the viewshed of any designated or eligible state scenic highways. The nearest eligible state scenic highways within Kern County are located more than 35 miles away (SR 41 in northwest Kern County) and more than 90 miles away (SR 14 and SR 58 in eastern Kern County) from the project site.

Local

Kern County General Plan

The project would be subject to applicable policies and measures of the Land Use, Open Space, and Conservation Element of the *Kern County General Plan*. The Land Use, Open Space, and Conservation Element includes the following policies and implementation measures related to aesthetics and visual resources that would apply to the project.

Chapter 1. Land Use, Open Space, and Conservation Element

1.10 General Provisions

1.10.7 Light and Glare

Policies

- **Policy 47.** Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
- **Policy 48.** Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measures

- **Implementation Measure AA.** The County shall utilize CEQA Guidelines and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.

Chapter 2. Circulation Element

2.3 Highways

2.3.9 Scenic Route Corridors

Policies

- **Policy 1.** Kern County should consider designating local scenic highway routes, where appropriate, throughout the County.

- **Policy 2.** Various methods of protecting, and enhancing the scenic qualities of land and uses within corridor boundaries must be devised and carried out.

- **Policy 3.** Standards for corridor protection should parallel those established by State Scenic Highway Law (1963) and outlined in State guidelines.

Implementation Measures

- **Implementation Measure A.** Caltrans has the responsibility for coordinating Scenic Highway programs. Caltrans will not act on programs until the local government requests aid from that agency. Caltrans will coordinate and conduct two studies. Caltrans calls the studies "Corridor Survey" and "Highway Facility Study." Results of these two studies will be presented in a comprehensive Scenic Highway Report. The Report will contain maps, photographs, and other documentation showing:

    1. Suggested Scenic Highway Corridor boundaries.
    2. Scenic elements within the suggested corridor.
    3. The relationship of the right-of-way to its environment.
    4. Suggested preservation of the scenic and aesthetic elements of the visual environment.
    5. Any proposed realignments of the route, if known.
    6. Potential locations of roadside rests, vista points, and areas for public or commercial information sites.

    California gives the local jurisdiction the approved Caltrans' report to use in preparation of a local scenic corridor protection and enhancement plan and program.

- **Implementation Measure B.** Kern County Planning Department shall prepare as needed, with aid from Caltrans, Scenic Route Corridor Specific Plans. These specific plans shall include circulation, land use, open space and conservation plan maps and appropriate implementation measures. The plan should provide for the protection and enhancement of the existing natural and man-made scenic resources for the routes California includes in the State Master Plan of Scenic Highways. The scenic corridor boundaries and Scenic Route Corridor Specific Plan, identifying the land use regulation measures used within the corridor, shall be adopted by the Board of Supervisors. Upon adoption of the plan, the County shall apply to the District Director of Transportation for official State designation as an Official State Scenic Highway.

- **Implementation Measure C.** County roads may be set as official County Scenic Highways by the Board of Supervisors after the State Director of Transportation has found that all requirements are met. All standards and procedures prescribed for State Scenic Highways shall apply to County Scenic

Highways. The Department of Transportation will not undertake a Scenic Highway Study but will be available upon request by the local jurisdiction to consult about the technical aspects of this program. The Planning Department is responsible for doing a case study.

- **Implementation Measure D.** The County has adopted a Scenic Corridor (SC) Combining District to designate areas which contain unique visual and scenic resources as viewed from a major highway or freeway and for the regulation of off-site advertising signs, where the siting of such signs need to be reviewed on a case-by-case basis to safeguard the scenic qualities of the natural environment and the visual qualities of primary entranceways into the County.

Kern County Ordinance

Title 19 – Zoning Code

Chapter 19.80 – Special Development Standards

Section 19.80.030 – Development and performance standards—Commercial and industrial districts

All development in the CO, C-1, C-2, CH, M-1, M-2, and M-3 districts, and, where specified, in the A and NR districts, shall comply with the following standards:

J. All exterior lighting shall be directed away from adjacent properties and roads. When lighting would be visible from a residential district or adjacent public roads, the lighting standards shall be equipped with glare shields or baffles and shall not exceed forty (40) feet in height above grade. Lighting within areas containing the H (airport approach height combining) district, or otherwise located within one-half (½) mile of any public airport or public use airstrip, shall additionally be developed and maintained as required by subsection (A) of Section 19.76.125 of this title. Light fixtures shall be maintained in sound operating condition at all times.

Section 19.81 – Outdoor Lighting "Dark Sky Ordinance"

Section 19.81.040 – General requirements

The following standards shall apply to all outdoor lighting fixtures subject to this ordinance.

A. *Shielding.* All outdoor lighting fixtures which utilize one hundred (100) watts or more (based on an incandescent bulb), or emit one thousand six hundred (1,600) lumens or more per fixture, shall be fully shielded per the definition listed in this chapter, unless the fixture is exempted by this chapter. All floodlights which utilize less than one hundred (100) watts per fixture must be at least partially shielded to reduce light spillover onto adjacent properties. Additionally, the light source (bulb) within all lighting fixtures shall be

oriented downward to prevent direct uplighting, except as permitted by Section 19.81.040(F).

4.1.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to aesthetics for the project. It describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, where applicable.

Methodology

Potential impacts to visual resources near the project site were evaluated based on the following criteria:

- existing visual quality and scenic attributes of the landscape;
- location of sensitive receptors in the landscape;
- assumptions about receptors' concern for scenery and sensitivity to changes in the landscape;
- the magnitude of visual changes in the landscape that would be brought about by implementation, construction, and operation of the project;
- compliance with State, County, and local policies for visual resources; and
- the significance threshold questions in relation to aesthetics contained in Kern County's CEQA Implementation Document and Environmental Checklist.

Photographs of existing landscape conditions and computer-generated photographic simulations are provided in this section to portray existing conditions, the project, and the project's changes to the visual character of the landscape.

Baseline data on visual resources were collected using an approach that incorporated a combination of information review, agency consultation, analysis of aerial photographs and satellite imagery, map review, field reconnaissance, and on-site photography. The existing visual setting and character of the area is discussed above in Section 4.1.2, *Environmental Setting*, and represents the baseline conditions against which project impacts are compared. Further discussion of existing visual character is provided below as related to individual key observation points used for assessing project impact significance.

Project Site Visibility

Because of its proximity to the project site, SR 58 is the primary public viewing location of the project site. The project site fronts approximately 3,500 feet of SR 58. An average of 160

vehicles per day passes along SR 58 in the project vicinity (Caltrans 2017b). SR 58 drops down from the summit of the Temblor Range as it heads east toward the San Joaquin Valley.

SR 58 follows a curvilinear alignment as it descends the varied slopes of the eastern hillsides. Traveling in the eastbound direction, because of the curved road alignment, the project site is generally hidden from view by intervening landform until a point approximately 1,000 feet west of the project site. From the westbound direction of SR 58, existing topography and road curvature limits project site visibility until approximately 600 feet east of the project site. Once within view, the project site is seen below the elevation of SR 58 as it traverses the hillside immediately south of the project site. The topography of the project site is defined by three north–south-oriented ridges diminishing in size as they extend northward from SR 58. As SR 58 passes next to the project site, views of the site are increased by the close proximity and the elevated viewing location of the roadway. However, because of the curvilinear alignment of the highway combined with the undulating landform, most views are limited to only portions of the site and the entire limits of the project are not seen from any one vantage point. In addition, while sitting in a vehicle traveling immediately adjacent to the project site, much of the lower portions of the site are blocked from view by the leading (northern) edge of the highway roadbed and shoulder. This condition is most noticeable when traveling in the eastbound direction, where the travel lane and viewing position is further from the northern edge of the roadbed and the westbound lanes block more of the views of the project site below.

Because of these dynamic viewing conditions from the roadway itself, the project site is most visible from two unpaved westbound SR 58 turnouts located along the project frontage. From these informal turnouts, viewpoints are closer to the edge of the landform and where more of the project site is visible. In addition, potential viewers from these turnouts may be static and have longer duration views of the project than those passing by in vehicles.

Field review shows that the project site has limited visibility from distant public viewing areas in the valley to the north and east. From these potential viewing areas, the project site is typically more than 5 miles away and is most often obscured from view by intervening landform. Even if visible, the viewing distance makes the project site difficult to differentiate from the larger overall landscape.

Analysis Methodology

The findings of this study are based on multiple field visits conducted in January, May, and June 2018 and June 2019, including review of the entire site as well as the surrounding area. Resource inventories were conducted both on foot and from a moving vehicle. Existing visual resources and site conditions were photographed and recorded. Assessment of project elements was based on conceptual plans and descriptions provided by the project applicant. Planning documents and approved studies relevant to the project and the surrounding area were referenced to gain an understanding of the project, applicable regulatory requirements, and established aesthetic values.

The project site was viewed from potential public viewer group locations throughout the surrounding area. Representative viewpoints were identified for further analysis, based on dominance of the site within the view, duration of views, and expected sensitivity of the viewer

group. Of those potential viewpoints, Kern County selected five Key Viewing Areas (KVAs) for photosimulations that would best illustrate the visual changes resulting from the project (**Figure 4.1-3,** *Key Viewing Area map*).

Photographs were taken with a 50-millimeter lens to replicate the unaided view of the human eye. Accuracy of the visual simulations was ensured by analyzing the known dimensions and elevations of existing site features and landform, combined with three-dimensional topographic mapping analysis and empirical field observation. These simulations were used to identify and quantify potential project visibility and related impacts. The project was then reanalyzed to determine the need for possible mitigation measures.

Photosimulations were prepared to portray potential project visibility and to assess related visual effects. Images of the existing views as well as photosimulations of the proposed project from the KVAs are shown in **Figures 4.1-4** through **4.1-28**.

Project Phasing Assumptions and Photosimulations

As identified in Chapter 3, *Project Description*, the specific sequence and locations of active mining operations is not defined at this time. The project is limited to no more than 20 acres of disturbance at any one time; however, the disturbance location and duration of that operation would occur at the discretion of the project operator.

For the purpose of photosimulations, the visual analysis assumes that mining activities would occur sequentially in the areas defined in the project plans as Mine Areas 1, 2, and 3. To represent a range of interim phasing throughout the project's proposed 50-year life of operation, the photosimulations depict the project's estimated appearance with some/all of the mine area(s) fully excavated. Additional photosimulations also illustrate the project with and without the proposed reclamation implemented.

Visual Quality Ratings

This analysis includes the "Scenic Quality Rating Criteria" method developed by the U.S. Bureau of Land Management (BLM) as a methodology for assessing the various landscape elements that comprise visual quality to be quantified and rated with a minimum of ambiguity or subjectivity (BLM 1986).

According to this method, visual quality is rated according to the presence and characteristics of seven key components of the landscape, which include landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications:

1. The ***landform*** component of the visual quality rating criteria considers the fact that topography becomes more interesting visually as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental (as found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain badlands, pinnacles, arches, and other extraordinary formations).

2. The ***vegetation*** component of the rating criteria gives primary consideration to the variety of patterns, forms, and textures created by plant life. Short-lived displays are given consideration when they are known to be recurring or spectacular. Consideration is also given to smaller scale vegetation features that add striking and intriguing detail elements to the landscape (e.g., gnarled or wind beaten trees, Joshua trees, etc.).

3. The ***water*** component of the rating criteria recognizes that visual quality is largely tied to the presence of water in scenery, as it is that ingredient that adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score for the water component.

4. The ***color*** component of the visual quality rating criteria considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.). Key factors that are used when rating the color of scenery are variety, contrast, and harmony.

5. The ***adjacent scenery*** component of the rating criteria considers the degree to which scenery outside the view being rated enhances the overall impression of the scenery under evaluation. The distance of influence for adjacent scenery normally ranges from 0 to 5 miles, depending upon the characteristics of the topography, the vegetation cover, and other such factors. This factor is generally applied to views that would normally rate very low in score, but the influence of the adjacent high visual quality would enhance the visual quality and raise the score.

6. The ***scarcity*** component of the visual quality rating criteria provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within a region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often, it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery—the scarcity factor can be used to recognize this type of area and give it the added emphasis it should have.

7. The ***cultural modifications*** component of the visual quality rating criteria considers any man-made modifications to the landform, water, vegetation, and/or the addition of manmade structures. Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion or they may complement and improve the scenic quality of a view.

Based on the above criteria, views are rated numerically and a total score of visual quality is tabulated. Based on the BLM's rating system, there are a total of 32 points possible. Views that score a total of 19 points or more are typically considered very high in visual quality. Views that score a total of 15 to 19 points are typically considered to have a high level of visual quality. Views that score a total of 12 to 15 points are typically considered to have an above average level of visual quality. Finally, views that score a total of 11 points or less are typically considered to have average visual quality. Point values associated with the various criteria are described in **Table 4.1-1,** *Visual Quality Rating System*.

Table 4.1-1 Visual Quality Rating System

Key Factors	Rating Criteria and Score		
Landform	**5 Points:** High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers.	**3 Points:** Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional.	**1 Point:** Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features.
Vegetation	**5 Points:** A variety of vegetative types as expressed in interesting forms, textures, and patterns.	**3 Points:** Some variety of vegetation, but only one or two major types.	**1 Point:** Little or no variety or contrast in vegetation.
Water	**5 Points:** Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape.	**3 Points:** Flowing, or still, but not dominant in the landscape.	**1 Point:** Absent, or present but not noticeable.
Color	**5 Points:** Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water, or snow fields.	**3 Points:** Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element.	**1 Point:** Subtle color variations, contrast, or interest; generally mute tones.
Influence of Adjacent Scenery	**5 Points:** Adjacent scenery greatly enhances visual quality.	**3 Points:** Adjacent scenery moderately enhances overall visual quality.	**1 Point:** Adjacent scenery has little or no influence on overall visual quality.
Scarcity	**5 Points:** One of a kind, or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc.	**3 Points:** Distinctive, though somewhat similar to others within the region.	**1 Point:** Interesting within its setting but fairly common within the region.
Cultural Modifications	**2 Points:** Modifications add favorably to visual variety while promoting visual harmony.	**0 Points:** Modifications add little or no visual variety to the area and introduce no discordant elements.	**-4 Points:** Modifications add variety but are very discordant and promote strong disharmony.
	Total Score for All Categories: Out of 32		

Source: BLM 1986.

An important aspect of this evaluation methodology is that views with the most variety and most harmonious composition have the greatest scenic value. Another important concept is that manmade features within a landscape do not necessarily detract from the scenic value. In fact, certain manmade features that complement the natural landscape may actually enhance the visual quality. In making this determination, it is therefore important to assess project effects

relative to the visual character of the project setting. Visual character is qualitatively defined by four primary components: form, line, color, and texture.

Projects that create a high level of contrast to the existing visual character of a project setting are more likely to generate adverse visual impacts due to visual incompatibility. Conversely, projects that create a low level of contrast to the existing visual character are less likely to generate adverse visual impacts due to inherent visual compatibility. On this basis, project modifications are quantified and evaluated for impact assessment purposes.

By comparing the difference in visual quality ratings from the baseline ("before" condition) to post-project ("after" condition) visual conditions, the severity of project-related visual impacts can be quantified.

Views of the existing project site and proposed modifications have been rated numerically and shown in **Table 4.1-2,** *Visual Quality Rating Analysis*. This analysis tool is used to gain a more detailed understanding of the specific characteristics that affect the visual quality of the site and the proposed changes. The results of the Visual Quality Rating Analysis are incorporated into the CEQA Thresholds findings discussed below.

Table 4.1-2 Visual Quality Rating Analysis

Rating Feature	Existing Conditions (Pre-Disturbance)	Project Site has been Fully Mined but Reclamation has not Commenced	Project Site has been Fully Mined and Fully Reclaimed
Landform	**4 Points:** The project site includes prominent landform features including natural rounded ridges and valleys, which contribute to the visual quality and memorability of the view as seen from the public highway.	**2 Points:** The project would result in artificial, engineered landforms visually inconsistent with the adjacent natural topography. The close proximity of the project to the highway would substantially increase the noticeability of the altered landforms.	**2 Points:** The project would result in artificial, engineered landforms visually inconsistent with the adjacent natural topography. The close proximity of the project to the highway would substantially increase the noticeability of the altered landforms (i.e., fully reclaimed contours are proposed to be the same as fully mined contours).
Vegetation	**2 Points:** Vegetation in the area is limited to grasses and valley scrub with some larger species on the upper reaches of the canyons.	**2 Points:** Disturbed areas would be void of vegetation. However, the project only proposes to disturb a portion (93.67 acres total) of the approximately 331-acre site.	**3 Points:** Reclamation of the site would result in vegetation visually similar to the existing (pre-disturbance) vegetation.
Water	**1 Point:** There are seasonal drainages in the area but no visible water other than during rain events.	**1 Point:** The project would not alter the visibility of water in the vicinity.	**1 Point:** The project would not alter the visibility of water in the vicinity.

Table 4.1-2 Visual Quality Rating Analysis

Rating Feature	Existing Conditions (Pre-Disturbance)	Project Site has been Fully Mined but Reclamation has not Commenced	Project Site has been Fully Mined and Fully Reclaimed
Color	**2 Points:** In the project vicinity, there is some color variation between ground plane, exposed road cuts, and scattered vegetation.	**1 Point:** The project would expose whitish-colored diatomaceous earth, adding more visual contrast.	**2 Points:** Reclamation of the site would result in vegetation visually similar to the existing (pre-disturbance) vegetation.
Influence of Adjacent Scenery	**3 Points:** The project site occupies the foreground of vast panoramic views of the southern San Joaquin Valley to the northeast and the eastern flanks of the Temblor Range to the west.	**3 Points:** The project would not reduce visibility of the adjacent scenery; however, the alteration of the natural foreground context would affect the visual harmony of the vista.	**3 Points:** The project would not reduce visibility of the adjacent scenery. Reclamation of the site would result in vegetation visually similar to the existing (pre-disturbance) vegetation; as such, any affect to the visual harmony of the vista is anticipated to be minimal.
Scarcity	**4 Points:** SR 58 adjacent to the project site provides a somewhat unique hillside vantage point of the valley floor.	**3 Points:** Although the project would introduce substantial landform manipulation, the acreage of land proposed to be disturbed as a result of the project is minimal in proportion to the view of valley floor.	**3 Points:** Although the project would introduce substantial landform manipulation, the acreage of land proposed to be disturbed as a result of the project is minimal in proportion to the view of valley floor.
Cultural Modifications	**1 Point:** Existing modifications of the site include ranch roads and passive agriculture uses (i.e., cattle grazing).	**-3 Points:** The project would introduce a mining operation into the foreground of a public scenic vista. However, during the life of the proposed surface mining and reclamation plan, cattle grazing would continue on the project site (on portions of the project site outside of the active mine and processing areas) as deemed necessary by the property owner.	**0 Points:** The project site would be reclaimed to an end use of cattle grazing land following completion of mining activities.
Total Score	**17 out of 32**	**9 out of 32**	**14 of 32**

Source: BLM 1986

Rating Summary

The Visual Quality Ratings above show that the existing visual quality rating is 17, the fully mined (but reclamation has not commenced) rating is 9, and the fully mined and reclaimed rating is 14. Review of the ratings indicate that the factors most affecting the visual quality

would be the alteration and scarring of the natural landform, combined with the project's location within the foreground of a scenic panorama as seen from the adjacent state highway.

Viewer Sensitivity

Viewer sensitivity to changes in the visual environment in the project vicinity are expected to be moderate. Viewer sensitivity is increased by the project site's contribution to the high-quality panoramic view of the southwestern San Joaquin Valley as seen from SR 58. In addition, the rural and open space character of the site and setting may increase sensitivity to visual alterations that contrast with the scenic context.

However, the expected viewer sensitivity rating is moderated by other factors. The *Kern County General Plan*, Kern County Zoning Ordinance, and Kern County Outdoor Lighting "Dark Skies Ordinance" include visual policy indicators related to visual sensitivity for the project area. In addition, the project would not be seen from any State- or County-designated scenic roadways. The number of potential viewers from SR 58 is relatively low (160-vehicle average per day), and the project has limited visibility from distant public viewpoints throughout the valley floor.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to aesthetics. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to aesthetics if it would:

a. Have a substantial adverse effect on a scenic vista;

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

c. In nonurbanized 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 points.) If the project is in an urbanized area, it would conflict with applicable zoning and other regulations governing scenic quality; or

d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the IS/NOP and additional information regarding the following impacts:

- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

In addition to the State CEQA *Guidelines*, the Kern County Environmental Information Form (Form 108) questionnaire includes a checklist item pertaining to potential visual impacts. Item 22 asks whether a project would potentially cause a "change in scenic views or vistas from existing residential areas or public lands or roads." Analysis of this item is included in Impact 4.1-3.

Project Impacts

Impact 4.1-1: The project would have a substantial adverse effect on a scenic vista.

A substantial adverse impact to a scenic vista would occur if the project would significantly degrade the scenic landscape as viewed from public roads or from other public areas. The degree of potential impact on scenic vistas varies with factors such as viewing distance, duration, viewer sensitivity, and the visual context of the surrounding area. Scenic vistas are often panoramic views that have high-quality compositional and picturesque value. Scenic vistas from SR 58 include the quality viewshed composition of the southern San Joaquin Valley as it stretches out in the distance with the undulating slopes of the Temblor Range foothills in the fore- and mid-ground. From areas of the valley floor, the Temblor Range provides a scenic backdrop when looking to the south and west.

As seen from SR 58, the project would be seen along an approximately 0.9-mile section of the roadway. From this viewing area on SR 58, the project site occupies a portion of the foreground of the scenic vista. As seen from SR 58 along the project frontage, some evidence of project disturbance would be visible from the highway throughout the life of the project. A maximum of 20 acres of exposed land would be allowed at any given time, per San Joaquin Valley Air Pollution Control District (SJVAPCD) regulations. Although direct visibility of the active mining operation would be the most noticeable project feature and would result in the greatest amount of visual impact, visibility of the engineered landform following active mining would also have an adverse visual effect. Even areas that have undergone reclamation (which could take several years to successfully revegetate), would contrast with the form of the surrounding natural topography.

Alterations to Mine Area 2 would be the least visible as seen from SR 58 since it is lower in elevation and situated between Mine Areas 1 and 3. Approaching the project from the westbound direction of the highway, the lowering of Mine Area 1 (which presumably would be the first of the three mine areas to be excavated) would open views to Mine Areas 2 and 3 and their associated disturbance. Approaching the project from the eastbound direction, Mine Area 3 would presumably be the last mine area to be excavated and, if that is the case, would help block views of the previously excavated Mine Areas 1 and 2, until Mine Area 3 was mined. If Mine Area 2 was the first area to be mined, the overall duration of project impacts would be reduced because Mine Area 2 is the least visible. Visual impacts caused by disturbance and landform changes to Mine Area 2 would be partially hidden by the undisturbed landforms of Mine Areas 1 and 3 on each side of it, until such time as Mine Areas 1 and 3 were mined.

There are several variables that would affect the visibility and noticeability of the project throughout its lifespan. The evolving alteration of landform, the decades-long project timeframe, the continually changing area of active disturbance, and the variability in the appearance of revegetation established on reclaimed land would all factor into the overall perception and visual effect of the project.

If active mining operation areas were to start at the southern ends of each defined mine area, closest to the highway, the overall duration of visual exposure to project impacts would be increased. However, if active operations were to begin at the northernmost sections of each mine area, the existing undisturbed ridge topography of that mine area would partially block visibility of the active mine area as the operation progressed south toward the highway.

One of the primary visual impacts resulting from project implementation would be the unnatural and engineered appearance of the mined areas in contrast with the surrounding topography of the Temblor Range foothills. Although the proposed reclamation would require revegetation (per the success criteria in the response to Question #27 of the Surface Mining and Reclamation Act [SMARA] Application, included in this EIR as Appendix B), the underlying shape of the land would look unnatural and would detract from the scenic foreground context of the vista.

The project would result in noticeable changes to the scenic vista due to alterations of topography caused by active mining operations (which would be the same as the topography upon completion of site reclamation). Because of the project site's close proximity to SR 58, combined with its contribution to the foreground context of the quality panorama, these changes would result in temporary visual impacts to the scenic vista as seen from SR 58 during mining activities. Since mining activities would not exceed 20 acres at any time and reclamation activities would occur concurrently throughout the life of the project, no significant permanent impacts would occur, and impacts would be less than significant through site reclamation.

Mitigation Measures

Mitigation is not necessary.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.1-2: The project would substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Project-related actions would be considered to have a significant impact on the visual character of the site if they altered the area in a way that substantially changed, detracted from, or degraded the visual quality of the site or was inconsistent with community policies regarding visual character. The degree to which that change reflects documented community values and meets viewers' aesthetic expectations is the basis for determining levels of significance. Visual contrast and compatibility may be used as a measure of the potential impact that the project

may have on the visual quality of the site. If a strong contrast occurred where project features or activities attract attention and dominate the landscape setting, this would be considered a potentially significant impact on visual character or quality of the site.

Project components that are not subordinate to the landscape setting could result in a significant change in the composition of the landscape. Consideration of potential significance includes analysis of visual character elements such as land use and intensity, visual integrity of the landscape type, and other factors.

The existing visual character of the project site and its surroundings is a product of both built and natural elements. The project site is rural and contributes to the scenic character of the Temblor Range foothills. The open space and ranches in the vicinity support the visual quality of this mostly natural setting. As the foothills flatten-out east to the San Joaquin Valley, the landscape character quickly becomes one of industrial-scale mineral extraction. Although the underlying landscape character is rural, in many areas the visual presence of oil wells and oil extraction infrastructure dominate the scenery. As seen from SR 58 in the project vicinity, the mineral extraction facilities throughout the valley floor in the distance are visible but are difficult to differentiate from the surrounding larger viewshed.

In order to illustrate the degree of anticipated change that would result from the project, photographs of existing conditions were taken from the five representative viewpoints identified in **Figure 4.1-3,** *Key Viewing Area map*, and photographic simulations were prepared for each to represent anticipated views from these locations with: (1) areas all visible mine area(s) have been fully mined but reclamation has not commenced; and (2) all visible mine area(s) have been fully mined but reclaimed has not commenced. **Figures 4.1-4 through 4.1-28** provide a series of photographs and simulations for each representative view location.

The topography of the proposed mine pits would differ from the surrounding unmined topography. Specifically, upon final reclamation, the floor of the three mine areas would be an essentially flat (horizontal surface), while the walls of the three mine areas would be of approximately uniform slopes which would not exceed a slope of 3:1 (horizontal:vertical). As a result, the overall visual character of the region would not be adversely affected; however, the quality and character of the project site itself would be reduced. These physical changes would alter the quality of the landscape from rural ranchland to a more industrial use and appearance during mining and reclamation operations. The close proximity of the project to SR 58 would increase its public noticeability, along with any associated changes to character. As a result, the project would result in potentially significant visual impacts to the existing visual quality of the site and its surroundings, as seen from SR 58.

Adverse changes to the visual quality and character of the site would occur due to visibility of an active mining operation as well as the long-term visibility of engineered slopes and unnatural landforms (which would remain upon final reclamation). These changes would be considered potentially significant as seen from SR 58. Mitigation Measure MM 4.1-1, below, would reduce potential impacts to the existing visual quality and character of the project site and its surroundings.

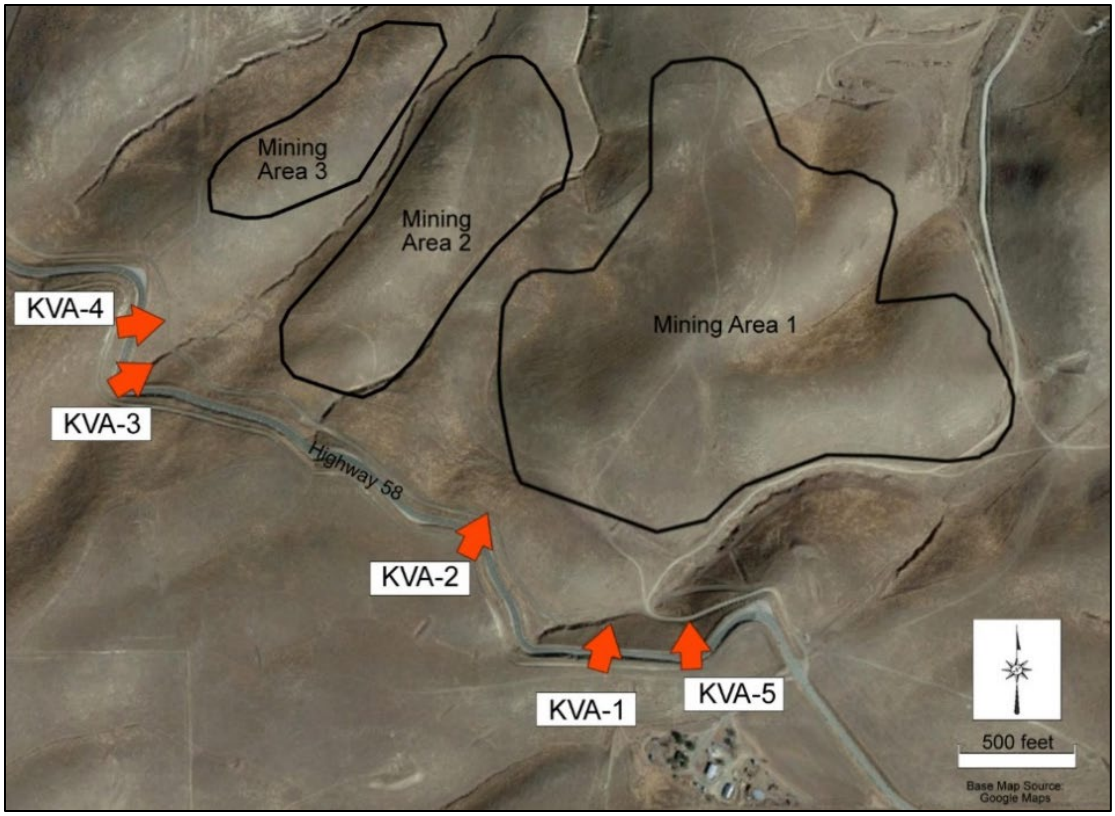

Figure 4.1-3
Key Viewing Area Map

Mitigation Measures

MM 4.1-1 Prior to any clearing or ground-disturbing activities, the project proponent/operator shall submit a Maintenance and Trash Abatement/Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The program shall include, but not be limited to, the following:

A. The project proponent/operator shall clear debris from the project area at least twice per year once the project is operational.

B. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators, such as common ravens, coyotes, and feral dogs.

C. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within 2 weeks to resident requests for additional cleanup of debris.

KEY VIEWING AREA 1

Note: Mine Areas 2 and 3 would not be visible from KVA-1, so simulations are not provided for those phases.

Figure 4.1-4

KVA-1: Existing Conditions (Mining Has Not Commenced)

Figure 4.1-5

KVA-1: Mine Area 1 Has Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-6

KVA-1: Mine Area 1 Has Been Fully Mined and Fully Reclaimed

KEY VIEWING AREA 2

Figure 4.1-7
KVA-2: Existing Conditions (Mining has not Commenced)

Figure 4.1-8
KVA-2: Mine Area 1 Has Been Fully Mined but Reclamation Has Not Commenced, and Mining Has Not Commenced in Mine Areas 2 and 3

Figure 4.1-9

KVA-2: Mine Area 1 Has Been Fully Mined and Fully Reclaimed, Mine Area 2 Has Been Fully Mined but Reclamation Has Not Commenced, and Mining Has Not Commenced in Mine Area 3

Figure 4.1-10

KVA-2: Mine Areas 1 and 2 Have Been Fully Mined and Fully Reclaimed, and Mine Area 3 Has Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-11
KVA-2: Mine Areas 1, 2, and 3 Have Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-12
KVA-2: Mine Areas 1, 2, and 3 Have Been Fully Mined and Fully Reclaimed

KEY VIEWING AREA 3

Figure 4.1-13
KVA-3: Existing Conditions (Mining Has Not Commenced)

Figure 4.1-14
KVA-3: Mine Area 1 Has Been Fully Mined but Reclamation Has Not Commenced, and Mining Has Not Commenced in Mine Areas 2 and 3

Figure 4.1-15

KVA-3: Mine Area 1 Has Been Fully Mined and Fully Reclaimed, Mine Area 2 Has Been Fully Mined but Reclamation Has Not Commenced, and Mining Has Not Commenced in Mine Area 3

Figure 4.1-16

KVA-3: Mine Areas 1 And 2 Have Been Fully Mined And Fully Reclaimed, And Mine Area 3 Has Been Fully Mined But Reclamation Has Not Commenced

Figure 4.1-17

KVA-3: Mine Areas 1, 2, and 3 Have Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-18

KVA-3: Mine Areas 1, 2, and 3 Have Been Fully Mined and Fully Reclaimed

KEY VIEWING AREA 4

Note: Mine Area 3 would not be visible from KVA-4, so simulations are not provided for that phase.

Figure 4.1-19

KVA-4: Existing Conditions (Mining Has Not Commenced)

Figure 4.1-20

KVA-4: Mine Area 1 Has Been Fully Mined but Reclamation Has Not Commenced, and Mining Has Not Commenced in Mine Area 2

Figure 4.1-21

KVA-4: Mine Area 1 Has Been Fully Mined and Fully Reclaimed, and Mine Area 2 Has Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-22

KVA-4: Mine Areas 1 and 2 Have Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-23

KVA-4: Mine Areas 1 and 2 Have Been Fully Mined and Fully Reclaimed

KEY VIEWING AREA 5

Note: Mine Area 2 would not be visible from KVA-5, so simulations are not provided for that phase.

Figure 4.1-24
KVA-5: Existing Conditions (Mining Has Not Commenced)

Figure 4.1-25
KVA-5: Mine Area 1 Has Been Fully Mined but Reclamation Has Not Commenced, and Mining Has Not Commenced in Mine Area 3

Figure 4.1-26

KVA-5: Mine Area 1 Has Been Fully Mined and Fully Reclaimed, and Mine Area 3 Has Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-27

KVA-5: Mine Areas 1 and 3 Have Been Fully Mined but Reclamation Has Not Commenced

Figure 4.1-28

KVA-5: Mine Areas 1 and 3 Have Been Fully Mined and Fully Reclaimed

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.1-1, impacts would be less than significant.

Impact 4.1-3: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

The project would result in a significant impact if viewers from public roads or residences were subjected to a substantial amount of new point-source lighting visibility at night, or if the collective illumination of the project resulted in a noticeable spill-over effect into the nighttime sky, increasing the ambient light over the region.

The project proposes operations primarily during daylight hours, between 6:00 a.m. and 7:30 p.m. Although no specific lighting plan is provided, it is reasonable to assume that some nighttime lighting for security, safety, and operational purposes would be utilized. It is expected that this night lighting would be required primarily at the blending/screening plant, although lights may also be used on vehicles and equipment as they conduct other operations throughout the site. The blending/screening plant would be located at a lower elevation on the site, and the surrounding topography would reduce the visibility of lighting into the surrounding area. In addition, because of the project's generally remote location, few, if any, residences would be affected by night lighting. However as seen from a portion of SR 58 to the south, potential visibility of lighting at the blending/screening plant would be increased as mining progresses in Mine Area 1.

The impact of additional light sources in conjunction with surface mining and reclamation is not expected to significantly affect adjacent properties or nighttime views, as compared to existing (i.e., baseline) use of the project site (which consists of cattle grazing, which is assumed not to generate any light). However, given the relative isolation of the project site, the lack of typical urban light sources, and the absence of screening vegetation around the project site, the possibility exists that light sources would be visible to automobiles as they drive along SR 58 and other areas within the project region.

Unshielded lighting could generate some "light pollution" in the area. Therefore, the impact associated with the additional light sources in conjunction with the project is considered potentially significant. Mitigation Measure MM 4.1-2 would require the project proponent comply with the County's Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance) (Kern County 2020), and Mitigation Measure MM 4.1-3 would require the project proponent to prepare and submit an outdoor lighting plan to the Kern County Planning and Natural Resources Department for review and approval. Implementation of Mitigation Measures MM 4.1-2 and MM 4.1-3 would reduce this potential impact to less than significant.

Mitigation Measures

MM 4.1-2 Project facility lighting shall continuously comply with the applicable provisions of the Dark Skies Ordinance (Kern County Zoning Ordinance Chapter 19.81) and shall be designed to provide the minimum illumination

needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not extend below the shields.

MM 4.1-3 Prior to the issuance of any required building permits, the project proponent shall submit an Outdoor Lighting Plan for review and approval by the Kern County Public Works Department in accordance with Kern County Zoning Ordinance Chapter 19.81 (Outdoor Lighting "Dark Skies Ordinance"). Additionally, a copy of the approved Outdoor Lighting Plan shall be submitted to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-2 and MM 4.1-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The discussion of cumulative impacts relates to the potential for the project to contribute to an aggregate change in visual quality from surrounding public viewing areas, taking into consideration existing as well as proposed development. The project's proximity to SR 58 increases its potential to influence the aesthetic quality and character of the area. This change in visual character, if experienced along with other recent and proposed projects, could potentially contribute to an emerging perception that southwestern Kern County is undergoing a visual change toward increasing development.

Little visual change has occurred in the project vicinity over the last several years, and no substantial new development that would be easily seen from SR 58 is currently proposed in the project area. Solar energy projects located in the San Joaquin Valley can be seen from SR 58; however, they are all separated from the project by the Temblor Range, and the closest is approximately 7 miles away.

Impact 4.1-4: The project would contribute to cumulative aesthetic and visual resource impacts.

Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis). As discussed above, although the project would modify the visual character of the project site, the project is not anticipated to result in significant project-specific visual impacts and would reduce potential light and glare impacts to less than significant with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3.

No new substantial other developments near the project site have been identified. Development of the project in combination with existing, proposed, approved, and reasonably foreseeable

development would, therefore, not significantly affect visual resources or create cumulative significant impacts related to light and glare.

The cumulative scenario for the aesthetic impacts from light and glare includes the existing conditions in the area plus potential future developments and sources of adverse visual changes and lighting. However, given the number of projects within 6 miles of the proposed project site (as referenced in **Table 3-6**), the commonality of existing mining land uses throughout Kern County, and the implementation of the proposed mitigation measures, the proposed project's incremental contribution to such impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-1 through MM 4.1-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-1 through 4.1-3, cumulative impacts would be less than significant.

Section 4.2

Agriculture and Forest Resources

4.2.1 Introduction

This section of the Environmental Impact Report (EIR) addresses potential impacts of the project on agriculture and forest resources, provides the environmental and regulatory settings, and discusses mitigation measures to reduce impacts, where applicable.

4.2.2 Environmental Setting

Regional

Kern County covers approximately 8,163 square miles (5,224,258 acres) including 1,384 square miles (885,957 acres) of harvested agricultural land and approximately 2,889 square miles (1,849,266 acres) of grazing land. According to the 2018 Kern County Agricultural Crop Report, agriculture in Kern County was worth approximately $7.4 billion in 2018, which is an increase of 3% from the 2017 crop value. The top five commodities for 2018 were grapes, almonds, citrus, milk, and pistachios, which made up more than $4.4 billion (59%) of the total value, with the top 20 commodities making up more than 71% of the total value (Kern County Department of Agriculture and Measurement Standards (DAMS) 2018).

Kern County is a growing population and, like many agriculturally based jurisdictions, must balance urbanization and the loss of farmland. As shown in **Table 4.2-1**, *Agricultural Land Use Designation Conversions in 2018*, approved amendments re-designated 132.18 acres of agriculturally designated lands for non-agricultural uses. As discussed in Chapter 11.0, Agricultural Land Conversion, of the Kern County General Plans and Housing Element Annual Progress Report (January 1, 2018, to December 31, 2018), amendments resulted in a total net conversion of 132.18 acres within unincorporated Kern County. (Note: These various farmland designations are defined in Section 4.2.3, *Regulatory Setting*, below.)

Table 4.2-1 Agricultural Land Use Designation Conversions in 2018

Project/Applicant	Case Number	Document	From Map Code	To Map Code	Acreage Converted
Afinar, Inc. by Bernard Salgado	GPA 5, Map 143-41	Kern County General Plan	8.1/2.3	5.7/2.3	-21.18
Highway 58, LLC by EPD Solutions	SPA 2, Map 30	Lost Hills Specific Plan	4.1 (Agriculture)	4.1 (Industrial)	-112
				Total Acreage Converted (net)	**-132.18**

Source: Kern County Planning and Natural Resources Department 2019.

According to the Kern Economic Development Corporation (KEDC), it is estimated that the total population of Kern County will reach approximately 1,240,496 individuals in 2040 (KEDC 2019), growing from today's population of approximately 905,801 (California Department of Finance [DOF] 2018). The anticipated growth in population will most likely decrease the amount of agricultural land in Kern County even further. However, it is important to note that the conversion of agricultural land is affected by numerous factors other than population growth and urban development. Actual production is dependent on commodity prices, water prices and supply, labor, the proximity of processing and distribution facilities, and pest management. Factors such as weather, trade agreements, and labor disputes can also affect decisions regarding what crops are grown and which lands go in and out of production. Most conversion of Prime Farmland or Farmland of Statewide Importance agricultural lands is occurring within the planned development footprint of Metropolitan Bakersfield. Very little conversion of the most productive agricultural lands has occurred in outlying areas of Kern County.

Local

The project site is approximately 331 acres and is comprised of portions of three parcels (Assessor's Parcel Numbers [APNs] 156-070-01, 156-070-02, and 156-070-10) on the north and south sides of State Route (SR) 58, approximately 8.5 miles west of the unincorporated community of McKittrick in Kern County, California. Current agricultural use on the project site consists of livestock grazing. The entire project site is zoned A (Exclusive Agriculture), with the following Kern County General Plan land use designations (**Figure 4.2-1,** *Existing Kern County General Plan Designations*, and **Figure 4.2-2,** *Existing Kern County Zoning Classifications*):

- 8.3/2.4 (Extensive Agriculture (minimum 20-acre parcel size, 80 acres with Williamson Act Contract) / steep slope environmental constraints overlay);
- 8.3 (Extensive Agriculture (minimum 20-acre parcel size, 80 acres with Williamson Act Contract);
- 8.4 (Mineral and Petroleum, (minimum 5-acre parcel size));
- 8.4/2.2 (Mineral and Petroleum (minimum 5-acre parcel size), landslide environmental constraints overlay); and
- 8.4/2.4 (Mineral and Petroleum (minimum 5-acre parcel size), steep slope environmental constraints overlay).

The entire project site and surrounding areas are designated as Grazing Land by the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), as shown on **Figure 4.2-3,** *Important Farmlands, Agricultural Preserve, and Williamson Act Map* (DOC 2016a). There is no important farmland, as designated by the DOC FMMP, within or adjacent to the project site (DOC 2016a). The project site is currently used as grazing land, though flat hilltops and valley areas have been farmed in the past (Three Girls and a Shovel 2008).

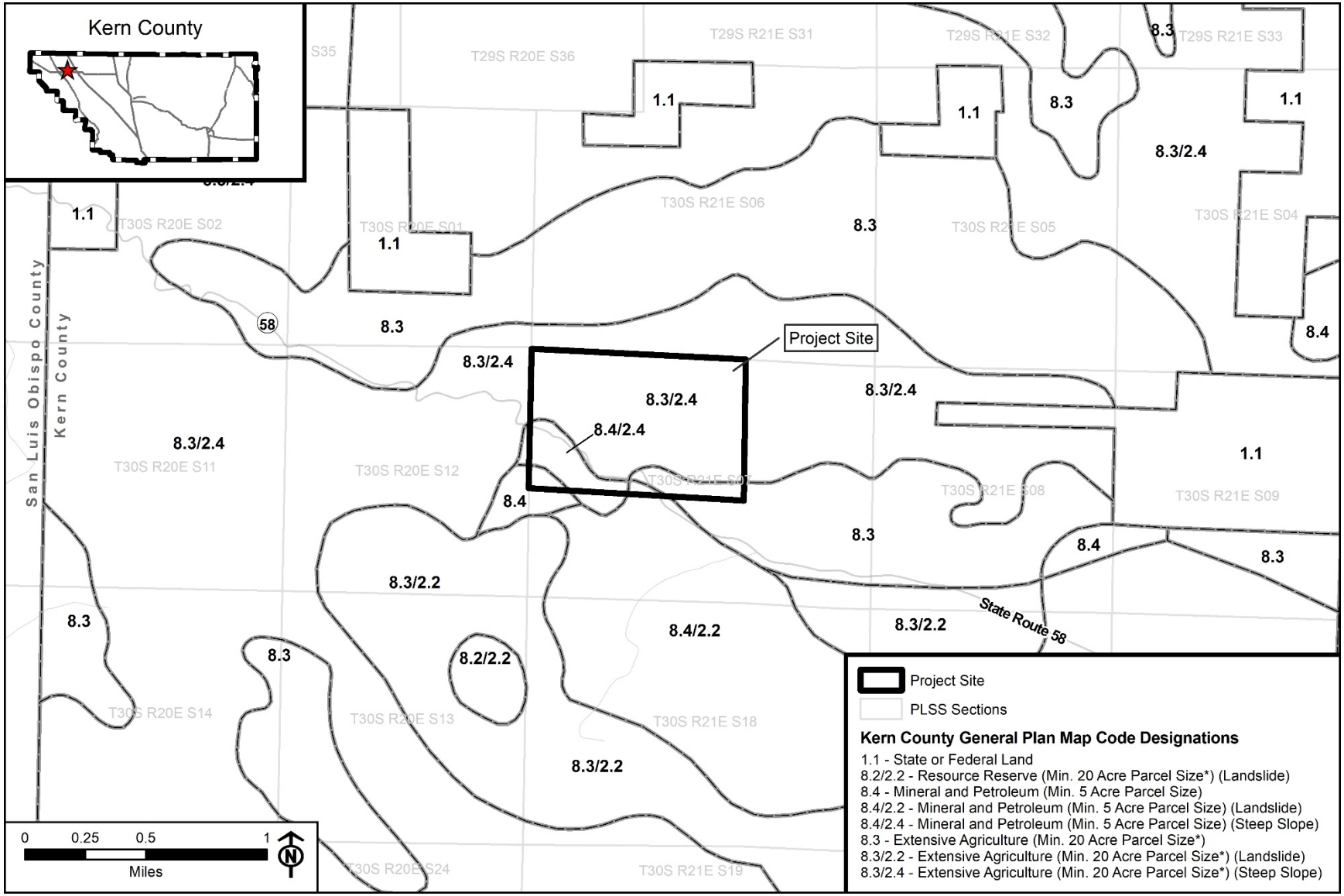

Figure 4.2-1
Existing Kern County General Plan Designations

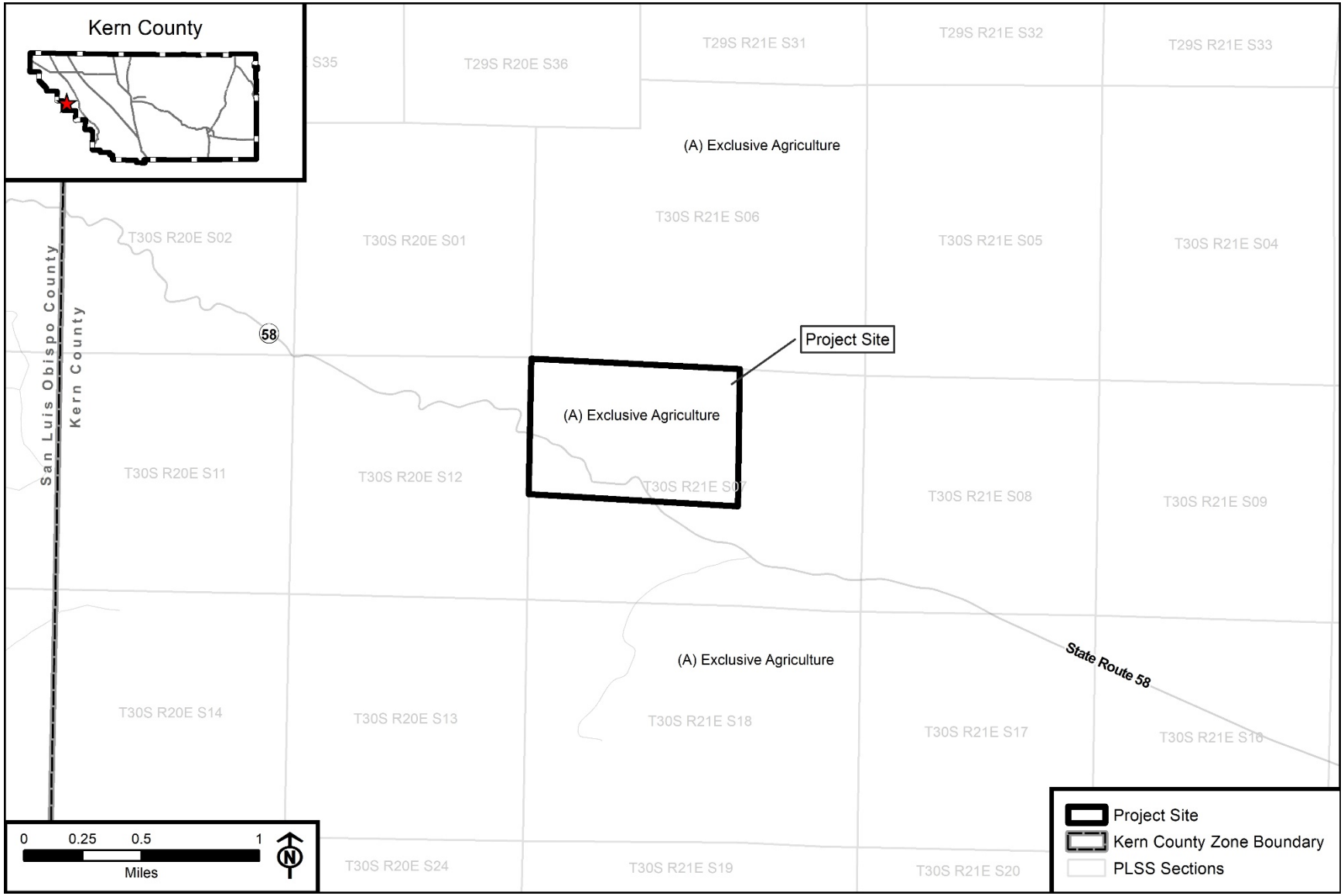

Figure 4.2-2
Existing Kern County Zoning Classifications

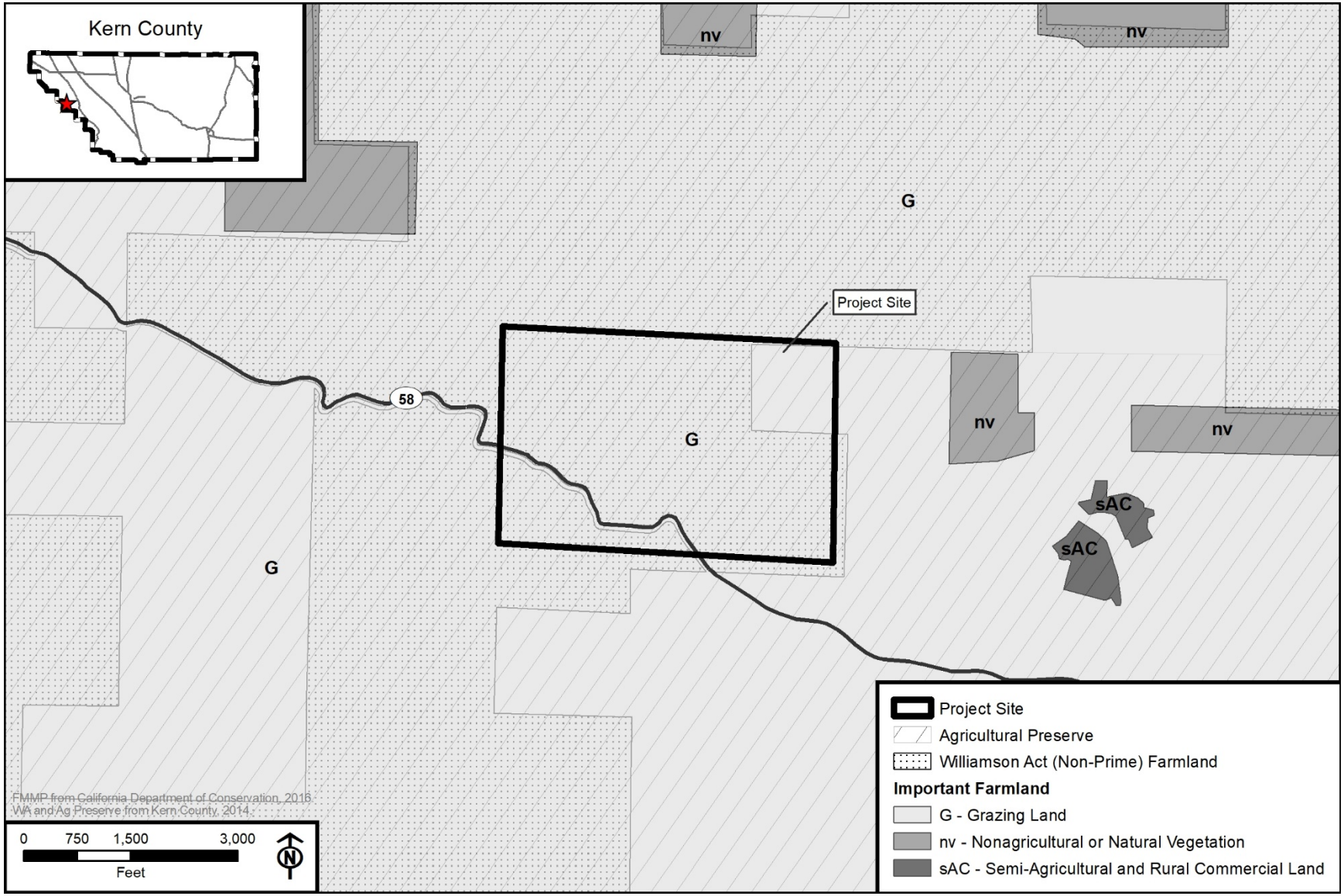

Figure 4.2-3
Important Farmlands, Agricultural Preserve, and Williamson Act Map

Portions of the project site (i.e., land within the boundaries of APNs 156-070-01 and 156-070-10) are currently under an active Williamson Act contract (recorded at the Kern County Recorder's Office as Book 4939, Pages through 1484 through 1496 of Official Records), as shown on **Figure 4.2-3,** *Important Farmlands, Agricultural Preserve, and Williamson Act Map* (DOC 2013). The property owner is not proposing to cancel the Williamson Act Contract; consequently, reclamation will return the land to its current use as cattle grazing. As shown on **Figure 4.2-3,** the entire approximately 331-acre project site is designated as Agricultural Preserve and is surrounded by land also designated as Agricultural Preserve (Desert Renewable Energy Conservation Plan Gateway [DRECPG] 2015). Neither the project site, nor the surrounding lands, are under Farmland Security contracts (Data Basin 2015).

The project site is comprised of land that ranges from flat to steeply sloping hillsides. As shown on **Figure 4.2-4,** *Soils Map*, soils present at the project site predominantly include shaly clay loam and shaly loam, which have a California Revised Storie Index of between Grade 4 (Poor) and Grade 1 (Excellent). The majority of the project site is located on Grade 3 (Fair) soils, which provide decent conditions for agriculture (Natural Resource Conservation Service [NRCS] 2017a).

Land surrounding the project site is also designated as Grazing Land by the FMMP (DOC 2016a). As stated above, land surrounding the project site designated as Agricultural Preserve.

There are no forest resources, as identified by the California Department of Forestry and Fire Protection (CAL FIRE) *California's Forests and Rangelands: 2017 Assessment*, within or in the vicinity of the project site (CAL FIRE 2018).

4.2.3 Regulatory Setting

Federal

Farmland Protection Policy Act (7 USC Section 4201)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It also directs Federal programs to be compatible with State and local policies for the protection of farmland. Under the FPPA, the term "farmland" includes Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance. Farmland that is subject to FPPA requirements does not have to be currently used as cropland. It can be forestland, pastureland, or other land but not urban and built-up land or water. The FPPA assures that, to the extent possible, Federal programs are administered to be compatible with State, and local units of government, and private programs and policies to protect farmland.

In 1981, Congress passed the Agriculture and Food Act (Public Law 97-98), which contained the FPPA, Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the *Federal Register* on June 17, 1994. Federal agencies are required to develop and review their policies and procedures related to implementing the FPPA every 2 years.

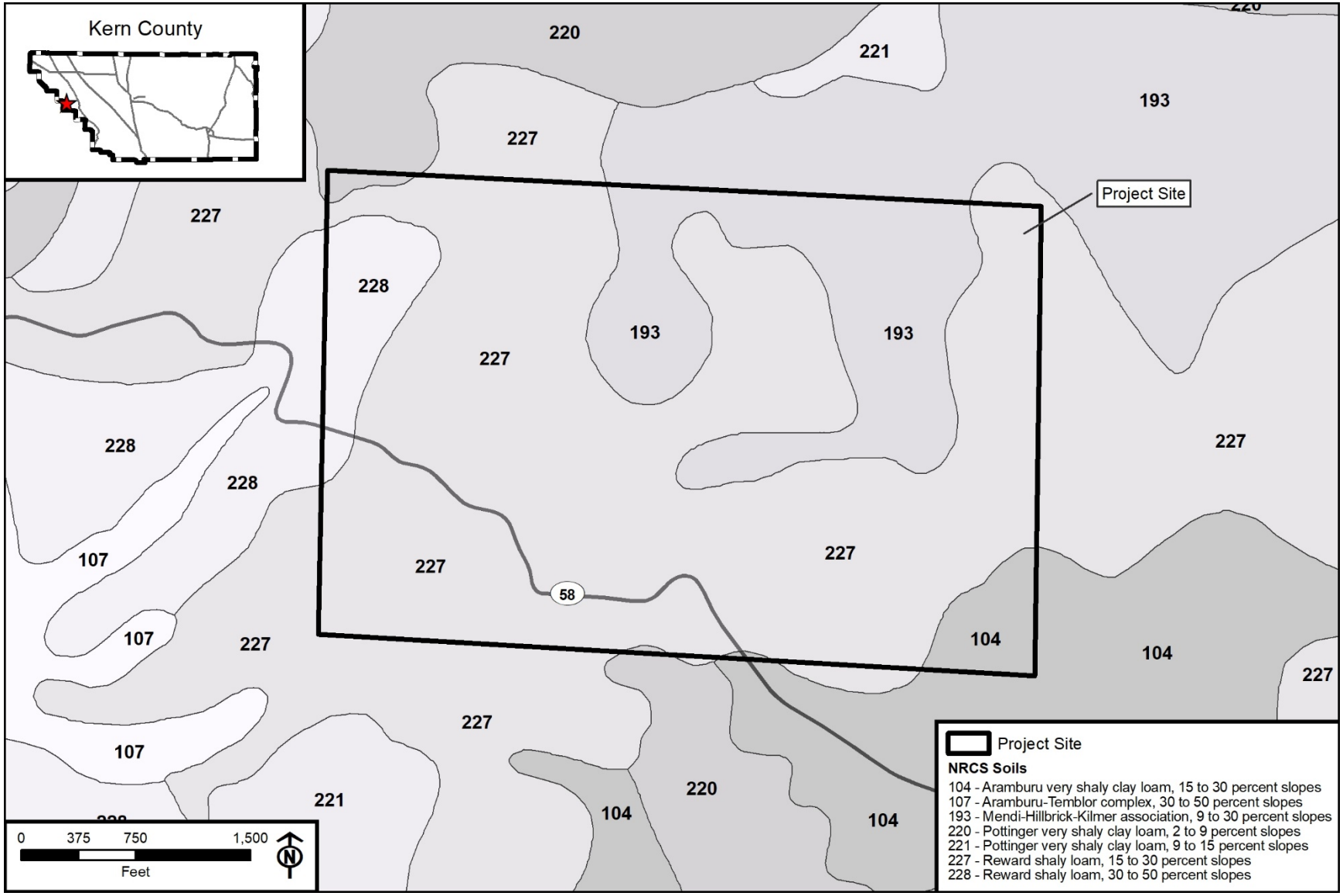

Figure 4.2-4
Soils Map

The FPPA does not authorize the Federal government to regulate the use of private or non-Federal land or, in any way, affect the property rights of owners. Projects are subject to FPPA requirements if they irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by or rely on assistance from a Federal agency.

State

California Department of Conservation Division of Land Resource Protection

The DOC applies NRCS soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

Public Resources Code Section 21060.1

Public Resources Code (PRC) Section 21060.1 defines agricultural land for the purpose of assessing environmental impacts using the FMMP.

Farmland Mapping and Monitoring Program

The DOC FMMP was established in 1982 to monitor changes in agricultural land use. It divides land into eight categories based on soil quality, irrigation status, and existing agricultural uses to produce maps and statistical data used for analyzing impacts on California's agricultural resources. Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance are all Important Farmland and are collectively referred to as Important Farmland in this EIR. The highest-rated category of Important Farmland is Prime Farmland. Farmland maps are updated and released every 2 years. The list below provides a comprehensive description of the categories mapped by the DOC:

- **Prime Farmland.** Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- **Farmland of Statewide Importance.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- **Unique Farmland.** Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.

- **Farmland of Local Importance.** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

- **Urban and Built-up Land.** Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, or public administrative purposes; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment; water control structures; and other developed purposes.

- **Other Land.** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code (CGC) Sections 51200–51297.4 and, therefore, is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. The Williamson Act program is administered by the DOC, in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted. Each year, the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected County or City. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on County adoption and implementation of the program and is voluntary for landowners (DOC 2015).

The Williamson Act states that a Board or Council by resolution shall adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the uses allowed. Generally, any commercial agricultural use will be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit.

CGC Section 51238 states that, unless otherwise decided by a local Board or Council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Also, Section 51238(b) states that the Board of Supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses in conformity with Section 51238.1.

Further, CGC Section 51238.1 allows a Board or Council to allow as compatible any use that without conditions or mitigations would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

- The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels on other contracted lands in agricultural preserves.

- The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.

- The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

A Williamson Act Contract cancellation is an option under limited circumstances and conditions set forth in CGC Section 51280 et seq. In such cases, landowners may petition a board/council for Williamson Act Contract cancellation. The board/council may grant tentative cancellation only if it makes required statutory findings (Government Code Section 51282(a)). If the required findings are met, the landowner is required to pay a cancellation fee equal to 12.5 percent of the cancellation valuation (unrestricted fair market value) of the property (Government Code Section 51283(b)).

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a

contract with the County. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35% reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into non-agricultural uses.

Local

Kern County General Plan

The project is subject to the *Kern County General Plan*, which states that agriculture is vital to the future of Kern County and establishes goals for protecting important agricultural lands for future use and preventing the conversion of prime agricultural lands to other uses. The project site includes land designated as 8.3 (Extensive Agriculture) by the *Kern County General Plan*, as shown on **Figure 4.2-1,** *Existing Kern County General Plan Designations*. The *Kern County General Plan*'s Extensive Agriculture designation is described as follows:

- **8.3 Extensive Agriculture** (minimum parcel size is 20 acres gross, except lands subject to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size shall be 80 acres gross) – lands devoted to uses involving large amounts of land with relatively low value-per-acre yields such as livestock grazing, dry-land farming, and woodlands.

The goals, policies, and implementation measures in the *Kern County General Plan* related to agriculture and forest resources of potential applicability to the project are provided below. The *Kern County General Plan* contains additional goals, policies, and implementation measures that are more general in nature and not specific to development. Therefore, they are not listed below, but, as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space, and Conservation Element

1.9 Resource

Goals

- **Goal 1.** To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.

- **Goal 2.** Protect areas of important mineral, petroleum, and agricultural resource potential for future use.

- **Goal 5.** Conserve prime agriculture lands from premature conversion.

Policies

- **Policy 1.** Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.

- **Policy 2.** In areas with a resource designation on the General Plan map, only industrial activities which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with the General Plan.

- **Policy 5.** Areas of low intensity agriculture use (Map Code 8.2 (Resource Reserve), Map Code 8.3 (Extensive Agriculture), Map Code 8.5 (Resource Management)) should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract.

- **Policy 7.** Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.

- **Policy 12.** Areas identified by the NRCS as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.

- **Policy 21.** The County shall encourage qualifying agricultural lands to participate in the Williamson Act program or Farmland Security Zone program.

Implementation Measures

- **Implementation Measure F.** Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.

- **Implementation Measure G.** Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.

Kern County Ordinance

Title 19 – Zoning Code

Chapter 19.12 – Exclusive Agriculture (A) District

The purpose of an A zone is to designate areas suitable for agricultural uses to prevent the encroachment of incompatible uses onto agricultural lands and premature conversion of such lands to non-agricultural uses. Allowable land uses within the A zone are set forth in Sections 19.12.020 and 19.12.030 of the Kern County Code and include those associated with growing and harvesting crops, breeding and raising animals, agricultural industries, residential uses to house farm workers or the landowner, Christmas tree farms, utility corridors, resource extraction, waste facilities, institutional/educational uses, and various miscellaneous uses, such as animal shelter and clubs. Rock, gravel, sand, concrete, aggregate, or soils crushing, processing, or distribution is permitted with approval of a Conditional Use Permit (CUP).

Williamson Act Standard Uniform Rules

Kern County has adopted a set of Agricultural Preserve Standard Uniform Rules that identify land uses that are considered compatible uses within agricultural preserves established under the Williamson Act. These rules are designed to restrict the uses of land enrolled in a Williamson Act contract to agriculture or other compatible uses. Agricultural uses include crop cultivation, grazing operations, commercial wind farms, livestock breeding, dairies, and uses that are incidental to agricultural uses. Other compatible uses include farm dwellings; labor camps; recreational uses; oil and gas drilling and production; erection, construction, alteration, operation, and maintenance of gas, electric, water, and communication utility facilities and similar public service facilities; production of minerals by in situ leaching or other means and methods similar to production of oil and gas; private, agriculturally related airstrips; commercial wind developments; water recharge facilities; and offices and administrative buildings (Kern County 2013).

4.2.4 Impacts and Mitigation Measures

This section describes the methodology used in conducting the impact analysis for agricultural resources, the thresholds of significance used in assessing impacts to agricultural resources, and the assessment of impacts to agricultural resources, including relevant mitigation measures.

Methodology

This section describes the potential agricultural resources impacts associated with development of the project. Baseline conditions were first established for the affected environment relevant to agricultural resources, as presented above in Section 4.2.2, *Environmental Setting*.

These baseline conditions were evaluated based on their potential to be affected by project ground disturbance and other activities associated with mining and reclamation within the project area. Following the completion of mining, mined areas would be reclaimed (which

includes revegetation) so that they are suitable for cattle grazing (see Section 3.4.3, *Reclamation Plan*, in Chapter 3, *Project Description*). The predicted interactions between the affected environment as it pertains to agricultural resources and project activities are evaluated based on the significance criteria identified under the Thresholds of Significance below.

Economic impacts are beyond the scope of environmental analysis under the California Environmental Quality Act (CEQA), except to the extent that they may lead to physical changes to the environment. Section 15131(a) of the State CEQA *Guidelines* states:

> Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

This EIR does not consider potential economic impacts of the project on agriculture and forest resources because there are no economic impacts that would result in physical impacts.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on agriculture and forest resources. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to agriculture and forest resources if it would:

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;

b. Conflict with existing zoning for agricultural use, or Williamson Act contract;

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g);

d. Result in the loss of forest land or conversion of forest land to non-forest use;

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 forest land to non-forest use; or

f. Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code).

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- 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;

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g); and

- Result in the loss of forest land or conversion of forest land to non-forest use.

Project Impacts

Impact 4.2-1: The project would conflict with existing zoning for agricultural use or Williamson Act contract.

The entire project site is zoned A (Exclusive Agriculture) and portions of the project site (i.e., those within the boundaries of APNs 156-070-01 and 156-070-10) are currently under a Williamson Act contract. Section 19.100 (Surface Mining Operations) of the Kern County Zoning Ordinance stipulates requirements applicable to any surface mining operation undertaken in unincorporated Kern County, except for those operations specifically exempted by PRC Sections 2714 or 2776. The proposed surface mining and reclamation plan is permitted within this Zone District, subject to securing a CUP. Therefore, with the approval of a CUP, the proposed surface mining project would be consistent with applicable land use policies and regulations. Approval of the CUP by the Kern County Board of Supervisors is required to determine compatibility of the proposed land use with existing zoning designations. Section 19.12 (A [Exclusive Agriculture] District) stipulates in part that uses in the A District are limited primarily to agricultural uses and other activities compatible with agricultural uses.

As discussed previously, surrounding agricultural land uses are limited to livestock grazing, which would not be affected by the proposed project. Not only would livestock grazing on surrounding properties be uninterrupted by project activities, livestock grazing would continue to occur within the project site as well (on portions of the project site outside of the active mine and processing areas). The reclaimed (end use) of the land disturbed as a result of the project is cattle grazing. Therefore, the proposed project would not conflict with the project site's existing agricultural zoning. Additionally, the property owner is not proposing to cancel the Williamson Act contract and the site would be returned to grazing land use following

reclamation activities. Under Section 17.64.050 of the Williamson Act, mining is considered a compatible use but is required to follow the reclamation standards adopted by the State Mining and Geology Board (SMGB), pursuant to PRC Section 2773. This includes the applicable performance standards for prime agricultural land and other agricultural land, and no exceptions to these standards may be permitted (Code Publishing Company 2018). Although the proposed project would not conflict with existing zoning for agricultural use, or Williamson Act Contract, Mitigation Measure MM 4.2-1 has been included to ensure the project proponent addresses the Williamson Act Contract, and Mitigation Measure MM 4.2-2 would require posting a note on site plans as referenced below. Therefore, impacts would be less than significant with mitigation.

Mitigation Measures

MM 4.2-1 Prior to commencement of operations as authorized by this approval, on those portions of the project site subject to a Williamson Act Contract, the project proponent shall obtain either:

A. approval from the Kern County Board of Supervisors of a determination of compatibility for the proposed use of the site in accordance with California Government Code Section 51238.1; or

B. approval of a contract cancellation for the affected portion of the project site.

MM 4.2-2 The project proponent/operator shall ensure that the following note appears on all site plans associated with the proposed project: "The County of Kern encourages operation of properly conducted businesses in agriculture, oil, mining, manufacturing, and other non-residential operations within the County. If the property you are purchasing is located near these businesses, you may be subject to inconveniences or discomforts arising from such operations to the extent allowed by law. This notice does not waive your legal rights."

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.2-1 and MM 4.2-2, impacts would be less than significant.

Impact 4.2-2: The project would 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 forest land to non-forest use.

The project would result in the temporary exposure of up to 20 acres of land at any given time that is currently used for cattle grazing to a non-agricultural use (i.e., mining), as further described in Section 3.4.2, *Mining Plan*, of this EIR. While cattle grazing is considered an agricultural use, such land is not necessarily considered farmland; however, this evaluation

conservatively considers it as such. The temporary conversion of grazing land would occur as operations expand into the proposed 93.67-acre disturbance area. It is anticipated that cattle grazing would continue within the proposed 88-acre mine area following project approval until mining within a given portion of that 88-acre area were to commence. At that time, cattle grazing would be excluded from the given portion until such time as it has been deemed reclaimed in accordance with the approved Reclamation Plan. As described in Section 3.4.3, *Reclamation Plan*, the project site would be reclaimed (which includes being revegetated) so that the area will be suitable for post-mining grazing, similar to the site's current condition.

As previously described, the project site does not contain designated Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or other improved agricultural land. As proposed, upon completion of the project, the site would be reclaimed to an end use of grazing land for livestock. Although the project would convert an existing agricultural use (cattle grazing) to non-agricultural use for the period of time that mining and reclamation (i.e., until the area has been deemed by the Lead Agency to have been reclaimed in accordance with the approved Reclamation Plan) occur within a given area, this temporary conversion is not considered a substantial change or effect on the environment. Thus, this impact is considered less than significant. However, mitigation is included to provide additional assurances that reclamation would achieve specific performance standards for rangeland suitability for livestock, by requiring the site to be reclaimed to an end use of rangeland for livestock, in accordance with the approved surface mining and reclamation plan. Specifically, the proposed surface mining and reclamation plan lists performance standards (67.5% of the ground surface covered with vegetation, and a species richness of five species within a 1-square-meter area), per the response to Question #27 of the Surface Mining and Reclamation Act (SMARA) Application (included as Appendix B of this EIR).

With regard to Mitigation Measure MM 4.2-3, livestock grazing is generally expressed in terms of animal units per area or total animal unit months (AUMs). Correspondence has been submitted by Julie Finzel (Livestock and Natural Resources Advisor, University of California Cooperative Extension – Kern, Tulare and Kings Counties) (included as Appendices D6 and D7 of this EIR) indicating the proposed performance standards should be sufficient to provide a grazing standard of 0.25 AUM per acre, assuming normal rainfall and good grazing management.

Additionally, the aforementioned correspondence submitted by Ms. Finzel indicates that, upon final reclamation in accordance with the approved reclamation plan, it is assumed 48 acres of reclaimed land (per the proposed vegetation performance standards) would be required to sustain one head of cattle on a year-round basis. However, many grazing lands are not utilized by cattle on a year-round basis, as cattle are often transported multiple times annually to graze different properties. As such, reclamation would also be the equivalent, for example, of 48 acres of reclaimed land of sustaining two head of cattle for a 6-month growing season, or 48 acres of reclaimed land sustaining four head of cattle for a 3-month growing season.

Mitigation Measures

MM 4.2-3 Upon completion of the project, the site shall be reclaimed to an end use of rangeland for livestock, in accordance with the approved surface mining and reclamation plan.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.2-3, impacts would be less than significant.

Impact 4.2-3: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code).

Portions of the project site (i.e., those within the boundaries of APN 156-070-01 and 156-070-10) are currently under a Williamson Act contract; however, as discussed in Chapter 3, *Project Description*, the project proponent is not proposing to cancel the Williamson Act contract, but rather to obtain approval from the Kern County Board of Supervisors of a determination of compatibility for the proposed use of the site (mining). Following mining activities, the land would be reclaimed to its current use as grazing land. Implementation of the proposed project would not result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 (Williamson Act) or Farmland Security Zone Contract for any parcel of 100 or more acres; therefore, no impact would occur.

Mitigation Measures

Mitigation is not necessary.

Level of Significance after Mitigation

There would be no impact.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project site (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis). Notwithstanding consideration of these specific projects, the geographic scope for cumulative impacts to agriculture and forest resources encompasses Kern County. As agricultural land statistics and characteristics are typically collected at the County level, cumulative impacts to agricultural and forest land should be evaluated within the context of Kern County. See Section 4.2.2, *Environmental Setting*, for discussion of recent Countywide trends for agricultural lands and crop values.

Impact 4.2-4: The project would contribute to cumulative conversion of farmland to non-agricultural use.

As proposed, the project would result in the temporary conversion of 92.27 acres of land currently used for cattle grazing to a non-agricultural use. This impact would occur over time as land is mined. Following the completion of mining, lands would be reclaimed to be suitable for cattle grazing. Although the project impact is considered less than significant, as discussed in Impact 4.2-2, above, Mitigation Measure MM 4.2-3 is included to provide additional assurances that reclamation would achieve specific performance standards for rangeland suitability for cattle.

Section 4.2.2, *Environmental Setting*, discusses recent Countywide trends for agricultural lands and crop values. As discussed there, Kern County is growing rapidly, and non-agricultural uses are encroaching on agricultural lands. However, while important farmland was reduced by 4,605 acres, grazing land increased by 1,652 acres, resulting in a net decrease in agricultural lands within the County of 2,953 acres between 2014 and 2016 (DOC 2016b). As of 2016, there were approximately 1,849,266 acres of grazing land in Kern County (DOC 2016b). Although a maximum of up to 20 acres of land may be exposed at any given time, potentially the entire 92.27-acre disturbance area may be temporarily unavailable for grazing (i.e., which includes any land which has been reseeded/replanted and undergoing reclamation, but has not yet been deemed reclaimed by the Lead Agency). However, such 92.27-acre area represents less than 0.00005% of the Countywide grazing land. This temporary conversion is not considered to represent a significant contribution to the permanent loss of grazing land in the County. Therefore, with implementation of Mitigation Measures MM 4.2-1 through MM 4.2-3, this cumulative impact is considered less than significant for the purposes of this analysis and no additional mitigation is required.

Mitigation Measures

Implement Mitigation Measures MM 4.2-1 through MM 4.2-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.2-1 through MM 4.2-3, cumulative impacts would be less than significant.

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Section 4.3
Air Quality

4.3.1 Introduction

This section of the Environmental Impact Report (EIR) evaluates short- and long-term air quality impacts associated with implementation of the project and describes the affected environment and regulatory setting for air quality. Potential impacts on the environment and human health due to emissions affecting air quality during implementation of the project are discussed using applicable thresholds where indicated. Mitigation measures that would reduce the project's impacts, where applicable, are also discussed. Information in this section is based on the following documents:

- *Air Quality Impact Assessment, GF Industries, Johe Ranch Mine, McKittrick CA, Kern County, California* (AQIA) (WZI Inc. 2019a), included as Appendix C.1;
- *Johe Ranch Project – Response to Kern County Questions* (WZI Inc. 2020a), included as Appendix C.2;
- *Johe Ranch Project – AQIA Supplemental Memo* (WZI Inc. 2020b), included as Appendix C.3; and
- *Johe Ranch Project – AQIA Supplemental Memo* (WZI Inc. 2020c), included as Appendix C.4.

4.3.2 Environmental Setting

The project site is located entirely in the southernmost San Joaquin Valley Air Basin (SJVAB). Air pollutant emissions and other air quality programs in the SJVAB are regulated by the San Joaquin Valley Air Pollution Control District (SJVAPCD).

The San Joaquin Valley floor is within the southern end of the SJVAB, which is made up of all or portions of the following counties in California's Central Valley: Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties, and the San Joaquin Valley portion of Kern County. The western portion of Kern County, where the project site is located, is regulated by the SJVAPCD.

Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that produce emissions. Air pollution from significant anthropogenic activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources. Activities that tend to increase mobile activity include increases in population, increases in traffic (including automobiles, trucks, aircraft, and rail), urban sprawl (which increases commuter driving distances), and general local land management practices as they pertain to modes of commuter transportation. Air pollution is

also transported into the SJVAB from a variety of sources, including northern California and Asia.

Sensitive Receptors

The SJVAPCD identifies a sensitive receptor as a location where human populations, especially children, senior citizens, and sick persons, are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for ambient air quality standards, such as 24-hour, 8-hour, or 1-hour. Examples of sensitive receptors include residences, hospitals, and schools (SJVAPCD 2015a). Industrial and commercial uses are not considered sensitive receptors.

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Land uses that can be considered sensitive receptors include residential communities, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive individuals with compromised immune systems, such as children and the elderly, may be exposed to emissions from the construction and operation of the project. Worker receptors refer to employees and locations where people work. Impacts on sensitive receptors are of particular concern because they are the people most vulnerable to the effects of air pollution. Although much of the area surrounding the project site is occupied by agricultural land uses, there are also a limited number of commercial and residential uses within approximately 8 miles of the site, with the closest residence being approximately 0.7 mile from the project site. The AQIA (WZI Inc. 2019a), included as Appendix C.1, specifically identifies seven receptor locations for which impacts associated with emissions and emissions-related health risks are evaluated. The locations are identified as R1 through R7 on **Figure 4.3-1,** *Air Quality Analysis Sensitive Receptor Locations*, and consist of the following locations:

- R1: private residence
- R2: private residence
- R3: private residence
- R4: private residence
- R5: Town of McKittrick
- R6: private residence
- R7: private residence

Meteorological Conditions

The SJVAB is the southern half of California's Central Valley and is 250 miles long and bordered by mountains on three sides. The SJVAB is bordered by the Sierra Nevada Mountains in the east (8,000 to 14,491 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000 to 7,981 feet in elevation).

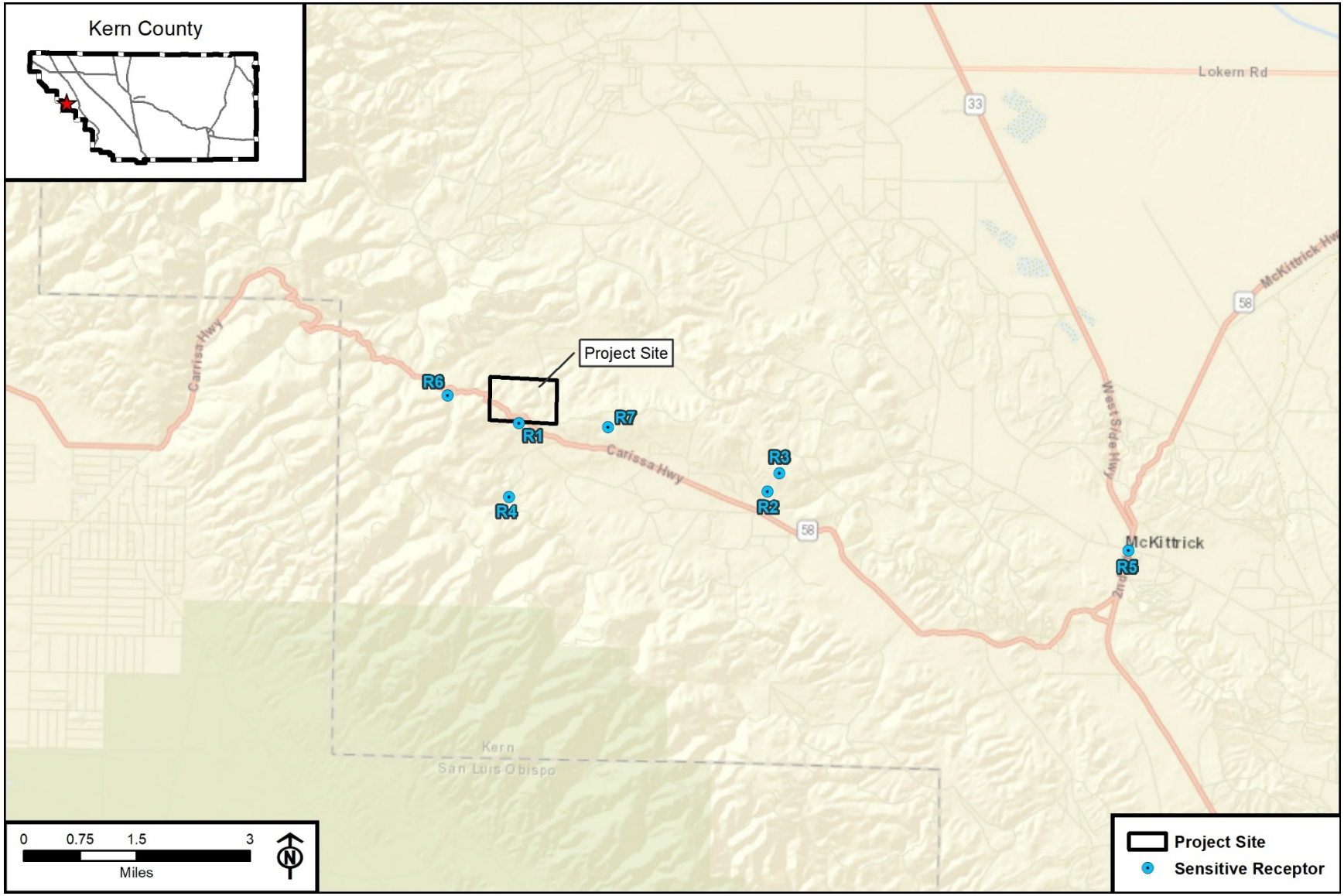

Figure 4.3-1
Air Quality Analysis Sensitive Receptor Locations Map

There is a slight downward elevation gradient from Bakersfield in the southeast end (408 feet in elevation) to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the valley.

The overall climate in the SJVAB is warm and semi-arid. The San Joaquin Valley is in a Mediterranean Climate Zone. Mediterranean Climate Zones occur on the west coast of continents at 30 to 40 degrees latitude and are influenced by a subtropical high-pressure area most of the year. Mediterranean climates are characterized by sparse rainfall, which occurs mainly in the winter. There is only one wet season during the year and 90% of the precipitation falls during October through April. Snow in the valley is infrequent and thunderstorms seldom occur. Summers are hot and dry. Summertime maximum temperatures often exceed 100 degrees Fahrenheit in the valley.

The subtropical high-pressure area is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the valley. Air temperature in the lowest layer of the atmosphere typically decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. The height of the base of the inversion is known as the "mixing height." This is the level to which pollutants can mix vertically. Mixing of air is minimized above the inversion base. The inversion base represents an abrupt density change where little air movement occurs. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass near the land surface, resulting in trapping of air pollutants below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500 to 3,000 feet). Concentration levels of air pollutants are directly related to inversion layers due to the limitation of vertical mixing. Inversion layers enhance the formation of ozone and limit dispersion of directly emitted pollutants like particulate matter and carbon monoxide.

Wintertime high-pressure events can often last many weeks with surface temperature often lowering into the 30 degrees Fahrenheit range. During these events, fog can be present and inversions are extremely strong. These winter-time inversions can inhibit vertical mixing of pollutants to a few hundred feet.

The transport and dispersion of air pollutants in ambient air are influenced by many complex factors. The primary factors are wind, topological boundaries, and atmospheric stability. During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the San Joaquin Valley and flows in a south-southeasterly direction through the valley and the Tehachapi Pass, into the Mojave Desert. During the winter months, the San Joaquin Valley experiences light, variable winds, less than 10 miles per hour (mph).

Topography

Air pollution is directly related to a region's topographic features. The SJVAB is approximately 250 miles long, an average of 35 miles wide, and is the second largest air basin in the State. As previously stated, the SJVAB is defined by the Sierra Nevada mountains in the east (8,000 to 14,491 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and

the Tehachapi Mountains in the south (6,000 to 7,981 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest and opens to the sea at the Carquinez Straits where the San Joaquin–Sacramento Delta empties into San Francisco Bay.

Wind Patterns

The SJVAB's topography has a dominating effect on wind patterns. Winds tend to blow somewhat parallel to the valley and mountain range orientation. In spring and early summer, thermal low-pressure systems develop over the interior basins east of the Sierra Nevada mountain range, and the Pacific High (a high-pressure system that develops over the central Pacific Ocean near the Hawaiian Islands) moves northward. These developments and the topography produce the high incidence of relatively strong northwesterly winds in the spring and early summer.

Diurnal wind regimes markedly affect the horizontal transport of air in the project area. During the summer, northeast winds dominate the daytime regime. These winds, generated by the Pacific High offshore, are enhanced by the San Joaquin Valley orientation and by the thermal low that develops in the Central Valley during this season. In response to this thermal low, air moves inland through passes in the coastal ranges, principally the Carquinez Strait near San Francisco, and flows to the south in the San Joaquin Valley as an up–valley northwesterly wind. This general northwest flow in the San Joaquin Valley is expressed locally as a more northeasterly wind under the influence of local terrain on the west side of the valley.

Dominant nighttime wind directions during summer are markedly different from those of the daytime. Winds with a northerly component have a low frequency of occurrence at night. The high frequency of west to southwest winds at night is due primarily to down-slope drainage flow.

During the winter months, northerly to northeasterly winds remain dominant in the daytime. However, winds are more variable than during summer, due in part to: (1) the southward migration of the Pacific High and resultant storm passages; (2) the absence of a strong thermal trough; and (3) the varied influence of the Great Basin High. As in summer, winds during winter nights are predominantly from the west to southwest and are associated with drainage flow. Wind speeds are generally higher in summer than in winter in the project area. Calm conditions occur most often in winter but are relatively infrequent during either season.

The mountains to the east, south, and west essentially block the region from transport of very cold air from the mid–continent in winter, and the relatively cool, marine air from the Pacific Ocean during summer. Transport of marine air through the Carquinez Strait during summer has a moderating effect on northern portions of the San Joaquin Valley, but this effect is not great in the southern portion of the valley. In this area, temperature regimes are influenced primarily by topography, the higher elevations generally experiencing cooler temperatures.

Temperature

The vertical rise and mixing of air pollutants is limited by the presence of persistent temperature inversions. Inversions may be either ground level or elevated. Ground-level inversions occur

frequently during early fall and winter (i.e., October through January). High concentrations of primary pollutants (i.e., pollutants emitted directly into the atmosphere, such as carbon monoxide) may be found at these times. Elevated inversions act as a lid over the basin and limit vertical mixing, resulting in severe air stagnation. Elevated inversions contribute to the occurrence of high levels of ozone during the summer months.

In winter, storm systems moving in from the Pacific Ocean bring a maritime influence to the San Joaquin Valley. The Sierra Nevada mountain range prevents the cold, continental air masses from influencing the valley. Temperatures below freezing are unusual. In the southern portion of the SJVAB, average high temperatures in the winter are in the 60s, but highs in the 30s and 40s can occur with persistent fog and low cloudiness. In summer, high temperatures often exceed 100 degrees, with averages in the mid/high 90s in the southern SJVAB. Summer low temperatures average in the mid-50s in the southern basin.

Precipitation

Precipitation in the SJVAB is strongly influenced by the position of the semi-permanent subtropical high-pressure area located off the Pacific Coast (the Pacific High). In the winter, this high-pressure system moves southward, allowing Pacific storms to move through the SJVAB. The majority of the precipitation in the valley is winter rain produced by these storms. Snowstorms, hailstorms, and ice storms occur infrequently in the valley, and severe occurrences are very rare.

Precipitation on the SJVAB floor and in the Sierra Nevada decreases from north to south. This decrease is primarily because the Pacific storm track often passes through the northern part of the State while the southern part of the State remains protected by the Pacific High. For example, the northern portion of the SJVAB (Manteca and Stockton areas) receives approximately 20 inches of rain per year; the central portion of the basin (Fresno area) receives approximately 10 inches of rain per year; and the southern portion of the basin (Bakersfield area) receives less than 6 inches of rain per year. The Tejon Pass area receives about 12 inches of rain per year.

Ambient Air Quality Standards

National and State Standards

Both the Federal government and State of California have established ambient air quality standards for several different pollutants, which are summarized in **Table 4.3-1,** *National and California Ambient Air Quality Standards*. For some pollutants, separate standards have been set for different time periods. Most standards have been set to protect public health. For other pollutants, standards have been based on some other value (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

As required by the Federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate

matter (less than 10 microns in diameter [PM_{10}] and less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb). These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, the USEPA has set "primary" and "secondary" ambient standards for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

Regional and Local Standards

The NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. The NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]). **Table 4.3-1,** *National and California Ambient Air Quality Standards*, presents both sets of ambient air quality standards (i.e., national and State) as well as attainment status for each of these standards within the SJVAPCD jurisdiction. If a pollutant concentration in an area is lower than the established standard, the area is classified as being in "attainment" for that pollutant. If the pollutant concentration meets or exceeds the standard (depending on the specific standard for the individual pollutants), the area is classified as a "nonattainment" area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

Table 4.3-1 National and California Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	California Standards[1]		National Standards[2]	
		Concentration[3]	Attainment Status	Primary[3,5]	Attainment Status
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment/ Severe	N/A	No Federal Standard[f]
	8-Hour	0.070 ppm (137 µg/m^3)	Nonattainment	0.075 ppm (147 µg/m3)	Nonattainment/ Extreme[e]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment/ Unclassified	9 ppm (10 mg/m^3)	Attainment/ Unclassified
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)[8]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Attainment	53 ppb (100 µg/m^3)	Attainment /Unclassified
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)[6]	
Sulfur Dioxide (SO_2)[8]	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm	Attainment/ Unclassified
	3 Hour	N/A		N/A	

Table 4.3-1 National and California Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	California Standards[1]		National Standards[2]	
		Concentration[3]	Attainment Status	Primary[3,5]	Attainment Status
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	
	Annual	N/A		0.030 ppm	
Particulate Matter <10 Microns in Aerodynamic Diameter (PM_{10})	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Attainment[c]
	Annual Arithmetic Mean	20 µg/m^3		N/A	
Particulate Matter <2.5 Microns in Aerodynamic Diameter ($PM_{2.5}$)	24-Hour	No Separate State Standard	Nonattainment	35 µg/m^3	Nonattainment
	Annual Arithmetic Mean	12 µg/m^3		12 µg/m^3	
Lead (Pb)[10,11]	30 days average	1.5 µg/m^3	Attainment	N/A	No Designation/ Classification
	Calendar Quarter	N/A		1.5 µg/m^3	
Visibility-Reducing Particles (VRP)[12]	8-Hour (10 am to 6 pm, PST)	See footnote 13	Unclassified	No Federal Standards	
Sulfate	24 Hour	25 µg/m^3	Attainment		
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Attainment		

Notes:
ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; km = kilometers; RH = relative humidity; PST = Pacific standard time; N/A =not applicable.

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and VRP) are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of the California Air Resources Board (CARB) to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[8] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m3 as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 30 years.

[9] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 100 ppb and 100 ppb are identical to 0.100 ppm.

[10] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards

Table 4.3-1 National and California Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	California Standards[1]		National Standards[2]	
		Concentration[3]	Attainment Status	Primary[3,5]	Attainment Status

are approved. Note that the 1-hour national standard is in units of ppb; California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[11] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[12] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 j.tg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[13] In 1989, the CARB converted both the general Statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the Statewide and Lake Tahoe Air Basin standards, respectively.

Source: WZI Inc. 2019a.

Existing Attainment Status

As shown in **Table 4.3-1,** *National and California Ambient Air Quality Standards*, the SJVAPCD is currently classified as nonattainment/severe for the 1-hour State ozone standard as well as nonattainment and nonattainment/extreme for the national and State 8-hour ozone standards, respectively. Additionally, the SJVAPCD is classified as nonattainment for the State 24-hour PM_{10} standard and the State and Federal $PM_{2.5}$ standards. The SJVAPCD is currently in attainment and/or unclassified status for all other ambient air quality standards. California has also established CAAQS for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected to occur under the project and thus these pollutants are not addressed further in this EIR.

Ambient Air Monitoring

The California Air Resources Board (CARB) has established and maintains a network of sampling stations (called the State and Local Air Monitoring Stations [SLAMS] network) that work in conjunction with local air pollution control districts (APCDs) and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of eight stations that monitor various pollutant concentrations. The locations of these stations were chosen to meet monitoring objectives, which, for the SLAMS network, call for stations that monitor the highest pollutant concentrations, representative concentrations in areas of high population density, the impact of major pollution emissions sources, and general background concentration levels.

Existing and probable future air quality in the project area can best be inferred from examining ambient air quality measurements taken at monitoring station(s) in the vicinity of the project area. The Bakersfield 5558 California Avenue air quality monitoring station is the closest station to the project site that has monitoring data available for ozone, PM_{10}, and $PM_{2.5}$, but does not collect data for CO or NO_2. **Table 4.3-2,** *Air Quality Data Summary (2016–2018)*, shows the monitoring results for criteria pollutants for the past 3 years from the Bakersfield 5558 California Avenue air quality monitoring station. As indicated in the table, there have been numerous exceedances of the ozone, PM_{10}, and $PM_{2.5}$ standards at the air quality monitoring station during the 3-year study period.

Table 4.3-2 Air Quality Data Summary (2016–2018)

Pollutant	Monitoring Year		
	2016	2017	2018
Ozone			
Maximum concentration (1-hour/8-hour average) µg/m^3	0.092/0.085	0.122/0.104	0.107/0.098
Number of days State/national 1-hour standard exceeded	0/0	11/0	8/0
Number of days State/national 8-hour standard exceeded	63/30	87/47	64/34
Suspended Particulate Matter ($PM_{2.5}$)			
Maximum concentration (24-hour average) (national/State) µg/m^3	66.4/66.4	101.8/101.8	98.5/98.5
Annual Average (national/State) µg/m^3	14.7/66.4	15.9/15.9	15.6/17.6
Number of days national standard exceeded	25.5	30.2	40.3
Suspended Particulate Matter (PM_{10})			
Maximum concentration (24-hour average) (national/State) µg/m^3	90.9/92.2	138.0/143.6	142.0/136.1
Number of days State standard exceeded	121.4	98.7	Insufficient Data
Number of days national standard exceeded	0	0	0

[1] Data from Bakersfield 5558 California Avenue (https://www.arb.ca.gov/adam/select8/sc8start.php).
Source: CARB 2019a.

Criteria Air Pollutants

The following is a general description of the physical and health effects from pollutants including the governmentally regulated air pollutants shown in **Table 4.3-1,** *National and California Ambient Air Quality Standards*.

Ozone (O_3)

Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, at ground level, troposphere, or "bad," ozone is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up where it meets the second layer, the stratosphere. The stratospheric or "good" ozone layer extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), nitrogen oxide (NO_X), and sunlight to form. ROG and NO_X are emitted from various sources throughout Kern County. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Ozone is a regional air pollutant. It is generated over a large area and transported and spread by the wind. As the primary constituent of smog, ozone is the most complex, difficult to control,

and pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically NO_X and ROG. Sources of precursor gases number in the thousands and include common sources such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as forests and foothill communities; agricultural crops; and some manmade materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone also accelerates aging and exacerbates pre-existing asthma and bronchitis. Evidence has linked the onset of asthma to exposure to elevated ozone levels in exercising children (CARB 2016). Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. In addition, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs. Elevated ozone concentrations also reduce crop and timber yields, damage native plants, and damage materials such as rubber, paints, fabric, and plastics (CARB 2016).

Reactive Organic Gases (ROG) and Volatile Organic Compounds (VOC)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases, including ROG and volatile organic compounds (VOCs), which include all hydrocarbons except those exempted by the CARB. Therefore, ROGs are a set of organic gases based on State rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by Federal law. The list of compounds exempt from the definition of a VOC is presented in District Rule 102.

Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see the ozone health effects discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate Federal or California ambient air quality standards for ROG. Carcinogenic forms of ROG are considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen. The health effects of individual ROGs are described under the *Toxic Air Contaminants* subheading below.

Carbon Monoxide (CO)

CO, an odorless, colorless, poisonous gas that is highly reactive, is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is a byproduct of motor vehicle exhaust, which contributes more than 66% of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95% of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

When inhaled, CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, with prolonged enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome; and increased daily mortality rate (Fierro et al. 2001).

Most of the studies that evaluate the adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death. At extremely high concentrations, CO is poisonous and can cause death (USEPA 2020).

Nitrogen Dioxide (NO_2) and Nitrogen Oxide (NO_X)

NO_2 is a reddish brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide. NO_X is a family of highly reactive gases that is a primary precursor to the formation of ground-level ozone, and reacts in the atmosphere to form acid rain. NO_X is emitted from solvents and combustion processes in which fuel is burned at high temperatures, principally motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates. NO_X is also an ozone precursor that combines with ROG to form ozone (see discussion above for the health effects of ozone).

NO_X reacts with other pollutants to form ground-level ozone, nitrate particles, acid aerosols, and NO_2, which cause respiratory problems. NO_X and the pollutants formed from NO_X can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NO_X is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Direct inhalation of NO_X can also cause a wide range of health effects. NO_X can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of NO_2 may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne NO_X can also impair visibility.

NO_X contributes to a wide range of environmental effects both directly and indirectly when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms. NO_X also contributes to visibility impairment.

Sulfur Dioxide (SO_2)

SO_2 is a colorless, irritating gas with a “rotten egg” smell that is formed primarily by the combustion of sulfur-containing fossil fuels. Historically, SO_2 was a pollutant of concern in Kern County, but with the successful implementation of regulations, the levels have been reduced significantly.

High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

SO_2 not only has a bad odor, it can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. SO_2 can also irritate the lung and throat at concentrations greater than 6 parts per million (ppm) in many people; impair the respiratory system's defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods; and enhance the harmful effects of ozone (combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing).

SO_2 tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among "mouth breathers," e.g., people who are exercising or who have head colds. SO_2 can also easily injure many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. In addition, increases in SO_2 concentrations accelerate the corrosion of metals, probably through the formation of acids. SO_2 is a major precursor to acidic deposition. Sulfur oxides may also damage stone and masonry, paint, various fibers, paper, leather, and electrical components.

Increased SO_2 also contributes to impaired visibility. Particulate sulfate, much of which is derived from SO_2 emissions, is a major component of the complex total suspended particulate mixture.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter pollution consists of very small liquid and solid particles floating in the air. Some particles are large and dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and is a subset of PM_{10}.

Particulate matter or airborne dusts are the small particles that remain suspended in the air for long periods of time. Particulates of concern are PM_{10} and $PM_{2.5}$, which are small enough to be

inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

The composition of PM_{10} and $PM_{2.5}$ can vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from photochemical reactions of gaseous SO_2 and NO_X in the atmosphere to create sulfates (SO_4) and nitrates (NO_3), respectively. Secondary particles are of greatest concern during the winter months when low inversion layers tend to trap the precursors of secondary particulates.

In the western United States, there are sources of PM_{10} in both urban and rural areas. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

PM_{10} and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death. Sensitive populations, including children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis, are especially vulnerable to the effect of PM_{10}. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States. Non-health-related effects include reduced visibility and soiling of buildings. Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter (e.g., from diesel exhaust) not only bypasses the body's defense mechanisms and becomes embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-based studies in hundreds of cities in the United States and around the world have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of children's health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children.

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3% of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths resulted from homicide. Attaining the California particulate matter and ozone

standards would annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter causes about 250 excess cancer cases per year in California (Kern County 2006).

A study conducted in 2006 provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely affected by particulate air pollution are at risk of developing lung cancer at a rate comparable to nonsmokers exposed to secondhand smoke. This study also found approximately 16% excess risk of dying from lung cancer due to fine particulate air pollution (Pope and Dockery 2006). Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Kern County 2006).

Sulfates (SO_4^{-2})

Sulfates (SO_4^{-2}) are particulate product that comes from the combustion of sulfur-containing fossil fuels. When sulfur monoxide or SO_2 is exposed to oxygen, it precipitates out into sulfates (SO_3 or SO_4). Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in oxygen intake, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility and, because they are usually acidic, can harm ecosystems and damage materials and property.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Historically, lead was used to increase the octane rating in automobile fuel. However, because the use of gasoline-powered automobile engines run on leaded fuels, a major source of airborne lead, has been mostly phased out, the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ. Recent studies also show that

lead may be a factor in high blood pressure and subsequent heart disease. Lead can also be deposited on the leaves of plants, presenting a hazard to grazing animals and humans through ingestion.

Hydrogen Sulfide (H_2S)

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production and refining, sewage treatment plants, and confined animal feeding operations. H_2S in the atmosphere would likely oxidize into SO_2 that can lead to acid rain. At low concentrations H_2S, which has a characteristic "rotten egg" smell, may cause irritation to the eyes, mucous membranes and respiratory system, dizziness and headaches. In high concentrations hydrogen sulfide is extremely hazardous (800 ppm can cause death), especially in enclosed spaces. Occupational Safety and Health Administrations (OSHA) have the primary responsibility for regulating workplace exposure to H_2S.

Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H_2S (0.00011–0.00033 ppm). Deaths due to breathing in large amounts of H_2S have been reported in a variety of different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools.

Vinyl Chloride

Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics.

In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of liver angiosarcoma, which is a rare cancer, and have suggested a relationship between exposure cancers of the lung and brain. There are currently no adopted ambient air quality standards for vinyl chloride.

Short-term exposure to vinyl chloride has been linked with the following acute health effects:

- Acute exposure of humans to high levels of vinyl chloride via inhalation has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.

- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of

consciousness; irritation to the lungs and kidneys; inhibition of blood clotting in humans; and cardiac arrhythmias in animals.

- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects:

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.

- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed "vinyl chloride disease," which is characterized by Raynaud's phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).

- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances), as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers), have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified:

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals.

- Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings.

- Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages during their wives' pregnancies, although other studies have not supported these findings.

- Long-term exposure to vinyl chloride has also been identified as a cancer risk. Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans. Animal studies have shown that vinyl chloride, via inhalation, increases the incidence of angiosarcoma of the liver and cancer of the liver.

Visibility-Reducing Particles

This standard is a measure of visibility. The CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the State as being in attainment or nonattainment. Visibility-reducing particles (VRPs) consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated to be in attainment), California's attainment status with respect to VRPs is currently designated as unclassified.

Toxic Air Contaminants (TACs)

Hazardous air pollutants (HAPs) is a term used by the Federal CAA that includes a variety of pollutants generated or emitted by industrial production activities. Called TACs under the California Clean Air Act (CCAA) of 1988, 10 pollutants have been identified through ambient air quality data as posing the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. The CARB provides emission inventories for only the larger air basins.

Similar to the criteria pollutants, TACs are emitted from stationary, areawide, mobile, and natural sources. The primary sources of benzene in the state include mobile sources (87%) and stationary sources (12%). Forty-six percent of hexavalent chromium emissions are from stationary sources, such as electrical generation, aircraft and parts manufacturing, and fabricated metal product manufacturing. The majority of 1,3-butadiene emissions are generated from incomplete combustion of gasoline and diesel fuels—53% of 1,3-butadiene emissions are from mobile sources and 21% are from area sources, such as agricultural waste burning and open burning. Emissions of carbon tetrachloride are all produced by stationary sources such as chemical and allied produce manufacturers and petroleum refineries. Most of the emissions of para-dichlorobenzene are from consumer products such as non-aerosol insect repellents and solid/gel air fresheners. Eighty-two percent of formaldehyde emissions in California are from mobile sources, while 48% of methylene chloride emissions are from paint removers/strippers, automotive brake cleaners, and other consumer products. Perchloroethylene is produced primarily from stationary sources such as dry cleaning plants and manufacture of aircraft parts and fabricated metal parts. Emissions of diesel particulate matter (DPM) are from mobile sources (98%) and stationary sources (1%).

TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the act must prepare and submit toxic emission inventory plans and reports, and periodically update those reports. Of the Kern County portion of the SJVAB, no facility in the SJVAPCD has reported cancer risk exceeding 10 in 1 million or a hazard index over 1.0, and, therefore, are not considered significant by the standards of the Hot Spots program in the SJVAPCD.

Crystalline Silica

Respirable crystalline silica means crystalline silicon dioxide with aerodynamic diameter less than four microns (0.0004 centimeters). Silica or quartz is ubiquitous in nature. Most silica is amorphous and is therefore not crystalline as these two terms are mutually exclusive. Most dust generated by construction and mining dust sources including blasting is greater than 4 microns and therefore too large to be respirable. Respirable crystalline silica constitutes a de minimis fraction of dust from these sources and does not represent a significant health risk to neighbors of these types of projects. In order to result in toxic effects, the silica needs to be crystalline, smaller than 4 microns, and inhaled.

Inhalation of crystalline silica initially causes respiratory irritation and an inflammatory reaction in the lungs. Silicosis results from chronic exposure; it is characterized by the presence of histologically unique silicotic nodules and by fibrotic scarring of the lung. Lung diseases other than cancer associated with silica exposure include silicosis, chronic bronchitis, tuberculosis/silicotuberculosis, small airways disease, and emphysema. Ambient air exposures do not cause concern but levels to which workers (e.g., miners, sandblasters) may be exposed have been shown to cause cancer.

Acute exposures to high concentrations cause cough, shortness of breath, and pulmonary alveolar lipoproteinosis (acute silicosis). In a report on the hazards of exposure to crystalline silica, the American Thoracic Society (1997) stated: “Studies from many different work environments suggest that exposure to working environments contaminated by silica at dust levels that appear not to cause roentgenographically visible simple silicosis can cause chronic airflow limitation and/or mucus hypersecretion and/or pathologic emphysema.” Other researchers also concluded that “chronic levels of silica dust that do not cause disabling silicosis may cause the development of chronic bronchitis, emphysema, and/or small airways disease that can lead to airflow obstruction, even in the absence of radiological silicosis.” Fibrotic lesions associated with crystalline silica have also been found at autopsy in the lungs of granite workers who lacked radiological evidence of silicosis.

Silicosis results from chronic exposure; it is characterized by the presence of histologically unique silicotic nodules and by fibrotic scarring of the lung. Lung diseases other than cancer associated with silica exposure include silicosis, tuberculosis/silicotuberculosis, chronic bronchitis, small airways disease, and emphysema. Silica exposure has been implicated in autoimmune diseases (rheumatoid arthritis, scleroderma, systemic lupus erythematosus) in gold miners and granite workers and in the causation of kidney disease in some occupations, possibly by an immune mechanism.

Acetaldehyde

Acetaldehyde is classified as a Federal hazardous air pollutant and as a California TAC. Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere from photochemical oxidation. Sources include combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. In California, photochemical oxidation is the largest source of acetaldehyde concentrations in the ambient air. Approximately 85% of the emissions of acetaldehyde in the

SJVAB are from mobile sources, primarily diesel-fueled, and areawide sources, such as residential wood combustion, account for approximately 10% (Kern County 2006). However, in general, acetaldehyde concentrations are higher indoors than outdoors, due in part to the abundance of combustion sources, such as cigarettes, fireplaces, and woodstoves.

The primary acute effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract in humans. At higher exposure levels, erythema, coughing, pulmonary edema, and necrosis may also occur. Acute inhalation of acetaldehyde resulted in a depressed respiratory rate and elevated blood pressure in experimental animals. Tests involving acute exposure of rats, rabbits, and hamsters have demonstrated acetaldehyde to have low acute toxicity from inhalation and moderate acute toxicity from oral or dermal exposure.

Benzene

Benzene is highly carcinogenic and occurs throughout California; benzene also has noncancer–related health effects. The primary sources of benzene emissions in the SJVAB are mobile sources (approximately 67%) and stationary sources (approximately 32%). The mobile source emissions are primarily gasoline-fueled.

Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness. Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness in humans. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions in humans. Exposure to benzene in liquid and vapor form may irritate the skin, eyes, and upper respiratory tract in humans. Redness and blisters may result from dermal exposure to benzene.

Chronic inhalation of certain levels of benzene causes blood disorders in humans; specifically, benzene affects bone marrow (the tissues that produce blood cells). Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans who have been occupationally exposed to benzene.

1,3-Butadiene (Vinyl Ethylene)

1,3-butadiene has been identified as a carcinogen in California. The majority of 1,3-butadiene emissions come from incomplete combustion of petroleum-based fuels. Mobile sources account for 48% of total SJVAB emissions. Area sources, such as agricultural waste burning, open burning associated with forest management, and woodstoves and fireplaces, contribute to approximately 27%. Since the majority of 1,3-butadiene emissions are from incomplete combustion of gasoline and diesel fuels, CARB's 1990 adopted low-emission vehicle/Clean Fuels regulations and the 1996 Phase II reformulated gasoline regulations are expected to continue to reduce 1,3-butadiene emissions from cars and light-duty trucks as the fleet turns over and new low-emission vehicles are introduced into the fleet.

At very high levels, butadiene vapors cause neurological effects, such as blurred vision, fatigue, headache, and vertigo. Dermal exposure of humans to 1,3-butadiene causes a sensation of cold, followed by a burning sensation, which may lead to frostbite.

One epidemiological study reported that chronic (long-term) exposure to 1,3-butadiene by inhalation resulted in an increase in cardiovascular diseases, such as rheumatic and arteriosclerotic heart diseases, while other human studies have reported effects on the blood. A large epidemiological study of synthetic rubber industry workers demonstrated a consistent association between 1,3-butadiene exposure and occurrence of leukemia. Several epidemiological studies of workers in styrene-butadiene rubber factories have shown an increased incidence of respiratory, bladder, stomach, and lymphato-hematopoietic cancers. However, these studies are not sufficient to determine a causal association between 1,3-butadiene exposure and cancer, due to possible exposure to other chemicals and other confounding factors.

Carbon Tetrachloride (Tetrachloromethane)

Carbon tetrachloride is a central nervous system depressant, which the USEPA has classified as Group B2 (probable human carcinogen). The primary sources of carbon tetrachloride in California include chemical and allied product manufacturers and petroleum refineries. Unlike many of the other TACs, carbon tetrachloride is emitted primarily by sources other than motor vehicles, and there are virtually no emissions within the SJVAB or California.

Acute inhalation and oral exposures to high levels of carbon tetrachloride have been observed primarily to damage the liver (e.g., swollen, tender liver; changes in enzyme levels; jaundice) and kidneys (e.g., nephritis, nephrosis, proteinuria) of humans. Depression of the central nervous system has also been reported. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting. Delayed pulmonary edema (fluid in lungs) has been observed in humans who have been exposed to high levels of carbon tetrachloride by inhalation and ingestion, but this is believed to be due to injury to the kidney rather than direct action of carbon tetrachloride on the lung. Chronic inhalation or oral exposure to carbon tetrachloride produces liver and kidney damage in humans and animals.

Hexavalent Chromium

Hexavalent chromium emissions come mainly from electric generation, aircraft and parts manufacturing, and fabricated metal product manufacturing. In California, hexavalent chromium has been identified as a carcinogen. Epidemiological evidence suggests that exposure to inhaled hexavalent chromium may result in lung cancer.

The respiratory tract is the major target organ for chromium (VI) following inhalation exposure in humans. Other effects noted from acute inhalation exposure to very high concentrations of chromium (VI) include gastrointestinal and neurological effects, while dermal exposure causes skin burns in humans. Chronic inhalation exposure to chromium (VI) in humans results in effects on the respiratory tract, with perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness reported. Chronic human exposure to high levels of chromium (VI) by inhalation or oral exposure may

produce effects on the liver, kidney, gastrointestinal and immune systems, and possibly the blood.

Para-Dichlorobenzene

In California, para-dichlorobenzene has been identified as a carcinogen. In addition to the carcinogenic impact, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans. Para-dichlorobenzene is a chlorinated aromatic hydrocarbon. It was first registered for use in the United States in 1942, and it is sometimes called 1,4-dichlorobenzene. It is a fumigant insecticide and repellent. Para-dichlorobenzene turns directly from a solid into a gas, a process called sublimation.

The primary sources of para-dichlorobenzene include consumer products such as nonaerosol insect repellents and solid/gel air fresheners. These sources contribute to 97% of SJVAB para-dichlorobenzene emissions.

People who have been exposed to para-dichlorobenzene have experienced nausea, vomiting, dizziness, fatigue, and headaches. Para-dichlorobenzene vapor can also irritate the eyes and nasal passages. It may also cause kidney and liver damage in pets.

Formaldehyde

Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation, which is the largest source of formaldehyde concentrations in California ambient air. Directly emitted formaldehyde is a product of incomplete combustion. One of the primary sources of formaldehyde is vehicular exhaust. In fact, approximately 76% of the formaldehyde emissions in the SJVAB are from mobile sources, of which the source is predominantly diesel fueled. Formaldehyde is also used in resins, fumigants, and soil disinfectants, and it can be found in many consumer products as an antimicrobial agent.

The major toxic effects caused by acute formaldehyde exposure via inhalation are eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and irritation of the eye, nose, and throat. Animal studies have reported effects on the nasal respiratory epithelium and lesions in the respiratory system from chronic inhalation exposure to formaldehyde.

Occupational studies have noted statistically significant associations between exposure to formaldehyde and increased incidence of lung and nasopharyngeal cancer. This evidence is considered to be “limited,” rather than “sufficient,” due to possible exposure to other agents that may have contributed to the excess cancers. The USEPA considers formaldehyde to be a probable human carcinogen and has ranked it in Group B1 (probable human carcinogen). In California, formaldehyde has been identified as a carcinogen.

Methylene Chloride (Dichloromethane)

In California, methylene chloride has been identified as a carcinogen. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity. Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and a solvent in paint stripping operations. Approximately 80% of the SJVAB emissions of methylene chloride are from paint removers/strippers, automotive brake cleaners, and other consumer products. The statewide trend for methylene chloride shows that by comparing the statewide average methylene chloride concentration for 1990–1992 to that for 2005–2007 the result is a 77% decrease in both concentration and health risk.

Case studies of methylene chloride poisoning during paint stripping operations have demonstrated that inhalation exposure to extremely high levels of methylene chloride can be fatal to humans. Acute inhalation exposure to high levels of methylene chloride in humans has affected the central nervous system including decreased visual, auditory, and psychomotor functions, but these effects are reversible once exposure ceases. Methylene chloride also irritates the nose and throat at high concentrations. The major effects from chronic inhalation exposure to methylene chloride in humans are effects on the central nervous system, such as headaches, dizziness, nausea, and memory loss. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity. The USEPA considers methylene chloride to be a probable human carcinogen and has ranked it in Group B2. The State of California considers methylene chloride to be a carcinogen.

Perchloroethylene (Tetrachloroethylene)

In California, perchloroethylene (PRC) has been identified as a carcinogen. PRC vapors are irritating to the eyes and respiratory tract. Following chronic exposure, workers have shown signs of liver toxicity as well as kidney dysfunction and neurological disorders.

PRC is used as a solvent, primarily in dry cleaning operations. PRC is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In the SJVAB, approximately 65% of the emissions of PRC are from such stationary sources as dry cleaning plants and manufacturers of aircraft parts and fabricated metal parts. Areawide sources contribute approximately 35%. In comparing the statewide perchloroethylene concentration for 1990-1992 to that for 2005-2007 the result is an 84% decrease in both concentration and health risk.

Breathing PRC for short periods of time can adversely affect the human nervous system. Effects range from dizziness, fatigue, headaches, and sweating to incoordination and unconsciousness. Contact with PRC liquid or vapor irritates the skin, eyes, nose, and throat. These effects are not likely to occur at levels of PRC that are normally found in the environment.

Breathing PRC over longer periods of time can cause liver and kidney damage in humans. Workers exposed repeatedly to large amounts of PRC in air can also experience memory loss and confusion. Laboratory studies show that PRC causes kidney and liver damage and cancer

in animals exposed repeatedly by inhalation and by mouth. Repeat exposure to large amounts of PRC in air may likewise cause cancer in humans.

Diesel Particulate Matter (DPM)

DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute about 24% of the Statewide total, with an additional 71% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5% of total DPM.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). The CARB estimates that about 70% of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, the OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from the OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health (NIOSH), have calculated cancer risks from diesel exhaust that are similar to those calculated by the OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine-particle pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can reduce lung function in children. In California, diesel exhaust particles have been identified as carcinogens (OEHHA and American Lung Association of California [ALAC] 2001).

Polycyclic Aromatic Hydrocarbons (PAHs)

The term polycyclic aromatic hydrocarbons (PAHs) refers to a group of several hundred chemically related, environmentally persistent organic compounds of various structures and varied toxicity. Most of them are formed by a process of thermal decomposition (pyrolysis) and subsequent recombination (pyrosynthesis) of organic molecules. PAHs enter the environment through various routes and are usually found as a mixture containing two or more of these compounds, e.g., soot. They have been shown to cause carcinogenic and mutagenic effects and are potent immunosuppressants. Effects have been documented on immune system development. They are by-products of natural gas combustion.

Airborne Fungus (Valley Fever)

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicelluar structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

About 60% of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin.

One important fact to mention is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum, or body fluid sample; (2) growing a culture of CI from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called coccidioidin or spherulin), which indicates prior exposure to the fungus (Valley Fever Center for Excellence [VFCE] 2019). It should be noted that the incident rate for Valley Fever in Kern County within the SJVAB is the highest incidence rate within California.

Valley Fever is not contagious and therefore cannot be passed on from person to person. Most of those who are infected would recover without treatment within 6 months and would have a lifelong immunity to the fungal spores. In severe cases, especially in those patients with rapid

and extensive primary illness, those who are at risk for dissemination of disease, and those who have disseminated disease, antifungal drug therapy is used. The type of medication used and the duration of drug therapy are determined by the severity of disease and response to the therapy. The medications used include ketoconazole, itraconazole, and fluconazole in chronic, mild-to-moderate disease, and amphotericin B, given intravenously or inserted into the spinal fluid, for rapidly progressive disease. Although these treatments are often helpful, evidence of disease may persist, and years of treatment may be required (VFCE 2019).

The usual course of Valley Fever in healthy people is complete recovery within 6 months. In most cases, the body's immune response is effective, and no specific course of treatment is necessary. About 5% of cases of Valley Fever result in pneumonia (infection of the lungs), while another 5% of patients develop lung cavities after their initial infection with Valley Fever. These cavities occur most often in older adults, usually without symptoms, and about 50% of them disappear within 2 years. Occasionally, these cavities rupture, causing chest pain and difficulty breathing, and require surgical repair. Only 1% to 2% of those exposed who seek medical attention would develop a disease that disseminates (spreads) to other parts of the body other than the lungs (VFCE 2019).

Table 4.3-3, *Range of Valley Fever Cases*, presents the range of Valley Fever cases based on research conducted by the VFCE.

Table 4.3-3 Range of Valley Fever Cases

Infection Classification	Percent of Total Diagnosed Cases
Unapparent infections	60%
Mild to moderate infections	30%
Infections resulting in complications	5–10%
Fatal infections	<1%

Source: VFCE 2019.

Factors that affect the susceptibility to coccidioidal dissemination are race, sex, pregnancy, age, and immunosuppression. While there are no racial or gender differences in susceptibility to primary infection with coccidioidomycosis, differences in risk of disseminated infection do appear to exist. Men have a higher rate of dissemination than do women and several studies have shown that the rate of dissemination in African Americans and Filipinos is several times higher than in the rest of the U.S. population. Native Americans, Hispanics, and Asians may also have a higher rate of dissemination than the general population, but these population differences are not well defined (VFCE 2019).

The CI fungal spores are often found in the soil around rodent burrows, Indian ruins, and burial grounds. The spores become airborne when the soil is disturbed by winds, construction, farming, and soil-disturbing activities. This type of fungus is endemic to the southwestern United States and more common in Kern County. The ecological factors that appear to be most conducive to the survival and replication of the fungal spores are high summer temperatures, mild winters, sparse rainfall, and alkaline, sandy soils. During drought years, the number of organisms competing with CI decreases, and the CI remains alive, but dormant. When rain

finally occurs, the arthrocondia germinate and multiply more than usual because of a decreased number of other competing organisms. Later, the soil dries out in the summer and fall, and the fungi can become airborne and potentially infectious.

Asbestos

The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90–95% of all asbestos contained in buildings in the United States. Asbestos occurs in certain geologic environments that contain serpentinite and ultramafic rocks, which are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, Klamath Mountains, and Coast Ranges. According to information provided by the California Department of Conservation Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (USGS 2014).

Asbestos can only adversely affect humans in its fibrous form and these fibers must be broken and dispersed into the air and then inhaled. During geological processes, the asbestos mineral can be crushed, causing it to become airborne. It also enters the air or water from the breakdown of natural deposits. Constant exposure to asbestos at high levels on a regular basis may cause cancer in humans. The two most common forms of cancer are lung cancer and mesothelioma, a rare cancer of the lining that covers the lungs and stomach.

Coronavirus Disease 2019

Coronavirus Disease 2019 (COVID-19) is a new disease, caused by a novel (or new) human coronavirus that has not previously been seen in humans. The first known case of COVID-19 was confirmed in the United States on January 20, 2020 (Holshue et al. 2020). There are many types of human coronaviruses, including some that commonly cause mild upper-respiratory tract illnesses. COVID-19 is a respiratory illness that can spread from person to person. According to the Center for Disease Control (CDC), older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness. Symptoms may appear 2 to 14 days after the exposure to the virus and may include, but are not limited to, fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and diarrhea (CDC 2020a). According to the CDC, COVID-19 is believed to spread between people who are in close contact with one another (within about 6 feet) through respiratory droplets produced when an infected person coughs, sneezes, or talks (CDC 2020b). COVID-19 research and causality are still in the beginning stages. A nationwide study by Harvard University found a linkage between long-term exposure to $PM_{2.5}$ (averaged from 2000 to 2016) as air pollution and statistically significant increased risk of COVID-19 death in the United States (Wu et al. 2020).

4.3.3 Regulatory Setting

In California, air quality is regulated by several agencies, including the USEPA, CARB, and local air districts, such as the SJVAPCD. Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although USEPA regulations may not be superseded, some State and local regulations may be more stringent than Federal regulations. The project site is located within the SJVAB, which is under the jurisdiction of the SJVAPCD.

Federal

U.S. Environmental Protection Agency Clean Air Act

The principal air quality regulatory mechanism on the Federal level is the CAA and, in particular, the 1990 amendments to the CAA and the NAAQS that it establishes. These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants include ozone, CO, NO_2 (which is a form of NO_X), SO_2 (which is a form of sulfur oxide [SO_X]), PM_{10}, $PM_{2.5}$, and lead. The USEPA also has regulatory and enforcement jurisdiction over emission sources beyond State waters (outer continental shelf), and those that are under the exclusive authority of the Federal government, such as aircrafts, locomotives, and interstate trucking. The USEPA's primary role at the State level is to oversee the State air quality programs. The USEPA sets Federal vehicle and stationary source emission standards and oversees approval of all State Implementation Plans (SIPs) and provides research and guidance in air pollution programs. The SIP is a State-level document that identifies all air pollution control programs within California that are designed to help the State meet the NAAQS.

As discussed previously and shown in **Table 4.3-1,** *National and California Ambient Air Quality Standards*, the USEPA has designated the portion of the SJVAB where the project is located within Kern County as being in attainment or unclassified with respect to all NAAQS with the exception of the 8-hour ozone standard. Attainment defines the status of a given airshed with regard to NAAQS requirements. Airsheds not meeting these standards are classified as "nonattainment."

State

California Air Resources Board California Clean Air Act

The CARB, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California by administering the SIP. Its primary responsibility lies in ensuring implementation of the 1989 amendments to the CCAA, responding to the Federal CAA requirements, and regulating emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish the CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as

the Federal CAA, and also include sulfates, visibility-reducing particulates, hydrogen sulfide, and vinyl chloride (there are currently no NAAQS for these latter pollutants). They are also more stringent than the Federal standards in most cases, although recently promulgated NAAQS for 1-hour NO_2 and SO_2 can in some instances be more stringent than the respective CAAQS. As shown in **Table 4.3-1,** *National and California Ambient Air Quality Standards*, the Kern County portion of the SJVAB is designated as nonattainment for the State ozone and PM_{10} standards. Concentrations of all other pollutants are presumed to meet State standards as the area is designated as either attainment or unclassified.

The CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the air basin. Each APCD ranks the data into high-, intermediate-, and low-priority categories. When considering the ranking, the potency, toxicity, quantity, volume, and proximity of the facility to receptors are given consideration by an APCD.

The CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the project's emissions through the phasing in of cleaner on- and off-road engines. Additionally, the CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a Statewide program to operate their equipment, which must meet specified program emission requirements, throughout California, without having to obtain individual permits from local APCDs. Since the project is not proposing to install any applicable stationary sources, the AB 2588 program would not apply to the project.

In 2007, the CARB enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 California Code of Regulations [CCR] Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and NO_X emissions for owners of fleets of diesel-fueled off-road vehicles and applies to equipment fleets of three specific sizes, and the target emission rates are reduced over time.

Title V and Extreme Designation

Title V of the CAA, as amended in 1990, creates an operating permits program for certain defined sources. In general, owner/operators of defined industrial or commercial sources that emit more than 25 tons per year (tpy) of NO_X and ROG must process a Title V permit. In "Extreme Designation" areas, the definition of a major source, which requires Title V permitting changes from 25 tpy to 10 tpy. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and USEPA participation in the permitting process and requires additional record-keeping and reporting by businesses, which results in significant administrative requirements.

California Renewable Portfolio Standard Program

Senate Bill (SB) 1078 established California's Renewable Portfolio Standard (RPS) program in 2002. The RPS program requires electrical corporations and electric service providers to purchase a specified minimum percentage of electricity generated by eligible renewable energy resources. The bill requires the California Energy Commission to certify eligible renewable energy resources, to design and implement an accounting system to verify compliance with the RPS by retail sellers, and to allocate and award supplemental energy payments to cover above-market costs of renewable energy. Under SB 1078, each electrical corporation was required to increase its total procurement of eligible renewable energy resources by at least 1% per year so that 20% of its retail sales were procured from eligible renewable energy resources.

In 2006 SB 107 accelerated the RPS program by establishing a deadline of December 31, 2010, for achieving the goal of having 20% of total electricity sold to retail customers in California per year generated from eligible renewable energy resources.

The RPS goal was increased to 33% when Governor Schwarzenegger signed Executive Order (EO) S-14-08 in November 2008. EO S-14-08 was later superseded by EO S-21-09 on September 15, 2009. EO S-21-09 directed the CARB to adopt regulations requiring that 33% of electricity sold in the State come from renewable energy by 2020. On September 23, 2010, the CARB approved a Renewable Electricity Standard regulation.

On April 12, 2011, the California Senate passed legislation paralleling and expressly superseding CARB's RPS program rules set forth on September 23, 2010. Pursuant to SB 1X-2, the statutory RPS was increased to 33% and expanded the RPS program to include customer-owned utilities. In addition, SB 1X-2 limits the use of out-of-state tradable renewable energy certificates to 25% in 2013, 15% in 2016, and 10% thereafter.

On October 7, 2015, Governor Brown signed the Clean Energy and Pollution Act of 2015 or SB 350 that increased the RPS goal from 33% to 50% by 2030. The legislation also required local publicly owned electric utilities to establish annual targets for energy efficiency savings and demand reduction consistent with this goal.

Local

Kern County General Plan

The goals, policies, and implementation measures in the *Kern County General Plan* applicable to air quality as related to the project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below, but, as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space, And Conservation Element

1.10 General Provisions

1.10.2 Air Quality Element

Goals

- **Goal 1.** Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Policies

- **Policy 18.** The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations.

- **Policy 19.** In considering discretionary projects for which an EIR must be prepared pursuant to the California Environmental Quality Act (CEQA), the appropriate decision-making body, as part of its deliberations, will ensure that:

    a. All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and

    b. The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the CEQA.

- **Policy 20.** The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Eastern Kern Air Pollution Control District on ministerial permits.

- **Policy 21.** The County shall support air districts' efforts to reduce PM_{10} and $PM_{2.5}$ emissions.

- **Policy 22.** Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

- **Policy 23.** The County shall continue to implement the local government control measures in coordination with the Kern Council of Governments and the San Joaquin Valley Unified Air Pollution Control District.

Implementation Measures

- **Implementation Measure F.** All discretionary permits shall be referred to the appropriate air district for review and comment.

- **Implementation Measure G.** Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:

    a. Minimizing idling time.

    b. Electrical overnight plug-ins.

- **Implementation Measure H.** Discretionary projects may use one or more of the following to reduce air quality effects:

    a. Pave dirt roads within the development.

    b. Pave outside storage areas.

    c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.

    d. Use of alternative fuel fleet vehicles or hybrid vehicles.

    e. Use of emission control devices on diesel equipment.

    f. Residential fireplaces – Does not apply

    g. Bicycle lockers – Does not apply

    h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).

    i. The use and development of park and ride facilities in outlying areas.

    j. Other strategies that may be recommended by the local air pollution control districts.

San Joaquin Valley Air Pollution Control District

The project site, located in the SJVAB portion of Kern County, is under the jurisdiction of the SJVAPCD, which has regulatory authority over stationary source air pollution control and is responsible for implementing certain Federal CAA and CCAA programs and regulations. SJVAPCD also maintains air quality plans to attain CAAQS and NAAQS. SJVAPCD regulations that may apply to the proposed project include Regulation II (Permits), and Regulation VIII (Fugitive PM_{10} Prohibitions).

Regulation II (Permits)

Regulation II (Rules 2010–2550) is a series of rules covering permitting requirements within the SJVAB. SJVAPCD regulations require any person constructing, altering, replacing, or operating any source operation that emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. Most new stationary sources, if they emit over 2 pounds of pollutants per day, will be subject to Best Available Control Technology (BACT) in accordance with the SJVAPCD's New and Modified Stationary Source Review Rule and to the New Source Review (NSR) Rule. Current SJVAPCD rules identified as applicable to project emission sources include the following:

Regulation VIII (Fugitive PM_{10} Prohibitions)

Regulation VIII (Rules 8011–8081) is a series of rules designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, etc. If a construction project is 10 or more acres in area or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least 3 days, a Dust Control Plan must be submitted as specified in Section 6.3.1 of Rule 8021. Site preparation/construction activities shall not commence until the SJVAPCD has approved the Dust Control Plan. The project could also be subject to provisions within Rule 8021 (Construction, Demolition, Excavation, Extraction and Other Earthmoving Activities), Rule 8031 (Bulk Materials), Rule 8041 (Carryout and Track Out), Rule 8051 (Open Areas), Rule 8061 (Paved and Unpaved Roads), and Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas). Rule 8061 places thresholds and requirements on limiting visible dust emissions (VDE) from unpaved road segments, and Rule 8071 also contains thresholds and requirements.

Rule 3135 (Dust Control Plan Fee)

Rule 3135 requires the applicant to submit a fee in addition to a Dust Control Plan. The purpose of this fee is to recover SJVAPCD's cost for reviewing these plans and conducting compliance inspections.

Rule 4002 (National Emission Standards for Hazardous Air Pollutants)

In the event that any portion of an existing building will be renovated, partially demolished, or removed, the project will be subject to SJVAPCD Rule 4002. Prior to any demolition activity, an asbestos survey of existing structures on the project site may be required to identify the presence of any asbestos-containing building material (ACBM). Any identified ACBM having the potential for disturbance must be removed by a certified asbestos contractor in accordance with California Division of Occupational Safety and Health (CAL/OSHA) requirements.

Rule 4102 (Nuisance)

Rule 4102 applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or site preparation/construction of the project creates a public nuisance, it could be in violation and be subject to SJVAPCD enforcement action.

Rule 9510 (Indirect Source Review)

This rule requires the applicants of certain development projects to submit an application to the SJVAPCD when applying for the development's last discretionary approval. Projects subject to the rule are required to quantify indirect emissions (mobile source emissions), area source emissions and construction exhaust emissions and to mitigate a portion of these emissions. The Indirect Source Review (ISR) Rule became effective March 1, 2006. Rule 9510 was adopted to reduce the impacts of growth in emissions from all new development in the San Joaquin Valley. The emission reductions expected from the rule allow the SJVAPCD to achieve attainment of the Federal air quality standards for ozone by 2023.

In the context of TACs, to meet the requirements of Federal and State law, the SJVAPCD has created an Integrated Air Toxic Program (SJVAPCD 2019). This program serves as a tool for implementation of the requirements outlined in Title III of the 1990 Federal CAA Amendments. The goals of SJVAPCD risk management efforts are to: (1) minimize increases in toxic emissions associated with new and modified sources of air pollution; and (2) ensure that new and modified sources of air pollution do not pose unacceptable health risks at nearby residences and businesses. In order to achieve these goals, the SJVAPCD reviews the risk associated with each permitting action where there is an increase in emissions of TACs. SJVAPCD staff, as part of the engineering evaluation for these projects, performs this risk management review. The risk management review is performed concurrently with other project review functions necessary to process permit applications with the SJVAPCD. Under the SJVAPCD's risk management policy, BACT must be applied to all units that, based on their potential emissions, may pose greater than *de minimus* risks. Facilities that pose health risks above SJVAPCD action levels are required to submit plans to reduce their risk. Action levels for risk were established in the SJVAPCD's Board-Approved Risk Reduction policy. The action level for cancer risk is 10 cases per million exposed persons, based on the maximum exposure beyond facility boundaries at a residence or business. The action level for non-cancer risk is a hazard index of 1.0 at any point beyond the facility boundary where a person could reasonably experience exposure to such risk.

The SJVAPCD has an extensive stationary source permitting program that includes NSR Rules, which are in the approved SIP. These rules require offsets of emissions of ozone and particulates precursors at a ratio of greater than one to one, when 10 tons and 15 tons are exceeded. The rules also require that each new stationary source that exceeds 2 pounds per day of pollutants shall install BACT.

Air Quality Conformity Determination for Transportation Plans and Programs

The CAA Amendments of 1990 require a finding to be made stating that any project, program, or plan subject to approval by a metropolitan planning organization conforms to air plans for attainment of air quality standards. The Kern Council of Governments (Kern COG) is designated the Regional Transportation Planning Agency and Metropolitan Planning Organization for Kern County. In that capacity, Kern COG models air quality projections on population projections in conjunction with current general plan designations and estimated vehicle miles as well as the current Regional Transportation Plan (RTP) and the Federal

transportation plan for Kern County. These results are compared to pollutant budgets for each basin approved by the USEPA in the 1999 base year. Kern County is contained within two air basins: SJVAB and the Mojave Desert Air Basin. Each air basin has its own plans and pollutant budgets. Kern COG makes conformity findings for each air basin.

The Federal Transportation Improvement Program (FTIP) for the Kern County region is a 6-year schedule of multimodal transportation improvements, and the RTP is a long-range, 26-year transportation plan. The conformity findings conclude that the FTIP and RTP result in emissions that are less than the emission budgets of baseline emissions for CO, VOC, NO_X, and PM_{10} (Kern COG 2018b).

4.3.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to air quality for the proposed project. It describes the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Where warranted, measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany an impact discussion.

Methodology

The air quality significance criteria were developed considering the California Environmental Quality Act (CEQA) significance criteria developed by the local air quality districts in the project area, approved CEQA air quality checklists, and considering other Federal criteria. The air quality analysis is based on the AQIA prepared for the project (WZI Inc. 2019a), included as Appendix C.1 and incorporated by reference herein.

Models

Table 4.3-4, *Models Used in Impact Analysis*, indicates which models were used, the pollutants to which they apply, and the standards to which the model results were compared for significance determination. These models, current models during time of submission, were selected in conformance with USEPA and SJVAPCD guidelines. The same thresholds are used for construction and operational emissions or combinations thereof.

Table 4.3-4 Models Used in Impact Analysis

Model	Project Specific	Public Health/ Hazards	Cumulative	Area of Model Impact
AERMIC Model (AERMOD)	(µg/m^3) Criteria Pollutants	See HARP (see Appendix C.1)	(µg/m^3) Criteria Pollutants	Six-mile radius model limitation, impacts are assessed at maximum point of impact
VISCREEN	Index of Perceptibility			Any Class I within 100 kilometers
Hotspots Analysis and Reporting Program (HARP)		Cancer risk/million, Hazards Index		Maximum point of impact is assumed to be the location of Sensitive Receptor
California Emissions Estimator Model (CalEEMod) 2013.2.2 Construction	Tons/year		Tons/year	Onsite construction
CalEEmod 2013.2.2 Operational	Tons/year		Tons/year	Utilized air shed for identified projects
Kern COG Conformity Analysis	Households/period Employment/period		Households/period Employment/period	Regional/Basin-wide for all projects in SIP

Source: WZI Inc. 2019a.

The following models and guidelines were used as tools to create the analytical basis for the impact analysis. Each model was used specifically to analyze either: (1) project-specific impacts; (2) modeled cumulative impacts; or (3) regional impacts. Pursuant to the methodologies prescribed by the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI), the analysis in this section primarily models and analyzes ROG, NO_X, CO, PM_{10}, $PM_{2.5}$, SO_X, and visibility (SJVAPCD 2015a).[1] Some results are reported in concentration by pollutant, some provide data in mass per unit time, some provide probability of occurrences per million persons, and some provide data in the number of households or employment over specified periods of time. Some of the more important tools are discussed below.

AERMIC Model (AERMOD)

The USEPA Regulatory Model Improvement Committee AERMIC Model (AERMOD) atmospheric dispersion model is used for modeling the potential impacts of area sources in simple (i.e., flat) and complex (i.e., hilly) terrain. This program uses Gaussian dispersion to determine concentration of pollutants from sources. It is an accepted mathematical estimate of pollutant levels based on distance from a point source and physical conditions of equipment, site, and weather conditions. The model is limited to approximately a 50-kilometer radius; however, this analysis reports the impacts at their maximum location. The units of output are

[1] Per the March 2015 GAMAQI Technical Guidance Document, the SJVAPCD no longer monitors lead in the ambient air of the SJVAB since the use of leaded fuel has been mostly phased out. H_2S is associated with geothermal activity, oil and gas production and refining, sewage treatment plants, and confined animal feeding operations. The CARB does not have a measuring method to accurately designate areas in the State, in attainment, or in nonattainment. Sulfate data collected in the SJVAB demonstrates levels of sulfates significantly less than the health standards.

micrograms per cubic meter. This model is used for both project-specific long-term and short-term impacts and cumulative impacts.

VISCREEN

The USEPA model VISCREEN is used to estimate impacts on visibility at the Class I area nearest to a subject project. This model estimates the visibility of plumes that may be created from the proposed project or the ability for a plume to obscure the view.

VISCREEN uses two scattering angles to calculate potential plume visual impacts for cases where the plume is likely to be the brightest (i.e., 10 degree azimuth for the forward scatter case) and the darkest (i.e., 140 degree for the backward scatter case). The forward scatter case produces a very bright plume when the sun is placed directly in front of the observer, while the backward scatter case produces a dark plume when the sun is directly behind the observer. For viewing backgrounds, the terrain is assumed to be black and located as close to the observer and the plume as possible. This assumption yields the darkest possible background against which plumes are the most likely to be visible. However, actual viewing backgrounds would be much lighter and located much farther from the observer. This model is used for project-specific impacts.

Hotspots Analysis and Reporting Program (HARP)

The Hotspots Analysis and Reporting Program (HARP) is a tool that assists with the programmatic requirements of the Air Toxics "Hot Spots" Program. HARP is a computer software package that combines the tools of emission inventory database, facility prioritization calculation, air dispersion modeling, and risk assessment analysis. All of these tools are tied to a single database allowing information to be shared and utilized.

HARP can be used by APCDs and air quality management districts, facility operators, and other parties to manage and evaluate emissions inventory data and the potential health impacts associated with these emissions.

California Emissions Estimator Model (CalEEMod) and Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI)

GAMAQI considers construction emissions and operational emissions as separate. Construction emissions are considered short-term impacts and are temporary in nature. California Emissions Estimator Model (CalEEMod) estimates construction-related emissions as if all construction were ongoing at the same time, with all paving and architectural coatings applied in the last year. This analysis utilized the emission factors from the CARB's EMFAC2007 (EMission FACtors model) for the construction analysis.

CalEEMod operational emissions are comprised of two separate sources: area sources, which produce emissions from space heating, landscape maintenance, and mobile sources (vehicles), which produce emissions as they travel all over the City and County. These emissions are calculated for the build-out period and consider future fleet mixes and emission controls. These are depicted as long-term impacts.

CalEEMod provides a simple platform to calculate both construction emissions and operational emissions from a land use project. It calculates both the daily max and annual average for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions, which can be used in support of analyses in CEQA documents, such as EIRs and Negative Declarations. In addition, default values for water and energy use are quantified that may be useful for other sections in an EIR or represent opportunities to incorporate the rigorous site-specific information from the other EIR sections.

Where site-specific or project-specific data were available, CalEEMod default factors were modified to fit with the information. Where little or no information was available for a project, default values were selected. For the cumulative analysis, modeled air emissions that occur in the SJVAB were utilized.

Kern Council of Governments Conformity Model Using Traffic Analysis Zone

The Traffic Analysis Zone (TAZ) analysis is a USEPA-approved model used to show conformance with the SIP. It is used throughout the SJVAB to show conformance with the SIP, including the mandated 5% reduction in emissions to bring the State into attainment with the NAAQS, i.e., conformity analysis. This model, which incorporates growth and development plans as well as traffic study data, is broken down into zones based on traffic patterns. Each zone is combined through the model to create larger regional zones, which in turn are added together to create even larger regional zones, ultimately creating a model for the entire air shed. This model has to show that there will be further progress towards attainment in accordance with the SIP. The units in the TAZ analysis are in households and employment in specified year time intervals. This model is used for cumulative impact analysis for the SJVAB.

Thresholds of Significance

Kern County has adopted the following significance thresholds concerning air quality for projects located within the San Joaquin Valley portion of Kern County. The thresholds for project emissions are as follows:

- 10 tons per year for ROG;
- 10 tons per year for NO_X;
- 15 tons per year for PM_{10}; and
- 25 tons per year for stationary sources (non-pollutant specific).

These standards are utilized in air quality analysis along with Federal and State guidelines for assessing air quality impacts. Kern County-adopted thresholds are defined for purposes of determining cumulative effects as the baseline for “considerable.” Anything above 10 in 1 million is considered significant but, up to 20 in 1 million, is still accepted by the SJVAPCD, as stated in SJVAPCD APR 1906, Framing for Performing Heath Risk Assessment.

Additionally, in order to be consistent with Federal guidance documents, actions that violate Federal standards for criteria pollutants (i.e., primary standards designed to safeguard the health

of people considered to be sensitive receptors while outdoors and secondary standards designed to safeguard human welfare) are considered significant impacts, and actions that violate State standards developed by the CARB or criteria developed by the SJVAPCD, including thresholds for criteria pollutants, are considered significant impacts.

Visibility

The CAAQS for VRP represents a policy judgment that a certain minimum degree of visibility is conducive to public welfare, regardless of location. This policy is manifested as a Statewide minimum dry air particle extinction limit of 0.23/kilometer (230 Mm-1) averaged from 9:00 a.m. to 5:00 p.m. (PST) when Relative Humidity (RH) is less than 70%. This is roughly equivalent to Vr = 10 miles. The standard is 0.07/kilometer (70 Mm-1) for the Lake Tahoe Air Basin (roughly equivalent to Vr = 30 miles). Equivalent PM_{10} concentrations when this standard is just met range from about 50 micrograms per cubic meter ($\mu g/m^3$) for a fine particle dominated urban setting (e.g., Sacramento in the winter) to 90 or more $\mu g/m^3$ for a mixture of coarse and fine particles (e.g., Central Valley in the summer). The Lake Tahoe VRP limit equates to PM_{10} concentrations ranging from about 16 to 25 $\mu g/m^3$ over a similar range of aerosol characteristics.

Health Risk-Based Thresholds

The OEHHA is responsible for setting health risk thresholds for air toxics. These thresholds include Reference Exposure Levels (RELs) for non-carcinogenic toxins that pose potential acute and/or chronic health risks and Unit Risk Factors (URFs) for carcinogens. The RELs and URFs represent exposure levels that OEHHA deems not likely to cause adverse effects in a human population, including sensitive receptors. These thresholds are based on the most recent scientific data and are designed to protect the most sensitive individuals in the population by inclusion of margins of safety. The thresholds approved by the SJVAPCD are a potential to increase cancer risk for the person with maximum exposure potential by 10 in 1 million or a non-cancer Hazard Index greater than 1 for both acute and chronic exposure.

There are no thresholds of significance for Valley Fever that have been adopted by the State. However, the likelihood of its occurrence can be determined based on the proposed project location.

Construction-Specific Thresholds

The SJVAPCD approach to analyses of construction impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emission concentrations for modeling of direct impacts. PM_{10} emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are a number of feasible control measures that can be reasonably implemented to significantly reduce PM_{10} emissions from construction. The SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Chapter 9 of the GAMAQI (as appropriate, depending on the size and location of the project

site) would constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant. Additionally, SJVAPCD has adopted Rule 9510, the ISR Rule, which is designed to reduce the construction PM_{10} by 50% and the construction NO_X by 33.3%.

All practicable mitigation measures will be implemented during the construction phase of the project. While implementation of these mitigation measures would bring the project's construction emissions to a level that is below significance according to the SJVAPCD, the emissions from construction will still be quantified. The project-specific construction emissions were quantified, modeled, and compared along with the operational emissions against the NAAQS and CAAQS and the health thresholds in order to determine local impact significance.

SJVAPCD has adopted guidelines for implementing CEQA. Those guidelines contain air quality significance criteria that are applied during CEQA review of projects for which SJVAPCD is the Lead Agency. However, Kern County is the CEQA Lead Agency for the project and will make the determination as to whether or not the proposed project may have a significant effect on the environment. Kern County's determination will take into consideration SJVAPCD's criteria but will ultimately be based on the thresholds adopted by Kern County.

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to air quality. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to air quality if it would:

a. Conflict with or obstruct implementation of the applicable air quality plan;

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. Specifically, would implementation of the project (in a specific location) exceed any of the following adopted thresholds:

    i. San Joaquin Valley Unified Air Pollution Control District:

        1. Operational and Area Sources

            a. Reactive Organic Gases (ROG) 10 tons per year

            b. Oxides of Nitrogen (NO_X) 10 tons per year

            c. Particulate Matter (PM_{10}) 15 tons per year

        2. Stationary Sources as determined by District Rules

            a. Severe Nonattainment 25 tons per year

            b. Extreme Nonattainment 10 tons per year

c. Expose sensitive receptors to substantial pollutant concentrations; or

d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/ IS and additional information regarding the following impact:

- Create objectionable odors affecting a substantial number of people.

Project Impacts

Impact 4.3-1: The project would conflict with or obstruct implementation of applicable air quality plans.

The project site is located within the administrative boundaries of the SJVAPCD, which has jurisdiction over air quality in the SJVAB. The SJVAPCD has developed plans to attain Federal and State standards for ozone and particulate matter. The SJVAPCD's air quality plans include emissions inventories to identify the sources and quantities of air pollutant emissions, evaluate how well different control methods have worked, and demonstrate how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution to ensure that the SJVAB will meet air quality goals. As of March 2015, the following attainment/maintenance plans are in effect, as detailed in Section 4.3.3, *Regulatory Setting*, above.

One-Hour Ozone Plan

The CARB submitted the SJVAPCD's 2004 Extreme Ozone Attainment Demonstration Plan to the USEPA on November 15, 2004. The plan was amended by the SJVAPCD in 2008. Effective June 15, 2005, the USEPA revoked the Federal 1-hour ozone ambient air quality standard, finding that the 8-hour ozone standard was more health protective. Under Federal anti-backsliding provisions, the SJVAPCD has continued to implement the 2004 plan's control measures and emissions reductions strategies. The SJVAPCD developed a new plan for the USEPA's revoked 1-hour ozone standard, which was adopted by the SJVAPCD's Governing Board on September 19, 2013.

Eight-Hour Ozone Plan

The SJVAPCD adopted the 2007 Ozone Plan on April 30, 2007. This far-reaching plan, with innovative measures and a "dual path" strategy, ensures expeditious attainment of the Federal 8-hour ozone standard established by the USEPA in 1997. The plan projects that the SJVAB will achieve the 8-hour ozone standard for all areas of the SJVAB no later than 2023. The CARB approved the plan on June 14, 2007. The USEPA approved the 2007 Ozone Plan effective April 30, 2012. The more stringent 8-hour ozone standard was adopted June 16, 2016.

PM_{10} Maintenance Plan

Based on PM_{10} measurements from 2003–2006, the USEPA found that the SJVAB has achieved the Federal PM_{10} NAAQS. On September 21, 2007, the SJVAPCD's Governing Board adopted the 2007 PM_{10} Maintenance Plan and Request for Redesignation. This plan demonstrates that the SJVAB will continue to meet the PM_{10} standard. The USEPA approved the document and effective December 12, 2008, the SJVAB was redesignated to attainment for the PM_{10} NAAQS.

2008 $PM_{2.5}$ Plan

The SJVAB is designated nonattainment for Federal $PM_{2.5}$ standards. The USEPA established its first $PM_{2.5}$ standards in 1997. The USEPA strengthened the 24-hour standard in 2006 and the annual standard in 2013. Building on the strategy used in the 2007 Ozone Plan, the SJVAPCD agreed to additional control measures to reduce directly produced $PM_{2.5}$. The 2008 $PM_{2.5}$ Plan was adopted by the SJVAPCD Governing Board on April 30, 2008. The plan demonstrates that the SJVAB will achieve the 1997 annual $PM_{2.5}$ NAAQS of 15 $\mu g/m^3$ by 2014. The CARB approved the plan on May 22, 2008. The USEPA approved most provisions of the 2008 $PM_{2.5}$ Plan effective January 9, 2012.

2012 $PM_{2.5}$ Plan

The SJVAPCD adopted the 2012 $PM_{2.5}$ Plan on December 20, 2012. The plan demonstrates that the SJVAB will achieve the 2006 24-hour $PM_{2.5}$ NAAQS of 35 $\mu g/m^3$ by 2019. The CARB approved the plan on January 24, 2013. The SJVAPCD will need to revise its $PM_{2.5}$ strategy in the future to address attainment of the 2013 annual standard. These plans include emissions inventories; projected changes in population, vehicles, fuels, and equipment; and consequent changes in the associated emission levels. The plans then identify existing rules and additional proposed measures required to reduce emissions and ensure compliance with the ambient air quality standards. These rules and proposed measures include requirements to obtain permits to construct and operate, and rules regulating the allowable emissions from various activities or classes of equipment.

Consistency with SJVAPCD Applicable Rules

The proposed project will result in emissions from non-permitted sources (e.g., trucks, employee and contractor trips, onsite vehicles). Air pollutants will also be emitted during project construction (e.g., off-road construction equipment, on-road vehicles, fugitive particulate matter from material movement). The following is a list of the SJVAPCD rules that could potentially apply to construction and operation of the proposed project.

- Rule 2010 (Permits Required)
- Rule 2201 (New and Modified New Source Review)
- Rule 2280 (Portable Equipment Registration)
- Rule 2520 (Federally Mandated Operating Permits)

- Rule 2540 (Acid Rain Program)
- Rule 2550 (Federally Mandated Preconstruction Review for Major Sources of Air Toxics)
- Rule 3135 (Dust Control Plan Fee)
- Rule 4001 (New Source Performance Standards)
- Rule 4002 (National Emission Standards for Hazardous Air Pollutants)
- Rule 4101 (Visible Emissions)
- Rule 4102 (Nuisance)
- Rule 4201 (Particulate Matter Concentration)
- Rule 4202 (Particulate Matter Emission Rate)
- Rule 4301 (Fuel Burning Equipment)
- Rule 4612 (Motor Vehicle and Mobile Equipment Coating Operations)
- Rule 4701 (Internal Combustion Engines – Phase 1)
- Rule 4702 (Internal Combustion Engines)
- Rule 8011 (General Requirements)
- Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities)
- Rule 8031 (Bulk Materials)
- Rule 8041 (Carryout and Trackout)
- Rule 8051 (Open Areas)
- Rule 8061 (Paved and Unpaved Roads)
- Rule 8071 (Unpaved Vehicle/Equipment Traffic Areas)
- Rule 9510 (Indirect Source Review)

The SJVAPCD's GAMAQI provides guidance for evaluating whether or not project emissions will conflict with or obstruct implementation of an applicable air quality plan. This evaluation is based on the quantified criteria pollutant thresholds used for assessing regional air quality impacts. The SJVAPCD Guidance states: "Emission reductions achieved through implementation of District offset requirements are a major component of the District's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to 'Not conflict or obstruct implementation of the District's air quality plan'."

The project must comply with the SJVAPCD's rules and regulations and conform to all adopted mitigation measures to reduce those impacts. This approach is consistent with SJVAPCD requirements.

Consistency with Kern County General Plan

Implementation of the project is consistent with the goals of the *Kern County General Plan* in providing an adequate and geographically balanced supply of land designated for a range of industrial purposes. With the exception of the residence located immediately south of the project site and the residence located approximately 0.7 mile east of the project site, the proposed project is geographically isolated from sensitive uses; as such, the project promotes compatibility with land uses that may be affected by mining operations while simultaneously ensuring economic strength and well-being of Kern County and its residents without detriment to its environmental quality. In conclusion, the proposed project is consistent with the *Kern County General Plan* and will adhere to all SJVAPCD rules and regulations necessary to ensure ongoing compliance with all adopted attainment plans.

Based on the factors discussed above, the potential for the project to conflict with or obstruct the implementation of an applicable air quality plan is less than significant. Nevertheless, the County considers the project emissions to be potentially significant. Mitigation Measure MM 4.3-1, outlined below, has been included to ensure the project complies with any applicable requirement of the SJVAPCD. With implementation of the required mitigation measures, impacts are considered less than significant.

Mitigation Measures

MM 4.3-1 The project shall comply with any applicable requirement of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Any approvals, waivers, or permits issued by the SJVAPCD shall be submitted to the Kern County Planning and Natural Resources Department and incorporated into the approved surface mining and reclamation plan in accordance with the provisions of the Surface Mining and Reclamation Act (SMARA) of 1975.

Level of Significance After Mitigation

With implementation of Mitigation Measure MM 4.3-1, impacts would be less than significant.

Impact 4.3-2: The project would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is nonattainment under an applicable Federal or State ambient air quality standard.

Short-Term Emissions

Construction activity impacts from the project would primarily result in fugitive particulate matter emissions. Grading, excavation, filling, and other construction activities result in increased dust emissions. Regulation VIII of the SJVAPCD specifies control measures for specified outdoor sources of fugitive particulate matter emissions. Rule 8011 contains administrative requirements, Rule 8021 applies to construction activities, and Rule 8071 applies to vehicle and equipment parking, fueling, and service areas. The SJVAPCD does not

require a permit for these activities, but does impose measures to control fugitive dust, such as the application of water or a chemical dust suppressant.

The SJVAPCD's GAMAQI does not necessarily require a quantification of construction emissions for all projects. Quantification is generally only required at the request of the Lead Agency. For this project, the construction emissions were quantified in order to demonstrate that the impacts from the project would be below the applicable thresholds.

Construction would also result in exhaust emissions from diesel-powered heavy equipment. Exhaust emissions from construction include emissions produced on-site as the equipment is used and emissions from trucks transporting excavated materials from the site, and topsoil grading. Examples of these emissions include CO, ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Exhaust emission factors for typical diesel-powered heavy equipment are based on USEPA AP-42 emissions factors. Actual exhaust emissions would vary substantially from day to day. Numerous variables are factored into estimating total construction emissions, including level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and amount of materials to be transported on- or off-site. Additional exhaust emissions would be associated with the transport of workers and materials. During the mining operations, mobile equipment would include graders, dozers, rippers, rubber-tired loaders, haul trucks, a water truck, and a tire truck. The diatomaceous earth would be excavated by a single loader. The loader would either load material directly into trucks or move the material to form small temporary stockpiles and then load it onto dump trucks. For loosening the shale in the exposure process, the necessary equipment, including dozer or ripper, would be rented for a short duration. At the completion of the mine life, all equipment would be removed from the project site and the site would be reclaimed to a safe and stable condition for use as grazing land.

Using the emissions rates from CalEEMod and the planned construction fleet, the construction emissions for this project were quantified (CalEEMod output files are included in Appendix C.1). **Table 4.3-5,** *Construction-Related Emissions*, shows annual construction emissions which are estimated to be the same for each year of operation.

Table 4.3-5 Construction-Related Emissions

Project	Tons per Year					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
Annual Construction Emissions						
Unmitigated	0.16	1.82	0.86	9.07	1.37	0.0019
Mitigated	0.16	1.82	0.86	3.22	0.54	0.0019
SJVAPCD Level of Significance	10	10	100[1]	15	15[2]	27
Kern County Level of Significance	**10**	**10**	**100**	**15**	**15[2]**	**27**

Notes:
1. San Joaquin Valley is in attainment for CO and SO_X; therefore, no specific level emissions from a project are considered significant.
2. USEPA specified interim use of PM_{10} threshold for $PM_{2.5}$
Source: WZI Inc. 2019a.

As shown in **Table 4.3-5,** *Construction-Related Emissions*, the levels of air pollutants emitted by the project for the site preparation/construction phase would be below the SJVAPCD level of significance and the Kern County level of significance.

The Kern County area and the San Joaquin Valley are designated nonattainment for $PM_{2.5}$ particulates for both Federal and State standards and nonattainment for PM_{10} particulates for State standards. Fugitive particulate emissions would occur during construction and operation. Control measures are required and enforced by the SJVAPVD under Regulation VIII. As stated in the GAMAQI, the SJVAPCD guidance document, implementation of these control measures would result in short-term emissions that are considered less than significant. The following three rules related to fugitive dust control apply to this project:

- Rule 8011: Fugitive dust administrative requirements for control of fine particulate matter.
- Rule 8021: Fugitive dust requirements for control of fine particulate matter from construction, demolition, excavation, extraction, and earthmoving activities.
- Rule 8071: Fugitive dust requirements for control of fine particulate matter from vehicle and/or equipment parking, shipping, receiving, transfer, fueling, and service areas 1 acre or larger.

In addition, the project should include the following as requirements of the local municipal code:

- Water sprays or chemical suppressants must be used in all unpaved areas to control fugitive emissions.

Compliance with Regulation VIII of the SJVAPCD and the Kern County codes would reduce net particulate emission impacts to levels that are considered less than significant.

Long-Term Emissions

Long-term emissions are caused by mobile sources (vehicle emissions), stationary source (product screen), and other area sources (material-handling) emissions. The major long-term impacts to air quality would be emissions caused by haul trucks traveling to and from the mine. The proposed project operational emissions would be generated by area and mobile sources as a result of normal day-to-day activities on the project site. Mobile emissions would be generated by haul trucks removing ore from the mine for transport to cement plants and the employee motor vehicles traveling to and from the project site (South Coast Air Quality Management District [SCAQMD] 2013).

Area Source Emissions

The area source emissions have been quantified utilizing the applicable sections of AP-42, as shown in **Table 4.3-6,** *Maximum Project Mining Source Emissions*. Area source emissions include road dust from equipment travel on-site, disturbed land wind erosion from the open pit

mine, handling of ore, stockpile wind erosion, and dust from the screening plant. Detailed calculations and AP-42 reference sections can be viewed in Appendix C.1.

Table 4.3-6 Maximum Project Mining Source Emissions

Emissions Source	Tons per Year					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
Mine Source Emissions						
Unmitigated Emissions	0	0	0	18.03	2.70	0
Mitigated Emissions	0	0	0	6.33	0.95	0
Screening Unit						
Unmitigated Emissions	1.36E-03	2.62E-02	4.64E-03	6.58	0.99	6.90E-03
Mitigated Emissions	1.36E-03	2.62E-02	4.64E-03	0.20	0.03	6.90E-03

Source: WZI Inc. 2019a.

Mobile Source Emissions

Kern County is a nonattainment area for Federal air quality standards for ozone and $PM_{2.5}$. ROGs and NO_X are regulated as ozone precursors. A precursor is defined by the SJVAPCD as "a directly emitted air contaminant that, when released into the atmosphere forms or causes to be formed or contributes to the formation of a secondary air contaminant for which an ambient air quality standard has been adopted…"

The SJVAPCD regulates air quality in the SJVAB portion of Kern County. The predicted emissions associated with vehicular traffic (mobile sources) are not subject to the SJVAPCD permit requirements. However, the SJVAPCD is responsible for overseeing efforts to improve air quality within the San Joaquin Valley. The SJVAPCD has prepared an Air Quality Attainment Plan to bring the San Joaquin Valley into compliance with the CAAQS for ozone. The SJVAPCD reviews land use changes to evaluate the potential impact on air quality. Kern County and the SJVAPCD have established a significance level for ROG and NO_X of 10 tons per year each and 15 tons per year for PM_{10} (SJVAPCD 2015a). USEPA has recommended the use of the PM_{10} standards as the interim standard for $PM_{2.5}$.

Vehicle emissions have been estimated for the year 2035, the projected completion date. Project-related mobile source emissions for ROG, NO_X, CO, PM_{10}, $PM_{2.5}$, and SO_X attributable to this project are summarized in **Table 4.3-7,** *Maximum Project Mobile Source Emissions*; total project emissions are summarized in **Table 4.3-8,** *Total Project Operational Emissions*.

Table 4.3-7 Maximum Project Mobile Source Emissions

Emissions Source	Tons per Year					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Mobile On–Road Emissions						
Unmitigated Emissions	0.086	0.458	1.28	0.477	0.137	0.008
Mitigated Emissions	0.086	0.458	1.28	0.477	0.137	0.008
Mobile Mine Equipment Off- Road Emissions						
Unmitigated Emissions	0.1508	0.33	0.8495	3.96E-03	0.0118	3.9E-03
Mitigated Emissions	0.1508	0.33	0.8495	3.96E-03	0.0118	3.9E-03

Source: WZI Inc. 2019a.

Table 4.3-8 Total Project Operational Emissions

Emissions Source	Tons per Year					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Mobile Mine Equipment Off-Road Emissions						
Unmitigated	0.16	1.82	0.86	0.07	0.06	0.0019
Mitigated	0.16	1.82	0.86	0.07	0.06	0.0019
Mine Source Emissions						
Unmitigated	0	0	0	9.03	1.39	0
Mitigated	0	0	0	3.18	0.48	0
Screening Unit Emissions						
Unmitigated	1.36E-03	2.62E-02	4.64E-03	6.58	0.99	6.90E-03
Mitigated	1.36E-03	2.62E-02	4.64E-03	0.20	3.43E-02	6.90E-03
Mobile On-Road Emissions						
Unmitigated	0.162	1.306	2.699	0.489	0.145	0.008
Mitigated	0.162	1.306	2.699	0.489	0.145	0.008
Total Operational Emissions						
Unmitigated Total	0.319	3.157	3.564	16.16	2.59	0.017
Mitigated Total	0.319	3.157	3.564	3.94	0.715	0.017
SJVAPCD Level of Significance	10	10	100[1]	15	15[6]	27[2]
Kern County Level of Significance[3]	**10**	**10**	**100[4]**	**15**	**15[6]**	**27[5]**

[1] San Joaquin Valley is in attainment for CO and SO_X; therefore, no specific-level emissions from a project are considered significant. The only significance level is the Prevention of Significance Determination (PSD) limit, which is discussed in the *Air Modeling Scenarios* section below.
[2] Ibid.
[3] Kern County 2006; Attachment A.
[4] SJVAPCD 2015a.
[5] Ibid.
[6] USEPA specified interim use of PM_{10} threshold for $PM_{2.5}$
Source: WZI Inc. 2019a.

The proposed project is being planned to coincide with the completion of another mine with the same operations. The mine currently in operation by GF Industries (GFI) is herein referred to as the "East Pit" per the AQIA (WZI Inc. 2019a); however, it was permitted by Kern County as Conditional Use Permit (CUP) 4, Map 96 (listed as the first project in **Table 3-6,** *Cumulative*

Projects List, of this EIR). The East Pit is located approximately 2.5 miles east of the project site and has been in operation by GFI, also mining diatomaceous earth. All equipment in operation at East Pit would be used at the project site, after mining operations have ceased at the East Pit. The equipment currently in operation includes two rubber-tired loaders, one tire truck, and one water truck. In addition, GFI intends to add a screener at the project site for any processing that may be necessary according to client requirements.

The project's operational emissions include emissions from employee trips, truck trips, and on-site material movement. The project would haul diatomaceous earth and overburden material to clients within Kern County. Additional truck trips are proposed as part of the proposed project due to increasing production and increased mileage of approximately 2.5 miles (approximately 5 miles round trip) for the proposed project compared to the East Pit operation. As described in **Table 4.3-8,** *Total Project Operational Emissions*, the only project pollutant (mitigated or unmitigated) that would exceed SJVAPCD thresholds is unmitigated total source emissions of PM_{10} (16.16 tons per year, which exceeds the 15 tons per year SJVAPCD threshold); for all other emissions of the criteria pollutants of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$, neither project construction nor project operation would exceed the SJVAPCD significance thresholds (WZI Inc. 2019a). Thus, it is not expected that project construction or operational emissions would result in a substantial increase in criteria pollutant concentrations and their related health effects in the air basin, and impacts would be less than significant.

Other than the East Pit, there are two other mining operations within 6 miles of the project site (projects 5 and 6 as listed in **Table 3-6,** *Cumulative Projects List*, of this EIR). The East Pit would shut down operations when the proposed project is scheduled to begin. As shown in **Table 4.3-9,** *Total Net Project Emissions*, the project's emissions would not exceed applicable SJVAPCD thresholds.

Table 4.3-9 Total Net Project Emissions

Project	Tons per Year					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Total Source Emissions (Mitigated)						
Johe Ranch Mine	0.47	4.98	4.42	7.16	1.25	0.019
East Pit	0.42	4.53	3.50	6.99	1.20	0.016
Net Emissions	0.05	0.45	0.92	0.17	0.05	0.0028
SJVAPCD Level of Significance	10	10	N/A[1]	15	15[6]	N/A[2]
Kern County Level of Significance[3]	**10**	**10**	**N/A[4]**	**15**	**15[6]**	**N/A[5]**

[1] San Joaquin Valley is in attainment for CO and SO_X; therefore, no specific-level emissions from a project are considered significant. The only significance level is the Prevention of Significance Determination (PSD) limit, which is discussed in the *Air Modeling Scenarios* section below.
[2] Ibid.
[3] Kern County 2006; Attachment A
[4] Kern County is in attainment for CO and SO_X; therefore, no specific-level emissions from a project are considered significant.
[5] Ibid.
[6] USEPA specified interim use of PM_{10} threshold for $PM_{2.5}$
Source: WZI Inc. 2019a.

Based on this analysis and modelling included in Appendix C.1, the project's operational emissions at build-out would not exceed the SJVAPCD's or Kern County's NO_X or PM_{10} thresholds. Nevertheless, the Lead Agency considers the project emissions related to fugitive

dust to be potentially significant and has included Mitigation Measures MM 4.3-2 through MM 4.3-7 to ensure impacts would be reduced to be less than significant. With implementation of the required mitigation measures, impacts are considered less than significant.

Mitigation Measures

MM 4.3-2 The project proponent shall develop and implement a Fugitive Dust Control Plan in compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) fugitive dust suppression regulations to further reduce emissions, during operations, of particulate matter that is 10 microns or less in diameter (PM_{10}) and 2.5 microns or less in diameter ($PM_{2.5}$). The Fugitive Dust Control Plan shall include:

A. Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan.

B. Description and location of operation(s).

C. Listing of all fugitive dust emissions sources included in the operation.

D. The following dust control measures shall be implemented:

1. All on-site unpaved roads shall be effectively stabilized using water or chemical soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than California Air Resources Board-approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.

2. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles will be watered as needed to limit dust emissions to less than 20% opacity or covered with temporary coverings.

3. Activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and those activities cause visible dust plumes. Such activities may continue if dust suppression measures are used to minimize visible dust plumes.

4. Track-out debris onto public paved roads shall not extend 50 feet or more from an active operation and track-out shall be removed or isolated such as behind a locked gate at the conclusion of each workday.

5. All hauling materials shall be moist while being loaded into dump trucks.

6. All material on haul trucks shall be effectively contained in accordance with SJVAPCD regulations.

7. Material loads on trucks shall maintain at least 6 inches of freeboard space below the top of the container.

8. Drop heights shall be minimized when loaders dump material into trucks.

9. Gate seals shall be tight on dump trucks.

10. Traffic speeds on unpaved roads shall be limited to 15 miles per hour.

11. All grading activities shall be suspended when visible dust emissions exceed 20%.

12. Other fugitive dust control measures as necessary to comply with SJVAPCD Rules and Regulations.

13. Disturbed areas shall be minimized.

14. Disturbed areas shall be revegetated as soon as possible after disturbance if area is no longer needed for mining activities.

MM 4.3-3 Surface disturbance, with the exception of ongoing and permitted agricultural activities, shall be kept to a minimum in advance of mining. Where feasible, disturbed areas shall be seeded with an interim seed mix to minimize fugitive dust emissions from unvegetated areas. At such time as surface mining or associated activities have been completed on an area of disturbed land, reclamation efforts shall be initiated on those portions of the disturbed lands that will not be subject to further disturbance by the surface mining operation or its associated activities.

MM 4.3-4 Fugitive dust (PM_{10}) emissions shall be minimized during the course of mining and reclamation utilizing the application of water or by presoaking. Haul roads shall be watered or have a palliative applied, depending on weather and road conditions, as necessary to adhere to the requirements of the San Joaquin Valley Air Pollution Control District.

MM 4.3-5 Mined materials transported off-site shall be covered, effectively wetted to limit visible dust emissions, or employ at least 6 inches of freeboard space to separate material from the top of the container.

MM 4.3-6 The fleet of diesel engines in off-road vehicles operating at the project site shall comply with the In-Use Off-Road Engine Air Toxic Control Measure (13 California Code of Regulations [CCR] Sections 2449 and 2449.1) and

provide copies of annual compliance certification reports made to California Air Resources Board through the DOORS program to Kern County annually.

A. All equipment shall be turned off when not in use. Engine idling of all equipment shall be limited to 5 minutes, except under exemptions specified in 13 CCR Section 2449(d)(2). In addition, the facility shall have a written idling policy and distribute it to vehicle operators as required by this regulation.

B. All equipment engines shall be maintained in good operating condition and in proper tune per manufacturers' specifications.

MM 4.3-7 To further reduce emissions of nitrogen oxides from on-road heavy-duty diesel haul vehicles:

A. 2007 engines or pre-2007 engines shall comply with California Air Resources Board retrofit requirements set forth in 13 California Code of Regulations (CCR) Section 2025.

B. All on-road haul trucks, except those meeting the 2007/California Air Resources Board-certified Level 3 diesel emissions controls, shall meet all applicable California on-road emission standards and shall be licensed in the State of California. This does not apply to worker personal vehicles.

C. All on-road haul trucks shall be properly tuned and maintained in accordance with the manufacturers' specifications.

Level of Significance After Mitigation

With implementation of Mitigation Measures MM 4.3-2 through 4.3-7, impacts would be less than significant.

Impact 4.3-3: The project would expose sensitive receptors to substantial pollutant concentrations.

The SJVAPCD identifies a sensitive receptor as a location where human populations, especially children, senior citizens, and sick persons, are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for ambient air quality standards, such as 24-hour, 8-hour or 1-hour. Examples of sensitive receptors include residences, hospitals, and schools (SJVAPCD 2015a); industrial and commercial uses are not considered sensitive receptors.

Potential Effect on Sensitive Receptors

Sierra Club vs. County of Fresno (December 24, 2018)

In Sierra Club v. County of Fresno (S219783) (*Sierra Club*) the Supreme Court held that CEQA requires environmental impact reports to either (i) make a "reasonable effort" to substantively connect the estimated amount of a given air pollutant a project will produce and the health effects associated with that pollutant, or (ii) explain why such an analysis is infeasible (6 Cal.5th at 1165-66). However, the Court also clarified that that CEQA "does not mandate" that EIRs include "an in-depth risk assessment" that provides "a detailed comprehensive analysis . . . to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure" (id. at 1665). However, correlating the project's criteria air pollutant to specific health impacts, particularly with respect to O_3, is not possible because there is no feasible or established scientific method to perform such analysis. This conclusion is supported by both the SJVAPCD and the South Coast Air Quality Management District (SCAQMD), who have determined that this type of analysis is speculative and infeasible and there are no unique issues for the SJVAPCD that would make this analysis invalid.

Writing as amicus curiae in *Sierra Club*, the SJVAPCD explained that "[t]he health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility/health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task" (SJVAPCD 2015b).

Instead, the SJVAPCD explained that it assesses a project's potential to exceed NAAQS by evaluating the project's compliance with district thresholds of significance, which are measured in mass emissions (SJVAPCD 2015b). As explained by the SJVAPCD, its thresholds are based on factual, scientific data and have been set at a level that ensures that NAAQS will not be exceeded, taking into consideration all cumulative emission sources (SJVAPCD 2015b). The SJVAPCD explained that attempting to connect criteria pollutant emissions to localized health impacts will "not yield reliable information because currently available modeling tools are not well suited for this task" (SJVAPCD 2015b). Available models are only equipped to model the impact of all emissions sources on an air basin-wide or regional basis, not on a project-level basis, and "[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved" (SJVAPCD 2015b).

This inability to "accurately ascertain local increases in concentration" of mass emissions and then to further link emissions with health effects is particularly true for O_3 and its precursors—NO_X, ROGs, and VOCs; O_3 is not directly emitted into the air, but is instead formed as ozone precursors that undergo complex chemical reactions through sunlight exposure (SJVAPCD 2015b). Given the complex nature of this process, and the fact that O_3 can be transported by wind over long distances, "a specific tonnage amount of NO_X or VOCs emitted in a particular

area does not equate to a particular concentration of ozone in that area" (SJVAPCD 2015b). For this reason, the photochemical analysis for O_3 is done on a regional scale and it is inappropriate to analyze O_3 impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (State CEQA *Guidelines* Section 15145*; Laurel Heights Improvement Association v. Regents of the University of California 1988*).

The SJVAPCD also explained that the disconnect between the tonnage of precursor pollutants and the concentration of O_3 or particulate matter formed in a particular area is especially important to understand in considering potential health effects because it is the concentration, not the tonnage, that causes health effects (SJVAPCD 2015b). The SJVAPCD explained that even if a model were developed that could accurately assess local increases in concentrations of pollutants like O_3 and particulates, it would still be "impossible, using today's models, to correlate that increase in concentration to a specific health impact" (SJVAPCD 2015b). The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine "whether and to what extent emissions from an individual project directly impact human health in a particular area" (SJVAPCD 2015b). The SJVAPCD explained that this is particularly true for development projects like the proposed project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The SCAQMD also, as amicus curiae in *Sierra Club*, made similar points, reiterating that "an agency should not be required to perform analyses that do not produce reliable or meaningful results" (SCAQMD 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O_3, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to all regional increases (SCAQMD 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amounts of $PM_{2.5}$, the primary author of the methodology has reported that it "may yield unreliable results due to various uncertainties" and CARB staff has been directed by its Governing Board to reassess and improve it, which factor "also counsels against setting any hard-and-fast rule" about conducting this type of analysis (SCAQMD 2015). The amicus briefs filed by SJVAPCD and SCAQMD in *Sierra Club* are attached as Appendix C.4 of this EIR.

Ambient Air Quality Standards

The USEPA and CARB have established NAAQS at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety. Further, California air districts, like the SJVAPCD, have established emission-based thresholds that provide project-level estimates of criteria air pollutant quantities that air basins can accommodate without affecting the attainment dates for the NAAQS. Accordingly, elevated levels of criteria air pollutants as a result of a project's emissions could cause adverse health effects associated with these pollutants. The SJVAPCD where the project is located is designated as an attainment area for O_3 (1- hour), PM_{10}, and $PM_{2.5}$ and nonattainment for O_3 (8-hour) under the NAAQS, and nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under the CAAQS.

The air quality impact of this project is not likely to affect sensitive receptors, which include areas where young children, chronically ill individuals, or other individuals more sensitive than

the general population are located. Examples of sensitive receptors are residences, schools, day care centers, and hospitals.

Air Modeling Scenarios

Because of the variance of the soil diatomite composition, multiple scenarios were developed. The proximity of the exposed areas within the mine to the project boundary necessitated multiple air models to adequately predict dispersion of emissions. The following three scenarios are modeled to be the most realistic possibilities. Preliminary plans on the order of mining operations involve beginning in Mine Area 3 and progressing east to Mine Area 2 and finally Mine Area 1. However, GFI wants more flexibility in order to provide for the needs of the customers being supplied with the product. The following tables indicate criteria pollutant impacts for each of the three scenarios modeled.

Table 4.3-10, *Project Criteria Pollutant Impact Model Results (Scenario 1)*, lists the results from Scenario 1 modeled with AERMOD. The maximum ground exposure at any given time would be 20 acres or less. Therefore, a model was created depicting a section of this maximum area within the boundaries of Mine Area 1. The remainder of the model is identical for each remaining scenario because the access roads and stockpile areas remain. The emission sources, in addition to the exposed 20 acres, include unpaved roads, diatomite storage piles, topsoil storage piles, a screening unit, on-site mining equipment, and haul truck on-site travel. As seen in **Table 4.3-10,** *Project Criteria Pollutant Impact Model Results (Scenario 1)*, NO_X emissions exceed the Significant Impact Level (SIL) for the annual averaging period, and PM_{10} emissions would exceed both the 24-hour and annual averaging period SIL. Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-6 would reduce PM_{10} emissions and potential impacts would be less than significant.

Table 4.3-10 Project Criteria Pollutant Impact Model Results (Scenario 1)

Pollutant	Averaging Period	µg/m³			
		Project Impact	PSD SIL	NAAQS	CAAQS
NO_X	1-hour	130.58	--	188.68	339
	Annual	3.84	1	100	57
SO_X	1-hour	0.27	--	195	655
	3-hour	0.11	25	1,300	--
	24-hour	0.02	5	365	105
	Annual	0.01	1	80	--
CO	1-hour	64.38	2,000	40,000	23,000
	8-hour	18.90	500	10,000	10,000
PM_{10}	24-hour	23.35	5	150	50
	Annual	4.11	1	--	20
$PM_{2.5}$	24-hour	4.02	5	35	--
	Annual	0.46	1	12	12

PSD = Prevention of Significant Deterioration
Source: WZI Inc. 2019a.

Table 4.3-11, *Project Criteria Pollutant Impact Model Results (Scenario 2)*, lists the results from Scenario 2 modeled with AERMOD. To have a more accurate representation of the

proposed mining operation, the second scenario was built to evaluate the results of mining partially in Mine Area 2 and in Mine Area 1 at the same time. Keeping with the maximum 20 acres of exposed ground, the area was split between the two mines at 10 acres apiece. The reason for this air model was to accurately estimate the dispersion attributed to operating in a different location, which would result in different dispersion based on the proximity of the area to the project boundaries. GFI plans on operating with flexibility that would allow mining in any portion of the three mine boundaries at their discretion. For Scenario 2, PM_{10} and $PM_{2.5}$ exceed the SIL. Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-6 would reduce PM_{10} and $PM_{2.5}$ emissions and potential impacts would be less than significant.

Table 4.3-11 Project Criteria Pollutant Impact Model Results (Scenario 2)

Pollutant	Averaging Period	µg/m³			
		Project Impact	PSD SIL	NAAQS	CAAQS
NO_X	1-hour	122.47	--	188.68	339
	Annual	3.84	1	100	57
SO_X	1-hour	0.277	--	195	655
	3-hour	0.0818	25	1,300	--
	24-hour	0.0218	5	365	105
	Annual	0.0040	1	80	--
CO	1-hour	56.71	2,000	40,000	23,000
	8-hour	19.74	500	10,000	10,000
PM_{10}	24-hour	31.90	5	150	50
	Annual	5.07	1	--	20
$PM_{2.5}$	24-hour	5.09	5	35	--
	Annual	0.81	1	12	12

PSD = Prevention of Significant Deterioration
Source: WZI Inc. 2019a.

Finally, the third scenario in **Table 4.3-12,** *Project Criteria Pollutant Impact Model Results (Scenario 3)*, depicts the possibility of mining in both Mine Area 3 and Mine Area 2. This model was necessary due to the close proximity of Mine Area 3 to the upper northwest boundary of the proposed project site. This was modeled so that the 20 acres were split between these two mines at 10 acres apiece. Scenario 3 exceeds the SIL for PM_{10} and $PM_{2.5}$. Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-6 would reduce PM_{10} and $PM_{2.5}$ emissions and potential impacts would be less than significant.

Table 4.3-12 Project Criteria Pollutant Impact Model Results (Scenario 3)

Pollutant	Averaging Period	µg/m³			
		Project Impact	PSD SIL	NAAQS	CAAQS
NO_X	1-hour	123.06	--	188.68	339
	Annual	3.262	1	100	57
SO_X	1-hour	0.223	--	195	655
	3-hour	0.0921	25	1,300	--
	24-hour	0.0192	5	365	105
	Annual	0.0036	1	80	--
CO	1-hour	58.63	2,000	40,000	23,000
	8-hour	17.93	500	10,000	10,000

Table 4.3-12 Project Criteria Pollutant Impact Model Results (Scenario 3)

Pollutant	Averaging Period	µg/m³			
		Project Impact	PSD SIL	NAAQS	CAAQS
PM_{10}	24-hour	37.76	5	150	50
	Annual	5.82	1	--	20
$PM_{2.5}$	24-hour	5.844	5	35	--
	Annual	0.916	1	12	12

PSD = Prevention of Significant Deterioration
Source: WZI Inc. 2019a.

Health Risk Analysis of Construction and Operation of the Project on Existing Sensitive Receptors

The health risk assessment is based on operations and construction for a 1-year period since it reflects the maximum emissions of the project. In order to take the health effects of diesel particulate emissions into account, the emissions from the equipment were obtained using CalEEMod and included in the health risk assessment model. The emission rate for DPM from the construction equipment was also obtained from CalEEMod. Operations and construction for a 1-year period reflects conservative emissions. 2016 is used because operations and construction occur concurrently. The analysis is conducted for the "build-out" year of 2016 with full 70-year exposure. The analysis uses the higher mobile source numbers of 2016 (worker trips) in construction which uses the 2016 EMFAC numbers.

There would be one stationary source that would operate part-time on-site. The following is a source used for the operational phase of the project: a screening unit operating an average of 1 hour each workday.

Risk Characterization

Risk characterization is the process of evaluating the risks due to facility emissions. As explained above, the HARP model calculates the estimated cancer and non-cancer health risk based on the predicted short- and long-term exposure levels for each air toxic at each model receptor. This section presents the total predicted individual cancer risk for residential and working populations, presents the total population excess cancer burden, and evaluates the predicted non-cancer health hazards from the proposed project construction and operational phases.

The CARB generally considers a potential cancer risk of 10 in a million (i.e., 10×10^{-6}) as significant. For acute or chronic non-cancer health impacts, the AB 2588 significance threshold is 1.0. For this health risk assessment, the AB 2588 significance thresholds were used:

Excess Cancer Risk: 10.0×10^{-6}

Non-Cancer Health Hazard Indices: 1.0

Operational Phase Direct Toxic Impacts

Cancer Impacts

The total individual excess cancer risk is defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular facility continuously, 24 hours a day, 261 days a year, for a 20-year life of mining operations. This risk is defined as an excess risk because it is above and beyond the background cancer risk to the population. Since the modeled risk (0.00000286) is lower than the 0.00001 threshold (**Table 4.3-13,** *Individual Excess Cancer Risk Maximum Impacts*), it is considered less than significant.

Table 4.3-13 Individual Excess Cancer Risk Maximum Impacts

Receptor Description (Point of Maximum Impact)	#	UTM Easting (meters)	UTM Northing (meters)	Cancer Risk (Respiratory)
	1	248003	3913869	0.00000286

Source: WZI Inc. 2019a.

Chronic Non-Cancer Health Impacts

Scientists at OEHHA have established No Adverse Effect Level (NAEL) concentrations for non-carcinogenic chemicals. In determining these thresholds, OEHHA has assumed continuous exposure, 24 hours a day, 261 days a year, with a 20-year exposure. According to OEHHA, exposure to non-carcinogens at or below the chronic NAEL will not result in adverse chronic non-cancer health effects to the public. Since the modeled risk (0.08) is lower than 1 (**Table 4.3-14,** *Chronic Non-Cancer Maximum Impacts*), it is considered less than significant.

Table 4.3-14 Chronic Non-Cancer Maximum Impacts

Receptor Description (Point of Maximum Impact)	#	UTM Easting (meters)	UTM Northing (meters)	Hazard Index (Respiratory)
	1	248003	3913869	0.08

Source: WZI Inc. 2019a.

Acute Non-Cancer Health Impacts

Scientists at OEHHA believe that 1-hour average exposures at or below the acute NAEL will not result in acute adverse health effects to the public. OEHHA only considers the inhalation exposure pathway for acute health effects. Since the modeled risk (0.115) is lower than 1 (**Table 4.3-15,** *Acute Non-Cancer Maximum Impacts*), it is considered less than significant.

Table 4.3-15 Acute Non-Cancer Maximum Impacts

Receptor Description (Point of Maximum Impact)	#	UTM Easting (meters)	UTM Northing (meters)	Hazard Index (Respiratory)
	1	249278	3913794	0.115

Source: WZI Inc. 2019a.

Although the risk assessment modelling concluded that risks would be less than significant, the Lead Agency is recommending mitigation to ensure impacts to sensitive receptors and on-site employees would be reduced to be less than significant. Mitigation Measures MM 4.3-8 and MM 4.3-10 would ensure employees on-site are trained regarding the dangers of Valley Fever and how it can be released into the air as soil is disturbed during construction and mining operations. Sensitive receptors also would be alerted to the dangers of Valley Fever through payment by the applicant to the Kern County Public Health Services Department, which would fund public awareness programs. Implementation of these mitigation measures along with adherence to the *Kern County General Plan* goals, policies, and implementation measures would ensure impacts would be less than significant.

Valley Fever

The project has the potential to generate fugitive dust and suspend Valley Fever spores with the dust that could then reach nearby sensitive receptors. It is possible that on-site workers could be exposed to Valley Fever as fugitive dust is generated during construction. The project would be required to comply with Rule 8021 Section 6.3, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significant for all construction phases of the project, which would also control the release of the *Coccidioides immitis* fungus from construction activities. This requirement is included in Mitigation Measure MM 4.3-2; however, exposure to the *Coccidioides immitis* fungus would be potentially significant and Mitigation Measure MM 4.3-8 is provided to further reduce impacts associated with Valley Fever and to protect on-site construction workers and nearby receptors. In addition, Mitigation Measure MM 4.3-10 would be required and includes payment of a onetime fee for public awareness programs related to Valley Fever. Therefore, the exposure to Valley Fever would be minimized and impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified above.

Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading of development projects, and at mining operations.

Serpentine and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. However, according to information provided by the California Department of Conservation Division of Mines and Geology, the project site is not in an area likely to contain ultramafic rock or naturally occurring asbestos (California Department of Conservation 2000). Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos would be less than significant.

Mitigation Measures

MM 4.3-8 Prior to ground disturbance activities, the project proponent shall provide a "Valley Fever Training Information Packet" and conduct training sessions for all personnel. A copy of the handout and a schedule of education sessions shall be provided to the Kern County Planning and Natural Resources Department. All evidence of the training session(s) and handout(s) shall be submitted to the Kern County Planning and Natural Resources Department on a monthly basis. Multiple training sessions may be conducted if different work crews come to the site for different stages of work; however, all personnel shall be provided training prior to beginning work. The evidence submitted to the Kern County Planning and Natural Resources Department regarding the "Valley Fever Training Handout" and Session(s) shall include the following:

A. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.

B. Distribution of an information packet that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever, symptoms of exposure, and instruction for reporting cases of flu-like or respiratory illness symptoms to the Site Safety Officer. Those with persistent symptoms lasting more than 3 days shall be recommended to seek immediate medical advice.

C. Training on methods that may help prevent Valley Fever infection.

D. A demonstration to employees on how to use personal protective equipment (PPE), such as respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Though use of the equipment is not mandatory during work, the equipment shall be readily available and shall be provided to employees for use during work, if requested by an employee. Proof that the demonstration is included in the training shall be submitted to Kern County. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.

MM 4.3-9 At the time of project implementation, a COVID-19 Health and Safety Plan should be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and Safety Plan shall be submitted to the Kern County Planning Department for review and approval.

MM 4.3-10 Prior to commencement of operations as authorized by this approval, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of $3,200 for public awareness programs.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM4.3-8 through MM 4.3-10, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The current nonattainment status of regional pollutants is determined by past development and present activities. The SJVAPCD's attainment plans are designed to ensure the future attainment of Federal or State ambient air quality standards. Consequently, the SJVAPCD's application of thresholds of significance for emission of criteria pollutants determines whether a project's emissions would have a cumulatively considerable contribution of emissions of a criteria pollutant for which the SJVAPCD is nonattainment. If project emissions exceed the thresholds of significance for criteria pollutants, the project would be expected to result in a considerable net increase of any criteria pollutant for which the SJVAPCD is in nonattainment under applicable Federal or State ambient air quality standards. The San Joaquin Valley is in nonattainment for $PM_{2.5}$, PM_{10}, and ozone. Ozone is addressed by examining its precursors which are NO_X, ROG, and CO.

Per the SJVAPCD's March 2015 GAMAQI:

> 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 the District's attainment plans. Consequently, the District'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.
>
> 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 [CCR §15064(h)(1)].
>
> Thus, if project-specific emissions would be less than the thresholds of significance for criteria pollutants, as a general matter the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under applicable federal or State ambient air quality standards.

The SJVAPCD March 2015 GAMAQI also states:

> As discussed in Section 8.3.1 (Basis for Air Quality Thresholds of Significance), the District's thresholds of significance for criteria pollutants

> are based on District rule 2201 (New Source Review) offset requirements. Furthermore, New Source Review (NSR) is a major component of the District's attainment strategy. NSR provides mechanisms, including emission trade-offs, by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards. District implementation of NSR ensures that there is no net increase in emissions above specified thresholds from new and modified Stationary Sources for all nonattainment pollutants and their precursors. In fact, permitted emissions above offset thresholds equivalent to the District's thresholds of significance for criteria pollutants are mitigated to below the thresholds, and the District's attainment plans show that this level of emissions increase will not interfere with attainment or maintenance of ambient air quality standards.

The SJVAPVD's attainment plans demonstrate that project-specific net emissions increase below NSR offset requirements will not prevent the SJVAPCD from achieving attainment. Consequently, emission impacts from sources permitted consistent with NSR requirements are not individually significant and are not cumulatively significant.

The Kern County Air Quality Assessment Guidelines further require the cumulative air quality impact assessment to include assessment of the following issues:

- Consistency with Existing Air Quality Plans. Discuss the Project in relation to Kern COG conformity and Traffic Analysis Zones. Quantify emissions from similar projects and evaluate consistency with the applicable attainment plan.

- Localized Impacts. Assess the cumulative emissions impact associated with the proposed project, in conjunction with approved and proposed projects located within a 1- and 6-mile radius of the proposed project.

- Air Basin Emissions Analysis. Compare emissions from the proposed project to emissions within the SJVAB and the Kern County portion of the SJVAB.

Impact 4.3-4: The project would contribute to cumulative air quality impacts.

Cumulative impacts of the project when considered together with past, existing, and reasonably foreseeable future projects are not cumulatively considerable and are less than significant. This analysis considered the following cumulative impacts:

- **Cumulative Ozone Impacts:** Ozone impacts are the result of the cumulative emissions from numerous sources in the region and transport from outside the region. Ozone is produced in chemical reactions involving ROG, NO_X, and sunlight.

- **Cumulative PM_{10} and $PM_{2.5}$ Impacts:** PM_{10} and $PM_{2.5}$ has the potential to cause significant local problems during periods of dry conditions accompanied by high winds, and during periods of heavy earth disturbing activities. PM_{10} and $PM_{2.5}$ may have cumulative local impacts.

- **Cumulative CO Impacts:** Cumulative carbon monoxide impacts are accounted for in the CO "Hot Spot" screening analysis described earlier in this document.

- **Cumulative Hazardous Air Pollutant (TAC) Impacts:** Cumulative analysis for TACs focused on local impacts on sensitive receptors. The SJVAPCD recommends screening a radius of 1 mile for TAC cumulative impacts.

The cumulative analysis looks to several levels of impact: Regional Analysis, List of Projects/Cumulative Operational, Kern COG Conformity Analysis, California Department of Finance (DOF) Triennial Plan Projections Analysis, and the CARB Projection Analysis. Each level of cumulative analysis serves as an element of the whole cumulative analysis and is not to be considered separately.

The cumulative analysis is based, in part, on a quantitative analysis of projects in the vicinity of the proposed project, and is supplemented with the California DOF population projections, and an analysis of data utilized by Kern COG's adopted regional growth forecast used for the regional air quality conformity analysis required by the 1990 Federal CAA Amendments (Kern COG 2018c). The nearby project analysis (traffic-affected analysis) quantifies operational project impacts along with all identified projects in the vicinity of the proposed site for comparison with the SJVAB and the basin's Kern County portion totals for NO_X and ROG. The Kern COG analysis confirms whether the proposed project, when added to existing and proposed development and compared with local and regional growth forecasts,[3] are in line with those forecasts, and therefore in conformance with SIP emission budgets or baseline emissions for NO_X, ROG, CO, and PM_{10}. Along with CO "Hot Spot" analysis and TACs, the combined analyses provide a detailed description of the project's overall cumulative impact on air quality.

Utilization of Kern COG data provides a framework for assistance in determining the cumulative significance of a project. Through the demonstration that a project's emissions are less than or consistent with projected growth in a particular local area, linked to a regional air basin projection, which ties to Federal requirements, then that project could be said to be *in conformance* cumulatively as it is in line with Federal, State, and regional emissions budgets and air quality improvement goals.

The 2011 Conformity Analysis for the 2011 FTIP Amendment #10 and RTP Amendment #2 complies fully with the July 1, 2004, USEPA final rule that amended the transportation conformity rule to include criteria and procedures for the new 8-hour ozone and fine particulate matter ($PM_{2.5}$) NAAQS.

State CEQA *Guidelines* Section 15064(h)(3) states in part:

> 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 that provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated

[3] This regional approach includes all aspects of growth within the SJVAB, including distribution centers, industrial uses, housing, and infrastructure development.

> waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.

It is important to note that the Kern COG conformity analysis highlights a project's conformance with existing local planning and does not serve as a determinant of a single project's impact.

The cumulative analysis is based, in part, on a quantitative analysis of projects in the vicinity of the proposed project, and is supplemented with the California DOF population projections, and an analysis of data utilized by the Kern COG adopted regional growth forecast used for the regional air quality conformity analysis required by the 1990 Federal CAA Amendments. The nearby project analysis (traffic-affected analysis) quantifies operational project impacts along with all identified projects in the vicinity of the proposed site for comparison with the SJVAB and the basin's Kern County portion totals for NO_X and ROG. The Kern COG analysis confirms whether the proposed project, when added to existing and proposed development and compared with local and regional growth forecasts, is in line with those forecasts, and therefore in conformance with SIP emission budgets or baseline emissions for NO_X, ROG, CO, and PM_{10}. Along with CO "Hot Spot" analysis and TACs, the combined analyses provide a detailed description of the project's overall cumulative impact on air quality.

A complete list of projects within a 6-mile radius of the project site can be found in **Table 4.3-16,** *Projects within a 6-Mile Radius of the Project Site*. There are nine projects within 6 miles of the project site. Projects include communication towers and surface mining and reclamation plans. As described in **Table 4.3-6,** *Maximum Project Mining Source Emissions*, and **Table 4.3-8,** *Total Project Operational Emissions*, the only project pollutant (mitigated or unmitigated) that would exceed SJVAPCD thresholds is unmitigated total source emissions of PM_{10} (16.16 tons per year, which exceeds the 15 tons per year SJVAPCD threshold); for all other emissions of the criteria pollutants of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$, neither project construction nor project operation would exceed the SJVAPCD significance thresholds (WZI Inc. 2019a). Since none of these projects are expected to exceed levels of significance after required mitigation has been implemented, and the proposed project is expected to do the same, the cumulative impacts would be less than significant. Mitigation Measures MM 4.3-1 through MM 4.3-10 are proposed to reduce potential air quality impacts.

Table 4.3-16 Projects within a 6-Mile Radius of the Project Site

Map ID	Name	Project Location	Request	Case Type Code*	Acreage	APN	Project Status
1	Cooper, Stanley & Wanda (Cooper Pit #2)	Section 31, T29S/R21E	Surface Mining and Reclamation Plan	CUP 4, Map 96	40	--	Active
2	White Ash Broadcasting, Inc.	McKittrick Summit (Section 30, T30S/R21E)	Transmitter Tower	CUP 10, Map 117	--	--	Approved
3	ARCO	Section 30, T30S/R21E	110-Foot-High Communications Tower	CUP 9, Map 117	--	--	Approved
4	Anterra Services, Inc.	Reward and Highway 58, Near McKittrick (Section 15, T30S/R21E)	Hazardous Waste Treatment and Recycling Facility (Class II Injection Well)	CUP 15, Map 117	8.13	156-110-10	Approved
5	Switzer Mark by Mcintosh and Associates	2 miles north of Highway 58, 10 NE McKittrick	Surface Mining and Reclamation Plan	CUP	38.35	098-080-040	Active
6	Cooper Stanley and Wanda (Cooper Pit #1)	Sections 10, 14 & 15, T30S/R21E	Mine Expansion and New Mine Development	CUP 14, Map 117	49.20	--	Active
7	McKittrick Ldt/ Dewalt Corp	West of SR 33, South of Reward, CA	Zoning Change to Natural Resource	ZCC 1, Map 117	11.17	--	Active
8	Sprint/Nextel - Debra Gardner Deptratti	499 Franco Western Road, McKittrick (Section 3, T30S/R21E)	50-Foot Communication Monopole	CUP 12, Map 117	--	156-040-03	Active
9	Renia Boudaghian, Esq., AT&T	Reward Road at Franco Western Road (Section 18, T30S/R22E)	145-Foot Wireless Tower with 5-Foot Lightning Rod	CUP 12, Map 118	17.63	157-090-12	Active

* GPA = General Plan Amendment, SP = Specific Plan, ZCC = Zoning Code Change, -- = Information not available

Operation Localized Health Impacts from Regional Emissions (Friant Ranch Case)

Regulatory agencies have been evaluating the impacts of criterial pollutants emissions from a regional level, and today's environmental models are designed to support such regional analysis. As discussed previously, converting project-level (local) criteria pollutants' air quality impact to a resulting human health impact is not practical with today's environmental science models. As shown in **Table 4.3-8,** *Total Project Operational Emissions*, while operation of the project would emit ozone precursor emissions of ROG and NO_X (except as they pertain to Mine Source Emissions [both mitigated and unmitigated]), because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is infeasible to meaningfully convert specific project emissions levels of NO_X or ROG emitted in

a particular area to a particular concentration of ozone and resulting human health impact in that area (WZI Inc. 2019a). The same is true for secondary PM, which like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides and NO_X. Therefore, a general description of the adverse health effects resulting from the project-level criteria pollutants is all that can be feasibly provided at this time.

As described in **Table 4.3-6,** *Maximum Project Mining Source Emissions*, and **Table 4.3-8,** *Total Project Operational Emissions*, the only project pollutant (mitigated or unmitigated) that would exceed SJVAPCD thresholds is unmitigated total source emissions of PM_{10} (16.16 tons per year, which exceeds the 15 tons per year SJVAPCD threshold); for all other emissions of the criteria pollutants of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$, neither project construction nor project operation would exceed the SJVAPCD significance thresholds (WZI Inc. 2019a). Thus, it is not expected that project construction or operational emissions would result in a substantial increase in criteria pollutant concentrations and their related health effects in the air basin, and impacts would be less than significant.

The cumulative operational emissions generated during the concurrent operation of the proposed project and projects within 6 miles of the proposed project site are not expected to exceed the SJVAPCD threshold levels for NO_X because the proposed project's incremental contribution is less than significant under the SJVAPCD's thresholds for project-specific impacts, and the project's incremental contribution to a cumulative effect is considered less than significant (State CEQA *Guidelines* Section 15064(h)(3) [WZI Inc. 2019a, 2020b]).

Mitigation Measures

Implement Mitigation Measures MM 4.3-1 through MM 4.3-10.

Level of Significance After Mitigation

With implementation of Mitigation Measures MM 4.3-1 through 4.3-10, cumulative impacts would be less than significant.

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Section 4.4
Biological Resources

4.4.1 Introduction

This section of the Environmental Impact Report (EIR) describes effects on biological resources that would result from implementation of the project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts for the project, and recommends measures to reduce or avoid significant impacts anticipated from project construction and operation. In addition, existing laws and regulations relevant to biological resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the project.

The information in this section is based on the following (included in Appendix D of this EIR), which were prepared by the project proponent and peer reviewed by the EIR consultant before use in this EIR:

- *Biological Resources Report prepared for the Johe Ranch Mine Project,* prepared by Padre Associates, Inc. Updated June 2019 (Padre Associates, Inc. 2019a), included as Appendix D.1;
- *Supplemental Update of Biological Resources for Johe Ranch Mine Project, Kern County, California,* prepared by Padre Associates, Inc. Updated June 2019 (Padre Associates, Inc. 2019b), included as Appendix D.2;
- *2015 Botanical Survey Report prepared for the Johe Ranch Mine Project,* by Padre Associates, Inc. Prepared April 2015, revised May 2019 (Padre Associates, Inc. 2019c), included as Appendix D.3;
- *San Joaquin Kit Fox Survey Report,* prepared by Padre Associates, Inc. February 2019, included as Appendix D.4;
- *Johe Ranch Project Biological Studies Letter Re: Giant Kangaroo Rat and Blunt-Nosed Leopard Lizard*, prepared by Padre Associates, Inc. October 2018, included as Appendix D.5;
- Personal communication between Julie Finzel and Allen Waggoner re: Johe Ranch AUM calculations, 2016-2017, included as Appendix D.6; and
- Personal communication between Julie Finzel and Allen Waggoner re: Johe Ranch AUM calculations, 2020, included as Appendix D.7.

The analysis in this section is also based on a review of the project description, aerial maps, and available literature from Federal, State, and local agencies, as well as field verification by SWCA Environmental Consultants (SWCA).

Concepts and Terminology

Special-Status Species

Special-status species are plants, animals, and fish species that are legally protected under the Federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Special-status species include:

- Species listed or proposed for listing as threatened or endangered under the ESA (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the *Federal Register* [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (69 FR 24876, May 4, 2004).
- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA; State CEQA *Guidelines* Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (NPPA; California Fish and Game Code [CFGC] Section 1900 et seq.).
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1B and 2); plants ranked by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution (CRPR 3 and 4), which may be included as special-status species on the basis of local significance or recent biological information.
- Animals considered Species of Special Concern (SSC) to the California Department of Fish and Wildlife (CDFW).
- Animals fully protected in California (CFGC Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).

4.4.2 Environmental Setting

This section discusses the existing biological resources conditions within, and adjacent to, the project site. Methods for evaluating site conditions (e.g., literature review, field surveys) and a description of the habitat types and species composition are provided.

Regional Setting

The project site is located at the southern end of the San Joaquin Valley in the Lower Sonoran Life Zone in the rolling foothills of the Temblor Mountain Range, and is characterized by hot, dry summers with daytime temperatures frequently above 100 degrees Fahrenheit (ºF), and cool winters, with infrequent snow and temperatures seldom below freezing.

According to the period of record monthly climate summary reported by the Western Regional Climate Center (WRCC) for the closest National Weather Service Cooperative Observer Program (COOP) Station to the project site (Buttonwillow Station), the region experiences minimum average annual temperatures of 49ºF, with the lowest average temperature (34.5ºF) occurring in December; maximum average annual temperatures of 77.9ºF, with the highest average temperature (98.4ºF) recorded in July; and average annual total precipitation of 5.64 inches (WRCC 2019).

Local Setting

The project site is in a rural area, comprised of vacant, undeveloped land currently used for grazing and surrounded by undeveloped grazing land and Willow Springs Valley to the south. The project site is fenced with barbed wire to exclude the public from entering and consists of undeveloped rolling topography with some steep slopes and incised drainages. The elevation of the project site ranges from approximately 2,800 feet above mean sea level (MSL) near the southwestern corner to approximately 2,100 feet above MSL near the northeast corner. Preexisting graded roads and two-tracked roads occur throughout the project site. Farming equipment, corrals, and other ranching/farming structures are present near the project site.

Vegetation

The vegetative association within the project site consists primarily of Annual (non-native) Grassland. Greater descriptions of vegetation types are included below, and site photos are included in Appendix D.1.

Annual (Non-Native) Grassland

The project site is dominated by California Annual (non-native) Grassland series (Sawyer et al. 2009). An annual grassland community is characterized by a sparse-to-dense cover of low (less than 3.3 feet [1 meter]) annual grasses and native and non-native herbaceous species (Holland 1986; Sawyer et al. 2009). Shrubs and sub-shrubs are sometimes scattered in grasslands but do not dominate the vegetation. Annual grasslands are present throughout most of the project site. Dominant species in this vegetation type include ripgut and red brome (*Bromus diandrus* and *B. madritensis*), wild barley (*Hordeum spontaneum*), Mediterranean grass (*Schismus barbatus*), and a variety of other annuals, such as fiddleneck (*Amsinckia* spp.), redstem filaree (*Erodium cicutarium*), and peppergrass (*Lepidium* spp.).

Disturbed (Ruderal)

Disturbed areas are characterized as areas that have been physically disturbed or invaded by non-native species, such that few or no native plant species remain. Although a disturbed modifier can be applied to any native habitat, the actual designation of disturbed area refers to areas that are no longer recognizable as a native or naturalized vegetation association. Often these areas are associated with human-related activities, such as clearing or grazing. Staging areas and dirt roads within the project site contained mostly disturbed community habitats with several ruderal species dominating the vegetation, such as red brome, redstem filaree, London rocket (*Sisymbrium irio*), and other non-native species.

Alkali Goldenbush Scrub

A relatively small portion of the site also contained alkali goldenbush (*Isocoma acradenia*) scrub. Alkali goldenbush is the dominant plant species in the shrub canopy of this vegetation type. The canopy is usually open to continuous with an open-to-continuous herbaceous layer. Stands are typically found in flat areas but can occur on gently sloping hills with saline to alkali soils. This vegetation type was observed on a lower slope on the north side of the project site and adjacent to the proposed access road.

Soils

Soils occurring within or near the project site include very shaly clay loam and shaly loam. According to the Natural Resource Conservation Service (NRCS) Web Soil Survey (NRCS 2017), soils at the site are listed as Aramburu very shaly clay loam, 15 to 30 percent slopes; Mendi-Hillbrick-Kilmer association, 9 to 30 percent slopes; pottinger very shaly clay loam, 2 to 9 percent slopes; Pottinger very shaly clay loam, 9 to 15 percent slopes; Reward shaly loam, 15 to 30 percent slopes; and Reward shaly loam, 30 to 50 percent slopes. Arambur soils are moderately deep and well drained, formed in residuum derived dominantly from shale or sandstone. Mendi-Hillbrick-Kilmer soil is a combination of deep and well drained, shallow and well drained, and moderately deep and well drained soils. Pottinger soils are deep, well drained, and found on alluvial fans and terraces. Reward soil is deep, well drained, and found on hills and mountains.

Hydrology

Four unnamed ephemeral drainages traverse through the project site (**Figure 4.4-1,** *Water Resources Map*). The drainages flow from higher elevations southwest of the project site. Eventually, the two westernmost of the four unnamed ephemeral drainages converge at lower elevations with another unnamed ephemeral drainage within the Willow Springs Valley. Further review of the topographical maps for the project site and surrounding areas reveal that the aforementioned two westernmost drainages continue to flow through portions of the Temblor Range and terminate within the Temblor Valley, which presently contains the Cymric Oil Field. However, the drainages appear to be heavily disturbed by agricultural activities approximately 1 mile downstream from the project site boundary.

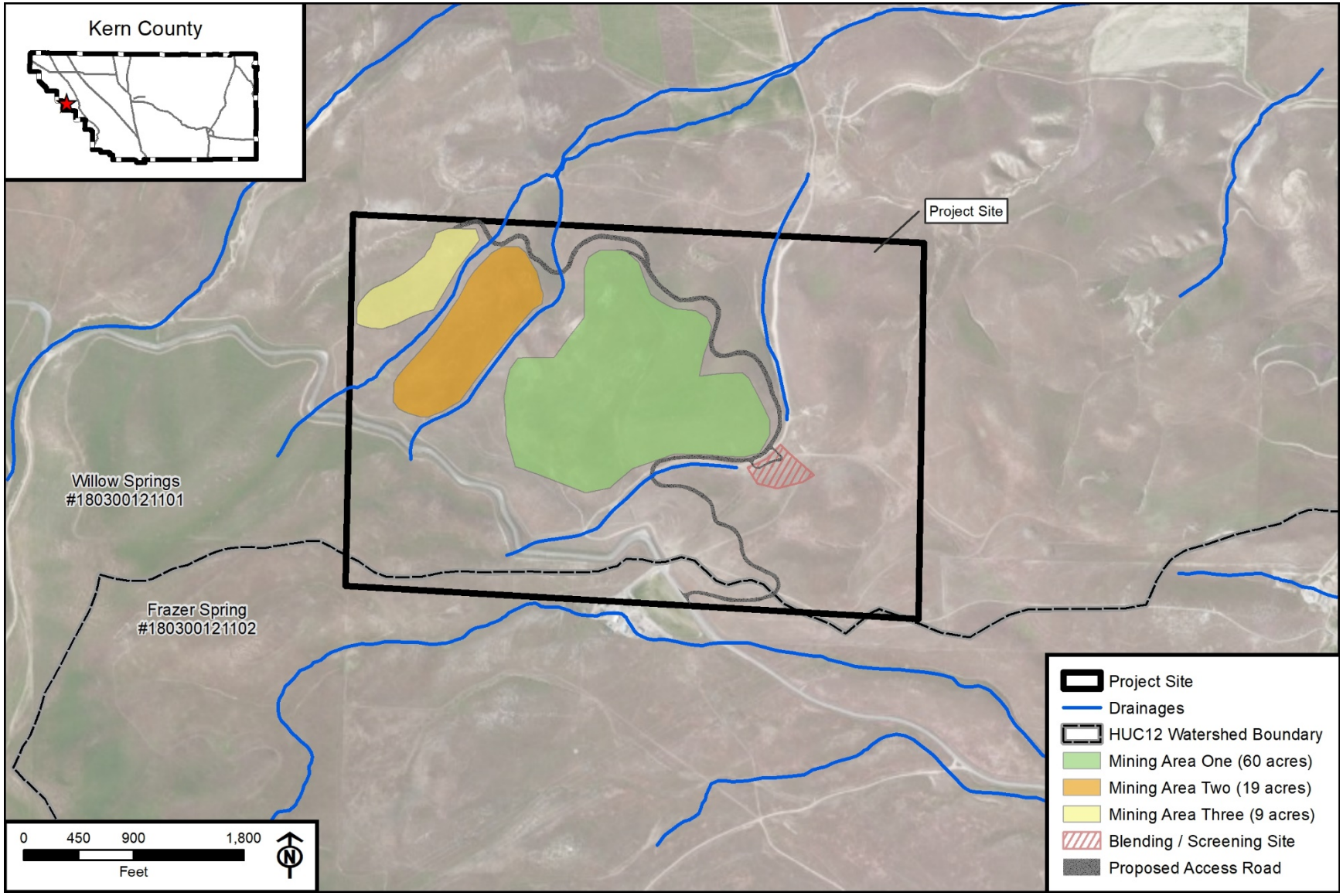

Figure 4.4-1
Water Resources Map

Per the Biological Resources Report, the baseline biological surveys were conducted for a 93.67-acre surface mining operation of diatomaceous earth and development of a reclamation plan on approximately 331 acres in accordance with the Surface Mining and Reclamation Act (SMARA) of 1975, in order to identify any threatened, endangered, or otherwise sensitive (TES) plant and animal species that may be present within or surrounding the project area. In addition, the surveys also focused on any other natural resources, such as the drainage features and the potential for any wetland and/or riparian features that could be impacted by project activities. No riparian and/or wetland habitat was observed within these drainages.

During the biological surveys conducted for this project, no flowing and/or standing water was observed within the drainages. The drainages have a v-shaped profile in the higher elevations of the project site and eventually widen into sandy bottom drainages in the lower elevations of the site. Except for one channel within the western portion of the project site, most of the channels observed did not connect to ephemeral drainages that occur nearby. Flow between these drainages was found to be interrupted by various topographical features and/or previous disturbances within the area.

Critical Habitat

There is no designated critical habitat within the project site or within 8 miles of the project site. The nearest designated critical habitat is U.S. Fish and Wildlife Service (USFWS) designated longhorn fairy shrimp (*Branchinecta longiantenna*) Critical Habitat, located approximately 8.4 miles west of the project site.

Connectivity and Migration Corridors

The importance of continuous habitat corridors and the effects of habitat fragmentation on wildlife populations have been studied extensively and are well understood. Land development and linear structures (e.g., roadways) convert large habitat blocks into noncontiguous patches separated by barriers; individual animals and entire populations can become isolated in remnant habitat "fragments." Depending on their size and other characteristics, these fragments may not support viable populations of some animals.

Wildlife movement corridors are linear habitats that function to connect two or more areas of significant wildlife habitat. These corridors may function on a local level as links between small habitat patches (e.g., streams in urban settings) or may provide critical connections between regionally significant habitats (e.g., deer movement corridors). Wildlife corridors typically include vegetation and topography that facilitate the movements of wild animals from one area of suitable habitat to another in order to fulfill foraging, breeding, and territorial needs. These corridors often provide cover and protection from predators that may be lacking in surrounding habitats. Wildlife corridors generally include riparian zones and similar linear expanses of contiguous habitat.

Although the general project area may be traversed by some species at different times, the property does not include any wildlife movement corridors that are considered significant on a regional basis.

Literature Review

Padre Associates conducted a literature review of the project site and surrounding area that included an updated query of California Natural Diversity Database (CNDDB), USFWS Information for Planning and Consultation (IPaC), USFWS Critical Habitat Portal, and the CNPS Inventory of Rare and Endangered Plants. Available aerial photographs and U.S. Geological Survey (USGS) topographical maps were also reviewed prior to field surveys. Padre Associates' experience and knowledge in the general region was also used to determine what special-status species could potentially occur within the project site or general vicinity. Tables 1 and 2 in the Biological Resources Report included in Appendix D.1 present the special-status wildlife and plant species, respectively, with potential to occur within or near the project site.

Survey Methodology

Reconnaissance-level biological surveys, botanical surveys, and San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*) surveys were performed by two qualified Padre Associates biologists in April and May 2008, April and May 2014, April and June 2015, and April and May 2018 in order to determine the presence of special-status species, as well as to document and update existing baseline biological conditions at the project site and provide recommendations, if applicable. The project site and access roads throughout the project site were surveyed. Surveys were conducted in an effort to identify suitable habitat for special-status species and/or signs (e.g., nests, burrows, scat, tracks, prey remains, seeds, leaves, etc.) of their presence. All drainages, potential waterways, gullies, washes, etc. were surveyed as well. Padre Associates conducted the survey by utilizing pedestrian belt transects spaced at approximately 60 feet in width. Steep locations were accessed by existing dirt roads and/or two-tracked roads. Areas that were on a steep incline were surveyed using 8×10 binoculars from the ridge tops and bottoms of the hill to obtain a better perspective. Any burrow and/or dens could be easily observed as the vegetation on-site was primarily low-growing grasslands. All burrow/den complexes observed were accessed on foot and carefully examined for any signs of fossorial special-status species. Logs, stones, and other debris observed within the drainages and other gullies within the project site were examined for the presence of any cryptic wildlife that may use these areas as refuge. Plant species that could not be readily identified in the field were collected for in-house identification using botanical keys and manuals.

Common Wildlife

Wildlife observed in the project area is consistent with wildlife known to occur throughout much of the San Joaquin Valley. Habitat suitability for a diverse range of wildlife is limited by the dominance of California annual grassland and ongoing grazing disturbance. Small mammals on and adjacent to the site live in underground burrows. No trees are present on the project site; consequently, birds primarily nest in shrubs, on the ground, in burrows, or on utility poles.

A summary of wildlife observed at the project site is provided below:

- **Amphibians.** Amphibians often require a source of standing or flowing water to complete their life cycle; however, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and under rocks or by burrowing into the soil. No amphibian species were observed during surveys of the project site.

- **Reptiles.** One common species of reptile was identified within the project site, the side-blotched lizard (*Uta stansburiana*).

- **Birds.** During surveys conducted, five avian species were recorded at the project site: burrowing owl (*Athene cunicularia*), which was identified by its burrow only; mourning dove (*Zenaida macroura*); rock wren (*Salpinctes obsoletus*); savannah sparrow (*Passerculus sandwichensis*); and western kingbird (*Tyrannus verticalis*).

- **Mammals.** Two common mammal species were identified through direct observation and signs of occurrence on the project site during surveys: coyote (*Canis latrans*) and California ground squirrel (*Otospermophilus beecheyi*). No live trapping was conducted.

- **Invertebrates.** Invertebrates play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; provide important pollination vectors for numerous plant species; act as efficient components in controlling pest populations; and support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. However, no invertebrates were observed on the project site and, consequently, no special-status invertebrates are expected to occur on-site.

- **Fish.** Standing water is not present at the project site. Consequently, no fish were observed and none are expected to occur.

Special-Status Species and Habitats

As discussed previously, Tables 1 and 2 in Appendix D.1 present the special-status wildlife and plant species, respectively, with potential to occur within or near the project site. The tables also denote the current status of each species as a Federally and/or State-listed species, or any other designations, as well as the rationale for the species' potential to occur within the project site. Those sensitive vegetation communities and special-status species that were determined not to have the potential to occur within the project site or immediate vicinity are not discussed further in this section. Special-status plant and animal species that are considered to have the potential to occur within the project site are discussed in detail below.

Special-Status Plants

Thirty-four special-status plant species were identified through the literature review as having the potential to occur within the project area. Prior to the start of botanical surveys, Padre Associates visited several special-status plant reference sites to determine if listed plant species were in bloom for proper species identification. These included the Carrizo Plains National

Monument, the Lokern area west of Buttonwillow, and Elk Hills near Taft. For those plants not observed, plants in the same genus were checked to ensure that blooming was present. The following are descriptions of special-status plant species considered to have the potential to occur within the project site.

California Jewelflower

California jewelflower (*Caulanthus californicus*) is both Federally and State listed as endangered. Populations of California jewelflower are only known to be extant in three areas: Santa Barbara Canyon near Cuyama Valley, the Carrizo Plain, and Kreyenhagen Hills near Coalinga. This species of jewelflower is reported to occur in grassland habitats but are thought to be threatened by cattle grazing. The nearest reported CNDDB occurrence for this species is within the Carrizo Plain approximately 9.5 miles southwest of the project site. The California jewelflower is unlikely to occur within the site as it is not within the vicinity of any known extant populations and grazing has occurred extensively throughout the immediate and general area.

San Joaquin Woollythreads

San Joaquin woollythreads (*Monolopia congdonii*) is Federally listed as endangered. Woollythreads are known to occur in non-native grasslands and are most frequently found on neutral to subalkaline soils. This species of plant is frequently found on sand dunes and sandy ridges as well as along the high-water line of washes. Grazing has been reported as a threat to the spring season survival of these plants. The nearest CNDDB occurrence is located approximately 7 miles northeast in the Belridge Oilfield. Although potential habitat may be present within the drainages of the project site, this species is not considered to have the potential to occur within proposed disturbance areas due to existing disturbance from ongoing grazing and the lack of suitable soils.

Kern Mallow

Kern mallow (*Eremalche kernensis*) is Federally listed as endangered and typically occurs on alkali flats and eroded hillsides of the southern San Joaquin Valley. Kern mallow is often found growing under and around saltbush shrubs (*Atriplex* sp.) and in areas with shrub cover less than 25% and herbaceous cover ranging from 48–80%. The geographical distribution of Kern mallow has been debated over the last few years as taxonomic problems and misidentifications have occurred with this species. In addition, Kern mallow is reported to only occur in the Lokern area. The Lokern area is approximately 10 miles northeast of the project site. As the project site is outside of the Lokern area, it is unlikely Kern mallow occurs in the area.

Padre Associates biologists conducted botanical surveys at the project site on February 24 and March 31, 2015. Meandering pedestrian belt transects spaced approximately 5 to 10 meters apart were completed within the areas planned for mining and proposed access roads, where accessible. A 200-foot buffer around these locations was included and surveyed as well. Transects were modified as needed depending on topography, shrub coverage, safe accessibility, property access, etc.

Surveys were scheduled for the proper time of year when most plants were both evident (i.e., flowering) and identifiable. The region experienced what seemed to be an early "spring" and many plant species were already in full bloom during the first botanical survey. Every plant observed during the surveys was recorded and identified to species, subspecies, and/or variety as applicable. *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) was consulted and used for the identification of species observed in the field. Hand-held Global Positioning System (GPS) units were on-hand to record the locations of any special-status plant species observed during the surveys. Photographs were also taken at various locations within the project site (Appendix D.1).

Padre Associates biologists identified 62 plant species throughout the survey area within the project site. The species observed were common native or non-native species typically found in similar habitats in western Kern County and surrounding areas. A complete list of plant species observed during the botanical surveys can be found in Appendix D.3.

No special-status plant species were observed within or near the survey area during the botanical surveys. Gypsum-loving larkspur (*Delphinium gyposphilum* ssp. *gypsophilum*) was observed to occur on many of the north-facing slopes throughout the project site; however, this plant species is listed as CRPR 4.2 for being "too common". Lemmon's jewelflower (*Caulanthus lemmonii*), listed as CRPR 1B.2, was observed in full bloom during the February botanical survey approximately 2.6 miles west of the project site; however, it was not observed within or in any other areas near the project site.

Special-Status Wildlife

Based on the literature review performed for this project, 24 sensitive wildlife species were identified as having the potential to occur in the project area or are known to occur in the vicinity of the project site (see Table 1 in Appendices D.1 and D.2). The following species were considered to have the potential to occur within or in the vicinity of the project site.

San Joaquin Antelope Squirrel

San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), which is a State threatened species, is typically found in arid annual grasslands and shrubland communities, with the most numerous in areas with a sparse-to-moderate cover of shrubs, typically desert saltbush (*Atriplex polycarpa*). Shrubless areas are only sparsely inhabited and steep slopes and broken, rocky, upland terrain are scarcely inhabited. In the southern and western San Joaquin Valley, these squirrels are associated with open, gently sloping land with shrubs. The project site was composed mostly of steep terrain with only a small patch of shrubs present. Flat areas to the north of the site have been cultivated for agriculture. The nearest CNDDB occurrence is from 1980 approximately 4.3 miles northeast of the project site. Therefore, it is unlikely that San Joaquin antelope squirrels would be present within or near the project site.

Giant Kangaroo Rat

The giant kangaroo rat (GKR) (*Dipodomys ingens*), which is Federally and State listed as endangered, is known to occur in the general region of the southern San Joaquin Valley. GKR

are known to occur in annual grassland habitats with up to 22 percent slopes. The majority of the project site occurs on slopes over 22 percent, which is typically suboptimal terrain for GKR. Additionally, GKR burrows can typically be identified such as those observed in the Lokern and Carrizo Plain areas, and Padre Associates did not observe any burrows characteristic of GKR on any portion of the Project site. Although studies such as the Lokern Grazing Study have resulted in more GKR being captured in grazed lands versus in ungrazed lands, GKR only accounted for 3% of species captured on grazed lands, likely indicating grazed grasslands are suboptimal for GKR as well. The project site is actively grazed. In addition, Padre Associates Biologist Andrew Krause, who holds both a California Memorandum of Understanding and Federal Recovery Permit for the live trapping of GKR, surveyed the project site and did not think it supported suitable habitat for GKR. The nearest occurrence of GKR is reported approximately 6 miles west of the project site within the Carrizo Plain and approximately 8 miles east of the project site in the Lokern Area. GKR are also known to occur within the McKittrick and Buena Vista Valleys, and the project site is not located within any of these geographical locations. Therefore, it is unlikely that GKR occur within the project site and protocol surveys were determined to not be required (refer to Appendix D.5).

Short-Nosed Kangaroo Rat

The short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*) is a California SSC that typically occurs in grassland habitats with scattered shrubs and desert-shrub associations on powdery soils with gently sloping and rolling hills. The nearest reported CNDDB occurrence is within the Cymric Oilfield approximately 7 miles northeast of the project site. Therefore, since the project site is mostly void of habitat that is suitable for short-nosed kangaroo rat, they are unlikely to occur within the site.

Tulare Grasshopper Mouse

The Tulare grasshopper mouse (*Onychomys torridus tularensis*) is a California SSC that inhabits arid grassland and shrubland associations and can be found within the sloping margins of the western San Joaquin Valley and Carrizo Plain. Potential habitat is present for this species within the project site and the species may occur within the area.

San Joaquin Kit Fox

The SJKF was once known to occur throughout the San Joaquin Valley from southern Kern County north to eastern Contra Costa County; however, kit fox populations have declined and are most abundant in the southern San Joaquin Valley. SJKF typically inhabit grasslands and scrublands and are known to adapt well to areas that have been extensively modified such as oilfields and agricultural areas. The project site contains suitable habitat for SJKF and is also within the current range of the species. The nearest reported CNDDB occurrence is approximately 1.83 miles north of the project site, north of Willow Springs Valley. No potential or known dens were observed within the project site as all burrow complexes observed were examined for any sign of scat, tracks, prey remains, fur, etc. It is probable that SJKF would be more inclined to travel through areas of flat terrain directly north of the project site within Willow Springs Valley; however, SJKF could potentially traverse through the site and forage in the general area at any time (refer to Appendix D.4).

Nesting Birds

Most bird species, their nests, and eggs are protected by the Migratory Bird Treaty Act (MBTA). The site is completely void of trees and only a small patch of alkali goldenbush was observed, which limits the amount of nesting habitat available for most bird species. However, this does not preclude ground nesting birds from potentially utilizing the project site. Species such as western meadowlarks (*Sturnella neglecta*), which were observed during surveys, typically build their nests on the ground. Although not observed during the surveys, the short-eared owl (*Asio flammeus*) may also utilize open grasslands for nesting such as those present within the project site. Additionally, long-eared owl (*Asio otus*), prairie falcon (*Falco mexicanus*), Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), Le Conte's thrasher (*Toxostoma lecontei*), and golden eagle (*Aquila chrysaetos*) could potentially forage over the site; however, no nesting habitat for these bird species is present within the project site. The mountain plover (*Charadrius montanus*) does not breed in California but could potentially forage through the site.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a California SSC that inhabits grassland habitats and utilizes the burrows of mammals such as squirrels, coyotes, foxes, and badgers. Two burrows that contained whitewash and pellets at the entrances were observed during the field survey. Although burrowing owls were not directly observed, the presence of the whitewash and pellets likely indicates that burrowing owls utilize the project site for nesting, roosting, and foraging.

American Badger

The American badger (*Taxidea taxus*) is a California SSC that inhabits drier open stages of a variety of habitats. Badgers are mostly found in areas with friable soils where they can dig burrows and hunt prey such as California ground squirrel and other small mammals. No potential badger dens were observed during the survey of the project site; however, suitable habitat for this species is present on the site.

Bats

The pallid bat (*Antrozous pallidus*) and western mastiff bat (*Eumops perotis californicus*) are both California SSC. Bats can forage over a variety of habitats; however, they typically utilize manmade structures such as attics, barns, roofs, bridges, and mines. Bats also roost in trees and rock outcrops/caves. Foraging habitat for bats is present within the project site; however, no roosting habitat is present.

Blunt-Nosed Leopard Lizard

The blunt-nosed leopard lizard (BNLL) (*Gambelia sila*) is endemic to the San Joaquin Valley and is currently thought to inhabit areas of the San Joaquin Valley floor and portions of the Coast Range foothills. BNLL are also known to occur in areas that are relatively flat and are not known in areas with slopes greater than 30 to 40 degrees. As previously stated, the terrain

within Johe Ranch Mine is composed mostly of steep terrain that is typically not suitable for BNLL. Drainages/ephemeral creeks observed within or near the mine were v-shaped and narrow and congested with vegetation (Russian thistle [*Salsola* spp.]), which typically are not suitable for BNLL as they prefer drainages that are flat, broad, and sandy bottomed. The nearest occurrences of BNLL are within the Carrizo Plain approximately 7 miles away west of the project site and Lokern area approximately 4 miles west of the project site, all reported in relatively flat areas unlike the project site. Additionally, the mine occurs at the elevation limit (2,400 feet) for BNLL; therefore, it is unlikely that BNLL would occur within the project site. For these reasons, protocol-level surveys were determined to not be necessary.

Coast Horned Lizard

The coast horned lizard (*Phrynosoma blainvillii*) is a California SSC that can be found in a variety of habitats; however, they require loose, fine soils with a high sand fraction, an abundance of native ant populations, and open areas with limited overstory for basking. The project site was mostly void of suitable habitat for the coast horned lizard and it is unlikely to occur within project site.

Silvery Legless Lizard

The silvery legless lizard (*Aniella pulchra*) is a California SSC that is known to occur within the Temblor Mountain Range and prefers areas with sandy soils. The project site is within the known range of this legless lizard; however, no sandy soils are known to occur within the areas planned for mining as they are mostly composed of shaly loam soils. Sandy soils may be present within lower portions of the drainages. Although silvery legless lizards could potentially be present within sandy soils at lower elevations of the site, it is unlikely that this species would occur within the project site.

San Joaquin Whipsnake

The San Joaquin whipsnake (*Masticophis flagellum ruddocki*) is a California SSC that occurs in grasslands and saltbush associations that are open and dry and contain little to no tree cover. The project site is within the known range of this species and the species could potentially occur in the general area.

4.4.3 Regulatory Setting

Federal

Federal Endangered Species Act

The ESA of 1973 (16 United States Code [USC] Sections 1531–1543) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The ESA defines species as "threatened" or "endangered" and provides regulatory protection for listed species. The ESA provides a program for conservation and recovery of threatened and endangered species, and conservation

of designated critical habitat that USFWS has determined is required for the survival and recovery of these listed species. Certain sections of the ESA have specific potential applicability to the project and are discussed below:

Section 7 requires Federal agencies, in consultation with and with the assistance of the Secretary of the Interior or the Secretary of Commerce, as appropriate, to insure that actions they authorize, fund, or carry out, are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) share responsibilities for administering the ESA. Regulations governing interagency cooperation under Section 7 are found at 50 CFR Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing a take that may occur incidental to an otherwise legal activity.

Section 9 lists those actions that are prohibited under the ESA. Section 9 of the ESA prohibits take (i.e., to harass, harm, pursue, hunt, wound, kill, etc.) of listed species of fish, wildlife, and plants without special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or shelter. "Harass" is further defined as actions that create the likelihood of injury to listed species to an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and shelter.

Section 10 provides a means whereby a non-Federal action with a potential to result in the "take" of a listed species could be allowed under an incidental take permit. Application procedures are found at 50 CFR Parts 13 and 17 for species under the jurisdiction of USFWS and 50 CFR Parts 217, 220, and 222 for species under the jurisdiction of NOAA Fisheries.

Migratory Bird Treaty Act

The MBTA, first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (16 USC 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property. On December 22, 2017, the Office of the Solicitor of the Department of the Interior issued a Memorandum (Opinion M-37050) regarding the MBTA prohibition on incidental take, which substantially modifies the Department's policy regarding the enforcement of the MBTA against the incidental taking or killing of migratory birds. The Solicitor's Opinion is that the MBTA does not prohibit incidental take, such that "the statute's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply

only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs."

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (72 FR 31132; 50 CFR 22.3).

On November 10, 2009, USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing BGEPA which has been the primary regulation protection for unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act.

Federal Clean Water Act

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Certain sections of the CWA have specific potential applicability to the project and are discussed below:

Section 401 of the CWA requires that the project proponent for any project that affects waters of the United States must request a 401 Water Quality Certification, which must be issued before the start of project construction. In association with obtaining a Section 404 permit, a Water Quality Certification must be obtained from the Regional Water Quality Control Board (RWQCB). To obtain approval of the application for Water Quality Certification, projects must follow the U.S. Army Corps of Engineers (USACE) Section 404(b)(1) Guidelines, which specify avoidance of wetland impacts and minimization and mitigation of impacts to any affected wetlands.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredge or fill material) into waters of the United States.

Section 404 establishes a permit program, administered by the USACE, regulating the discharge of dredged or fill material into waters of the United States, including wetlands. Implementing regulations by USACE are found at 33 CFR Parts 320–330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines and were developed by the U.S. Environmental Protection Agency (USEPA) in conjunction with the USACE (40 CFR Parts 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources and can fall under the jurisdiction of several regulatory agencies.

USACE exerts jurisdiction over waters of the United States, including all waters that are subject to the ebb and flow of tide; wetlands and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, and tributaries of the above features. The extent of waters of the United States is generally defined as that portion that falls within the limits of the ordinary high water mark (OHWM). Typically, the OHWM corresponds to the 2-year flood event.

Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are defined by USACE as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology) as determined by field investigation must be present for a site to be classified as a wetland by the USACE.

As discussed above, USACE regulatory jurisdiction under Section 404 is founded on a connection between the water body in question and interstate commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the USACE regulations. On January 9, 2001, the Supreme Court issued a decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* concerning CWA jurisdiction over isolated waters. This decision substantially affected the extent of USACE's regulatory authority over "non-navigable, isolated, intrastate waters," and, particularly, the use of indirect indicators of interstate commerce (e.g., use by migratory birds that cross state lines) as a basis for jurisdiction.

State

California Environmental Quality Act

CEQA was adopted in 1970 and applies to public agencies in California with discretionary authority over project approvals and permits. CEQA requires that impacts of proposed projects be assessed before the project is approved. Projects with significant impacts on the environment cannot be approved without adequate mitigation or compensation, unless a finding of overriding consideration is made. Discretionary approval from public agencies may require avoidance measures or compensatory mitigation. CEQA also provides that less-than-significant impacts of an individual project can be treated as significant if they contribute to significant cumulative impacts on the environment.

California Endangered Species Act

The CESA is similar to the ESA but pertains to State-listed endangered and threatened species. It requires State agencies to consult with the CDFW when preparing CEQA documents to ensure that the State lead agency actions do not jeopardize the existence of listed species. It directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that there are "overriding considerations;" however, the agencies are prohibited from approving projects that would result in the extinction of a listed species. The CESA prohibits the taking of State-listed endangered or threatened plant and wildlife species. The CDFW exercises authority over mitigation projects involving State-listed species, including those resulting from CEQA mitigation requirements. The CDFW may authorize "take" if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. The CDFW requires preparation of mitigation plans (CDFW 2081 permit) in accordance with published guidelines.

California Fish and Game Code

The CFGC establishes the foundation of fish, wildlife, and native plant protections and management in the State. Certain sections of the CFGC have specific potential applicability to the project and are discussed below:

Sections 1600 through 1616 require the project proponent to notify the CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the CFGC, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial streams valuable to fish and wildlife are subject to CDFW jurisdiction. The CDFW also has jurisdiction over dry washes that carry water ephemerally during storm events. Consultation with the CDFW shall be conducted to determine if the two dry washes on the project site are jurisdictional to the CDFW and if they might require a Streambed Alteration Agreement (SAA).

Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, the CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a SAA that becomes part of the plans, specifications, and bid documents for the project.

Section 2080 states, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the [California Fish and Game] Commission determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act."

Section 2081 authorizes individuals or public agencies to import, export, take, or possess, any State-listed endangered, threatened, or candidate species with approval from CDFW. These otherwise prohibited acts may be authorized through permits or a Memorandum of Understanding (MOU) if: (1) the take is incidental to an otherwise lawful activity; (2) impacts of the authorized take are minimized and fully mitigated; (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species; and (4) the project proponent ensures adequate funding to implement the measures required by the CDFW. The CDFW makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Section 3503 and 3503.5 prohibits the project proponent from conducting activities that would result in the taking, possessing, or destroying of any birds of prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to CFGC Section 3800.

Native Plant Protection Act (California Fish and Game Code Sections 1900–1913)

The NPPA requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows the CDFW to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with the CDFW during project planning to comply with the provisions of the NPPA and sections of CEQA that apply to rare or endangered plants.

Local

Kern County General Plan

The project site is located within the *Kern County General Plan*. The *Kern County General Plan* identifies the Federal, State, and local statutes, ordinances, or policies that govern the conservation of biological resources that must be considered by Kern County during the decision-making process for any project that could impact biological resources.

Chapter 1. Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element of the *Kern County General Plan* states that the element provides for a variety of land uses for future economic growth while also assuring the conservation of County's agricultural, natural, and resource attributes. Section 1.10, *General Provisions*, provides goals, policies, and implementation measures that apply to all types of discretionary projects.

1.10 General Provisions

1.10.5 Threatened and Endangered Species

Policies

- **Policy 27.** Threatened or endangered plant and wildlife species should be protected in accordance with state and federal laws.

- **Policy 28.** County should work closely with state and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

- **Policy 29.** The County will seek cooperative efforts with local, state, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

- **Policy 30.** The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, state, and federal programs concerning endangered species conservation issues.

- **Policy 31.** Under the provisions of the California Environmental Quality Act (CEQA), the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

- **Policy 32.** Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

- **Implementation Measure Q.** Discretionary projects shall consider effects to biological resources as required by the California Environmental Quality Act.

- **Implementation Measure R.** Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to the California Environmental Quality Act.

- **Implementation Measure S.** Pursue the development and implementation of conservation programs with state and federal wildlife agencies for property owners desiring streamlined endangered species mitigation programs.

4.4.4 Impacts and Mitigation Measures

This section describes the methodology used in conducting the impact analysis for biological resources, the thresholds of significance used in assessing impacts to biological resources, and the assessment of impacts to biological resources, including relevant mitigation measures.

Methodology

This section describes the potential biological resources impacts associated with development of the project. This analysis is based on the following:

- *Biological Resources Report prepared for the Johe Ranch Mine Project,* prepared by Padre Associates, Inc. Updated June 2019 (Padre Associates, Inc. 2019a), included as Appendix D.1;
- *Supplemental Update of Biological Resources for Johe Ranch Mine Project, Kern County, California,* prepared by Padre Associates, Inc. Updated June 2019 (Padre Associates, Inc. 2019b), included as Appendix D.2;
- *2015 Botanical Survey Report prepared for the Johe Ranch Mine Project,* by Padre Associates, Inc. Prepared April 2015, revised May 2019 (Padre Associates, Inc. 2019c), included as Appendix D.3;
- *San Joaquin Kit Fox Survey Report,* prepared by Padre Associates, Inc. February 2019, included as Appendix D.4;
- *Johe Ranch Project Biological Studies Letter Re: Giant Kangaroo Rat and Blunt-Nosed Leopard Lizard*, prepared by Padre Associates, Inc. October 2018, included as Appendix D.5;
- Personal communication between Julie Finzel and Allen Waggoner re: Johe Ranch AUM calculations, 2016-2017, included as Appendix D.6; and
- Personal communication between Julie Finzel and Allen Waggoner re: Johe Ranch AUM calculations, 2020, included as Appendix D.7.

Baseline conditions were first established for the affected environment relevant to biological resources, as presented above in Section 4.4.2, *Environmental Setting*. Literature review and field survey methodologies are described in Section 4.4.2, *Environmental Setting*, and in each of the corresponding survey reports included in Appendix D.

Baseline conditions were evaluated based on their potential to be affected by project ground disturbance and other activities associated with mining and reclamation within the proposed disturbance areas. As described in Chapter 3, *Project Description*, the project would result in activities within the mining expansion areas, including topsoil and overburden removal, which would remove existing vegetation and habitat; on-site transport of materials; and other activities that would create a potential for effects on habitat and wildlife. Mining activities

would occur incrementally over the proposed 50-year life of operation, and would likely progress in one area at a time. Thus, mining within some of the expansion areas may not occur for several decades after approval of the project. Following completion of mining in each mining area, the area would be reclaimed and revegetated to be suitable for cattle grazing similar to the site's current conditions. The predicted interactions between the affected environment and project activities are evaluated based on the significance criteria identified below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on biological resources. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to biological resources if it would:

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 Wildlife or U.S. Fish and Wildlife Service;

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

c. Have a substantial adverse effect on Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

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;

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas:

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Project Impacts

Impact 4.4-1: The project would 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 Wildlife or U.S. Fish and Wildlife Service.

As discussed in Section 4.4.2, *Environmental Setting*, the project site is dominated by California annual grassland habitat and consists of rolling topography with steep slopes and incised drainages. Based on the literature review and field surveys conducted for this project, no sensitive plant communities or special-status plant species are known to occur or are considered to have the potential to occur within the project site. However, based on the literature review and field surveys, the following special-status wildlife species are considered to have the potential to occur within the project site due to the presence of suitable habitat:

- Tulare grasshopper mouse (*Onychomys torridus tularensis*);
- San Joaquin kit fox (*Vulpes macrotis mutica*);
- nesting birds protected by the MBTA;
- burrowing owl (*Athene cunicularia*);
- American badger (*Taxidea taxus*); and
- San Joaquin whipsnake (*Masticophis flagellum*).

Implementation of the proposed project would result in direct and indirect loss of potential habitat for these special-status species. The removal of topsoil and vegetation from the mining areas and creation of roads would result in the loss of habitat for special-status species. Operation of the project could result in mortality through collision with the species during excavation of materials and use of access roads.

The removal of vegetation would result in direct and indirect effects to biological resources from the conversion of habitat. Removal or degradation of existing habitat associated with project ground disturbance would alter access to a variety of essential resources, including shade and food sources and would result in the displacement and/or potential mortality of resident wildlife species that are poor dispersers such as snakes, lizards, and small mammals. Implementation of the proposed project would degrade the value of habitat in the project site. Direct impacts as a result of project activities would include the long-term removal of existing vegetation communities used as habitat for both common and special-status wildlife and plants. Mining and other project activities would also generate fugitive dust, and increased noise levels due to heavy equipment operations occurring in these areas that could adversely affect special-status species.

Indirect impacts to habitat could include alterations to existing topographical and hydrological conditions and the establishment of non-native and invasive weeds. Operational impacts include disturbance caused by increased human presence, risk of injury or mortality from vehicles, and further opportunities for the introduction and spread of non-native and invasive weeds.

Project Timeframe

Proposed mining activities would occur incrementally over the proposed 50-year life of operation, and some areas may not be disturbed for several decades following project approval. Each species listed above may or may not have the potential to occur on these areas when such future ground disturbance is initiated. Furthermore, given the long timeframe of the project, it is reasonable to anticipate that the list of special-status species potentially occurring within areas to be disturbed may differ from this current list, with additional species being listed as special-status and other species being delisted in the event of their recovery. With climate change and other natural events over time, habitat characteristics of the project area could also change, altering the species they can support. The project's potential to adversely affect special-status species, including burrowing owl (known to occur on the project site), is considered potentially significant. However, the specific species that may be affected as a result of future habitat disturbance as project mining expands to new mine areas over time and potential direct effects to plant and animal species cannot be determined with certainty at this time. This impact is considered potentially significant. Therefore, Mitigation Measure MM 4.4-1 requires approval and implementation of an employee awareness program to identify sensitive and protected species that could exist on-site before project activities begin. Mitigation Measure MM 4.4-2(1) requires conducting pre-disturbance special-status species surveys, and Mitigation Measure MM 4.4-2(2) requires implementation of special-status animal species protection measures. Mitigation Measure MM 4.4-3 requires implementation of special-status plant species protection measures. Mitigation Measure MM 4.4-4 identifies specific mitigation for burrowing owl based on the species' known occurrence on the project site. Implementation of Mitigation Measures MM 4.4-1, MM 4.4-2(1), MM 4.4-2(2), MM 4.4-3, and MM 4.4-4 would reduce impacts associated with the long timeframe of the project disturbing special-status species on-site to less than significant.

Direct Impacts to Special-Status Species

The project would result in vegetation clearing, earth removal, grading, digging, and equipment movement. More mobile species like birds and larger mammals are expected to disperse into nearby habitat areas during construction. A significant impact would occur in the event that direct mortality of special-status plants, small mammals, amphibian, reptiles, and other less mobile species were to occur during construction or operation of the project. Eggs and nestlings of bird species with small, well-hidden nests could also be subject to loss. This impact is considered potentially significant. In addition to MM 4.4-1 and MM 4.4-2, described previously, MM 4.4-2(3) requires covering and inspecting structures (e.g., pipes, culverts) to prevent species from becoming trapped, and MM 4.4-5 requires measures to prevent species from becoming trapped in excavations with slopes steeper than 2:1 (horizontal:vertical).

Impacts to Burrowing Owl

Burrowing owl is the only special-status species with moderate to high habitat potential that was indirectly observed on-site during (burrows with whitewash). Construction and operation of the proposed project would reduce availability of potential nesting/foraging habitat for burrowing owl. Direct impacts to burrowing owls, if present, as a result of project construction activities could include the crushing of burrows, removal or disturbance of vegetation, increased noise levels and vibration from heavy equipment, increased human presence, and exposure to fugitive dust. Indirect impacts could include the loss of habitat due to the colonization of noxious weeds.

If burrowing owls are present within a construction zone, or adjacent to such an area, disturbance could destroy occupied burrows or cause the owls to abandon burrows. Construction during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Uncompensated reductions in the number of burrowing owl, directly or indirectly through nest abandonment or reproductive suppression, could constitute an adverse impact.

Operational impacts to this special-status species could occur due to increased human presence from personnel that could flush or otherwise disturb burrowing owls. Vehicular traffic also has the potential to cause injury or death to burrowing owls. This impact is considered potentially significant. Mitigation Measure MM 4.4-4 would reduce the potential impacts to burrowing owls to a less-than-significant level.

Nighttime Lighting

Although the potential effects vary, lighting can influence the life cycle and behavior of animals. In particular for birds, insects, and amphibians, outdoor lighting has been observed to influence behavior because animals are disoriented, attracted, or repelled by the light, thus increasing the chance of exhaustion and death. Light can confuse animal navigation, alter competitive interactions, change predator–prey relations, and influence animal physiology. The project is anticipated to include nighttime lighting, considering surface mining and reclamation operations would be conducted, as proposed, from 6:00 a.m. to 7:30 p.m., Monday through Friday. The potential for adverse impacts associated with lighting on special-status animal species that may be present on the project site is considered a potentially significant impact. Mitigation Measures MM 4.1-2 and MM 4.1-3 would require an outdoor lighting plan designed to focus and reduce lighting. Implementation of Mitigation Measures MM 4.1-2 and MM 4.1-3 would reduce this impact to less than significant.

Raptors and Migratory Birds

Implementation of the proposed project could result in direct mortality or the loss of habitat for raptors and migratory birds. This would be a potentially significant impact. Removal of vegetation and other appropriate nesting habitat associated with construction and mining activities could result in the loss of nesting habitat used by nesting migratory birds or direct mortality to these species. In addition to loss of nests associated with habitat or vegetation removal, construction and mining activities in the vicinity of active nests could potentially

disturb the birds and cause them to abandon their nests. After initial development of the project site, project activities are not expected to indirectly affect migratory birds and raptors that nest surrounding the site, because the bird would have nested in the presence of noise and human activity. For each subsequent phase of the project, new surveys would be required to ensure that nests are not directly removed from vegetation clearing and ground disturbance. Construction activities that require the removal/disturbance of habitat or vegetation could cause direct and indirect impacts to nesting raptors and migratory birds. Construction activities could also result in noise, dust, increased human activity, and other indirect impacts to nesting raptors or migratory bird species in the project vicinity. The loss or disturbance of active nests or direct mortality is prohibited by the MBTA and CFGC Section 3503.5. This impact is considered potentially significant. Mitigation Measures MM 4.4-6 through MM 4.4-9 would identify areas where special-status bird species are present and avoid, where possible, impacts on the bird species. The measures also require identifying and reporting direct impacts that do occur. Implementation of Mitigation Measures MM 4.4-6 through MM 4.4-9 would reduce potential impacts to migratory birds and raptors to less than significant.

Mitigation Measures

MM 4.4-1 Prior to commencement of operations in any new disturbance area, the project proponent shall develop and submit to the Kern County Planning and Natural Resources Department for review and approval an employee awareness program on the Migratory Bird Treaty Act and the Federal and State endangered species laws and regulations. The program shall provide employees with sufficient information to identify sensitive or protected species that could exist on-site, methods to avoid these species, and protection measures to reduce the potential for incidental take of these species. The employee awareness program shall be implemented by a qualified biologist until such time as reclamation has been completed and the site deemed fully reclaimed by the Kern County Planning and Natural Resources Department.

MM 4.4-2 The project proponent/operator shall implement the following measures to avoid and/or minimize potential impacts to special-status animal species.

A. Within no more than 30 days before ground-disturbing activities within the project site, a pre-disturbance survey shall be performed by a qualified biologist within the project site to record existing conditions of the site, determine if conditions have changed since the most recent reconnaissance or botanical surveys were conducted (April 14, 2018), and to determine where sensitive species avoidance buffers will be established for special-status species considered to have the potential to occur within the project site, including but not limited to the following:

1. Tulare grasshopper mouse (*Onychomys torridus tularensis*);
2. San Joaquin kit fox (*Vulpes macrotis mutica*);
3. nesting birds protected by the MBTA;

4. burrowing owl (*Athene cunicularia*);
5. American badger (*Taxidea taxus*); and
6. San Joaquin whipsnake (*Masticophis flagellum*).

This survey will include San Joaquin kit fox den evaluations. If ground-disturbing activities do not commence within 30 days of the initial survey date, surveys shall be repeated to refresh results.

B. If any sensitive species are observed, the following buffers shall be established by the qualified biologist to prevent incidental take of any observed sensitive species.

Buffers for Sensitive Biological Resources

Biological Resource	Buffer Zone from Disturbance (feet)
American badger: maternity den (pup rearing season: February 15 through July 1)	200
American badger: Non-maternity den	50
Burrowing owl burrow	Dependent on non-breeding or breeding, time of year, and project level impact
Active bird nest	50
San Joaquin coachwhip, silvery legless lizard, coast horned lizard	30
San Joaquin kit fox atypical den	50
San Joaquin kit fox potential den	50
San Joaquin kit fox known den	100
San Joaquin kit fox natal den	Contact California Department of Fish & Wildlife, United States Fish and Wildlife Service
Special-status plants	50

C. The project proponent/operator shall ensure that all employees working on the project site continuously implement the following measures:

1. A qualified biological monitor shall be present on the project site during any initial vegetation removal/grubbing activities. A biological monitor is not a substitute for an incidental take permit. If any threatened, endangered, or otherwise sensitive species are uncovered during project activities, work will be halted to determine the best course of action.
2. Keep all trash and food items picked up and removed from the site daily including microtrash (e.g., wrappers, bottle tops, food scraps).
3. No pets (dogs) shall be allowed on-site.
4. Vehicle traffic shall use established roadways. Cross-country travel is prohibited.
5. Conduct a 360-degree vehicle check before moving vehicle from site.
6. Maintain a speed limit of 15 miles per hour or less on dirt roads.

7. To the extent practicable, previously disturbed areas are to be used to stockpile excavated materials, storage of equipment, locations of trailers, parking of vehicles, and other surface-disturbing actions.
8. Open excavations or trenches shall be covered at the end of each workday to prevent wildlife entrapment. If an excavation or trench is too large to cover, then a 45-degree escape ramp shall be installed. All excavations and trenches shall be inspected for wildlife prior to the commencement of work.
9. If perimeter fencing is used, then the fencing shall include a 4- to 8-inch (0.1- to 0.2-meter) opening between the fence mesh and the ground or the fence shall be raised 4 inches above the ground to enable San Joaquin kit fox and other wildlife to pass through the project site.
10. All vertical tubes and chain-link fencing piles shall be temporarily or permanently capped to avoid the entrapment and death of special-status wildlife and birds. All pipes 1.5 inches (0.038 meter) or greater in diameter stored overnight on a project location must have end caps or other physical barriers that prevent wildlife from entering the pipe.
11. Any dead or injured special-status wildlife found on the project site shall be left in place and reported to the U.S. Fish and Wildlife Service/California Department of Fish and Wildlife within 48 hours of the discovery for rescue or salvage. Discovery of Federally or State-listed species that are injured or dead shall also be managed consistent with regulatory requirements, including being reported immediately via telephone and within 24 hours in writing, and a copy shall be furnished to the Kern County Planning and Natural Resources Department.
12. All washing of trucks, equipment, or similar activities shall occur in areas where runoff is fully contained for collection and off-site disposal. Wash water may not be discharged from the site and shall be located at least 100 feet (30.48 meters) from any water body or sensitive biological resources. If ground disturbance is intended to be temporary and does not occur on cultivated land, topsoil segregation shall be performed to preserve the seed bank for restoration efforts. Segregated topsoil shall be stored separate from the subsoil and segregated topsoil shall be restored to its original location. This will decrease unwanted invasive plant species (e.g., tumble weed, invasive grasses) from invading the area.
13. Contact a qualified biologist if any dens suitable for San Joaquin kit fox, burrowing owl, and/or American badger (4

inches or greater in diameter) are observed during project activities.

14. If any threatened, endangered, or otherwise sensitive species are encountered during project activities, all work that may harm that species shall stop immediately and a qualified biologist shall be contacted to determine the best course of action. Any threatened, endangered, or otherwise sensitive wildlife species shall be allowed to leave the site of their own accord.

MM 4.4-3 The project proponent/operator shall implement the following measures to avoid and/or minimize potential impacts to special-status plant species.

A. Within no more than 1 year prior to the commencement of operations as authorized by this approval, the project proponent shall retain a qualified botanist who shall conduct and document special-status plant surveys following the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" or those established by the California Native Plant Society.

B. If the surveys identify special-status plants, the following measures shall be implemented:

1. A 50-foot buffer shall be established around any occurrences of a special-status plant species as designated by a qualified biologist, when feasible;
2. In areas where it is not feasible to set up buffers, soil conservation will be implemented for areas known to support sensitive plant species. The soil will be stockpiled using straw waddles and a cover to prevent loss of topsoil by wind and soil erosion. The topsoil will be used for areas that will be temporarily disturbed and later restored;
3. Dust control shall be implemented in areas that occur near the rare or listed plant to avoid disturbance to the natural photosynthetic process of the plant. The pooling of water shall be avoided as well; and
4. Large equipment shall be washed at an off-site facility away from native habitat prior to entering the project location to prevent the spread of invasive plant species that may be within the equipment.

C. If disturbance cannot be avoided, the project proponent shall consult with the California Department of Fish and Wildlife and other regulatory agencies to identify and implement approved measures to

effectively mitigate any potential impacts to be less than significant, as appropriate.

MM 4.4-4 The following measures are based on the recently updated 2012 California Department of Fish and Game [now California Department of Fish and Wildlife] Staff Report on Burrowing Owl Mitigation, and shall be implemented to ensure potential effects on burrowing owl resulting from project implementation will be avoided and minimized to less-than-significant levels:

A. A project Lead Biologist shall be on-site during all initial ground-disturbing activities as authorized by this approval, in potential burrowing owl habitat. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct pre-disturbance surveys of the permanent and temporary impact areas, plus a 150-meter (approximately 492-foot) buffer, to locate active breeding or wintering burrowing owl burrows no less than 14 days prior to initial ground-disturbing activities. The survey methodology will be consistent with the methods outlined in the Staff Report and will consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing. As each burrow is investigated, biologists will also look for signs of American badger and kit fox. Copies of the survey results shall be submitted to the California Department of Fish and Wildlife and the Kern County Planning and Natural Resources Department.

B. If burrowing owls are detected, no ground-disturbing activities shall be permitted within the distances listed below in the table titled "Burrowing Owl Burrow Buffers," unless otherwise authorized by California Department of Fish and Wildlife. Burrowing owls shall not be moved or excluded from burrows during the breeding season.

Burrowing Owl Burrow Buffers

Location	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting sites	April 1 – August 15	200 meters	500 meters	500 meters
Nesting sites	August 16 – October 15	200 meters	200 meters	500 meters
Any occupied burrow	October 16 – March 31	50 meters	100 meters	500 meters

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C. If avoidance of active burrows is infeasible, the owls can be passively displaced from their burrows according to recommendations made in the 2012 Staff Report on Burrowing Owl Mitigation. Burrowing owls shall not be excluded from burrows unless or until the following circumstances occur:

1. Occupied burrows shall not be disturbed during the nesting season unless a qualified biologist meeting the Biologist Qualifications set forth in the 2012 Staff Report verifies through noninvasive methods that either: (1) the owls have not begun egg-laying and incubation or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season.
2. A Burrowing Owl Exclusion Plan shall be developed and approved by the applicable local California Department of Fish and Wildlife office and submitted to the Kern County Planning and Natural Resources Department. The plan shall include, at a minimum:
    a. confirmation by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;
    b. the type of scope and appropriate timing of scoping to avoid impacts;
    c. occupancy factors to look for and what will guide determination of vacancy and excavation timing (one-way doors shall be left in place 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily, and monitored for evidence that owls are inside and can't escape; i.e., look for sign immediately inside the door);
    d. how the burrow(s) will be excavated, including excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that no owls reside inside the burrow);
    e. removal of other potential owl burrow surrogates or refugia on-site;
    f. photographs of the excavation and closure of the burrow to demonstrate success and sufficiency;
    g. monitoring of the site to evaluate success and, if needed, to implement remedial measures to prevent subsequent owl use to avoid take; and
    h. how the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall,

heavy disking, or immediate and continuous grading) until development is complete.

3. Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the measures described below.
4. Temporary exclusion is mitigated in accordance with the measures described below.
5. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for 1 week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season.
6. Excluded burrowing owls are documented using artificial or natural burrows on an adjoining mitigation site (if able to confirm by band resight).

D. In accordance with the Burrowing Owl Exclusion Plan a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or burlap bag shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow. Forty-eight hours after the installation of the one-way doors, the doors can be removed, and ground-disturbing activities can proceed. Alternatively, burrows can be filled to prevent reoccupation.

E. During mining activities, monthly and final compliance reports shall be provided to California Department of Fish and Wildlife, the Kern County Planning and Natural Resources Department, and other applicable resource agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.

F. Should burrowing owls be found on-site, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented on-site or off-site in accordance with Burrowing Owl Staff Report guidance and in consultation with the California Department of Fish and Wildlife. At a minimum, the following recommendations shall be implemented:

1. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions, including decompacting soil and revegetating. If restoration is not feasible, then the project proponent shall implement “b” below.
2. Permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat will be mitigated such that the

habitat acreage, number of burrows, and burrowing owls impacted are replaced based on a site-specific analysis and shall include permanent conservation of similar vegetation communities (grassland, scrub lands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. Conservation shall occur in areas that support burrowing owl habitat and can be enhanced to support more burrowing owls

3. Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project proponent/operator may purchase available burrowing owl conservation bank credits.
4. Develop and implement a mitigation land management plan in accordance with Burrowing Owl Staff Report guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.
5. Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.
6. Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to California Department of Fish and Wildlife-approved management, monitoring, and reporting plans, and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.
7. Mitigation lands shall be on, adjacent to, or in proximity to the impact site, where feasible, and where habitat is sufficient to support burrowing owls.
8. Consult with California Department of Fish and Wildlife when determining off-site mitigation acreages.

MM 4.4-5 Active pits with slopes steeper than 2:1 (horizontal:vertical) shall have a minimum of one escape ramp or shall otherwise be fenced or obstructed to prevent wildlife entrapment.

MM 4.4-6 No more than 10 days prior to ground-disturbing activities, a pre-disturbance survey for active bird nests shall be conducted, if work occurs between February and September when nesting activity is most prevalent. If any active nests are observed, appropriate buffer areas (at least 50 feet) shall be established around each nest for avoidance as appropriate.

MM 4.4-7 If proposed mining activities are planned to occur during the nesting seasons for raptors and migratory birds (typically March 1 through August 31), the project proponent shall retain a qualified biologist to conduct a focused survey for active nests of raptors and migratory birds within and in the vicinity of (no less than 500 feet outside project boundaries, where possible) the disturbance area no more than 30 days before mining activities and at the onset of each phase. These surveys shall be conducted during breeding seasons for any special-status birds potentially present in the disturbance areas.

MM 4.4-8 If active nests are located during pre-disturbance surveys, U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife shall be notified regarding the status of the nests. If an active golden eagle nest is located within 500 feet of ground-disturbing activities, or if any other active raptor nest is located within 100 feet of ground-disturbing activities, or if an active migratory bird nest is located within 50 feet of ground-disturbing activities protection measures will be applied and enforced. Protection measures would include delaying project activities until the end of the breeding season, or if, project activities must take place during the breeding season, establishing an appropriate avoidance area (buffer zone) around the nest as determined by a qualified biologist in consultation with the appropriate resource agency. A qualified wildlife biologist shall monitor the nest to determine when the young have fledged and submit bi-weekly reports to the Kern County Planning Department throughout the nesting season. The biological monitor shall have the authority to cease mining activities or other activities if sign of distress to the raptor or migratory bird occurs.

MM 4.4-9 Ground-disturbing activities shall be restricted as necessary to avoid disturbance of a nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal (in consultation with U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife). Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment) or alteration of the schedule for initiation of mining or other activities. No action is necessary if ground disturbance occurs during the raptor and migratory bird nonbreeding season (September 1 through February 28).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-9, impacts would be less than significant.

Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

As discussed previously, four unnamed ephemeral drainages traverse the project site (see **Figure 4.4-1,** *Water Resources Map*). The site is not located within a Floodplain Safety Overlay District or Dam Inundation Overlay. The following are drainage channels present within the project site:

1. Blue line drainage channel (channel 1), located between Mine Areas 2 and 3.
2. Intermittent drainage channel (channel 2), located between Mine Areas 2 and 1.
3. Intermittent drainage channel (channel 3), located on the east side just north of Mine Area 1.
4. Intermittent drainage channel (channel 4), located between the project site entrance and Mine Area 1.

The drainages flow from higher elevations southwest of the project site. Eventually the two westernmost of the four unnamed ephemeral drainages converge at lower elevations with another unnamed ephemeral drainage within the Willow Springs Valley. However, the drainages appear to be heavily disturbed by agricultural activities approximately 1 mile downstream from the project site boundary. No riparian or wetland habitat is present within the project site; therefore, the project would not have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the USFWS or CDFW. Impacts would, therefore, be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.4-3: The project would have a substantial adverse effect on Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

As discussed under Impact 4.4-2, based on the results of the biological surveys conducted by Padre Associates, no riparian or wetland habitat is present within the project site; therefore, the project would not have a substantial adverse effect on Federally protected wetlands. No impact would occur as a result of the proposed project.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.4-4: The project would 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.

Migratory corridors can include a variety of habitats. Many animals make regular localized movements between breeding, foraging, or aestivation habitat through areas that are indistinguishable from adjacent habitat that is not so used. Although the project area may be traversed by some species at different times, including migratory mule deer (*Odocoileus hemionus*), it does not include any wildlife movement corridors that are considered significant on a regional basis. Therefore, this impact is considered less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The project would not conflict with policies contained in the *Kern County General Plan* (see discussion in Section 4.10, *Land Use and Planning*, of this EIR). Therefore, this impact is considered less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The geographic scope for cumulative impacts to biological resources considers projects or other activities generally within a 6-mile radius of the project site. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis). Analysis of cumulative impacts includes considering the entirety of impacts that the cumulative projects and other actions discussed in Section 3.7, *Cumulative Effects Overview*, would have on biological resources. This geographic scope of analysis is appropriate because, although impacts of the project are primarily localized to the impact areas, losses of vegetation types or fragmentation of wildlife corridors could combine with similar impacts of other projects beyond these limited impact areas.

Impact 4.4-6: The project would contribute to cumulative biological resource impacts.

The potential for cumulative biological resources impacts of the project exists as a result of the project-specific biological resources impacts discussed above when considered in conjunction with biological resources impacts from other past, present (ongoing), and reasonably foreseeable future development and other activities. Historic and ongoing land uses such as agricultural activities, oil and gas development, utility infrastructure, dispersed residential development, and other development, as well as mining, have reduced the quantity and quality of wildlife habitats provided by undeveloped grassland and overall wetland habitats in the project area.

The project-specific impacts identified above have each been considered in terms of their potential to contribute to cumulative biological resources impacts. It is reasonable to anticipate that ongoing land uses and future development within the project vicinity will continue to result in vegetation removal, grading, and loss of habitat. The project would result in a long-term loss of grassland, which would contribute to the regional cumulative loss of California annual grassland and associated wildlife habitat, including foraging and nesting habitat for several special-status species.

Regulatory compliance, including specific impact reduction/mitigation that may be imposed through those processes, and mitigation measures identified above for project-specific impacts would serve to avoid or minimize the project's impacts as well as its contribution to cumulative impacts. Due to Federal and State regulatory requirements and Kern County policies geared toward biological resources protection, it is also reasonable to anticipate that similar mitigation will be required of other projects to minimize their impacts to biological resources. As a result of biological resources impact avoidance and mitigation measures associated with the project applied to other projects in the area, the project's contribution to cumulative biological resources is considered less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-2, MM 4.1-3, and MM 4.4-1 through MM 4.4-9.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-2, MM 4.1-3, and MM 4.4-1 through MM 4.4-9, cumulative impacts would be less than significant.

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Section 4.5
Cultural Resources

4.5.1 Introduction

This section of the Environmental Impact Report (EIR) provides contextual background information on cultural resources in the project area, including the area's prehistoric, ethnographic, and historical settings. This section also summarizes the results of preliminary cultural surveys of the project site, analyzes the project's potential impacts on cultural resources, and identifies mitigation measures to address adverse impacts, where applicable. The analysis in this section is based on *A Cultural Resources Assessment of Approximately 240 Acres West of McKittrick, Kern County, California* prepared by Catherine Lewis Pruett (Three Girls and a Shovel, LLC 2008; Appendix E).

For the purposes of the California Environmental Quality Act (CEQA), "cultural resources" generally refer to prehistoric and historical archaeological sites and the built environment. Cultural resources can also include areas determined to be important to Native Americans, called tribal cultural resources. Paleontological resources are also considered within this section.

Concepts and Terminology

Below are definitions of key cultural resources terms used in this section.

- **Alluvium:** A fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in riverbeds, and in estuaries.

- **Archaeological Site:** A site is defined as the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains. Archaeological remains usually take the form of artifacts (e.g., fragments of tools, vestiges of utilitarian, nonutilitarian objects), features (e.g., remnants of walls, cooking hearths, midden deposits), and ecological evidence (e.g., pollen remaining from plants that were in the area when the activities occurred).

    - **Prehistoric archaeological sites** generally represent the material remains of Native American groups and their activities dating to the period before European contact. In some cases, prehistoric sites may contain evidence of trade contact with Europeans.
    - **Ethnohistoric archaeological sites** are defined as Native American settlements occupied after the arrival of European settlers in California.
    - **Historic archaeological sites** reflect activities during the Historic period.

- **Artifact:** An object that has been made, modified, or used by a human being.

- **Cultural Resource:** Expressions of human culture and history in the physical environment, and may include archaeological sites, buildings, structures, objects, districts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains, but also may include areas where significant human events occurred, even though evidence of the events no longer remains. Cultural resources also include places that are considered to be of traditional cultural or religious importance to social or cultural groups.

- **Cultural Resources Survey Area:** All areas of potential permanent and temporary project impacts.

- **Ethnographic:** Relating to the study of human cultures. "Ethnographic resources" represent the heritage resources of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

- **Historic Period:** The period that begins with the arrival of the first nonnative population. In 1772, Commander Don Pedro Fages was the first European to enter the desert of Kern County, initiating the historic period in the project study area.

- **Historical Resource:** Used for the purposes of CEQA and defined in the State CEQA *Guidelines* (Section 15064.5) as: (1) a resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources, as defined in Public Resources Code (PRC) Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

- **Holocene:** Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.

- **Isolate:** An isolated artifact or small group of artifacts that appear to reflect a single event or activity. Because isolates may lack identifiable context, and may not have the potential to add important information about a region, culture, or person, they are generally not considered under CEQA to be historical or unique archaeological resources (CEQA Statute Section 21083.2 and State CEQA *Guidelines* Section 15064.5).

- **Lithic:** Of or pertaining to stone. Specifically, in archaeology lithic artifacts are chipped or flaked stone tools, and the stone debris resulting from their manufacture.

- **Pleistocene (Ice Age):** An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

- **Prehistoric Period:** The era prior to 1772. The later part of the prehistoric period is also referred to as the protohistoric period in some areas, which marks a transitional period during which native populations began to be influenced by European presence resulting in gradual changes to their lifeways.

- **Quaternary Age:** The most recent of the three periods of the Cenozoic Era. It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene Epochs.

- **Tribal Cultural Resources:** Defined in Assembly Bill (AB) 52 as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources (PRC Section 21074 (a)(1)).

- **Unique Archaeological Resource:** This term is used for the purposes of CEQA and is defined in the State CEQA *Guidelines* (Section 15064.5) as an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it either contains information needed to answer important scientific research questions, has a special and particular quality such as being the oldest of its type or the best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person.

4.5.2 Environmental Setting

The project site is in the foothills of the Temblor Mountain Range, approximately 8.3 miles west of the community of McKittrick. Typical climate includes hot and arid summers and contrasting mild and slightly wet winters. Elevation of the project area ranges from approximately 2,100 feet to approximately 2,800 feet above mean sea level (msl). The project site is fenced with barbed wire to exclude the public from entering and consists of undeveloped rolling topography with some steep slopes and incised drainages. The elevation of the project site ranges from approximately 2,800 feet above msl near the southwestern corner to approximately 2,100 feet above msl near the northeast corner.

The southwestern San Joaquin Valley has experienced moderate historic and modern surficial ground disturbance within and in the vicinity of the project site, primarily attributed to agricultural and ranching activities. Currently, the project site is undeveloped with minor disturbance associated with existing unpaved access roads, and primarily consists of California annual grassland habitat. Historically, this area was characterized by valley grassland, which was important to inland Native Americans as a source for food and raw materials. Food staples

such as acorns from the foothill oaks were of great importance, and raw materials for baskets, cordage, and netting from the nearby springs most likely played a significant economic role for the prehistoric inhabitants. The plants, animals, and minerals of this regional environment were of key importance to prehistoric hunter-gatherer people as a source of food and raw material acquisition.

The project site is composed of five soil types:

- Aramburu very shaly clay loam, 15 to 30% slopes;
- Mendi-Hillbrick-Kilmer association, 9 to 30% slopes;
- Pottinger very shaly clay loam, 2 to 9% slopes;
- Reward shaly loam, 15 to 30% slopes; and
- Reward channery loam, 30 to 50% slopes.

No historic fill soil or refuse was observed within the project site. No bedrock outcrops or minerals, for example, types of cryptocrystalline, such as chert, utilized for tool manufacturing in prehistoric times were observed within the project site.

4.5.3 Cultural Setting

Prehistoric Setting

The Central Valley was attractive to the early inhabitants. The climate was locally varied, but generally pleasant. Precipitation was also variable and in the southern San Joaquin Valley, where it was scant, the water was supplemented by the snow melt from the mountains. The Central Valley's plains and wetlands had abundant game and vegetal foods. The bottomlands produced lush swamp vegetation valued for food, fiber, and building materials. Riparian woodlands grew along the watercourses. The waterways also provided the habitats for river mussels and many species of fish. Steatite and asphaltum occurred in the southern part of the valley and salt deposits were found in the north. With so many abundances, resources that were lacking, such as obsidian, were easily obtainable through trade with outside areas. With such an abundance of resources and comfortable living conditions, the eighteenth-century aboriginal population was 105,000, with 53,000 people in the Sacramento Valley and 52,000 in the San Joaquin Valley.

During the long prehistory of the Central Valley there have been diverse and changing environments, along with many population movements, waves of cultural influences from neighboring groups, and a complex interplay between local and regional cultural forces. The oldest evidence for occupation of the valley comes from Tracy, Tulare, and Buena Vista Lakes and dates to about 11,500–7,500 years ago. Since the floor of the valley is covered with a thick layer of alluvium, it is likely that most of the earliest habitation evidence lies buried beneath it. This would account for the modest antiquity of artifacts, especially in the valley lowlands of the San Joaquin and Sacramento River drainages.

Ethnographic Setting

The Yokuts have been broken into three geographical divisions—the Northern, Foothill, and Southern Valley Yokuts. The project area lies within the territory of the Southern Valley Yokuts, which included Tulare, Buena Vista, and Kem Lakes; their connecting sloughs; and the lower portion of the Kings, Kaweah, Tule, and Kem Rivers. The area consisted of extensive swamps and marshlands, which provided an enormous variety and abundance of wildlife and aquatic flora. The southern San Joaquin Valley received only 5–10 inches of rain annually and was dependent upon the additional water being brought in from the melting snows of the Sierra Nevada. As the Yokuts adapted to this abundance of subsistence resources, they developed a culture of comparatively greater material wealth and tended to live in large, more permanent settlements. It is estimated that this way of life lasted approximately 2,000 years. At the beginning of the historic period, 15 different Yokuts groups were identified in the area.

Adapting to their environment, the Southern Valley Yokuts developed a mixed economy subsistence pattern. It emphasized fishing, hunting waterfowl, and collecting shellfish, roots, and seeds. Most of their region was treeless except for the cottonwoods, sycamores, and willows that lined the river channels and sloughs. Oaks did not extend very far onto the valley floor and, therefore, acorns were not readily available. They were generally obtained by trade with neighboring groups.

Small land mammals and birds were only a small portion of the native diet and the Southern Valley Yokuts rarely ventured into the open country to capture antelope and elk. They did, however, capture many of the larger mammals when they came to the lakes and sloughs for water.

Various cooking methods were employed. Tule roots and seeds were ground into meal, mixed with water, and stone-boiled in baskets. Fish and meat were broiled and roasted on coals and ashes. Small earth ovens were used to bake both vegetable and animal foods. Salt grass was used for seasoning. Firewood was at a premium and dried tules were usually substituted.

Single-family residences were constructed by using long poles, limbs, or sticks with one end set on the ground in an oval pattern, and the other ends brought together at the top to form a frame that was then covered with mats made from tule reeds. Some groups, using the same materials, built a distinctive long, steep-roofed communal house. This structure would shelter 10 or more families. Each family would have a fireplace and outside door. Along the front of the house a long, open-shade porch was constructed and many of the domestic activities, such as cooking, were performed there. Additionally, each village had a communally owned sweathouse. The men did their daily sweating and occasionally slept there.

Clothing worn by the Southern Valley Yokuts was minimal. Males were either naked or used a breechcloth. Females wore a narrow-fringed apron in front and a larger back piece. In cold weather both sexes wrapped themselves in skin cloaks. Generally, feet were bare, though simple skin moccasins were used when traveling over rocky, brushy terrain. The hair was worn long by men and women and held in place by a string tied around the forehead. Women, who bore the heaviest burdens, wore basketry caps to protect the forehead from the tumpline band when carrying heavy burdens. Men carried loads in net backpacks held by a chest strap. Simple

design tattooing was worn mainly by women. The design consisted of lines, zigzags, and rows of dots down the chin and across from the corners of the mouth. Children had their earlobes and nasal septa pierced for insertion of an ornament.

The Yokuts technology was also shaped by the source of raw materials available. The very important tule provided the basis for their highest technological skill—basket weaving. The baskets varied in shape and use and included bowl-shaped cooking containers, conical burden baskets, flat winnowing trays, seed beaters, and a unique-necked water bottle. Wood and stone crafts were quite undistinguished. Wood and many lithic materials were imported. Even stone mortars and pestles were obtained by trade. Marine shells were secured from trade with coastal peoples and used for currency and personal adornment.

Canoe-shaped rafts were constructed of dried tules and constituted the Yokuts favored mode of travel. The rafts could hold six people and their belongings. The basic domestic and economic unit in Southern Valley Yokut society was the nuclear family. The families were grouped into patrilineal totemic lineages. A totem, an animal or bird, was a symbol representing the father's line. The totem was dreamed about, prayed to, and forbidden to kill or eat by that lineage. The lineage was a mechanism for transmitting offices, performing certain ceremonial duties, and creating mutual loyalties. These lineages were further organized into two moieties, or groups. The moieties had little to do with day-to-day life, but did serve certain functions. They would serve as opposing teams for games and as reciprocal groups in mourning rites and first-fruits ceremonies. Moiety exogamy was customary but not absolute.

There was no overall political unity among the tribes. They were split into self-governing local groups. Each group had a name, spoke a different dialect, and had a territory that was collectively owned. Some official positions were filled through patrilineal inheritance. In the Tachi tribe each settlement had a chief for each moiety and the pair shared equal authority. Generally, Yokuts groups were peaceful, but occasional warfare did break out. Fighting was on a small scale and very little ritual was attached to warfare.

There were four occasions regarded as significant and crucial in the life of each Yokut: birth, a girl's puberty, marriage, and death. Each of these periods required special care, attention, and ceremony. One of the most important ceremonies was the ritual honoring the tribal dead. This usually took place annually, lasted 6 days, and included outside local groups. Guests came by the hundreds for the festival. The shamans were the only religious specialists of the Yokuts; they also served as "doctors." Many rituals were accompanied by songs and instrumental music. Musical instruments included the cocoon rattle, bone and wood whistle, flute, musical bow, and a cleft-stick rattle. The major artistic accomplishment of the Southern Valley Yokuts was the decorative patterns woven into their baskets.

No significant number of Southern Valley Yokuts came under the control of the coastal Franciscan missionaries; however, significant impact to their culture resulted from infiltration of escaped natives from the missions. The runaways introduced foreign practices from their cultures, which had suffered greatly from non-practice and practices acquired from the missions. Complete cultural breakdown and near-total disappearance of native peoples from the San Joaquin Valley came with the annexation of California by the United States. The land passed quickly into the hands of the settlers. The process was relatively easy since the native

peoples offered little effective resistance. Because of the early and rapid decimation of the Southern Valley Yokuts and the rapid collapse of their culture, there is relatively little published literature regarding them, and ethnographic descriptions obtained from aged informants are certainly incomplete.

Historic Setting

Perhaps, because of its geographic remoteness from the coast, Euro-American settlement and development of the southern San Joaquin Valley region occurred later than in other parts of southern California. As a result, Euro-American history in these areas primarily consisted of explorers traversing the area until the 1850s.

The northwestern side of the San Joaquin Valley has remained rural and agrarian since the time the Southern Pacific Railroad rails were routed through the Antelope Valley, with the exception of oil exploration, as discussed below. Initially, agrarian uses included farming (for example, on the Sebastian Indian Reservation) and sheep, but ultimately shifted to cattle grazing.

Historically, the project area has been used for cattle ranching, farming, oil exploration, and mining of diatomaceous earth. The project area is currently used for cattle grazing, though flat hilltops and valleys have been farmed in the past. The project area is part of a larger tract of land known as the Johe Ranch. The current owners purchased the ranch from Carl Johe. A small residential dwelling located just south of the 331-acre project site was built by the current owners in 1952. A small homestead site with a water well is located approximately 470 feet north of the northern boundary of the 331-acre project site.

Existing Cultural Resources

Methods Used to Identify Known Cultural Resources

To evaluate the project's potential effects on significant cultural resources, a cultural resources study for the project was prepared, which included a records search, Native American outreach, a historic map review, a pedestrian survey, and subsurface testing (Three Girls and a Shovel, LLC 2008). The methodology and results of the study are summarized below.

SSJVIC Records Search

A records search of the project area, and the area immediately surrounding it, was conducted at the Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield. The records search indicated that a previous survey for cultural resources had been conducted along State Route (SR) 58. The remainder of the project area has not been inventoried for cultural resources and no cultural resources are recorded within the project area. There has been one other survey conducted within 1 mile of the property. No archaeological sites are recorded within 1 mile of the project area. **Table 4.5-1,** *Cultural Resource Reports Completed That Include the Subject Property*, and **Table 4.5-2,** *Cultural Resource Reports Completed Near the Subject Property*, list the cultural resource surveys that were performed in the area. As noted above, no cultural resources or archaeological sites were recorded within the project area or within a 1-mile radius.

Table 4.5-1 Cultural Resource Reports Completed That Include the Subject Property

Author	Date	Title	Result
Scott[1]	1999	Cultural Resources Inventory Report for the AT&T Corporation Cable Upgrade Project for Los Angeles, Kern, and San Luis Obispo Counties, California, Vol. 1.	Negative Survey
Pruett	2008	Cultural Resources Assessment of Approximately 240 Acres West of McKittrick, Kern County	Negative Survey

[1] Reports are on file at the SSJVIC, California State University, Bakersfield.
Source: Three Girls and a Shovel, LLC 2008

Table 4.5-2 Cultural Resource Reports Completed Near the Subject Property

Author	Date	Distance	Description	Result
Uli[1]	1984	Within 1 mile of project site	Archaeological Investigation of Twisselman's Proposed 40 Acres Shale Mining Claim, McKittrick, Kern County, California	Negative Survey

[1] Reports are on file at the SSJVIC, California State University, Bakersfield.
Source: Three Girls and a Shovel, LLC 2008

A pedestrian survey of the project area was conducted in 2008 as listed in **Table 4.5-1,** *Cultural Resource Reports Completed That Include the Subject Property*, which resulted in negative findings for cultural significance. In addition, there were no boulder outcrops or springs recorded on the project site, which is significant because cultural resources are almost all located within bedrock outcroppings near creeks and/or springs within the foothills. Both surveys listed in **Table 4.5-1,** *Cultural Resource Reports Completed That Include the Subject Property*, reported negative findings for surficial and/or subsurface prehistoric cultural resources in the area. This does not mean that older and/or buried cultural resources are not present under alluvium; however, the probability is low.

There are no cultural resources within the project area that are listed in the National Register of Historic Places (NRHP), California Inventory of Historic Places, California Historical Landmarks, or the California Point of Historic Interest. There were potential historical locations identified on the 1912 McKittrick, California U.S. Geological Survey (USGS) 15-minute topographic map. The maps and files at the California Division of Oil, Gas and Geothermal Resources (DOGGR) were reviewed for oil and gas wells, which identified the three gas wells known to be located within the 331-acre project site (although located outside the proposed disturbance areas).

Field Surveys

A pedestrian survey of the project area was conducted by Catherine Lewis Pruett, Peggy Murphy, and Stuart Ahlf on May 16 and 17, 2008. A pedestrian transect survey was conducted on flat hilltops and in valleys, spaced at 25 meters apart. Ridges and drainages were walked according to the terrain. There were no boulder outcrops or springs on the project. The small portion of the property south of SR 58 was covered in oat grass and visibility was less than 10%. Throughout the remainder of the property, there was some weed growth and visibility

ranged from 50% to 90%. Vegetation consisted of blooming mustard, poppies, larkspur, datura, and owl's clover, as well as dried annuals.

No evidence of prehistoric usage was observed on the project site. The property is some distance from water and other natural resources that would have attracted Native Americans, and any use of the project area would likely have been of a transitory nature.

Native American Outreach

The Lead Agency sent consultation notification to applicable Native American tribes in accordance with AB 52. Two responses were received, as follows:

1. On October 30, 2017, the San Manuel Band of Mission Indians (SMBMI) replied to the County's AB 52 consultation notification via email. The email states in part that the proposed project area is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the Lead Agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to these legal and regulatory mandates.

2. On January 17, 2018, the Twenty-nine Palms Band of Mission Indians replied to the County's AB 52 consultation notification via a letter. The aforementioned letter states in part that the Tribal Historic Preservation Office (THPO) is not aware of any additional archaeological/cultural sites or properties in the project area that pertain to the Twenty-Nine Palms Band of Mission Indians (Tribe). The Twenty-Nine Palms Band of Mission Indians currently has no interest in the project and defers to the comments of other affiliated tribes. If there are inadvertent discoveries of archaeological remains or resources, construction should stop immediately, and the appropriate agency and tribe(s) should be notified.

While no tribal cultural resources have been identified within or immediately adjacent to the project site, nonetheless the potential exists for tribal cultural resources to be encountered. Implementation of Mitigation Measures (MM) 4.5-1 through MM 4.5-3 would reduce impacts to a less-than-significant level.

Pursuant to Section 21080.3.2(b)(1) of AB 52, the Lead Agency considers the consultation concluded. However, the Lead Agency notes that that Section 21080.3.2(c) of AB 52 states as follows:

> (1) This section does not limit the ability of a California Native American tribe or the public to submit information to the lead agency regarding the significance of the tribal cultural resources, the significance of the project's impact on tribal cultural resources, or any appropriate measures to mitigate the impact.
>
> (2) This section does not limit the ability of the lead agency or project proponent to incorporate changes and additions to the project as a result of the consultation, even if not legally required.

Historic Map Review

A review of historic maps and aerial photographs to identify historic land uses within the project site and its vicinity was conducted (Three Girls and a Shovel, LLC 2008). A 1952 map depicts a small homestead site with a water well, located north of the project area.

4.5.4 Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act of 1966

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 United States Code [USC] 470f), and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), NHPA Section 106 requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the NRHP. As indicated in NHPA Section 101(d)(6)(A), properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 CFR 60.4.

National Register of Historic Places

The NRHP was established by the NHPA as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The NRHP recognizes both historical period and prehistoric properties, including archaeological sites, that are significant at the national, State, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior 1995):

- **Criterion 1:** Are associated with events that have made a significant contribution to the broad patterns of our history;
- **Criterion 2:** Are associated with the lives of persons significant in our past;
- **Criterion 3:** Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values,

or that represent a significant and distinguishable entity whose components may lack individual distinction; or

- **Criterion 4:** Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing (U.S. Department of the Interior 1995). In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity, a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from Federal and Tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. NAGPRA requires any Federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State

California Register of Historical Resources

Under PRC Section 5024.19(a), the CRHR was created in 1992 and implemented in 1998 as "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

- **Criterion 2:** It is associated with the lives of persons important in our past.

- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.

- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, California Code of Regulations (CCR) Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association.

Typically, an archaeological site in California may be recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions. However, archaeological sites may also be recommended eligible under CRHR Criteria 1, 2, and/or 3.

California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the City or Town Council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770; CHLs #770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type in the state or within a large geographic region (northern, central, or southern California);

- It is associated with an individual or group having a profound influence on the history of California; or

- It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California Points of Historical Interest (PHI) are sites, buildings, features, or events that are of local (City or County) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission (SHRC) are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type within the local geographic region (City or County);
- It is associated with an individual or group having a profound influence on the history of the local area; or
- It is a prototype of, or an outstanding example of, a period, style, architectural movement, or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. The State CEQA *Guidelines* (14 CCR Section 15064.5) recognize that a historical resource includes: (1) a resource listed in, or determined to be eligible by the SHRC, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of CEQA Section 21084.1 and Section 15064.5 of the State CEQA *Guidelines* apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of a historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (State CEQA *Guidelines* Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the State CEQA *Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in State CEQA *Guidelines* Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The State CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (State CEQA *Guidelines* Section 15064.5(c)(4)).

Native American Heritage Commission

PRC Section 5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerald "Jerry" Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the State CEQA *Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to PRC Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the

environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

California Public Records Act

California Public Records Act Sections 6254(r) and 6254.10 were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another State agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a State or local agency."

California Native American Graves Protection and Repatriation Act of 2001

Codified in California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection and Repatriation Act (Cal NAGPRA) is consistent with the Federal NAGPRA. Intended to "provide a seamless and consistent state policy to ensure that all California Indian human remains and cultural items be treated with dignity and respect," Cal NAGPRA also encourages and provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8025 established a Repatriation Oversight Commission to oversee this process. The Cal NAGPRA also provides a process for non-Federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

California Health and Safety Code Sections 7050 and 7052

California Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the Kern County Coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code Section 622.5

The California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

California Public Resources Code Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Kern County General Plan

The policies, goals, and implementation measures in the *Kern County General Plan* for cultural resources applicable to the project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space, and Conservation Element

1.10 General Provisions

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policies

- **Policy 25.** The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

- **Implementation Measure K.** Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

- **Implementation Measure L.** The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

- **Implementation Measure M.** In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

- **Implementation Measure N.** The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

- **Implementation Measure O.** On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

4.5.5 Impacts and Mitigation Measures

Methodology

As described in detail above, to evaluate the project's potential effects on significant archaeological and historic built environment resources, Three Girls and a Shovel, LLC conducted a Cultural Resources Assessment of the project site, which included archival research, a Native American contact program, and field surveys.

To identify tribal cultural resources that could be impacted, the NAHC performed a search of the Sacred Lands File. As part of their AB 52 consultation efforts, the Kern County Planning and Natural Resources Department sent tribal consultation letters in October 2017 to the Twenty-Nine Palms Band of Mission Indians, Torres Martinez Desert Cahuilla Indians, and San Manuel Band of Mission Indians inviting them to consult on the project. The Kern County Planning and Natural Resources Department received two responses to the AB 52 consultation letters: one from the Twenty-Nine Palms Band of Mission Indians and one from the San Manuel Band of Mission Indians.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on cultural resources. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to cultural resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5; or

c. Disturb any human remains, including those interred outside of dedicated cemeteries.

According to the State CEQA *Guidelines* (14 CCR 15064.5), a project with an effect that may cause a substantial adverse change in the significance of a historical resource (or a tribal cultural resource) is a project that may have a significant effect on the environment (14 CCR 15064.5(b)). The State CEQA *Guidelines* further state that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter those physical characteristics of a historical resource that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of PRC Sections 5020.1(k) and 5024.1(g).

Project Impacts

Impact 4.5-1: The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in State CEQA *Guidelines* Section 15064.5.

As discussed in Section 4.5.3, *Cultural Setting*, based on the findings of the Phase I Cultural Resources Assessment prepared by Three Girls and a Shovel, LLC, and a records search of the project area conducted at the SSJVIC, no prehistoric, historic, or other archaeological resources have been detected within or surrounding the project site. Although there are no known historical or archaeological resources within the project site, the potential exists for unknown buried cultural resources to be present on the site. Ground disturbance associated with the topsoil and overburden removal associated with mining activities create the potential for damage or destruction of previously unidentified cultural resources that could be present on the site. Undiscovered surface archaeological deposits could exist, having been obscured from view during pedestrian surveys by site vegetation. Subsurface deposits could be buried, with no surface evidence. Therefore, the potential for disturbance or destruction of one or more currently unknown culturally significant resources is considered potentially significant. Implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2 would reduce this impact to less than significant.

Mitigation Measures

MM 4.5-1 The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior 2011), to carry out all mitigation measures related to archaeological and historical resources.

A. Prior to the commencement of any ground-disturbing activities, the project proponent shall demonstrate that it has a Worker Environmental Awareness Program (WEAP) in place for all workers at the project site that includes cultural and paleontological resources training. The training shall be prepared and conducted, for all personnel working on the proposed project, by the qualified Lead Archeologist (as defined above) in consultation with the Native American monitor(s). A copy of the WEAP guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form.

B. The training shall include an overview of potential cultural resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist and Native American Monitor for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.

C. The project proponent/operator shall ensure all new employees or on-site workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet provisions specified above.

D. The Cultural Resources Sensitivity Training guide shall be kept available for all personnel to review and be familiar with, as necessary.

MM 4.5-2 In the event archaeological or paleontological (fossil) resources are encountered during ground-disturbing activities, the proposed project contractor shall cease any ground-disturbing activities within 50 feet of the find and notify the Kern County Planning and Natural Resources Department. The Lead Archaeologist shall evaluate the significance of the resource(s) and recommend appropriate treatment measures. Per State CEQA *Guidelines* Section 15126.4(b)(3), proposed project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with State CEQA *Guidelines* Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist shall develop additional treatment measures in consultation with Kern County, which may include data recovery or other appropriate measures. Kern County shall consult with the project and appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature; this consultation may also be conducted in advance of earth-disturbing work through a memorandum of agreement and/or an Unanticipated Discoveries Treatment Plan. Archaeological materials recovered during any investigation shall be presented for curation at an accredited curation facility. The Lead Archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the Southern San Joaquin Valley Information Center.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant.

Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA *Guidelines* Section 15064.5.

As discussed above under Impact 4.5-1, no prehistoric, historic, or other archaeological resources have been detected within or surrounding the project site. Although there are no known historical or archaeological resources within the project site, the potential exists for unknown buried archaeological deposits to be present on the site. As such, buried archaeological sites may be encountered during project-related excavation. In the event that unknown archaeological resources are discovered during project construction, significant

impacts could occur. However, with implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2, which require cultural resources sensitivity training for construction workers and appropriate treatment of unearthed archaeological resources during construction, potential impacts would be reduced to less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 and MM 4.5-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant.

Impact 4.5-3: The proposed project would disturb human remains, including those interred outside of dedicated cemeteries.

Buried human remains could be inadvertently unearthed during excavation activities, which could result in damage to those human remains. This impact is considered potentially significant. Mitigation Measure MM 4.5-3 contains procedures for recording and treating human remains that are discovered during implementation of the project and would reduce this impact to less than significant.

Mitigation Measures

MM 4.5-3 If human remains are uncovered during the life of the proposed project, the project proponent/operator shall immediately halt work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the State CEQA *Guidelines*. At that time, the project proponent shall contact the Kern County Planning and Natural Resources Department regarding the find. If the Kern County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with California Health and Safety Code Section 7050.5(c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent (MLD) for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (Section 7100 et seq.) directing identification of the next-of-kin will apply. If any

human remains are encountered, the Kern County Planning and Natural Resources Department shall be notified.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The geographic scope for cumulative impacts to cultural resources consists of all projects located within a 6-mile radius of the proposed project, as well as all similar (i.e., mining and/or reclamation) projects within Kern County under the jurisdiction of the San Joaquin Valley Air Pollution Control District (approximately the western half of Kern County. Analysis of cumulative impacts takes into consideration the entirety of impacts that the Conditional Use Permits and Zone Changes, discussed in Section 3.7, *Cumulative Effects Overview*, would have on cultural resources. This geographic scope of analysis is appropriate because the archaeological and historical resources within this area are expected to be similar to those in the project site because their proximity, similar environments, landforms, and hydrology would result in similar land use and thus, site types.

Impact 4.5-4: The project would contribute to cumulative cultural resources impacts.

Cumulative development within a 6-mile radius of the project site has the potential to result in cumulative impacts to cultural resources present. As discussed previously, there are no known cultural resources of significance within the project site. Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3 would minimize the potential for the proposed project to result in impacts to unknown cultural resources, if discovered during project activities. Implementation of the proposed project would not result in off-site impacts to cultural resources, and it is expected that other development projects within a 6-mile radius would be required to mitigate for their individual impacts to cultural resources. Consequently, the incremental effects of the project, after mitigation, would not have the potential to make a considerable contribution, in combination with impacts from past, present, or reasonably foreseeable projects to a cumulative significant impact on cultural resources under CEQA.

Regarding disturbance of human remains (Impact 4.5-3), with implementation of Mitigation Measures MM 4.5-3, any human remains discovered during project activities would be appropriately treated and the project would not contribute to cumulative impacts within the region.

As a result of these factors and with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, the project would not have the potential to substantially contribute to cumulative impacts associated with cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, cumulative impacts would be less than significant.

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Section 4.6
Energy

4.6.1 Introduction

This section of the Environmental Impact Report (EIR) analyzes the energy implications of the project, focusing on the following three energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section includes a summary of the project's anticipated energy needs and conservation measures. Information in this section is primarily based on the Energy Study for the proposed project (WZI Inc. 2019b), provided in Appendix F of this EIR. In addition, the information found herein, as well as other aspects of the project's environmental-related energy impacts, are discussed in greater detail elsewhere in this EIR, including in Chapter 3*, Project Description*; Section 4.3, *Air Quality*; and Section 4.8, *Greenhouse Gas Emissions*.

4.6.2 Environmental Setting

Electricity

Electricity, a consumptive utility, is a manmade resource. The production of electricity requires the consumption or conversion of energy resources—which may include water, wind, oil, gas, coal, solar, geothermal, and nuclear resources—into energy. The delivery of electricity involves several system components for distribution and use. The electricity generated is distributed through a network of transmission and distribution lines, commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If 10 100-W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Electrical services in the project area are provided by Pacific Gas & Electric (PG&E). PG&E obtains its energy supplies from power plants, including hydroelectric, natural gas, coal, wind, and solar generating plants, and delivers through high-voltage transmission lines. The closest power generation facilities to the proposed project include the California Valley Solar Ranch, located approximately 8.5 miles west of the project site, and the Midway Sunset Cogeneration power station, located approximately 10.5 miles southeast of the project site. Electrical service is available in the project area through connection to the PG&E distribution system. Power

lines extend through the southeastern corner of the property, but no electrical transformers are located within the project site.

Table 4.6-1, *Electric Power Mix Delivered to Retail Customers in 2018*, shows the electric power mix that was delivered to retail customers for PG&E compared to the statewide power mix for 2018, the most recent year in which data is available.

Table 4.6-1 Electric Power Mix Delivered to Retail Customers in 2018

	2018 PG&E Power Mix			
Energy Resource	Base Plan	100% Solar Choice	50% Solar Choice	2018 California Power Mix[1]
Eligible Renewable	39%	100%	69%	31%
Biomass and waste	4%	0%	2%	2%
Geothermal	4%	0%	2%	5%
Small hydroelectric	3%	0%	1%	2%
Solar	18%	100%	59%	11%
Wind	10%	0%	5%	11%
Coal	0%	0%	0%	3%
Large Hydroelectric[2]	13%	0%	6%	11%
Natural Gas	15%	0%	7%	35%
Nuclear	34%	0%	17%	9%
Other	0%	0%	0%	<1%
Unspecified[3]	0%	0%	0%	11%
TOTAL[4]	**100%**	**100%**	**100%**	**100%**

[1] Percentages are estimated annually by the California Energy Commission based on the electricity generated in California and net imports as reported to the Quarterly Fuel and Energy Report database and the Power Source Disclosure program.
[2] A significant amount of energy generated by PG&E comes from clean, large hydroelectric power stations, which do not qualify as an eligible renewable resource under California law.
[3] "Unspecified" sources of power means electricity from transactions that are not traceable to specific generation sources.
[4] The figures above may not sum to 100% due to rounding.
Source: PG&E 2018

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of the State's total energy requirements. Natural gas is measured in terms of cubic feet. PG&E and Southern California Gas Company, a subsidiary of Sempra Energy, are the natural gas providers in Kern County; however, there is no known natural gas service to the project site.

Transportation

According to the California Energy Commission (CEC), transportation accounted for nearly 40% of California's total energy consumption in 2018 (CEC 2019a). In 2019, California

consumed 15.4 billion gallons of gasoline and 3.08 billion gallons of diesel fuel (California Department of Tax and Fee Administration 2020a, 2020b). Petroleum-based fuels currently account for about 90% of California's transportation fuel use (CEC 2019b). However, the State is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles traveled (VMT) (CEC 2019b). The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC 2019a). According to the California Air Resources Board (CARB) Emission Factors (EMFAC) 2017 Web Database, Kern County on-road transportation sources consumed approximately 454 million gallons of gasoline and 308 million gallons of diesel fuel in 2018 (CARB 2019b).

4.6.3 Regulatory Setting

Federal

Corporate Average Fuel Economy Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards (NHTSA 2019). The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6–23% over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5–25% reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA and NHTSA 2016).

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The act included the first increase in fuel economy standards for passenger cars since 1975, and also included a new energy grant program for use by local governments in implementing energy-efficiency initiatives, as well as a variety of green building incentives and programs.

State

Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code [PRC] Sections 25300–25323) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (PRC Section 25301[a]). The 2019 Integrated Energy Policy Report (CEC 2020) provides the results of the CEC's assessments of a variety of energy issues facing California, including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50% renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in southern California, update on trends in California's sources of crude oil, update on California's nuclear plants, and other energy issues.

California Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33% by 2020 and 50% by 2030 (California Public Utilities Commission [CPUC] 2019).

In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44% of retail sales by the end of 2024, 52% by the end of 2027, and 60% by the end of 2030, and required that the CARB should plan for 100% eligible renewable energy resources and zero-carbon resources by the end of 2045. The CPUC and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR for additional details regarding this regulation.

Assembly Bill 1493

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, Assembly Bill (AB) 1493 (commonly referred to as CARB's Pavley regulations), enacted in 2002, requires CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025 (CARB 2017a). Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR.

California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the State's GHG emissions; however, AB 32 also tasked the CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, SB 32 and its companion bill AB 197 amended HSC Division 25.5 and established a new climate pollution reduction target of 40% below 1990 levels by 2030 and include provisions to ensure that the benefits of State climate policies reach into disadvantaged communities. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR for additional details regarding these regulations.

Low-Carbon Fuel Standard

The Low-Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with 0.25% in 2011 and culminating in a 10% total reduction in 2020. Petroleum importers, refiners and wholesalers can either develop their own low-carbon fuel products, or buy LCFS credits from other companies that develop and sell low-carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

California Air Resources Board

Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations. The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the Zero-Emissions Vehicle (ZEV) regulations to require manufactures to produce an increasing number of pure ZEVs (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEVs) between 2018 and 2025.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (Title 13 California Code of Regulations [CCR] Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes

at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Regulation to Reduce Emissions of Diesel Particulate Matter, Nitrogen Oxides, and Other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles

In addition to limiting exhaust from idling trucks, in 2008 CARB approved the Truck and Bus regulation to reduce nitrogen oxide (NOx), particulate matter with a diameter of 10 microns or less (PM_{10}), and particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$) from existing diesel vehicles operating in California (13 CCR Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower, such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

California Environmental Quality Act

In accordance with the California Environmental Quality Act (CEQA) and Appendix F, Energy Conservation, of the 2018 State CEQA *Guidelines*, and to ensure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the State CEQA *Guidelines* provides a list of energy-related topics to be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics for consideration in the discussion of energy use in an EIR, to the extent the topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.

- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 State CEQA *Guidelines*. Appendix G was amended to include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and for conflicts with State or local energy efficiency plans. Appendix F did not describe or require significance thresholds for determining the significance of impacts related to energy. According to the updated Appendix G Checklist, a project would have a significant impact on energy and energy resources if it would:

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.6.4 Impacts and Mitigation Measures

Methodology

This analysis addresses the project's potential energy usage of transportation fuel (diesel and gasoline) during both construction and operation. As proposed, the project will not require connection to electrical or natural gas utilities and no electrical or natural gas-powered equipment/vehicles will be used. Specific analysis methodologies are discussed below. The assessment presented herein is based in part on the Energy Study prepared by WZI Inc. for the project in May 2019. A full copy of the report is provided in Appendix F of this EIR.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to energy and energy resources. A project could have a significant adverse effect on energy and energy resources if it would:

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Project Impacts

Impact 4.6-1: The project would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

The project would mine diatomaceous earth and overburden material in an open pit mining operation that would disturb approximately 93.67 acres within the 331-acre project site. Mining would be conducted within three mine areas at the site. As proposed, no more than 20 acres are planned to be disturbed at any given time. Maximum annual production is anticipated to be 330,000 tons of diatomaceous earth and 20,000 tons of overburden material. It is anticipated that a total of 6,600,000 tons of diatomaceous earth and 400,000 tons of overburden material would be mined. The proposed life of the mining operation is for 50 years. Surface mining operations will be conducted from 6:00 a.m. to 7:30 p.m., Monday through Friday. There would be a maximum of 10 employees on-site at any given time.

Equipment utilized for the mining operation would include the following: two rubber-tired loaders (only one would be operating at any given time); haul trucks; a water truck; a tire truck; a portable screening unit; a radial stacker; employee vehicles; contractor vehicles servicing portable toilet; and a grader.

The project would not require electrical or natural gas service or new utility connections; however, the project is expected to require the use of non-renewable resources in the form of gasoline and diesel to power off-road construction equipment, on-road vehicles, radial stacker, portable screening unit, and portable truck scale. Construction activities for the project primarily include grading of haul roads and a pad for the blending and screening area. No structures would be constructed in conjunction with the project. It is estimated that grading for the construction phase would require approximately 10 days of work utilizing a Caterpillar Model 140M grader. According to Caterpillar Corporation, this model of grader uses 3.3 to 5.3 gallons of diesel fuel per hour during medium use applications, which includes road construction (Caterpillar Corporation 2014). **Table 4.6-2,** *Construction Phase Fuel Usage*, presents an estimate of diesel and gasoline fuel usage for the construction phase of the project.

Table 4.6-2 Construction Phase Fuel Usage

	Construction Days	Hours/Day	Gallons of Diesel/Hour	Total Gallons
Equipment (Diesel)	10	10	5	500
Worker Trips (Gasoline, one worker)	10	–	–	30

Based on the projections shown in the **Table 4.6-2**, the annual diesel and gasoline fuel utilization for the project during the construction phase is estimated to be approximately 530 gallons (on-site equipment and worker trip fuel usage).

During the operational phase of the project, the type of energy used will primarily be diesel fuel for the loaders, a water truck, a tire truck, and a portable screening unit; a small quantity of unleaded gasoline will be used as well for on-road vehicles and worker trips. The estimated fuel usage for the on-site operational phase of the project is summarized in **Table 4.6-3,** *Operational Phase Fuel Usage*, based on data from GF Industries for similar equipment at a project located approximately 2.5 miles east of the site (surface mining and reclamation plan, Conditional Use Permit [CUP] 14, Map 117). For the proposed project, an increase in fuel use of 20% was estimated based on the projected number of potential new customers. Estimated gasoline fuel usage for worker commutes is also included in **Table 4.6-3,** *Operational Phase Fuel Usage*.

Table 4.6-3 Operational Phase Fuel Usage

	Gallons per Month				
	High Usage	Low Usage	Average	Estimated with 20% increase	Estimated Annual Gallons
Off-road Vehicles and Screening Unit (Diesel)	3,447	1,068	2,195	2,634	31,608
On-Road Vehicles (Diesel and Gasoline)	--	--	174	209	2,508
Worker Trips (Gasoline) (average four workers/day)	--	--	240	--	2,880

In addition to fuel utilized for the on-site mining operations, the project will require diesel fuel for haul trucks that will transport the diatomaceous earth and overburden material to end use customers. According to the *Traffic Impact Study* prepared for the project (LAV/Pinnacle Engineering 2018) the project will generate 100 Average Daily Trips (ADTs) for the haul trucks. The average mileage per ADT of 186 miles that was used in this analysis is based on the ADT mileage in the *Air Quality Impact Assessment* prepared for the project (WZI Inc. 2019a). **Table 4.6-4,** *Operational Phase Fuel Usage (Off-Site Haul Trucks)*, presents the estimated diesel fuel usage for the off-site haul trucks during the project's operational phase, based on an estimated average of 6 miles per gallon for the haul trucks (GEOTAB) and 250 days per year of operation:

Table 4.6-4 Operational Phase Fuel Usage (Off-Site Haul Trucks)

	ADTs	Average Miles per ADT	Miles per Day	Estimated Daily Gallons Diesel	Estimated Annual Gallons Diesel
On-road haul trucks (Diesel)	100	186	18,600	3,100	775,000

Based on the projections shown in **Table 4.6-3,** *Operational Phase Fuel Usage*, and **Table 4.6-4,** *Operational Phase Fuel Usage (Off-Site Haul Trucks)*, the annual diesel and gasoline fuel utilization for the project during the operational phase is estimated to be approximately 811,996 gallons (on-site, off-site, and worker trip fuel usage).

Reclamation Energy Utilization

The mining operation will involve excavation within three pit areas. Reclamation activities will be minimal as slopes and pit floors will be maintained within design criteria during operational periods and the project will not include any on-site structures or facilities that would require demolition. A contingency for 20 working days (1 month) of equipment work has been included for reclamation activities based on the fuel utilization provided by GF Industries. **Table 4.6-5,** *Reclamation Phase Fuel Usage*, presents the estimated fuel usage during the reclamation phase of the project.

Table 4.6-5 Reclamation Phase Fuel Usage

	Gallons per Month				
	High Usage	Low Usage	Average	Estimated with 20% Increase	Estimated Reclamation Gallons
Off-road Vehicles and screening unit (Diesel)	3,447	1,068	2,195	2,634	2,634
On-road Vehicles (Diesel and gasoline)	--	--	174	209	209
Worker trips (Gasoline) (avg. 4 workers/day)	--	--	240	--	240
TOTAL	**3,447**	**1,068**	**2,609**	**2,843**	**3,083**

Based on the projections shown in **Table 4.6-5,** *Reclamation Phase Fuel Usage*, the annual diesel and gasoline fuel utilization for the project during the reclamation phase is estimated to be approximately 3,083 gallons.

Electricity and Natural Gas Energy Utilization

As proposed, the project will not require connection to electrical or natural gas utilities and no electrical or natural-gas-powered equipment/vehicles will be used.

Impact Summary

The energy-related impact of the project would be the use of diesel and small amounts of gasoline motor fuels during the construction, operational, and reclamation phases of the project. In accordance with the *Air Quality Impact Assessment* conducted for the project (WZI Inc. 2019a) both on- and off-road equipment and vehicles utilized by the project would meet Federal and California standards for efficiency and emissions. Other than the use of motor fuels, the project would have no effect on regional or local energy supplies and requirements for additional capacity because the project would not require connection to electrical or natural gas utilities and no electrical or natural gas-powered equipment/vehicles will be used. The project would have no impact on peak and/or base-period demands for electricity or other forms of energy because it would not require connection to electrical or natural gas utilities.

Project energy use would be limited to diesel and small amounts of gasoline motor fuels. All on- and off-road equipment and vehicles utilized by the project would meet Federal and California standards for efficiency and emissions. Due to the remote location of the project, the use of alternative transportation (e.g., public transportation, bicycles, etc.) to the site by on-site employees is not feasible. Due to the low number of workers at the site on a daily basis (average 3–4, maximum of 10), energy utilization for workers commuting to the project site would be minimized. No potential energy efficiency impacts associated with the construction and maintenance of on-site structures would occur because the project would not involve the construction of any structures. Additionally, the project would not generate solid waste (with the exception of domestic refuse that is brought on-site, which will be removed from the site the same day); consequently, no energy use due to solid waste diversion or disposal would occur.

Based on this analysis, the project as proposed is not expected to result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation; therefore, the impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.6-2: The project would conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

The project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The project would not result in the construction of permanent buildings that would need to comply with green building codes, and electrical connections will not be utilized throughout the duration of the project. As concluded in Impact 4.6-1, the project would not result in impacts associated with wasteful, inefficient, or unnecessary use of energy; additionally, with the implementation of the energy efficiency policies listed above, the project would keep energy usage to a minimum. Without utilizing electricity from the power grid, the project would not have to mitigate for GHG-emitting energy usage; therefore, any plan's requirements for utilizing clean, renewable energy would be satisfied. Therefore, the project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency and impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The project's contribution to an increased need for energy is considered in the context of other past, present, and reasonably foreseeable future projects within a 6-mile radius of the proposed project site. As discussed in Section 3.7, *Cumulative Effects Overview*, of this EIR, there are nine other projects planned within a 6-mile radius of the project site. These projects are listed as surface mining operations, composting facility, hazardous waste facility, communication towers, or zoning changes.

Significant cumulative impacts would occur if the proposed or surrounding projects identified would overburden energy facilities and/or contribute to the inefficient and negative impacts of increased energy usage, thereby resulting in significant combined impacts related to the need for development of new facilities and increased energy production. Public agencies and utilities are given an opportunity to respond to inquiries for information regarding the potential increase in demand for their services.

Impact 4.6-3: The project would contribute to cumulative energy impacts.

The project would not utilize electricity from the power grid or natural gas and therefore is not expected to contribute to energy impacts. Further, the project would not result in the construction of permanent buildings or conflict with or obstruct a State or local plan for renewable energy or energy efficiency; therefore, cumulative impacts related to energy are considered to be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

Section 4.7
Geology and Soils

4.7.1 Introduction

This section of the Environmental Impact Report (EIR) describes the geologic and soil characteristics of the project sites, potential impacts to geology and soils associated with construction and operation of the proposed project, and mitigation measures that would reduce these impacts where applicable.

The analysis in this section is largely based on information from the following documents:

- *Geotechnical Engineering Investigation Report, Johe Ranch Mine Project, McKittrick, California* (BSK Associates 2019), included as Appendix G.1;
- *Soil Sample Report, Johe Ranch Mine Site, Kern County, California* (WZI Inc. 2018a), included as Appendix G.2; and
- *Results of a Paleontological Resources Constraints Analysis for the Proposed Johe Ranch Mine Project, Kern County, California* (SWCA Environmental Consultants [SWCA] 2018), included as Appendix G.3 to this EIR.

A description of the environmental setting (affected environment) for geology and soils is presented below in Section 4.7.2, *Environmental Setting*, including discussion of the geologic setting (soils and geologic formations, faults and seismic history) and geologic and seismic hazards (slope stability, soil hazards, faults and seismicity, strong ground shaking, fault rupture, and liquefaction). The regulatory setting applicable to geology and soils is also presented in Section 4.7.3, *Regulatory Setting*, and project impacts and associated mitigation measures are discussed in Section 4.7.4, *Impacts and Mitigation Measures*. Additional descriptions of erosion and sediment impacts on surface water (e.g., turbidity) and mitigation, as appropriate, are presented in Section 4.10, *Hydrology and Water Quality*. See Section 4.5, *Cultural Resources*, for discussion of paleontological resources relevant to the project.

Concepts and Terminology

Definitions of concepts and terminology applicable to this section are provided below.

Expansive Soils: These soils generally result from specific clay minerals that expand in volume when saturated and shrink in volume when dry. The presence of this soil type can damage structures when expansion and contraction of soil cracks rigid building materials (e.g., concrete, wood, drywall, etc.).

Faults: Faults are fractures in the crust of the earth along which land on one side has moved relative to land on the other side. Most faults are the result of repeated displacements over a long period of time. A fault trace is the line on the earth's surface defining the fault. Faults are classified as active, potentially active, and inactive based on criteria developed by the California Geological Survey (CGS), formerly known as the California Division of Mines and Geology [CDMG]. By definition, an active fault is one that has experienced surface displacement within the Holocene period (within the last 11,000 years), a potentially active fault is one that has experienced displacement within the Quaternary period (during the last 1.6 million years), and inactive faults are those that have not experienced movement in the last 1.6 million years.

Ground Shaking: The central and southern California regions are characterized by, and have a history of, faults and associated seismic activity. Earthquakes are classified by their magnitude, a measure of the amount of energy released during an event.

Landslides and Rockfalls: These events are large movements of land downhill. They can be induced by seismic events (earthquakes) or wet, saturated soil conditions and can cause significant damage to life and property. Landslides are defined as the movement of rock, debris, or earth masses down a slope. Landslides are a form of "mass wasting," which refers to any downslope movement of soil and rock under the direct influence of gravity. Landslide events include rock falls, topples, slides, spreads, and debris flows. Causes of landslides include rainfall, earthquakes, volcanic activity, groundwater changes, and alteration of a slope by manmade construction activities.

Liquefaction: This occurs when saturated, loose materials (e.g., sand, silty sand) are weakened and transformed from a solid to a near-liquid state due to increased pore water pressure. The increase in pressure is caused by strong ground motion from an earthquake.

Paleontological Resources: The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources contribute to the understanding of past environments, environmental change, and the evolution of life.

Quaternary Age: The most recent of the three periods of the Cenozoic Era in the geologic time scale of the International Commission on Stratigraphy (ICS). It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene Epochs.

Seismic Hazards: Seismicity is the geographic and historical distribution of earthquakes, including their frequency, intensity, and distribution. Seismic hazards include surface rupture, ground shaking, liquefaction, landslides, subsidence, expansive soils, and soils and soil erosion.

Subsidence: Land subsidence is the gradual, local setting or shrinking of the earth's surface with little or no horizontal motion. Subsidence is normally the result of gas, oil, or water extraction, hydro compaction, or peat oxidation and not the result of landslide or ground failure.

Surface Rupture: This occurs when movement on a fault deep within the earth breaks through to the surface. Fault ruptures almost always follow pre-existing faults that are zones of

weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden displacements are more damaging to structures because they are accompanied by shaking. Fault creep is the slow rupture of the earth's crust.

Unique Paleontological Resource: This term is defined as a fossil that meets one or more of the following criteria: (1) it provides information on the evolutionary relationships and developmental trends among organisms, living or extinct; or (2) it provides data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geology.

4.7.2 Environmental Setting

Regional Setting

The project site is near the southeastern corner of the Great Valley Geomorphic Province (commonly referred to as the Central Valley), one of 11 provinces recognized in California. The Great Valley Geomorphic Province, which lies within the central portion of California, is approximately 400 miles long and 50 miles wide. It extends from Redding in the north to Bakersfield in the south, is surrounded by mountain ranges on all sides, and consists of a large depositional trough. Sediments from all directions have been deposited into the Great Valley Geomorphic Province almost continuously for approximately 160 million years. The province contains predominantly sedimentary rocks and recent alluvial deposits, with limited amounts of volcanic rock located in the Sutter Buttes area near Sacramento. In general, coarser sediments are found in recent, terrestrial sedimentary deposits near the margins of the Great Valley Geomorphic Province.

Faults

The project site is situated in an area surrounded by active and potentially active faults, consistent with the majority of central and southern California. Active faults present a variety of potential risks, including strong ground shaking, dynamic densification, liquefaction, mass wasting, and surface rupture at the fault plane. Generally speaking, the following four factors are the principal determinants of seismic risk at a given location:

- Distance to seismogenically capable faults;
- The maximum or "characteristic" magnitude earthquake for a capable fault;
- Seismic recurrence interval, in turn related to tectonic slip rates; and
- Nature of earth materials underlying the site.

As shown on **Figure 4.7-1,** *Regional Fault Map*, the project site is located in the vicinity of three regionally significant active faults: Buena Vista Fault, San Juan Fault, and San Andreas Fault (Carrizo Segment) in addition to smaller, unnamed faults approximately 11 miles from the project site.

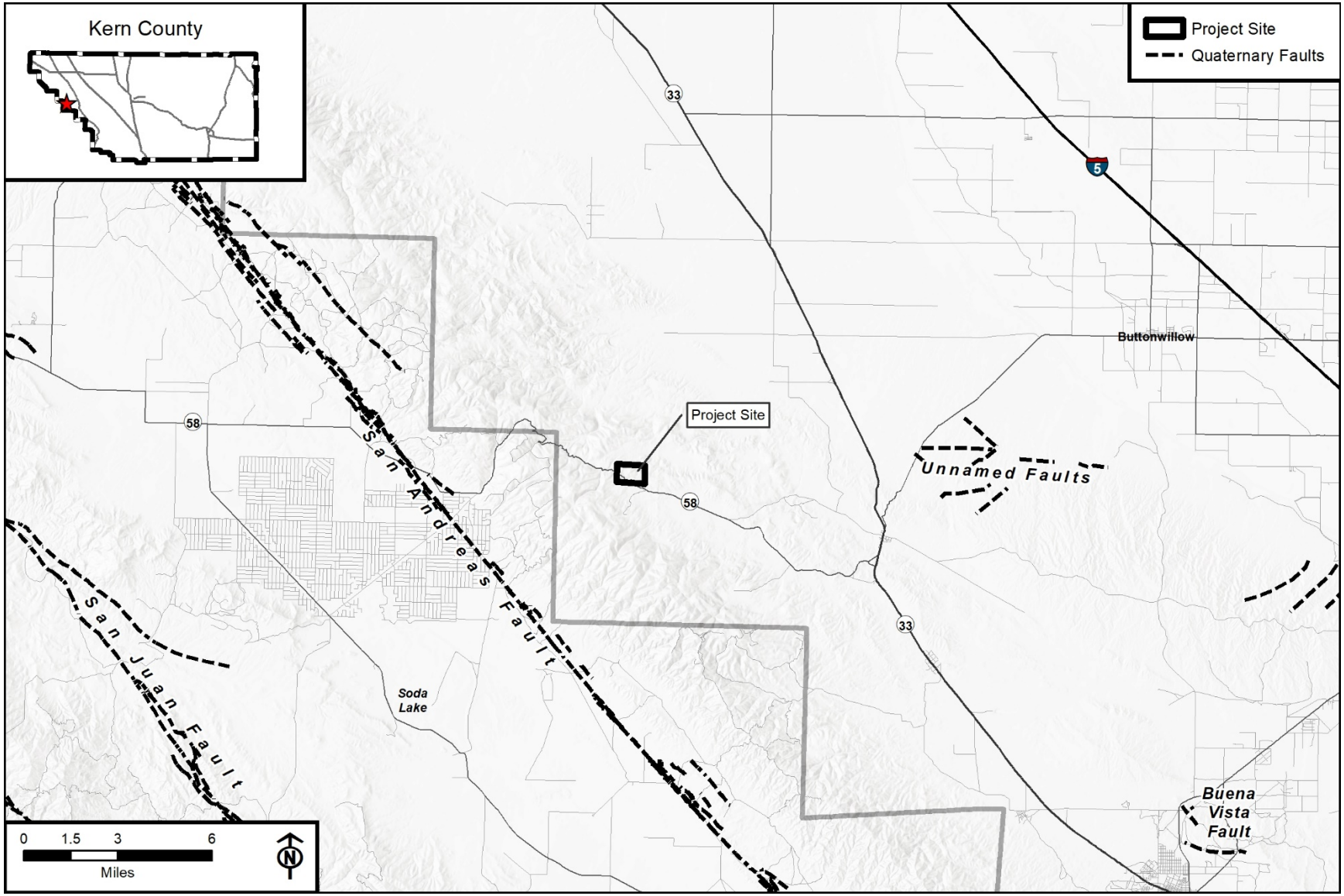

Figure 4.7-1
Fault Map

The San Andreas Fault is the closest fault to the project site (located 5.15 miles southwest of the project site) and the most significant fault as it has the most recent earthquake history. Additional fault zones are located at distances exceeding 15 miles from the project site. Greater distances, lower slip rates, and lesser maximum magnitudes indicate much lower risk to the project site from the fault zones located more than 15 miles from the site than the regionally significant San Andreas Fault. A description of the regionally significant fault and other faults of concern are provided below.

Buena Vista Fault

Buena Vista Fault is a semi-active thrust fault that spans approximately 5 kilometers located north of the community of Ford City. The fault has been creeping since 1933, or earlier, likely due to oil withdrawal. It should also be noted that the Buena Vista Fault dips to the north and is located 21.8 miles to the southeast of the project site (Southern California Earthquake Data Center [SCEDC] 2015).

San Juan Fault (including Big Springs Fault)

San Juan Fault is a semi-active, right-lateral strike-slip fault that spans almost 40 miles. The San Juan Fault is much less active than the San Andreas Fault and the southern portion is the least active. The most recent earthquake along this fault occurred during the Holocene period (SCEDC 2015). Big Springs Fault is part of the San Juan Fault zone, which is another semi-active, right-lateral strike-slip fault that spans nearly 10 miles branching off the San Juan Fault. This fault zone has seen little activity since the Holocene period; however, due to the relatively recent activity, this fault is listed as capable of damaging surrounding areas. The closest segments of this fault zone are located approximately 13.2 miles southwest of the project site (Big Springs section) and 14 miles southwest (San Juan Fault section).

San Andreas Fault

San Andreas Fault is a right-lateral, strike-slip fault that extends approximately 746 miles from the Mendocino Escarpment in northern California to Cajon Pass near San Bernardino in southern California. The segment of San Andreas Fault that is in Kern County is a small portion of the total extent; however, it is important because it is an active fault capable of damaging the project area. This portion of the fault breaks from the fault zone's predominantly 350-degree trending direction between the San Luis Obispo and Los Angeles County lines. Several earthquakes have occurred within the San Andreas Fault Zone in historic times that have produced significant seismic shaking in the vicinity of the project site. The most recent earthquake event on this segment of San Andreas Fault was the Fort Tejon Earthquake, which occurred on January 9, 1857, resulting in a rupture extending more than 200 miles (SCEDC 2015). An earthquake along this fault is estimated to have a magnitude of 8.3, which is designated as the maximum credible earthquake. Areas along this fault have been designated as Alquist-Priolo Special Studies Zones. The closest segment of this fault is located 5.15 miles southwest of the project site.

Seismic Hazards

As described above, the western end of the San Joaquin Valley is bordered by one major active fault system, making Kern County a historically active seismic area. Characteristics of the major active fault zones selected for inclusion in analysis of strong ground shaking are provided in **Table 4.7-1,** *Regional Faults in the Vicinity of the Project Site*.

Table 4.7-1 Regional Faults in the Vicinity of the Project Site

Fault	Distance from Project Site (miles)	Fault Length (miles)	Slip Rate (mm[1]/year)	Reference Earthquake M(max)[2]	Fault Type
Buena Vista	21.8	3.1	unspecified	unspecified	A
San Juan	13.2	55.9	unspecified	unspecified	A
San Andreas (Carrizo Segment)	5.15	90.7±9	34.0 ±3.0	7.4	A

[1] mm = millimeter
[2] M(max) = maximum magnitude
Source: U.S. Geological Survey 2018

As shown in **Table 4.7-1,** *Regional Faults in the Vicinity of the Project Site*, the one major fault located in the vicinity of the project site has the potential to generate large magnitude earthquakes capable of resulting in damage at the project site and in the vicinity. Probabilistic seismic hazard areas are mapped by the CGS to predict ground motions with a 10% probability of being exceeded in the next 50 years as a fraction of the acceleration due to gravity for peak ground acceleration (Pga) and spectral accelerations (Sa) for short and moderately long periods, 0.2 second and 1.0 second, respectively.

Based on review of probabilistic seismic hazard maps and data files prepared by the USGS, the project area has a 10% likelihood of a Pga of approximately 0.4841g ("g" is the acceleration due to Earth's gravity, i.e., g-force) occurring within the next 50 years (with an annual probability of one in 475 of being exceeded each year) (USGS 2018). Actual shaking intensities at the site from any seismic source may vary substantially during an earthquake event, due to complex and unpredictable effects such as:

- Near-source directivity effects (i.e., near-fault pulses);
- direction, length, and mechanism of fault rupture (strike-slip, normal, reverse);
- depth and consistency of unconsolidated sediments;
- topography;
- geologic structure underlying the site; and
- seismic wave reflection, refraction, and interference.

Fault Rupture

Fault (surface) ruptures are generally considered to be more likely along active faults (faults with observed displacement in the last 11,000 years). Alquist-Priolo Fault Zones are buffers

around historically active faults that have been determined to be especially prone to surface fault rupture. The McKittrick Summit, California USGS 7.5-minute topographic quadrangle, which includes the project site, is located within an Alquist-Priolo Fault Zone (CDMG 2015). The closest known fault to the project site is the regionally significant San Andreas Fault, a right-lateral, strike-slip fault that has reported historic movement. Based on available geologic maps, the San Andreas Fault is located 5.15 miles southwest of the project site; it does not cross or trend toward the project site. This fault was last active on April 18, 1906, and has been designated by the State as an Alquist-Priolo Special Studies Zone.

Ground Shaking

During a seismic event, the project site may be subjected to high levels of ground shaking due to proximity to active faults in the region. All active faults in the vicinity of the project site are capable of generating significant ground shaking during a seismic event.

Liquefaction

The susceptibility to liquefaction is a function of depth, density, groundwater level, and magnitude of an earthquake. Liquefaction-related phenomena can include lateral spreading, ground oscillation, flow failure, loss of bearing strength, subsidence, and buoyancy effects. For liquefaction to occur, the soil must be saturated (i.e., shallow groundwater) and be relatively loose. Liquefaction more often occurs in areas underlain by young alluvium where the groundwater table is higher than 50 feet below ground surface (bgs). According to the *Kern County General Plan* Safety Element, the project site is not within a zone of shallow groundwater.

Seismically Induced Landslides and Rockfalls

According to the *Kern County General Plan*, the areas of Kern County with slopes subject to failure are predominantly found along the river terraces, bluffs, and foothills, located in all directions around the project site. The project site is located on gently to steeply sloping topography and is located adjacent to steep slopes and areas that have been classified as landslide hazard areas by the *Kern County General Plan*.

Subsidence

Subsidence is occurring within the San Joaquin Valley and has been identified in portions of northern and western Kern County, northwest of the intersection of State Route (SR-) 99 and SR-166, and in the vicinity of the City of Visalia. There are four types of subsidence occurring in the county: tectonic subsidence, subsidence from extraction of oil and gas, subsidence from groundwater withdrawal, and subsidence caused by hydro-compaction of moisture-deficient alluvial deposits. The *Kern County General Plan* has indicated that, although subsidence is not a significant hazard, damage to wells, foundations, and underground utilities may occur.

Due to the petroleum and groundwater withdrawal activities throughout Kern County, subsistence has the potential to occur; however, the limited amount of petroleum withdrawal occurring in Kern County is not expected to be sufficient to result in serious subsidence. The

California Department of Conservation Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]) monitors subsidence in oil and gas fields and regulates oil and gas withdrawal and pressurizing activities on the field. If subsidence is noted, remediation is accomplished by raising the water table by injecting water or reducing the volume of groundwater being pumped. The remediation activities ensure that no significant impacts from subsidence would occur. The project site is surrounded by agricultural land uses and is not located in an area of significant petroleum extraction activities.

Dam Failure

The nearest dam to the project site is the Twitchell Dam, located approximately 40 miles southwest of the project site and developed near the West Huasna Fault. The Twitchell Dam is earth-filled, is approximately 241 feet high and 1,804 feet long, and has a capacity of 197,756 acre-feet of water. If an earthquake were to occur near the Twitchell Dam, damage to the project site would be limited as the contents would not be able to reach the project site. According to the County of San Luis Obispo Safety Element Dam Inundation Map, Twitchell Dam, if breached, would inundate areas to the west of Twitchell Reservoir and would not be able to reach the project site, as it lies 40 miles to the east of Twitchell Dam (County of San Luis Obispo 1999).

Flooding

The project site is located within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Zone X, which indicates an area of minimal flood hazard (Map Number 06029C2200E; FEMA 2008).

Local Geologic and Soils Setting

Geology

The project site is located within a gently to steeply sloping alluvium that ranges in elevation from approximately 2,200 feet above mean sea level (msl) in the northeastern portion of the site to approximately 2,800 feet above msl near the southwestern boundary of the site. The alluvium is composed of sediments transported during slope failure events. The Temblor Mountains lie to the west of the project site and contain extensive outcrops of the Miocene Monterey Formation. Most of the project area is mapped as the McClure Shale Member of the Monterey Formation. This formation consists of a white-weathering, diatomaceous siliceous shale that is thinly bedded and dates to the Mohnian Stage of the upper Miocene (7.5–13.5 million years ago). The Monterey Formation records the filling of a deep basin formed by tectonism along the California margin, constitutes one of the major elements of California geology, and can range up to several thousands of feet thick. The Monterey Formation has yielded a diverse fauna consisting of some mollusks and common fish skeletons, particularly from laminated diatomaceous beds like those in the project area, and remains of larger marine macrofauna such as whales and the giant extinct Desmostylus, as well as birds, crocodiles, and rare land organisms, such as horses and land plants. The closest fossil locality known to the Natural History Museum of Los Angeles County (LACM) in the Monterey Shale is at Wood Canyon, east-southeast of the project area, where fossil fish specimens of herring (*Xyne* and

Ganolytes), pipefish (Syngnathidae), and mackerel (*Scomber*) were collected (SWCA 2018). Given the extensive fossil record preserved in the Monterey Formation, this unit has high paleontological sensitivity.

Soils

Soils within the project site include very shaly clay loam and shaly loam. According to the Natural Resource Conservation Service's Web Soil Survey (Natural Resources Conservation Service [NRCS] 2017a), soils at the site are listed as Aramburu very shaly clay loam, 15 to 30% slopes; Mendi-Hillbrick-Kilmer association, 9 to 30% slopes; pottinger very shaly clay loam, 2 to 9% slopes; Pottinger very shaly clay loam, 9 to 15% slopes; Reward shaly loam, 15 to 30% slopes; and Reward shaly loam, 30 to 50% slopes. Arambur soils are moderately deep and well drained, formed in residuum derived dominantly from shale or sandstone. Mendi-Hillbrick-Kilmer soils are a combination of deep and well-drained, shallow and well-drained, and moderately deep and well-drained soils. Pottinger soils are deep, well drained, and found on alluvial fans and terraces. Reward soil is deep, well drained, and found on hills and mountains. The potential for expansive soil at the project site is considered to be very low. Soil types located within the project site and surrounding areas are shown on **Figure 4.7-2,** *Soils Map*. The project site is within the 2.2 (Landslide) and 2.4 (Steep Slope) physical and environmental constraints overlay, requiring the project to adhere to standard grading practices to prevent soil instability and erosion.

Subsurface Conditions

The subsurface material present within the project site generally consists of weathered mudstone and silty sand to depths of approximately 5 feet. Below 5 feet, dense mudstone and very hard to very firm silty clay is present.

Groundwater

The project site is not located within a groundwater basin but is located immediately north of the San Joaquin Valley Groundwater Basin in the Kern County Subbasin. Groundwater levels may fluctuate both seasonally and from year to year due to variations in rainfall, temperature, pumping from wells, and possibly as the result of other factors such as irrigation. Shallow groundwater is not known to be present within the project site.

Paleontological Setting

The majority of the project area is underlain by the marine Monterey Formation with small outcrops of landslide rubble occurring in the southern and central project area and older alluvium occurring in the southcentral project area. The project site consists of several hundred feet of McLure Shale Member, Monterey formation, landslide rubble, and alluvium (SWCA 2018). This type of deposited material would not provide an environment suitable for vertebrate fossil remains as these deposits form under high-energy conditions that are not conducive to the preservation of scientifically significant fossils. Vertebrate fossil remains may be present in bedrock, such as the Monterey Formation, but it is unknown if that formation underlies the deposit.

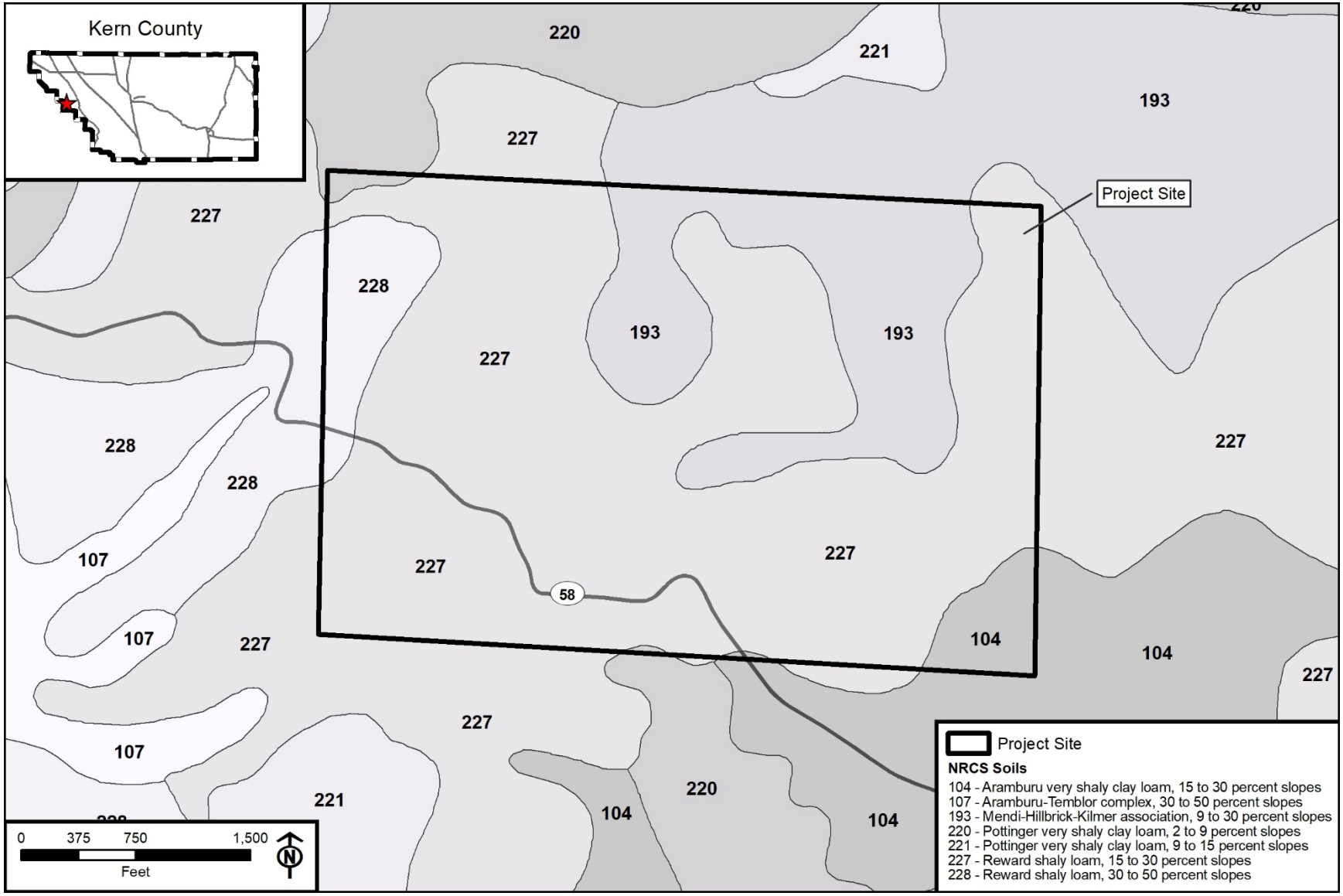

Figure 4.7-2
Soils Map

Paleontological Resources

A record search was conducted at the LACM. There are no known paleontological sites identified in the project area. Geologic maps were assessed in determining if the geologic units typically yielding paleontological resources were present within the project site. No paleontological surveys were completed for the project site due to the existing geology of the area (Monterey shale). The closest vertebrate fossil locality, LACM 7981 (Miocene), is found just east-southeast of the proposed project area in Wood Canyon in the western portion of the Little Santa Maria Valley, that produced fossil fish specimens of herring, *Xyne* and *Ganolytes*, pipefish, Syngnathidae, and mackerel, *Scomber*.

Any excavations in the Monterey Shale exposures found throughout the entire proposed project area have the potential to encounter significant vertebrate fossils.

4.7.3 Regulatory Setting

Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the NEHRP. This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates FEMA as the Lead Agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed project would be required to adhere.

Clean Water Act

The Clean Water Act (CWA) (United States Code [USC] Title 33, Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires States to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Projects that disturb 1 or more acres of

land are required to obtain NPDES coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Permit), Order No. 99-08-DWQ. The general permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to protect stormwater runoff, including measures to prevent soil erosion. Requirements of the Federal CWA and associated SWPPP requirements are described in further detail in Section 4.10, *Hydrology and Water Quality*.

Antiquities Act of 1906

The Antiquities Act of 1906 (16 USC 431–433) states, in part:

> That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the act itself, or in the act's uniform rules and regulations (Code of Federal Regulations [CFR] Title 43, Part 3), the term "objects of antiquity" has been interpreted to include fossils by the National Park Service (NPS), the U.S. Bureau of Land Management (BLM), the U.S. Forest Service (USFS), and other Federal agencies. Permits to collect fossils on lands administered by Federal agencies are authorized under this act. However, due to the large gray areas left open to interpretation due to the imprecision of the wording, agencies are hesitant to interpret this act as governing paleontological resources.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC. 1712[c], 1732[b]; sec. 2, Federal Land Management and Policy Act of 1962 [30 USC 611]; Subpart 3631.0 et seq., *Federal Register* Vol. 47, No. 159, 1982) does not refer specifically to fossils. However, "significant fossils" are understood and recognized in policy as scientific resources. Permits, which authorize the collection of significant fossils for scientific purposes, are issued under the authority of FLPMA. Under FLPMA, Federal agencies are charged to:

- Manage public lands in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, archaeological, and water resources, and, where appropriate, preserve and protect certain public lands in their natural condition (Section 102[a][8][11]);

- Periodically inventory public lands so that the data can be used to make informed land-use decisions (Section 102[a][2]); and

- Regulate the use and development of public lands and resources through easements, licenses, and permits (Section 302[b]).

State

Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act), regulates development and construction of buildings intended for human occupancy to avoid hazards associated with surface fault rupture. In accordance with this law, the CGS maps active faults and designates Earthquake Fault Zones along mapped faults. This act groups faults into categories (i.e., active, potentially active, or inactive). Historic and Holocene faults are considered active, Late Quaternary and Quaternary faults are considered potentially active, and pre-Quaternary faults are considered inactive. These classifications are qualified by conditions. For example, a fault must be shown to be "sufficiently active" and "well defined" through detailed site-specific geologic explorations to determine whether building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy, such as an operations and maintenance building, is subject to review under the Alquist-Priolo Earthquake Fault Zoning Act, and any structures for human occupancy must be located at least 50 feet from any active fault. The project site is not located within or near an Alquist-Priolo Fault Zone.

Seismic Hazards Mapping Act of 1990

In accordance with Public Resources Code (PRC) Chapter 7.8, Division 2, the CGS is directed to delineate seismic hazard zones. The purpose of the Seismic Hazards Mapping Act of 1990 is to reduce the threat to public health and safety and minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. State agencies, Counties, and Cities are directed to use seismic hazard zone maps developed by the CGS in their land use planning and permitting processes. In accordance with the act, site-specific geotechnical investigations must be performed prior to permitting most urban development projects within seismic hazard zones. The project site is not located within a seismic hazard zone.

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2019 CBC is based on the 2012 International Building Code (IBC) published by the International Code Conference. In addition, the CBC contains necessary California amendments, which are based

on reference standards obtained from various technical committees and organizations such as the American Society of Civil Engineers (ASCE), American Institute of Steel Construction (AISC), and American Concrete Institute (ACI). ASCE Minimum Design Standards 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project as described in Chapter 16 of the CBC. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC in accordance with CBC Chapter 16. Chapter 16, Section 1613 provides earthquake loading specifications for every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, which shall be designed and constructed to resist the effects of earthquake motions in accordance with ASCE 7-16. Chapter 18, Section 1804 provides requirements for excavation, grading, and fills, whereas Section 1806 provides specifications for load bearing soils. Chapter 18 also describes analysis of expansive soils (1803.5.3) and the determination of the depth to groundwater table. For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific Pga magnitudes and source characteristics consistent with the design earthquake ground motions.

Local

Construction and operation of the proposed project would be subject to policies and regulations contained within the *Kern County General Plan*, the Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies pertaining to the avoidance of geologic hazards and/or the protection of unique geologic features, as well as policies for the preservation of paleontological resources.

Kern County General Plan

The policies, goals, and implementation measures in the *Kern County General Plan* that pertain to geology and soils and are applicable to the proposed project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the proposed project. These

measures are not listed below, but as stated in Chapter 2, Introduction, all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space, and Conservation Element

1.3 Physical and Environmental Constraints

Goals

- **Goal 1.** To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

Policies

- **Policy 1.** Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

- **Policy 6.** Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby, minimizing the extent of topographic alteration required and reducing soil erosion while maintaining soil stability.

- **Policy 7.** Ensure effective slope stability, wastewater drainage, and sewage treatments in areas with steep slopes are adequate for development.

1.9 Resource

Goals

- **Goal 1.** To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.

- **Goal 2.** Protect areas of important mineral, petroleum, and agricultural resource potential for future use.

- **Goal 3.** Ensure the development of resources areas minimize effects on neighboring resource lands.

Policies

- **Policy 2**. In areas with a resource designation on the General Plan map, only industrial activities which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with this General Plan.

- **Policy 14.** Emphasize conservation and development of identified mineral deposits.

Implementation Measures

- **Implementation Measure H**. Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

- **Implementation Measure K**. Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).

Chapter 4. Safety Element

4.1 Introduction

Goals

- **Goal 1.** Minimize injuries and loss of life and reduce property damage.

- **Goal 2.** Reduce economic and social disruption resulting from earthquakes, fire, flooding, and other geologic hazards by assuring the continuity of vital emergency public services and functions.

- **Goal 3.** Assist in the allocation of public resources in Kern County to develop information regarding geologic, fire, and flood safety hazards and to develop a systematic approach toward the protection of public health, safety, and welfare from such hazards.

- **Goal 4.** Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards.

4.2 General Policies and Implementation Measure, Which Apply to More than One Safety Constraint

Policies

- **Policy 1.** That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oilfield areas, presently under way by various County departments, be continued.

- **Policy 2.** Those hazardous areas, identified as unsuitable for human occupancy, are guided toward open space uses, such as agriculture, wildlife habitat, and limited recreation.

Implementation Measures

- **Implementation Measure A.** All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisors action could involve the establishment of a land use activity susceptible to such hazards.

- **Implementation Measure C.** Require detailed site studies for ground shaking characteristics, liquefaction potential, dam failure inundation, flooding potential, and fault rupture potential as background to the design process for critical facilities under County discretionary approval.

- **Implementation Measure F.** The adopted Kern County, California Multi-Hazard Mitigation Plan is incorporated by reference. This multi-jurisdictional plan, approved in compliance with the Disaster Mitigation Act of 2000, provides long-term planning to reduce the impacts of future disasters.

4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policies

- **Policy 1.** The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measures

- **Implementation Measure B.** Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

- **Implementation Measure C.** The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible, in accordance with State and County regulations.

- **Implementation Measure D.** Detailed geologic investigations shall be conducted in conformance with guidelines of the California Geological Survey for all discretionary permits and construction designed for human occupancy in an Alquist-Priolo Earthquake Fault Zone.

4.5 Landslides, Subsidence, Seiche, and Liquefaction

Policies

- **Policy 1.** Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.

- **Policy 2.** Route major lifeline installations around potential areas of liquefaction or otherwise protect them against significant damage from liquefaction in an earthquake.

- **Policy 3.** Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

Implementation Measures

- **Implementation Measure B.** Require liquefaction investigations in all areas of high groundwater potential and appropriate foundation design to mitigate potential damage to buildings on sites with liquefaction potential.

- **Implementation Measure C.** Develop and maintain maps, at an appropriate scale, showing the location of all geologic hazards, including active faults, Alquist-Priolo Earthquake Fault Zones,

100-year flood hazard boundary, the extent of projected dam failure inundation and time arcs, depth of inundation, land subsidence, slope failure and earthquake-induced landslides, high groundwater, and liquefaction potential.

- **Implementation Measure D.** Discretionary actions will be required to address and mitigate impacts from inundation, land subsidence, landslides, high groundwater areas, liquefaction and seismic events through the CEQA process.

Kern County Ordinance

Title 17 – Buildings and Construction

All construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the CBC, 2010 Edition, with some modifications and amendments. The entire County is in Seismic Zone 4, a designation previously used in the Uniform Building Code (UBC) to denote the areas of highest risk to earthquake ground motion. California has established an Unreinforced Masonry program that details seismic safety requirements for Zone 4. Seismic provisions associated with Seismic Zone 4 have been adopted.

Chapter 17.28 – Grading Code

The purpose of the Kern County Grading Code is to safeguard life, limb, property, and public welfare by regulating grading on private property. All requirements of the Kern County Grading Code will be applied during implementation of the project. All required grading permit(s) shall be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

Section 17.28.140 – Erosion Control

A. **Slopes.** The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

B. **Other Devices.** Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

C. **Temporary Devices.** Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust

nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Section 17.28.170 – Grading Inspection

A. **General.** All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.

B. **Civil Engineer.** The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

C. **Soils Engineer.** The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.

D. **Engineering Geologist.** The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

E. **Permittee.** The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.

F. **Building Official.** The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.

G. **Notification of Noncompliance.** If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.

H. **Transfer of Responsibility.** If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:

1. The civil engineer, soils engineer, or engineering geologist, has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.

2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

Title 19 – Zoning Ordinance

Chapter 19.100 – Surface Mining Operations

The purpose of Chapter 19.100 of the Kern County Zoning Ordinance is to regulate surface mining operations consistent with the requirements of the California Mining and Reclamation Act (PRC Sections 2710 et seq.) and the State Policy for Surface Mining and Reclamation Practice (California Administrative Code Title 14, Sections 3500 et seq.).

Section 19.100.040 – Development Standards and Conditions

Section 19.100.040 sets development standards and conditions for surface mining operations. These include the following:

B.1. The designed steepness and proposed treatment of the mined lands' final slope shall take into consideration the physical properties of the slope material, its probable maximum water content, landscaping requirements and other factors. In all cases, the reclamation plan shall specify the critical gradient needed to maintain slope stability and shall specify slope angles flatter than the critical gradient for the type of material involved. Whenever final slopes approach the critical gradient for the type of material involved, an engineering analysis of the slope

stability shall be performed and submitted as part of the reclamation plan.

B.3. The removal of vegetation and overburden, if any, in advance of surface mining shall be kept to the minimum.

B.4. Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion.

B.9. Grading and revegetation shall be designed to minimize erosion and to convey surface runoff to natural drainage courses or interior basins designed for water storage. Basins that will store water during periods of surface runoff shall be designed to prevent erosion of spillways when these basins have outlet to lower ground.

4.7.4 Impacts and Mitigation Measures

This section describes the methodology used in conducting the California Environmental Quality Act (CEQA) impact analysis for geology and soils, the thresholds of significance used in assessing impacts to geology and soils, and the assessment of impacts to geology and soils, including relevant mitigation measures.

Methodology

The analysis in this section considered potential impacts associated with geology and soils issues identified in the *Kern County Environmental Checklist* (updated May 2019). Methodologies for specific geotechnical evaluations, including slope stability, are summarized in the respective impact discussions below, and are presented in detail in referenced studies, including *Geotechnical Engineering Investigation Report, Johe Ranch Mine Project, McKittrick, California* (BSK Associates 2019) included as Appendix G.1, *Soil Sample Report, Johe Ranch Mine Site, Kern County, California* (WZI Inc. 2018a), included as Appendix G.2, and *Results of a Paleontological Resources Constraints Analysis for the Proposed Johe Ranch Mine Project, Kern County, California* (SWCA 2018), included as Appendix G.3 to this EIR.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on geology and soils. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to geology and soils if it would:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault 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);

ii. Strong seismic groundshaking;

iii. Seismic-related ground failure, including liquefaction; or,

iv. Landslides;

b. Result in substantial 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;

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue area would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding this issue area:

- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Project Impacts

Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving: rupture of a known earthquake fault, 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.

The project site is not located within a State-designated Alquist-Priolo Earthquake Fault Zone where site-specific studies addressing the potential for surface fault rupture are required (BSK

Associates 2019). As described in Section 4.7.2, *Environmental Setting,* the project site is situated in an area surrounded by three seismically active faults: Buena Vista Fault, San Juan Fault, and San Andreas Fault (Carrizo Segment), in addition to smaller, unnamed faults approximately 11 miles from the project site.

While the project would introduce workers to the site, the maximum number of employees on-site at any one time would be 10 and they would only be onsite during working hours. There would be no full-time onsite employees or residents. Thus, the potential to expose people to substantial adverse effects involving rupture of a known earthquake fault is considered low. Furthermore, the project does not propose the construction of any structures within the project site. Therefore, given the absence of any known active faults in the project area, the limited duration of employees onsite, and lack of structures proposed within the project site, impacts related to fault rupture would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking.

As described above, the project is located in a seismic region within the influence of several fault systems, including the Buena Vista Fault, San Juan Fault, and San Andreas Fault (Carrizo Segment) systems that are capable of generating ground motions that could affect the project area. The project proponent is required to design the project as recommended by a California-licensed professional geotechnical engineer in the site-specific geotechnical review.

Based on exploration and anticipated subsurface conditions, and in accordance with CBC, BSK Associates (2019) determined that the site should be considered as having a Site Class D profile. In accordance with the general criteria of the CBC, the maximum considered earthquake spectral response acceleration and site coefficients presented in **Table 4.7-2,** *Seismic Design Parameters,* are considered appropriate for structures at the site. The project proponent is required to design all structures and associated infrastructure to withstand substantial ground shaking in accordance with applicable CBC seismic design standards and Kern County Building Code Chapter 17, and as recommended by a California-registered professional engineer in the site-specific geotechnical review. Compliance with these requirements would be anticipated to minimize the potential for structural damage during a seismic event and no significant impact associated with risk or loss of life is anticipated.

Table 4.7-2 Seismic Design Parameters

Seismic Design Parameter	2016 CBC Value		Reference
MCE* Mapped Spectral Acceleration (g)	S_S = 1.681	S_1 = 0.795	USGS Mapped Value
Amplification Factors (Site Class D)	F_a = 1.000	F_v = 1.500	Table 1613.3.3
Site Adjusted MCE Spectral Acceleration (g)	S_{MS} = 1.681	S_{M1} = 1.193	Equations 16-37, 38
Design Spectral Acceleration (g)	S_{DS} = 1.121	S_{D1} = 0.795	Equations 16-39, 40
Geometric Mean Pga (g)	Pga = 0.673		ASCE Equations 11.8-1

* MCE = Maximum Considered Earthquake
Source: BSK Associates 2019

As shown above, the short period design spectral response acceleration coefficient, S_{DS}, is greater than 0.50; therefore, the site lies in Seismic Design Category D as specified in Section 1613.3.4 of the 2016 CBC. The long period design spectral response acceleration coefficient, S_{D1}, is greater than 0.2; therefore, the site lies in Seismic Design Category D as specified in Section 1613.3.4 of the 2016 CBC. The Maximum Considered Earthquake (MCE) mapped spectral acceleration coefficient, S_1, is less than 0.75; therefore, the site lies in Seismic Design Category D as specified in Section 1613.3.5 of the 2016 CBC. In accordance with the 2016 CBC, each structure shall be assigned to the more severe seismic design category in accordance with Table 1613.3.5(1) or 1613.3.5(2), irrespective of the fundamental period of vibration of the structure.

Prior to the issuance of grading permits, the project proponent would be required to retain a California-licensed geotechnical engineer to design the project to withstand probable seismically induced ground shaking at the site. All grading and excavation on-site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations by the California-licensed professional geotechnical engineer in accordance with CBC and Kern County Building Code requirements. A copy of the approved design would be submitted to the Kern County Planning and Natural Resources Department. Adherence to the requirements of the ICB, the CBC, the Kern County Building Code, and Mitigation Measures MM 4.7-1 through MM 4.7-3 would ensure that seismic hazards would be minimized. The facilities would be constructed in accordance with all applicable codes, which require property line and public roadway setbacks that would protect the general public and on-site staff from potential hazards associated with the facilities that could result from an earthquake. Thus, with implementation of the above-described measures, project structures and personnel present during the construction and operation phases of the project would not be exposed to substantial adverse effects, including the risk of loss, injury, or death resulting from strong seismic ground shaking and impacts would be less than significant.

Mitigation Measures

MM 4.7-1 Maximum operational slopes for the mining areas, and the blending and screening site, shall be 2:1 (horizontal:vertical [h:v]). Maximum final reclaimed slopes for the mining areas, and the blending and screening site, shall be 3:1 (h:v). Maximum operational slopes for proposed access roads shall

be 1:1.75 (h:v). Maximum final reclaimed slopes for proposed access roads shall be 1:1.75 (h:v). Maximum final depth of excavation shall be 162 feet for Mine Area 1, 125 feet for Mine Area 2, and 40 feet for Mine Area 3. Increased slopes and/or depths may be approved in accordance with the provisions of the Surface Mining and Reclamation Act (SMARA) of 1975 and Section 19.100 of the Kern County Zoning Ordinance.

MM 4.7-2 Prior to commencement of mining operations, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project site and submit for review and approval by the Kern County Public Works Department.

A. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but not be limited to, the following:

    1. Location of fault traces and potential for surface rupture and ground-shaking potential;

    2. Maximum considered earthquake and associated ground acceleration;

    3. Potential for seismically induced ground shaking, liquefaction, differential settlement, and mudflows;

    4. Stability of any existing or proposed cut-and-fill slopes;

    5. Collapsible or expansive soils;

    6. Potential for wind erosion, water erosion, sedimentation, and flooding;

    7. Location and description of unprotected drainage that could be impacted by the proposed development; and

    8. Recommendations for placement and design of facilities, and remediation of unstable ground.

B. The final geotechnical study shall be submitted for review and approval by the Kern County Public Works Department. Final design requirements shall also be provided to the on-site project supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.

MM 4.7-3 Prior to commencement of mining operations, the project proponent shall cause engineered plans to be prepared by a California-licensed civil engineer

for the development of flood control facilities and any associated maintenance for the project site and submit them to the Kern County Public Works Department for review and incorporation into the approved surface mining and reclamation plan in accordance with the provisions of the Surface Mining and Reclamation Act (SMARA) of 1975 and Section 19.100 of the Kern County Zoning Ordinance. Said plans shall address flood flows including, but not limited to, the retention of any flows on-site and erosion and sedimentation.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3, impacts would be less than significant.

Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction.

Seismically induced liquefaction occurs when loose, water-saturated sediments of relatively low density are subjected to cyclic shaking that causes soils to lose strength or stiffness because of increased pore water pressure. Liquefaction generally occurs when the depth to groundwater is less than 50 feet. Based on groundwater data obtained from borings drilled within the project site, groundwater was not detected within 50 feet beneath the existing ground surface (BSK Associates 2019). Thus, the potential for liquefaction at the surface is low. Furthermore, the project is not located within a current, mapped California Liquefaction Hazard Zone. The project would be required by State law to be constructed in accordance with all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Building code requirements may include, but are not limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. Adherence to all applicable regulations would avoid any potential impacts to structures resulting from liquefaction at the project. Therefore, impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.7-4: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides.

The project site is located on gently to steeply sloping topography and is located adjacent to steep slopes and areas that have been classified as landslide hazard areas by the *Kern County*

General Plan. BSK Associates also evaluated the slope stability for the proposed reclamation condition of the proposed mine pits (BSK Associates 2019). The analysis considered the slope stability for a maximum depth of 325 feet with a 1:1.75 (horizontal:vertical [h:v]) gradient under seismic conditions. Based on BSK Associates' slope stability analysis, the anticipated 1:1.75 (h:v) cut slopes meet generally accepted minimum factor of safety for static and pseudo-static conditions of 1.5 and 1.1, respectively. Thus, the slopes under reclaimed conditions are considered stable under seismic loading parameters. As discussed above, structures would be designed in accordance with applicable seismic design standards and reclaimed mine slopes are expected to be sufficiently stable to achieve an acceptable factor of safety.

Mitigation has been included to ensure the maximum depth and slopes of mine pits are not exceeded and slope stability is not compromised; therefore, this impact is considered less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3, impacts would be less than significant.

Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.

The project proponent proposes to employ open pit mining techniques to mine diatomaceous earth (a mineral suitable for industrial uses, including the production of cement) and overburden material (earth overlying the diatomaceous earth, proposed to be sold for use as a landfill liner, and to solidify liquid waste after it is deposited in a landfill). A processing screener would be utilized on an as-needed basis according to customer demand for refined product. Blending of different types of diatomaceous earth mined on the project site would be conducted as necessary with the use of a loader. Trucks would be weighed before leaving the site on a portable scale located within the boundaries of the 2.42-acre blending and screening site. As proposed, all overburden material (typically considered as non-marketable waste in the mining industry) that is excavated will be exported from the project site and sold; as such, no waste is proposed to be generated.

As described in Chapter 3, *Project Description*, the project proponent shall adhere to the following measures, as project design features, to comply with the assumptions made for emissions calculations per *Air Quality Impact Assessment, Johe Ranch Mine, McKittrick, Kern County, California* (WZI Inc. 2019a):

9. Maximum exposed land is 20 acres at any given time (SMARA)

    a. Disturbed land not being mined daily (15 acres) will be covered in dust palliative to prevent wind erosion during periods of inactivity

b. Disturbed land being mined daily (5 acres) will be watered 3x/day

Any product stockpiles made within the mining areas would be a maximum of 20 feet in height and would have a maximum slope of 2:1 (h:v). Any product stockpiles (for any product that may be processed through the blending and screening site) would be a maximum of 10 feet in height and would have a maximum slope of 2:1 (h:v).

Grading activities associated with the proposed project have the potential to cause increased runoff, erosion, and sedimentation that would not otherwise occur at the project site. Proposed grading activities would remove or cover up to 6 inches of existing topsoil and may expose underlying soils to wind and water erosion during mining activities on the project site; however, mitigation has been included to minimize potential impacts related to erosion. Soils present within the project site are identified as having an erosion hazard ranging from slight to severe (NRCS 2017a). The granular layers of the fan deposits, which would be exposed on the mining slopes as a result of project implementation, are moderately susceptible to erosion due to the reduced compaction of the soils if water is allowed to flow over the slopes.

The proposed project would implement Mitigation Measure MM 4.10-1, which requires submittal and approval of a SWPPP, which includes erosion control measures in order to comply with the NPDES requirements of the Federal CWA. In addition to its NPDES and CWA obligations, the proposed project would also be subject to Kern County ordinances and standards related to soils, geology, and mining activities. Furthermore, the proposed project would implement Mitigation Measure MM 4.10-3, which requires submittal and approval of a detailed Drainage Plan. The erosion of engineered slopes on the project site resulting from the proposed project would be less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-3, MM 4.10-1, and MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3, MM 4.10-1, and MM 4.10-3, impacts would be less than significant.

Impact 4.7-6: The project would 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.

As discussed under Impact 4.7-1, slope stability analysis for the project concludes that the project's proposed 3:1 (h:v) final reclaimed slopes would achieve a suitable factor of safety. Nonetheless, in order to reduce the potential of exposing people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving unstable soil, the Lead Agency is recommending Mitigation Measures MM 4.7-1 through MM 4.7-3 to ensure that slopes and mining depths are consistent with the proposed reclamation plan,

SMARA, and the Kern County Zoning Ordinance. Therefore, potential impacts would be less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3, impacts would be less than significant.

Impact 4.7-7: The project would be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (1994), creating substantial risks to life or property.

Expansive soils are fine-grained soils (generally high plasticity clays) that can undergo a significant increase in volume with an increase in water content and a significant decrease in volume with a decrease in water content. Changes in the water content of a highly expansive soil can result in severe distress to structures constructed on or against the soil. As stipulated in the submitted Geotechnical Engineering Investigation Report (BSK Associates 2019), based on the data collected during this investigation, and from a geotechnical engineering standpoint, it is the opinion of the preparers that the soil conditions would not preclude the construction of the proposed improvements. Additionally, a final geotechnical study would be performed for the project site as part of Mitigation Measure MM 4.7-2, which would confirm the findings of the conceptual geotechnical study regarding soil conditions and would include recommendations to address any unstable soils, including the potential for expansive soils and their potential to create risks to life or property. Furthermore, the implementation of Kern County Building Code requirements, as applicable, would further minimize the potential impact of expansive soils. Therefore, impacts related to expansive soils would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.7-2.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.7-2, impacts would be less than significant.

Impact 4.7-8: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The project does not include adding septic tanks or alternative wastewater disposal systems because portable toilets would be used during site preparation, mining, and reclamation activities; therefore, no impact would occur.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

No impact would occur.

Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The results of a Paleontological Resources Constraints Analysis (SWCA 2018) indicate that the project area contains two geologic units that are well known for preserving fossil resources and have high paleontological sensitivity, older alluvium (Qoa), and the Monterey Formation (Tm). This determination was made following the guidelines of the Society of Vertebrate Paleontology (SVP) (2010) after a review of the relevant scientific literature and a records search from the LACM. Given the high sensitivity of the Monterey Formation, which makes up the majority of the project area and is the target of the mining operations, proposed ground-disturbing activities have the potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; therefore, this impact is considered potentially significant. Implementation of Mitigation Measures MM 4.7-4 and MM 4.7-5 would ensure potential impacts would be less than significant.

Mitigation Measures

MM 4.7-4 The project proponent/operator shall retain a qualified paleontologist to carry out mitigation measures related to paleontological resources. A qualified paleontologist is defined as an individual with the appropriate education and experience to accomplish tasks in conjunction with the mitigation measures relating to paleontological resources.

A. Prior to the start of any ground-disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all personnel working on the proposed project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. The

Paleontological Resources Awareness Training guide shall be kept available for all personnel to review and be familiar with.

B. Paleontological Resources Awareness Training may be conducted in conjunction with the required Cultural Resources Sensitivity Training.

C. Paleontological Resources Awareness Training shall include an overview of potential paleontological resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate, and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.

D. The project proponent/operator shall ensure new employees or on-site workers who have not participated in earlier Paleontological Resources Awareness Trainings shall:

1. Participate in Paleontological Resources Awareness Training as described above, and

2. Shall be provided a Paleontological Resources Awareness Training guide for all personnel that is approved by the Lead archaeologist.

3. The Paleontological Resources Awareness Training guide shall be kept available for all personnel to review and be familiar with.

MM 4.7-5 If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resource(s) and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and presented for donation to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-4 and MM 4.7-5, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project. (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.) The geographic scope for considering cumulative impacts with regard to geology and soils includes the extent of the project site, because impacts to geology and soils are generally site-specific. Impacts of the project would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects.

Impact 4.7-10: The project would contribute to cumulative geology and soil resource impacts.

As discussed above, the proposed project is in a seismically active area surrounded by active faults. All areas of Kern County are considered seismically active, to a less or greater extent depending on their proximity to active regional faults. Cumulative projects shown in **Table 3-6,** *Cumulative Projects List*, would also be subject to similar seismic hazards since they are in the project vicinity. However, the effects of these projects are not of a nature to cause cumulatively significant effects from geologic impacts, or on soils, because such impacts are site-specific and would only have the potential to combine with impacts of the proposed project if they occurred in the same location.

Impacts related to erosion and sediment deposition can be cumulative in nature if affecting a watershed. Cumulative impacts to water quality are addressed in Section 4.10, *Hydrology and Water Quality*, of this EIR. Buildout of approved and planned uses in Kern County has the potential to result in erosion and the loss of topsoil; however, individual projects are required to comply with applicable codes, standards, and permitting requirements (i.e., preparation of a SWPPP or approval of a Notice of Non-Applicability [NONA]) to mitigate erosion impacts. Impacts associated with erosion are mitigated on a project-by-project basis, which would reduce the overall cumulative impact to a less-than-significant level. Implementation of mitigation measures outlined in this section would reduce the potential impacts associated with geology and soils resulting from the proposed project; therefore, cumulative geological and soil-related impacts are not considered cumulatively considerable.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-5, MM 4.10-1, and MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-5, MM 4.10-1, and MM 4.10-3, cumulative impacts would be less than significant.

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Section 4.8
Greenhouse Gas Emissions

4.8.1 Introduction

This section of the Environmental Impact Report (EIR) describes the affected environment and regulatory setting for greenhouse gas (GHG) emissions. It also describes the GHG emission impacts that would result from implementation of the project along with mitigation measures that would reduce these impacts.

This section is based on *Air Quality Impact Assessment, Johe Ranch Mine, McKittrick, Kern County, California* (WZI Inc. 2019a), included in Appendix C of this EIR.

4.8.2 Environmental Setting

GHGs and climate change are a cumulative global issue. The California Air Resources Board (CARB) and U.S. Environmental Protection Agency (USEPA) regulate GHG emissions within the State of California and the United States, respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction. The CARB has divided California into regional air basins. The project is in unincorporated Kern County, which is within the San Joaquin Valley Air Basin (SJVAB), and under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Climate Change

In the early 1960s, scientists recognized that carbon dioxide (CO_2) levels in the atmosphere were rising every year. It was also noted that several other gases, including methane (CH_4) and nitrous oxides (N_2O) were also increasing. Levels of these gases have increased by about 40% since large-scale industrialization began around 150 years ago, according to the USEPA. After numerous computer-simulated model runs on the effects of these increases in the atmosphere, it was concluded that the rising concentrations almost always resulted in an increase in average global temperature. Rising temperatures may, in turn, produce changes in weather, sea levels and land use patterns, commonly referred to as "climate change." There is general scientific consensus that climate change is occurring, and that human activity contributes in some measure (perhaps substantially) to that change. Manmade emissions of GHGs, if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures. Increases in global temperatures will cause a reduction in the polar ice caps and an increase in sea level, which will result in flooding in low-lying areas of the world. Additionally, climate change will shift rainfall patterns, which will cause significant impacts to agriculture and freshwater availability worldwide.

Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the earth's temperature; however, emissions from human activities such as electricity production and the use of motor vehicles have elevated the concentration of GHGs in the atmosphere. This accumulation of GHGs has contributed to an increase in the average temperature of the earth's atmosphere and has contributed to global climate change. Of the principal GHGs (i.e., CO_2, CH_4, N_2O, sulfur hexafluoride [SF_6], perfluorocarbons [PFCs], and hydrofluorocarbons [HFCs]), CO_2 is the most common reference gas for climate change. Using the Global Warming Potential (GWP) measurement, GHG emissions are often quantified and reported as CO_2 equivalent (CO_2e). Large emission sources are reported in million metric tons of CO_2e ($MMTCO_2e$).

As the concentrations of GHGs continue to increase in the atmosphere, the Earth's surface temperature is also increasing, exceeding past levels. The Earth's average surface temperature has increased by about 0.15 degrees Fahrenheit (°F) per decade since 1901. On average, the warmest global temperatures on record have all occurred between 2006 and 2015, with 2015 being the warmest on record (USEPA 2016a). Climate models predict that the average surface temperature of the Earth could increase by 0.5 to 8.6°F by the end of this century if GHGs continue to increase (USEPA 2017).

Climate change affects people, plants, and animals. Scientists are certain that increasing the concentration of GHGs will change the planet's climate; however, they are not sure by how much it will change, at what rate it will change, or what the exact effects will be. They are working to better understand future climate change and how the effects will vary by region and over time.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (Intergovernmental Panel on Climate Change [IPCC] 2001):

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas;
- Reduced diurnal temperature range over most land areas;
- Increase of heat index over land areas; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and feedback mechanisms involved are not fully understood, and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

Some of the potential resulting effects in California of global warming may include loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. A summary of some of these potential effects that could be experienced in California as a result of climate change is provided below:

Sea Level Rise. Since 1870 the global sea level has risen about 8 inches. The rising sea level increases the likelihood and risk of flooding. Future sea level rise will vary for different reasons but is expected to rise at a greater rate than during the past 50 years. Regional factors, such as land elevation changes that occur due to subsidence or uplifting, will influence the relative sea level rise for the coastlines around the world. However, global sea level rise of 1 to 4 feet could occur by 2100 (USEPA 2017).

Air Quality. Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.

Water Supply. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10% during the last century. During the same period, sea level rose 8 inches along the California coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many southern California cities have experienced their lowest recorded annual precipitation twice within the past decade in a span of only 2 years.

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra Nevada snowpack provides the majority of California's water supply by accumulating snow during our wet winters and releasing it slowly when we need it during our dry springs and summers. The snowpack is expected to experience a 25% to 40% reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (California Department of Water Resources [DWR] 2008).

Hydrology. As discussed previously, climate change could potentially affect the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea level rise may be a product of climate change through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to saltwater intrusion. Increased

storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture. California has a $30 billion agricultural industry and has the highest crop value in the Nation serving as an important source of the Nation's food supply. Changes in temperature and water availability, compounded by annual and seasonal shifts and extremes, will affect both crop yield and quality. Indirect impacts such as decreases of pollinators and increases in pests and diseases will also have a negative effect on agricultural yield.

Ecosystems and Wildlife. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increases in drought, wildfire, invasive species, and pests as well as geographic ranges will threaten native ecosystems in the southwest. Over 3,000 native California species of plants are expected to face reductions in geographic ranges in which they can survive. Climate change and other stressors will hinder the species' ability to migrate or adapt. These stressors include human expansion, air and water pollution, invasive species, streamflow reductions, and the region's mountainous terrain (DWR 2008).

Greenhouse Gas Emissions

GHGs refer to gases that absorb and re-emit infrared radiation in the atmosphere. Many chemical compounds found in Earth's atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes Earth's surface, some of it is reflected back toward space as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of Earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (e.g., water vapor, CO_2, CH_4, N_2O), while others are exclusively manmade (e.g., gases used for aerosols). The principal GHGs—CO_2, CH_4, N_2O, SF_6, PFCs, and HFCs—are listed below (USEPA 2015).

- **Carbon dioxide:** CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- **Methane:** CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

- **Nitrous oxide:** N_2O is emitted during agricultural and industrial activities and during combustion of fossil fuels and solid waste.

- **Sulfur hexafluoride:** SF_6 is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity, including equipment such as electrical circuit breakers, which may be used for the project. SF_6 is a potential source of fugitive emissions from

electrical transmission and distribution equipment. Fugitive emissions are unintentional leaks of GHGs from equipment such as joints, seals, and gaskets.

- **Fluorinated gases:** SF_6, HFCs, and PFCs are synthetic, powerful climate-change gases emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons [CFCs], hydrochlorofluorocarbons, and halons). These gases are typically emitted in minute quantities, but because they are potent climate-change gases, they are sometimes referred to as high GWP gases.

In most cases, GHGs have both natural and anthropogenic (human-caused) sources. Natural mechanisms already exist as part of the "carbon cycle" for removing GHGs from the atmosphere (often called land or ocean sinks). Because of the increase in anthropogenic sources, levels of GHGs have exceeded the normal rates of natural absorption. This has resulted in increased atmospheric concentrations of GHGs and potentially human-induced climate change.

GHG emissions in the United States come mostly from energy use. These are driven largely by economic growth, fuel used for electricity generation, and weather patterns affecting heating and cooling needs.

Energy-related CO_2 emissions resulting from fossil fuel exploration and use account for approximately three-quarters of the human-generated GHG emissions in the United States, primarily in the form of CO_2 emissions from burning fossil fuels. More than half the energy-related emissions come from large stationary sources, such as power plants; approximately one-third come from transportation; and industrial processes, agriculture, forestry, other land uses, and waste management make up most of the other sources.

As previously stated, the generation of electricity can produce GHGs with criteria air pollutants that have been traditionally regulated under the Federal Clean Air Act (CAA) and California Clean Air Act (CCAA). For fossil fuel–fired power plants, the GHG emissions include primarily CO_2, with much smaller amounts of N_2O (not nitric oxide [NO] or nitrogen dioxide [NO_2], which are commonly known as nitrogen oxides [NOx]) and CH_4 (often from unburned natural gas). For photovoltaic solar power energy generation projects, stationary-source GHG emissions are much smaller than fossil fuel-fired power plants, but the associated maintenance vehicle emissions are higher due to the different and far-afield maintenance requirements that necessitate more vehicles and more travel within the project site. Other sources of GHG emissions include SF_6 from high-voltage equipment and HFCs and PFCs from refrigeration/chiller equipment. GHG emissions from the electricity sector are dominated by CO_2 emissions from carbon-based fuels; other sources of GHG emissions are small and are more likely to be easily controlled or reused/recycled.

Scientists at the California Office of Environmental Health Hazard Assessment (COEHHA) believe that most areas in the United States will continue to warm, although some will most likely warm more than others. Predicting which parts of the country will become wetter or drier is extremely difficult, but scientists generally expect increased precipitation and evaporation as

well as drier soil in the middle parts of the country. The northern regions, such as Alaska, are expected to experience the most warming.

Emissions Inventory

CO_2 is the most common reference gas for climate change of the principal GHGs (i.e., CO_2, CH_4, N_2O, SF_6, PFCs, and HFCs). Using the GWP measurement, GHG emissions are often quantified and reported as CO_2e. Large emission sources are reported in $MMTCO_2e$. Worldwide, anthropogenic emissions of GHGs were approximately 49,500 $MMTCO_2e$ in the year 2010 (IPCC 2014). CO_2 emissions from fossil fuel use accounts for 65% of the total emissions of 49,500 $MMTCO_2e$ (includes land use changes) and CO_2 emissions from all sources account for 77% of the total. CH_4 emissions account for 16% of GHGs and N2O emissions account for 6% (USEPA 2016b).

Based on data from the EPA, the total GHG emissions in the United States were 6,870 $MMTCO_2e$ in 2014, a 7% increase from 1990 levels. From year to year, emissions can rise and fall due to changes in the economy, the price of fuel, and other factors. In 2014, U.S. GHG emissions increased compared to 2013 levels. This increase was due to a number of factors, including cold winter conditions resulting in an increase in fuel demand, especially in residential and commercial sectors; an increase in transportation emissions resulting from an increase in vehicle miles traveled (VMT); and an increase in industrial production across multiple sectors also resulted in increases in industrial sector emissions. In 2014 the electrical, transportation, and industrial end-use sectors accounted for 77% of the total U.S. emissions, with electrical, transportation, and industrial sources emitting 30%, 26%, and 21% of CO_2 emissions, respectively. The residential and commercial end-use sectors accounted for 12% and agriculture accounted for the remaining 10% of CO_2 emissions (USEPA 2018a).

Statewide emissions of GHG from relevant source categories for 2010 through 2017 are summarized in **Table 4.8-1,** *California Greenhouse Gas Emissions Inventory by Economic Sector*. In 2017, California produced 424.1 $MMTCO_2e$ emissions. Transportation was the source of 40% of the State's GHG emissions, followed by industrial at 21%, electricity generation at 15%, commercial and residential sources at 10%, agriculture and forestry comprised at 8%, High GWP at 5%, and Recycling and Waste with the remaining 2% (CARB 2017b). CARB has projected that, unregulated, Statewide GHG emissions for the year 2020 will be 509 $MMTCO_2e$ (CARB 2014). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions. California GHG emissions and the change in emissions of CO_2, CH_4, and N_2O from 2010 to 2017 are summarized in **Table 4.8-1,** *California Greenhouse Gas Emissions Inventory by Economic Sector*.

Table 4.8-1 California Greenhouse Gas Emissions Inventory by Economic Sector

Economic Sector	GHG Emissions ($MMTCO_2e$)*							
	2010	2011	2012	2013	2014	2015	2016	2017
Transportation	165.1	161.8	161.3	160.9	162.5	166.2	168.8	169.9
Electric Power	90.3	88.0	95.5	89.4	83.8	83.8	68.6	62.4
Industrial	91.5	90.2	91.1	93.7	91.5	91.5	89.5	89.4
Commercial and Residential	45.9	46.4	43.8	44.4	38.8	38.8	40.6	41.1
Agriculture	33.7	34.3	35.5	34.0	38.8	33.8	33.5	32.4
High GWP	13.5	14.5	15.5	16.8	18.6	18.6	19.3	19.9
Recycling and Waste	8.4	8.5	8.5	8.5	8.7	8.7	8.8	8.9
Total GHG Emissions	**448.5**	**443.6**	**451.2**	**447.7**	**444.7**	**441.4**	**429.0**	**424.1**

* GHG emissions are weighted using the IPCC AR4.
Source: CARB 2017b

Kern County Greenhouse Gas Inventory

In 2012, SJVAPCD prepared a communitywide GHG inventory for all of Kern County (SJVAPCD 2012a). Year 2005 was used as the base year; GHG emissions were estimated to be 27 $MMTCO_2e$. The fossil fuel industry sector represented 40% of the 2005 total, followed by the electricity consumption sector at 22%. GHG emissions from electricity generation in Kern County were included in the Countywide GHG emissions, but not added in the totals. Kern County's 2005 GHG emissions, not including subtraction of sequestration sectors, are presented in **Table 4.8-2,** *2005 Kern County Baseline Greenhouse Gas Emissions*.

Table 4.8-2 2005 Kern County Baseline Greenhouse Gas Emissions

Category	GHG Emissions ($MMTCO_2e$)	Percent of Total
Electricity Production	13,002,127	(*)
Electricity Consumption	6,039,114	22%
Residential/Commercial/Industrial Combustion	1,281,498	5%
Transportation	4,569,913	17%
Fossil Fuels Industry	10,928,153	40%
Industrial Processes	1,852,124	7%
Waste Management	120,494	< 1%
Agriculture Fugitives	2,024,470	7%
Forestry and Land Use	11,028	<1%
Other Sources	218,823	1%
Total	**27,045,617**	

Notes:
(*) = The Kern County Communitywide GHG emissions inventory included emissions from electricity production for completeness purposes only, this sector was not included in further descriptions of Kern County's emissions.
Source: SJVAPCD 2012a

4.8.3 Regulatory Setting

In 1988 the United Nations and the World Metrological Organization established the IPCC to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions, including CH4. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The Plan consists of more than 50 voluntary programs. In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions California Air Pollution Control Officers Association (CAPCOA 2008).

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

A particularly notable result of the UNFCCC efforts was a treaty known as the Kyoto Protocol, which was negotiated in December 1997. The agreement came into force on February 16, 2005, following ratification by Russia on November 18, 2004. When countries sign the treaty, they demonstrate their commitment to reduce their emissions of GHGs or engage in emissions trading. As of December 2006, a total of 169 countries and other governmental entities have ratified the agreement. Notable exceptions include the United States and Australia. Although U.S. Vice President Gore symbolically signed the Kyoto Protocol in 1998, for the treaty to be formally ratified, it must be ratified by the U.S. Congress, and this has not occurred to date. Other countries, like India and China, which have ratified the protocol, are not required to reduce carbon emissions under the present agreement despite their relatively large populations.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere (CFCs, halons, carbon tetrachloride, and methyl chloroform) were to be phased out by 2000 (methyl chloroform was to be phased out by 2005).

Global warming and climate change have received substantial public attention for more than 15 years. For example, the U.S. Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system; to monitor, understand, and predict global change; and to provide a sound scientific basis for national and international decision-making. Even so, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting

effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

Federal

U.S. Environmental Protection Agency

The Federal CAA requires the USEPA to define National Ambient Air Quality Standards (NAAQS) to protect public health and welfare in the United States. The USEPA has not established any ambient air quality standards for GHGs as the CAA does not specifically regulate GHG emissions; however, on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* (549 U.S. 497 [2007]), the U.S. Supreme Court found that GHGs are pollutants covered by the CAA. The Supreme Court held that the USEPA must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution that could reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the USEPA is required to follow the language of Section 202(a) of the CAA. The Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations. Currently, there are no Federal regulations that establish ambient air quality standards for GHGs.

On April 17, 2009, the Administrator signed Proposed Endangerment and Cause or Contribute findings for GHGs under Section 202(a) of the CAA. The USEPA held a 60-day public comment period, which ended June 23, 2009, and received over 380,000 public comments. These included both written comments as well as testimony at two public hearings in Arlington, Virginia and Seattle, Washington. The USEPA carefully reviewed, considered, and incorporated public comments and issued the final Findings.

The USEPA found that six GHGs taken in combination endanger both the public health and public welfare of current and future generations. The USEPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that endangers public health and welfare under Section 202(a) of the CAA. These findings were based on careful consideration of the full weight of scientific evidence and a thorough review of numerous public comments received on the Proposed Findings published April 24, 2009. These findings became effective on January 14, 2010. Specific GHG Regulations that the USEPA has adopted to date are discussed below.

40 Code of Federal Regulations Part 98 Mandatory Reporting of Greenhouse Gases Rule

On September 22, 2009, the USEPA issued a final rule to require reporting of GHG emissions from all sectors of the U.S. economy (74 *Federal Register* [FR] 56260–56519). Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 $MTCO_2e$ or more per year are required to report GHG emissions data to USEPA annually. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to the USEPA in 2011. Additionally, reporting of emissions is required for owners of SF_6- and PFC-insulated equipment when the total nameplate capacity of these

insulating gases is above 17,280 pounds. This new program covers approximately 85% of the nation's GHG emissions and applies to roughly 10,000 facilities. The USEPA's new reporting system was intended to provide a better understanding of GHG sources and guide development of the policies and programs to reduce emissions. The data also allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective methods to reduce emissions in the future. The reporting rule has been amended numerous times, most recently on October 22, 2015. The project, including stationary sources, would not be expected to trigger Federal GHG reporting according to the rule.

U.S. Environmental Protection Agency and National Highway Traffic Safety Administration Joint Final Rules for Vehicle Standards

On April 1, 2010, the USEPA and National Highway Traffic Safety Administration (NHTSA) announced a joint final rule to establish a national program consisting of new standards for light-duty vehicles model years 2012 through 2016. The joint rule is intended to reduce GHG emissions and improve fuel economy. The USEPA approved the first-ever national GHG emissions standards under the CAA, and NHTSA approved Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act (75 FR 25324–25728). The final rule became effective on July 6, 2010 (75 FR 25324–25728).

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the USEPA published a final rule (effective December 22, 2015) establishing Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribed how States must develop plans to reduce GHG emissions from existing fossil fuel-fired electric generating units. Implementation of the Clean Power Plan was subsequently stayed by the U.S. Supreme Court pending resolution of several lawsuits challenging the plan.

On March 28, 2017, President Donald Trump signed Executive Order (EO) 13783 calling for USEPA review of the Clean Power Plan.

Affordable Clean Energy Rule

On June 19, 2019, the USEPA published a final rule repealing the Clean Power Plan, adopting the Affordable Clean Energy (ACE) rule requiring States to prepare and submit to the USEPA plans that establish CO_2 performance standards for certain existing coal-fired electric utility-generating units within their jurisdiction, and finalizing regulations governing implementation of the ACE rule and any future emissions guidelines that the EPA may issue under CAA Section 111(d). Also, on June 19, 2019, California Governor Gavin Newsom's office published a press release stating that California "and a coalition of states" will initiate a legal challenge of the ACE.

Federal Vehicle Standards

In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (USEPA and NHTSA 2016).

In August 2018, the USEPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021–2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2–3% of total daily consumption, according to the U.S. Energy Information Administration [USEIA]) and would impact the global climate by 3/1000th of 1 degree Celsius (°C) by 2100 (USEPA and NHTSA 2016). California and 16 other States have filed a lawsuit to challenge Federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other Countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 Federal proposal are speculative at this time. Further, the current chair of the CARB (Mary Nichols) has announced that the CARB will continue to file lawsuits to reverse any Trump administration decision to lessen vehicle efficiency standards, decline to allow California to enforce more stringent vehicular air pollution standards under the waiver procedure established by the Federal CAA, or otherwise reduce the stringency of Federal air pollution regulations, and has further announced the CARB's intention to continue to independently enforce Federal standards in California while such lawsuits are pending. It is not reasonably foreseeable that less stringent Federal air pollution standards will be applicable to the project given independent California authority, the length of time required to complete the Federal litigation process, the absence of any injunction precluding California from enforcing more stringent Federal standards while such lawsuits are present, and CARB's announced intention to continue to enforce Federal air regulations rescinded or modified by the Trump administration.

State

California Environmental Quality Act

A variety of Statewide rules and regulations have been implemented or are in development in California that mandate the quantification or reduction of GHGs. Under the California Environmental Quality Act (CEQA), an analysis and mitigation of emissions of GHGs and climate change in relation to a project is required where it has been determined that a project will result in a significant addition of GHGs. Certain Air Pollution Control Districts (APCDs) have proposed their own levels of significance. The SJVAPCD, which has regulatory authority over the air pollutant emissions from this project, has adopted a significance threshold for projects where the SJVAPCD acts as CEQA Lead Agency (SJVAPCD 2009a); however, Kern County has not adopted a significance threshold for these emissions.

California Supreme Court Ruling in Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal.4th 2014 (Newhall)

In *Center for Biological Diversity v. Department of Fish and Wildlife* (*Newhall*), the Supreme Court evaluated the California Department of Fish and Wildlife (CDFW) analysis of potential impacts caused by GHG emissions contained in the EIR for the proposed land development called Newhall Ranch. In the EIR, the CDFW analyzed GHG emissions under Assembly Bill (AB) 32, using the business-as-usual (BAU) comparison as its sole criterion of significance.

In *Newhall*, the Supreme Court concluded that a finding of consistency with meeting Statewide emission reduction goals is a legally permissible criterion of significance when analyzing potential impacts of GHG emissions under CEQA. However, the Court found that the EIR's conclusion that the project's emissions would be less than significant under that criterion was not supported by substantial evidence, and remanded back to the appellate court the narrow issue of whether substantial evidence supported the application of AB 32 Statewide GHG reduction goal of 29% to new land use projects.

The Court then identified "potential options" for lead agencies evaluating cumulative significance of a proposed land use development's GHG emissions in future CEQA documents, but the Court was careful to note that there was no "guarantee" that any of these would be sufficient, stating: "We do not, of course, guarantee that any of these approaches will be found to satisfy CEQA's demands as to any particular project; what follows is merely a description of potential pathways to compliance, depending on the circumstances of a given project."

The "potential pathways to compliance" suggested by the Supreme Court are as follows:

Business-As-Usual (BAU) Model: While the Court cautioned that the Scoping Plan may not be appropriate at the project-level, the BAU model might be used to determine what level of reduction from business as usual a new land use development at the proposed location must contribute in order to comply with statewide goals pursuant to AB 32. The Court specifically directed that reliance on this type of quantitative threshold must be supported by substantial evidence in the record that links the statewide GHG reduction standard to the appropriate GHG reduction standard for the specific type of project under consideration.

1. **Compliance With Regulatory Programs Designed To Reduce Greenhouse Gas Emissions:** The Court suggests that a lead agency could rely on a showing of compliance with regulatory programs designed to reduce GHG emissions in order to demonstrate consistency with AB 32's goals. The Court clarifies that a significance analysis based on compliance with such statewide regulations only goes to impacts within the area governed by the regulations.

2. **Local Climate Action Plan or Other "Geographically Specific Greenhouse Gas Emission Reduction Plans":** The Court points out that these plans may provide a basis for the tiering or streamlining of project-level CEQA analysis, so long as the plan is "sufficiently detailed and adequately supported."

3. **Regional Sustainable Community Strategy (SCS):** The Court also articulates that a Lead Agency need not additionally analyze GHG emissions from cars and light trucks in CEQA documents for certain residential, mixed-use, and transit priority projects that are consistent with an applicable SCS adopted pursuant to Senate Bill (SB) 375.

4. **Numerical GHG Significance Thresholds:** Although noting that use of such thresholds is not required, the Court favorably cited to the Bay Area Air Quality Management District GHG significance thresholds, based on compliance with AB 32, which use a "service population" GHG ratio threshold for land use projects and a 10,000-ton annual GHG emission threshold for industrial projects. The Court remanded for further consideration the application of the 29% overall Scoping Plan metric, which is used by several Air Districts and, like the favorably cited Bay Area Air Quality Management District metric, is based on AB 32.

5. **Executive Orders S-3-05 and B-30-15:** Citing to EOs S-3-05 and B-30-15, the Court cautioned that those EIRs taking a goal-consistency approach to CEQA significance may "in the near future" need to consider the project's effects on meeting emissions reduction targets beyond 2020.

Following the Supreme Court's decision in *Newhall*, the EIR at issue in that case was set aside on remand by the lower court. On November 2016, the CDFW released a draft Additional Environmental Analysis (AEA) intended to address the agency's CEQA compliance obligations (CDFW 2016). The AEA does not respond to the Supreme Court's direction to provide substantial evidence supporting the 29% BAU statutory GHG reduction threshold relied upon by the Newhall EIR. The AEA also does not include an assessment of the Newhall project's consistency with any of the Court's suggested GHG CEQA compliance pathways, although referenced documentation in the Newhall administrative record do include and confirm compliance with each pathway. Instead, as described in the AEA, the Newhall project applicant (Five Point LLC) voluntarily modified its project and proposed to achieve "net zero" GHG emissions for the project with the implementation of the project applicant's "zero net emission" proposal, which was made enforceable by the addition of 13 mitigation measures that correspond to the applicant's proposal, as further described in the AEA. The AEA states that the adoption and implementation of the 13 mitigation measures would reduce mobile source, electricity, natural gas, vegetation removal, and construction-related emissions by the amount of emissions estimated for the project and result in no net contributions of GHG emissions from the project, or "zero net emissions." The AEA further concludes that because the project would result in no net increase of GHG emissions after implementation of the mitigation measures, there would be no contribution of GHG emissions to cumulative GHG emissions influencing global climate change and the Newhall project would not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs. Consequently, the AEA concludes that project GHG and climate change impacts would be less than significant (CDFW 2016, pp. 1–18).

California Code of Regulations Title 24

Title 24 of the California Code of Regulations (CCR) was established in 1978 and serves to enhance and regulate California's building standards. Part 6 of Title 24 specifically established

Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and the California Energy Commission (CEC) (and revised if necessary) (Public Resources Code [PRC] Section 25402[b][1]). The regulations have the overall goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (PRC Section 25402). These regulations are analyzed for technological and economic feasibility (PRC Section 25402[d]) and cost effectiveness (PRC Sections 25402b][2] and [b][3]). These building code standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and reduce air pollutant emissions either by reducing the quantity of energy required by the building (e.g., with water conservation measures that reduce water use and thus the quantity of water requiring emission-causing transportation and treatment, or with energy efficiency standards such as enhanced insulation that reduce the need for heating, ventilation, and air conditioning (HVAC) and likewise result in less energy consumption and air pollutant emissions from these HVAC uses.

The current Title 24 standards are the 2016 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2017, following certification of the 2016 EIR. The 2019 Title 24 Building Energy Efficiency Standards, which will be effective January 1, 2020, will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; further, as newly mandated state standards requiring rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those built under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018). The 2016 EIR did not include the reduced energy consumption or corresponding reduced air pollutant emissions from compliance with the 2019 Building Code, which became effective on January 1, 2020, or the newly mandated state standards requiring rooftop solar electricity generation.

Assembly Bill 1493

On July 22, 2002, former Governor Gray Davis signed AB 1493, also known as the Pavley Regulations or the Clean Car Standards. AB 1493 required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions emitted by passenger vehicles and light-duty trucks. Subsequent regulations were adopted by the CARB in September 2004.

The regulations were threatened by automaker lawsuits and were stalled by the USEPA's initial denial to allow California to implement GHG standards for passenger vehicles. The USEPA later granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks, and sport utility vehicles on June 30, 2009. On September 24, 2009, the CARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016.

Executive Order S-1-07

Issued on January 18, 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. The CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard would drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The Low Carbon Fuel Standard is anticipated to lead to the replacement of 20% of the fuel used in motor vehicles with alternative fuels by 2020.

Assembly Bill 32: California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. The legislature stated, "global warming poses a serious threat to the economic wellbeing, public health, natural resources, and the environment of California." AB 32 caps California's GHG emissions at 1990 levels by 2020 and requires the CARB, the State agency charged with regulating statewide air quality, to adopt rules and regulations that would achieve GHG emissions equivalent to Statewide levels in 1990 by 2020. This law establishes periodic targets for reductions, and requires certain facilities to report emissions of GHGs annually; AB 32 also reserves the ability to reduce emissions targets for certain sectors that contribute the most to emissions of GHGs, including the transportation sector.

This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB 32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

The list of impacts included in AB 32 may be considered substantial evidence of environmental impacts requiring analysis in CEQA documents. AB 32 charges the CARB with responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. The CARB has adopted a list of discrete early action measures that can be implemented to reduce GHG emissions. The CARB has defined the 1990 baseline emissions for California, and has adopted that baseline as the 2020 statewide emissions cap. CARB is conducting rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In designing emission reduction measures, the CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

The AB 32 Scoping Plan contains the main strategies California will use to reduce the GHG emissions that cause climate change. The scoping plan has a range of GHG emission reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program. The proposed scoping plan was released on October 15, 2008, and approved at the Board hearing on December 12, 2008.

On October 20, 2011, the CARB approved a cap-and-trade program as part of AB 32, with compliance obligations that became effective in 2013. An initial cap will be implemented for the electrical sector and any large industrial source that emits more than 25,000 $MTCO_2e$ emissions per year. Over time, the cap will be reduced so that the program will apply to a broader range of facilities.

In May 2014, CARB adopted a Scoping Plan Update that revised the 2020 emissions target to 431 $MMTCO_2e$ (based on updated GWPs for GHGs) and also builds upon the initial Scoping Plan with new strategies and recommendations. The 2014 Scoping Plan Update identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2014 Scoping Plan Update also defined the CARB's climate change priorities for the following 5 years and set the groundwork to reach California's long-term climate goals set forth in EO S-3-05 and B-16-2012. EO B-16-2012 directed State entities under the governor's direction and control to support and facilitate development and distribution of zero-emission vehicles (ZEVs). Former Governor Jerry Brown's executive order set a long-term target of reaching 1.5 million ZEVs on California's roadways by 2025. On a Statewide basis, the executive order also established a target reduction of GHG emissions from the transportation sector equaling 80% less than 1990 levels by 2050.

Assembly Bill 32 Scoping Plan Update

In December 2017, the CARB adopted California's 2017 *Climate Change Scoping Plan* (CARB 2017b). The 2030 target of 40% emissions reductions below 1990 levels guides the Scoping Plan, as the economy evolves to reduce GHG emissions in every sector. The 2017 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target as established by SB 32 and define the state's climate change priorities to 2030 and beyond. The strategies' known commitments include implementing renewable energy and energy efficiency (including the mandates of SB 350), increasing stringency of the, implementing measures identified in the Mobile Source and Freight Strategies, implementing measures identified in the proposed Short-Lived Climate Pollutant Plan, and increasing stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program; continuing Low Carbon Fuel Standard activities, with increasing stringency of at least 18% reduction in carbon intensity; and a measure to reduce GHGs from refineries by 20%.

The Supreme Court has determined that a Scoping Plan is not self-implementing (i.e., is not a regulation), and in the Newhall case described above, the Supreme Court further concluded

that consistency with Scoping Plan overall targets is not an appropriate threshold of significance for determining CEQA impacts, notwithstanding arguments presented to the Court in that case that CEQA requires either a "net zero" GHG emissions significance threshold or the unlegislated EO 2050 target significance threshold.

Senate Bill 97

SB 97, enacted in August 2007, required the California Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions or effects related to releases of GHG emissions. On April 13, 2009, OPR submitted proposed amendments to the California Natural Resources Agency (CNRA), in accordance with SB 97, regarding analysis and mitigation of GHG emissions. Formal rulemaking was conducted in 2009 prior to adopting the amendments. As discussed below, the CEQA significance analysis for the project was conducted in accordance with the OPR guidance developed under this statute.

As part of the guidelines, OPR recommends that CARB set Statewide thresholds of significance and emphasized the need to have a consistent threshold available to analyze projects. The draft guidelines also noted that the analyses should be based on the best available information. As directed by SB 97, the CNRA adopted amendments to the State CEQA Guidelines for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments and filed them with the Secretary of State for inclusion in the CCR. The amendments became effective on March 18, 2010.

Senate Bill 375

In August 2008, the legislature passed, and on September 30, 2008, former Governor Schwarzenegger signed, SB 375 (Steinberg), which addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. Regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, as determined by the CARB, are required to consider the emission reductions associated with vehicle emission standards (see AB 1493), the composition of fuels (see EO S-1-07), and other CARB-approved measures to reduce GHG emissions. Regional metropolitan planning organizations will be responsible for preparing an SCS within their Regional Transportation Plan (RTP).

Senate Bill 1078

Approved by former Governor Gray Davis in September 2002, SB 1078 (Sher) established the Renewable Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010 (see SB 107).

Senate Bill 107

Approved by former Governor Arnold Schwarzenegger on September 26, 2006, SB 107 (Simitian) requires investor-owned utilities such as the Pacific Gas and Electric Company

(PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E), to generate 20% of their electricity from renewable sources by 2010.

Advanced Clean Cars Program

In January 2012, the CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. To improve air quality, the CARB will propose new emission standards to reduce smog-forming emissions beginning with 2015 model-year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, the CARB, in conjunction with the USEPA and the NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

Senate Bill 605

On September 21, 2014, former Governor Jerry Brown signed SB 605, which requires the CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state.

Senate Bill 350

Former Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the California Public Utilities Commission (CPUC), in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator (CAISO) into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the CAISO to those markets, pursuant to a specified process.

California Air Pollution Control Officers Association

The CAPCOA is the association of air pollution control officers representing all 35 air quality agencies throughout California. The CAPCOA is not a regulatory body, but it has been an active organization in providing guidance in addressing the CEQA significance of GHG

emissions and climate change as well as other air quality issues. The GHG analysis set forth in this report has been informed, in part, by the expertise and methodologies described in the following documents published by CAPCOA: (1) *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (CAPCOA 2008); and (2) *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (CAPCOA 2010). The methodologies used in this GHG analysis are consistent with the CAPCOA guidelines.

California Air Resources Board Cap-and-Trade for Stationary Sources and Fuels

The SJVAPCD approved Policy APR-2025 (CEQA Determinations of Significance for Projects Subject to CARB's GHG Cap-and-Trade Regulation) to evaluate whether projects subject to the cap-and-trade regulation would comply with plans for reducing GHG emissions supported by an environmental review compliant with CEQA requirements, and that compliance with this plan would adequately mitigate GHG emissions for CEQA purposes under the SJVAPCD thresholds.

SJVAPCD concluded that the cap-and-trade regulation is such a plan, and that compliance would result in a project having a less-than-significant impact for GHG emissions that are subject to the cap-and-trade regulations. The cap-and-trade regulation applies to providers of electricity generated or imported into California, large industrial facilities emitting more than 25,000 $MTCO_2e$ per year, and other specific facilities, as well as to distributors of transportation fuels, natural gas, and other fuels. The regulation requires that emissions generated by these facilities and combustion of fuels be reduced over time. Accordingly, the SJVAPCD found that "GHG emission increases caused by fuel use (other than jet fuels [which are not regulated under the cap-and-trade regulation]) are determined to have a less-than-significance impact on global climate change under CEQA." SJVAPCD Policy APR-2015 is consistent with the recent case *Association of Irritated Residents v. Kern County Board of Supervisors, et al.* (2017) 17 Cal.App.5th 708 ("*AIR*"), wherein the Court of Appeal held that CEQA does in fact authorize a Lead Agency "to determine a project's greenhouse gas emissions will have a less than significant effect on the environment based on the project's compliance with the cap-and-trade program."

Executive Orders

The current and prior Governors also issued several executive orders regarding climate change and GHG reductions. These orders include, but are not limited to, the following discussed below.

Executive Order S-3-05

EO S-3-05 was established by former Governor Arnold Schwarzenegger in June 2005. EO S-3-05 establishes Statewide emission reduction targets through the year 2050:

- By 2010, reduce GHG emissions to 2000 levels;

- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80% below 1990 levels.

This executive order does not include any specific requirements that pertain to the project. However, actions taken by the State to implement these goals could affect this project, depending on the specific implementation measures that are developed.

Executive Order S-13-08

Former Governor Arnold Schwarzenegger issued EO S-13-08 on November 14, 2008. The executive order is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. It directs State agencies to take specified actions to assess and plan for such impacts. It directs the CNRA, in cooperation with the DWR, CEC, California's coastal management agencies, and the Ocean Protection Council, to request that the National Academy of Sciences prepare a Sea Level Rise Assessment Report to assess the State's vulnerability. The report summarizes key climate change impacts to the State for the following areas: public health, ocean and coastal resources, water supply and flood protection, agriculture, forestry, biodiversity and habitat, and transportation and energy infrastructure. The report then recommends strategies and specific responsibilities related to water supply, planning and land use, public health, fire protection, and energy conservation.

Executive Order B-16-12

Former Governor Jerry Brown issued EO S-16-12 on March 23, 2012. The executive order requires that State entities under the governor's direction and control support and facilitate the rapid commercialization of ZEVs.

Executive Order B-18-12

Former Governor Jerry Brown issued EO S-18-12 on April 25, 2012. The executive order directs State agencies, departments, and other entities under the governor's executive authority take actions to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline.

Executive Order B-30-15

On April 29, 2015, former Governor Jerry Brown issued EO B-30-15, which identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32.

Assembly Bill 398: Extension of Cap-and-Trade

On July 25, 2017, former Governor Jerry Brown signed into law AB 398, which reauthorizes the continuation of the Cap-and-Trade Program through December 31, 2030.

Association of Irritated Residents v. Kern County Board of Supervisors (2017) 17 Cal.App.5th 708

In *AIR*, the Court of Appeal held that CEQA authorized a Lead Agency to reduce the volume of a project's estimated GHG emissions to reflect the use of cap-and-trade compliance instruments when assessing the significance of a project's GHG emissions. Specifically, the *AIR* court held that, for purposes of State CEQA Guidelines Section 15064.4(b)(2), the Cap-and-Trade Program qualifies as a Statewide regulatory program for the reduction of GHG emissions, and CEQA thus authorizes a Lead Agency "to determine a project's GHG emissions will have a less than significant effect on the environment based on a project's compliance with the cap-and-trade program." On January 31, 2018, the Supreme Court declined review of the *AIR* decision. Therefore, *AIR* is controlling law.

California Code of Regulations Title 23, Article 22.5

California extended emergency water conservation regulations based on ongoing and projected future drought conditions caused or exacerbated by climate change.

California Code of Regulations Title 17

The CARB adopted amendments to regulations implementing the Cap-and-Trade Program in 2017, consistent with and in furtherance of AB 398's extension of the Cap-and-Trade Program discussed above.

California Code of Regulations Title 14, Chapter 3

The CNRA and OPR adopted the updated State CEQA Guidelines in December 2018; however, the updated guidelines did not change the guidelines or Appendix G (often used as default CEQA significance standards) relating to GHG. The guidelines did adopt new CEQA provisions regarding VMT as CEQA impacts as of July 1, 2020, based on the relationship between VMT and health benefits of encouraging drivers to walk or bike instead of drive, the wear and rainwater runoff that occurs on roads and highways, and air pollutant emissions (including GHG) from avoided vehicle travel when VMT is reduced. The OPR also issued non-binding guidance documents relating to VMT and GHG.

Executive Order B-37-16

Issued May 2016, EO B-37-16 directs the State Water Resources Control Board (SWRCB) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the State. The SWRCB must also develop a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25% reduction called for in EO B-29-15. The SWRCB and DWR will develop new, permanent water use targets that build upon the existing State law requirements that the State achieve 20% reduction in urban water usage by 2020. EO B-37-16 also specifies that the SWRCB will permanently prohibit water-wasting practices, such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a

manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

Executive Order B-40-17

EO B-40-17 (April 2017) lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinds EO B-29-15, but expressly states that EO B-37-16 remains in effect and directs the SWRCB to continue development of permanent prohibitions on wasteful water use.

Executive Order B-55-18

EO B-55-18 (September 2018) establishes a Statewide policy for the State to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The goal is an addition to the existing Statewide targets of reducing the State's GHG emissions. The CARB will work with relevant State agencies to ensure that future scoping plans identify and recommend measures to achieve the carbon neutrality goal.

Local

2018 Regional Transportation Plan/Sustainable Communities Strategy

The Kern Council of Governments (Kern COG) is the Regional Transportation Planning Agency (RTPA) for the Kern County region. Kern COG adopted the 2018 RTP/SCS in August 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between Federal, State, regional, and local agencies. Included in the 2018 RTP is the SCS required by California's Sustainable Communities and Climate Protection Act, of SB 375. SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low-income housing need and transportation planning. SB 375 includes the following three primary findings related to the RTP/SCS development process:

- The CARB was required to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 Metropolitan Planning Organizations (MPOs) in California, including Kern COG. The CARB approved targets for the San Joaquin Valley in January 2013. Although focused on the San Joaquin Valley, the RTP/SCS applies to all of Kern County. The target for Kern County is a per capita reduction in GHG emissions from passenger vehicle travel of 5% by 2020 and 10% by 2035 relative to 2005 levels.

- Kern COG was required to prepare an SCS that specifies how the GHG emission reduction target set by the CARB will be achieved. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by Kern COG.

Chapter 4 of the 2018 RTP/SCS includes the SCS for Kern COG. The RTP/SCS for Kern County demonstrated reductions of 14.1% for 2020 and 16.6% for 2035.

- Streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Kern COG SCS or APS (as determined by the CARB) to achieve regional GHG emissions reduction target (Kern COG 2018a).

San Joaquin Valley Air Pollution Control District

The SJVAPCD does not regulate GHG emissions directly through its permitting responsibilities for stationary sources. Thus, there are no SJVAPCD rules or regulations related to GHGs. The SJVAPCD, however, affects reductions of GHGs from new and modified stationary sources when acting as a Lead Agency for CEQA. The SJVAPCD implements its GHG policies and reviews whether new or modified stationary sources will implement best performance standards (BPS). In 2009, the SJVAPCD reviewed potential GHG significance thresholds and approaches suggested by or adopted by the following entities, ranging from quantification of a project's GHG impacts without a recommended significance threshold to a zero threshold to specific significance thresholds for different kinds of projects (e.g., residential, mixed use, industrial, plans).

On December 17, 2009, the SJVAPCD Governing Board adopted Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009b). The guidance recommends the hierarchy discussed below.

Projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less-than-significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the Lead Agency with jurisdiction over the affected resource and supported by a CEQA-compliant environmental review document adopted by the Lead Agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.

Projects implementing BPS would not require quantification of project-specific GHG emissions. The guidance recommends, "Projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions." This assessment for the project does include quantification of the project's construction and operational GHG emissions. Consistent with the State CEQA Guidelines, such projects would be determined to have a less-than-significant individual and cumulative impact for GHG emissions. Projects not implementing BPS would require quantification of project-specific GHG emissions and demonstration that project-specific GHG emissions would be reduced or mitigated by at least 29%, compared to BAU, including GHG emission reductions achieved since the 2002–2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less-than-significant individual and cumulative impact for GHG (SJVAPCD 2009b).

For development projects, BPS would include project design elements, land use decisions, and technologies that reduce GHG emissions. While the SJVAPCD has adopted BPS for several types of stationary sources (e.g., boilers), it has not developed BPS for land development projects. Projects implementing any combination of BPS, and/or demonstrating a total 29% reduction in GHG emissions from BAU, would be determined to have a less-than-significant individual and cumulative impact on global climate change (SJVAPCD 2015).

The project relies on the first SJVAPCD-recommended approach for evaluating a project's impact with respect to its GHG emissions: compliance with an approved GHG emission reduction plan or GHG mitigation program.

Kern County

Kern County has not adopted a GHG reduction plan or climate action plan as of this publication of this EIR.

Kern County General Plan

The project site is located within the *Kern County General Plan*. The policies, goals, and implementation measures in the *Kern County General Plan* applicable to GHGs as related to the project are provided in Chapter 4.3, Air Quality. Some of the listed policies, goals, and implementation measures would indirectly impact GHG emissions through the reduction of fossil fuel use.

Chapter 1. Land Use, Open Space, and Conservation Element

1.10 General Provisions

1.10.2 Air Quality

Policies

- **Policy 18:** The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

- **Policy 19:** In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:

    A. All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and

    B. The benefits of the project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of

overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

- **Policy 20.** The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

- **Policy 21:** The County shall support air districts' efforts to reduce PM_{10} and $PM_{2.5}$ emissions.

- **Policy 22.** Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.

- **Policy 23.** The County shall continue to implement the local government control measures in coordination with the Kern Council of Governments and the San Joaquin Valley Unified Air Pollution Control District.

Implementation Measures

- **Implementation Measure F:** All discretionary permits shall be referred to the appropriate air district for review and comment.

- **Implementation Measure G.** Discretionary development projects involving the use of tractor trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:

    a. Minimizing idling time.

    b. Electrical overnight plug-ins.

- **Implementation Measure H.** Discretionary projects may use one or more of the following to reduce air quality effects:

    a. Pave dirt roads within the development.

    b. Pave outside storage areas.

    c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.

    d. Use of alternative fuel fleet vehicles or hybrid vehicles.

    e. Use of emission control devices on diesel equipment.

    f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.

g. Provide bicycle lockers and shower facilities on site.

h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).

i. The use and development of park and ride facilities in outlying areas.

j. Other strategies that may be recommended by the local Air Pollution Control Districts.

4.8.4 Impacts and Mitigation Measures

This section describes the methodology used in conducting the CEQA impact analysis for GHG emissions, the thresholds of significance used in assessing impacts to GHG emissions, and the assessment of impacts to GHG emissions and global climate change, including relevant mitigation measures.

Methodology

This section discusses the methodologies used to conduct the evaluation of GHG emission impacts for the project, including guidelines for preparing environmental documents under CEQA and technical methods employed in the evaluation. The precise manner in which GHG emissions should be assessed under CEQA is an evolving area of law and remains uncertain. Although Kern County has not published quantitative GHG emission thresholds, significance threshold standards have been applied and enforced on all Kern County EIRs. A recent California Supreme Court case has upheld the use of consistency with AB 32 as an appropriate significance criterion. The Court cautioned that an EIR should analyze how a project's emission reductions are consistent with Statewide reduction goals.

Further, the SJVAPCD's policy on Cap-and-Trade indicates that GHG emission increases subject to the CARB's Cap-and-Trade Regulation would have a less-than-significant individual and cumulative impact on global climate change. Here, the project's GHG emission reductions are analyzed for consistency with AB 32 and the Updated Scoping Plan to determine whether the project is consistent with AB 32's Statewide goals.

Emissions modeling and impact analysis is based on the *Air Quality Impact Assessment, Johe Ranch Mine, McKittrick, Kern County, California* (WZI Inc. 2019a), provided in Appendix C of this EIR and incorporated by reference herein.

The project is a surface mining operation (proposing to mine diatomaceous earth and overburden material) and reclamation plan in rural western Kern County. The project-specific GHG emissions include emissions from area sources and mobile sources (off-road equipment, employee trips, and haul trucks). This analysis considers several baselines: the current "no project" baseline, a baseline directly based on the BAU analysis, and the CARB Scoping Plan Baseline. The "no project" baseline would result in zero emissions but would not address inevitable population growth projections. From a global context, population growth would occur elsewhere with less regulatory restriction.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant environmental impact from the emissions of GHGs. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact on GHG emissions if it would:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Kern County has not developed a quantitative threshold of significance for GHG emissions, but a project found to contribute to a net decrease in GHG emissions and found to be consistent with the adopted implementation of the CARB *Climate Change Scoping Plan* is presumed to have less-than-significant GHG emission impacts (CARB 2014).

As indicated in Section 4.8.3, *Regulatory Setting*, the SJVAPCD has adopted guidance documents for assessing and mitigating GHG impacts on global climate change. Rather than establishing specific numeric thresholds of significance (as in the case of criteria pollutant emissions), the SJVAPCD guidance utilizes a tiered approach to assess cumulative impacts on global climate change. First, a project can demonstrate compliance with an approved GHG emissions reduction program (such as CARB's Statewide GHG Cap-and-Trade Program). Second, a project can demonstrate implementation of BPS to reduce GHG emissions. Finally, a project can demonstrate achievement of a 29% reduction in GHG emissions from BAU.

The SJVAPCD CEQA Cap-and-Trade Policy also recommends that projects that are required to comply with CARB's GHG Cap-and-Trade Program be determined to have a less than cumulatively significant impact on global climate change. This policy is included in the SJVAPCD's December 2009 CEQA GHG policies (described above) and its March 19, 2015 *Final Draft Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI), which states that a project whose emissions have been reduced or mitigated consistent with the California Global Warming Solutions Act of 2006 (AB 32) should be considered to have a less-than-significant impact on global climate change (SJVAPCD 2015).

This approach would include both the CARB's GHG Cap-and-Trade Program and other adopted GHG-reducing regulations (such as the oil and gas methane rule now in development) as adopted GHG emissions reduction plans. Under the SJVAPCD's tiered approach in assessing significance of project-specific GHG emission increases, projects complying with an approved GHG emission reduction plan or GHG mitigation program that avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less-than-significant individual and cumulative impact for GHG emissions (SJVAPCD 2015).

The SJVAPCD's March 2015 GAMAQI, Section 8.9, observes that:

> It is widely recognized that no single project could generate sufficient GHG emissions to noticeably change global climate temperature. However, the combination of GHG emissions from past, present and future projects could contribute substantially to global climate change. Thus, project specific GHG emissions should be evaluated in terms of whether or not they would result in a cumulatively significant impact on global climate change.

Project Impacts

Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The proposed project would generate GHG emissions from on-site operation of the following vehicles/equipment: a rubber-tired loader, tire truck, portable screening plant (such as Extec S5 5X10), grader, and radial stacker. The proposed project would generate GHG emissions from operation of the following vehicles, which would generate average daily trips (ADT) as follows: one water truck (12 ADT), three employee vehicles (six ADT), one contractor vehicle servicing portable toilets (0.28 ADT; i.e., one round trip per week) and 50 haul trucks (100 ADT). Not all GHGs exhibit the same ability to induce climate change; therefore, GHG contributions are commonly quantified in CO_2e.

The *Air Quality Impact Assessment, Johe Ranch Mine, McKittrick, Kern County, California* (WZI Inc. 2019a) performed a project-specific analysis in which several baselines were used: the current "no project" baseline, a baseline directly based on the BAU analysis, and the CARB Scoping Plan Baseline. The "no project" baseline would result in zero emissions but would not address inevitable population growth projections. From a global context, population growth would occur elsewhere with less regulatory restriction. The baseline for analysis varies by the particular regulatory framework and manner in which the emissions and impacts are determined.

BAU is a term used by California agencies to describe the rate of GHG emissions assuming no climate regulations. It is a projection into the future of the GHGs that could be emitted by projects based on current technologies and existing regulations in the absence of other reductions. BAU includes forecasted demographic and economic growth, whereas the historic CEQA baseline non-GHG impact analysis does not include any growth factors. Understanding this difference, between historic CEQA analyses and the GHG element of CEQA is critical to a reasoned analysis of global climate change impacts. The baseline for GHGs is BAU.

The BAU emissions for the project were estimated assuming the same methodology used by the CARB to forecast the Statewide emissions. This projection assumed no change in vehicle fleet mix over time; no intervening climate change reductions measures, strategies or actions; and no VMT reduction from the central location of the jobsite. **Table 4.8-3,** *Project GHG Emissions: Business-As-Usual Compared to Net*, identifies the GHG emissions for the project in the BAU scenario.

Table 4.8-3 Project GHG Emissions: Business-As-Usual Compared to Net

Emission Source	$MTCO_2e$/Year
Business-As-Usual (Proposed Project)	
Area-source emissions	405.31
Mobile-worker trips	6.04
Mobile-Haul Trucks	908.87
Total emissions	1,320.22

Source: WZI Inc. 2019a.

During full buildout of the project, compliance with the California Light-Duty Vehicle Greenhouse Gas Standards, Low Carbon Fuel Standard would reduce the GHG emissions from mobile sources by approximately 20%. The reduction has been applied to the calculation of project emissions from mobile sources. The GHG emissions for the proposed project at full buildout are identified in **Table 4.8-4,** *Project GHG Emissions at Buildout*.

Table 4.8-4 Project GHG Emissions at Buildout

Emission Source	$MTCO_2e$/Year
GHG Emissions at Buildout (Proposed Project)	
Area-source emissions	335.85
Mobile-worker trips	4.099
Mobile-Haul Trucks	715.05
Total emissions	1,053.32

Source: WZI Inc. 2019a

The percent reduction between the project's GHG emissions (unmitigated and mitigated) and BAU emissions for the project should be equal to or greater than 16% to conform with the goals of the Scoping Plan; therefore, BAU and Scoping Plan Baseline are both treated as a GHG baseline for the project-level analysis.

Table 4.8-5, *Comparison of Net BAU and Project Mitigated Emissions*, identifies the mitigated project's net GHG emissions compared to BAU emissions.

Table 4.8-5 Comparison of Net BAU and Project Mitigated Emissions

Emission Source	Business-As-Usual	Project Mitigated (2020)
Total Emissions	312	245
Percentage Reduction	--	21%

Source: WZI Inc. 2019a

As shown in **Table 4.8-5,** *Comparison of Net BAU and Project Mitigated Emissions*, GHG emissions generated for the proposed project at buildout would be 1,053.32 $MTCO_2e$/year. This is a net increase of 245 $MTCO_2e$/year. The project's net GHG emissions would achieve a 21% GHG emission reduction compared to BAU; therefore, the 16% reduction in carbon intensity,

as established by the Scoping Plan, would be met. To ensure GHG emissions would be less than significant, mitigation has been included that would require the project proponent to either prepare a plan that demonstrates how the project will achieve emissions reductions or offsets equal to a 21% reduction in GHG emissions from BAU or secure and retire offsets or credits that help achieve an emissions reduction or offset equal to a 21% reduction in GHG emissions. Therefore, impacts would be less than significant with mitigation.

Mitigation Measures

MM 4.8-1 Prior to initiating mining, the project proponent, at its option, shall either:

A. Prepare and implement a plan subject to approval of the Kern County Planning and Natural Resources Department that achieves an emissions reduction or offset equal to a 16% reduction in GHG emissions from BAU. Examples of quantifiable measures include electrification of fuel-burning processes, substitution of natural gas-powered vehicles for diesel-powered vehicles, reduction of VMT on- or off-site, white roofs, energy efficiency upgrades, solar panels and other green energy solutions, land dedication, woodland preservation, methane recovery, and market-based offsets or credits. These measures need not be applied on-site; or

B. Secure and retire offsets or credits that help achieve an emissions reduction or offset equal to a 16% reduction in GHG emissions from BAU from either: (a) the Climate Action Reserve of the California Climate Action Registry; (b) the American Carbon Registry; (c) The Green Exchange (NYMEX); or (d) any other comparable exchange.

Level of Significance After Mitigation

With implementation of Mitigation Measure MM 4.8-1, impacts would be less than significant.

Impact 4.8-2: The project would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

In accordance with SJVAPCD's CEQA thresholds for the evaluation of GHG impacts, a project would not have a significant GHG impact if it is consistent with an applicable GHG-reduction plan. Applicable GHG-reduction plans include Kern COG's *2018 RTP/SCS*, which was approved by the CARB in August 2018, and the CARB's *2017 Climate Change Scoping Plan*. Consistency with these plans is discussed in greater detail as follows:

2018 Regional Transportation Plan/Sustainable Communities Strategy

The *2018 RTP/SCS* identifies Transit Priority Centers to be developed for urbanized uses around which future transit, vanpooling services, and other smart growth and transportation practices could be implemented to accommodate future population and economic growth. The

intent of these measures is to reduce future GHG emissions associated with mobile sources. The proposed project is consistent with the projected land use development patterns and transit priority employment place types identified in the *2018 RTP/SCS*.

Climate Change Scoping Plan

The *2017 Climate Change Scoping Plan* describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 40% below 1990 levels by 2030. The Scoping Plan was first approved by the CARB in 2008 and is updated every 5 years. The *First Update to the Climate Change Scoping Plan* was approved by the CARB on May 22, 2014. In December 2017, CARB adopted the *2017 Climate Change Scoping Plan*.

The *Climate Change Scoping Plan* identifies strategies to reduce California's GHG emissions in support of AB 32. Many of the strategies identified in the scoping plan are more programmatic and are not applicable to individual development projects. These strategies are grouped into 14 categories, as follows in **Table 4.8-6,** *2017 Climate Change Scoping Plan: Climate Change Policies and Measures*.

Table 4.8-6 2017 Climate Change Scoping Plan: Climate Change Policies and Measures

Policy	Recommended Action
Implement SB 350 by 2030	• Increase the Renewables Portfolio Standard to 50% of retail sales by 2030 and ensure grid reliability. • Establish annual targets for Statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of Statewide energy efficiency savings in electricity and natural gas end uses by 2030. • Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in Integrated Resource Plans (IRPs) to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs. • At least 1.5 million ZEVs and plug-in hybrid light-duty electric vehicles by 2025. • At least 4.2 million ZEVs and plug-in hybrid light-duty electric vehicles by 2030. • Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Cars regulations. • Medium- and heavy-duty GHG Phase 2. • Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20% of new urban buses purchased beginning in 2018 will be zero-emission buses with the penetration of zero-emission technology ramped up to 100% of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NOx standard. • Last Mile Delivery: New regulation that would result in the use of low NOx or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for Class 3–7 last-mile delivery trucks in California. This measure assumes ZEVs comprise 2.5% of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10% in 2025 and remaining flat through 2030.

Table 4.8-6 2017 Climate Change Scoping Plan: Climate Change Policies and Measures

Policy	Recommended Action
	• Further reduce VMT through continued implementation of SB 375 and regional Sustainable Communities Strategies; forthcoming Statewide implementation of SB 743; and potential additional VMT reduction strategies not specified in the Mobile Source Strategy but included in the document "Potential VMT Reduction Strategies for Discussion."
SB 375 Sustainable Communities Strategy	• Increase stringency of SB 375 Sustainable Communities Strategy (2035 targets).
Transportation facility design	• By 2019, adjust performance measures used to select and design transportation facilities. • Harmonize project performance with emissions reductions and increase competitiveness of transit and active transportation modes (e.g., via guideline documents, funding programs, project selection, etc.).
Transportation Pricing Policies	• By 2019, develop pricing policies to support low-GHG transportation (e.g. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).
California Sustainable Freight Action Plan	• Implement California Sustainable Freight Action Plan: – Improve freight system efficiency. – Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize both zero and near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
Low Carbon Fuel Standard	Adopt a Low Carbon Fuel Standard with a CI reduction of 18%.
Short-Lived Climate Pollution Strategy	• Implement the Short-Lived Climate Pollutant Strategy by 2030: – 40% reduction in methane and hydrofluorocarbon emissions below 2013 levels. – 50% reduction in black carbon emissions below 2013 levels.
Organic Waste Landfill Reduction	• By 2019, develop regulations and programs to support organic waste landfill reduction goals in the short-lived climate pollutants (SLCPs) and SB 1383.
Cap-and-Trade Program	• Implement the post-2020 Cap-and-Trade Program with declining annual caps.
Integrated Natural and Working Lands Implementation Plan	• By 2018, develop Integrated Natural and Working Lands Implementation Plan to secure California's land base as a net carbon sink: – Protect land from conversion through conservation easements and other incentives. – Increase the long-term resilience of carbon storage in the land base and enhance sequestration capacity – Utilize wood and agricultural products to increase the amount of carbon stored in the natural and built environments – Establish scenario projections to serve as the foundation for the Implementation Plan
Carbon Accounting Framework (SB 859)	• Establish a carbon accounting framework for natural and working lands as described in SB 859 by 2018.
Forest Carbon Plan	• Implement Forest Carbon Plan.
Funding and Financing Mechanisms	• Identify and expand funding and financing mechanisms to support GHG reductions across all sectors.

The proposed project's consistency with the action items contained in the *Climate Change Scoping Plan* is summarized in **Table 4.8-6,** *2017 Climate Change Scoping Plan: Climate Change Policies and Measures*. As noted, the proposed project would not conflict with any of the provisions of the *Climate Change Scoping Plan*. It is also important to note that the Scoping Plan identifies a Cap-and-Trade program as one of the strategies to be employed to reduce GHG emissions. The Cap-and-Trade Program is implemented by the CARB and places a cap on GHG emissions from industrial, utility, and transportation fuels sectors. The Cap-and-Trade regulation was adopted by the CARB on October 20, 2011. In accordance with SJVAPCD CEQA policy (APR 2025), the CARB's Cap-and-Trade Program is considered to be an adopted Statewide plan for reducing or mitigating GHG emissions, which includes emissions from the transportation fuel and energy sectors. As such, the SJVAPCD considers GHG emissions resulting from the combustion of fuels at the project level, either for energy use or transportation, to be mitigated under the Cap-and-Trade Program and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. As discussed previously, the project-specific GHG emissions include emissions from area sources and mobile sources (e.g., off-road equipment, employee trips, and haul trucks). The proposed project would comply with Kern County requirements for the recycling of solid waste. As the proposed project would not conflict with either the *2018 RTP/SCS* or the *2017 Climate Change Scoping Plan*, there would be a less-than-significant impact related to a conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Mitigation Measures

Mitigation is not required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

As discussed previously, impacts associated with GHG emissions are cumulative in nature, rather than project-specific. Refer to Section 4.8.1, *Introduction*, for a discussion of the cumulative setting for GHG emissions.

Under AB 32, the CARB, which is the agency in charge of regulating sources of emissions of GHGs in California, has been tasked with adopting regulations for the reduction of GHG emissions. The effects of this project are evaluated based not upon the quantity of emissions, but rather on whether the project is consistent with reduction strategies identified in AB 32, EOs S-3-05 and B-30-15, or other strategies to help toward reducing GHGs to the proposed levels. If so, it could reasonably follow that the project would not result in a significant contribution to the cumulative impact of global climate change.

The geographic scope for cumulative impacts for GHGs includes other projects planned within a 6-mile radius of the project site. This is discussed further in Section 3.7, *Cumulative Effects Overview*. While projects in the region and the larger area affect the volume of GHG in the atmosphere, by focusing on plans scheduled to be implemented within the project site and in the vicinity of the project site, the analysis of cumulative impacts can be given a regional context.

Impact 4.8-3: The project would contribute to cumulative greenhouse gas emissions impacts.

The Kern County 2005 base year GHG emissions inventory was estimated to be 27 $MMTCO_2e$ per year, of which the Fossil Fuel Industry sector represents 40%, followed by the Electricity Consumption sector at 22% (see **Table 4.8-2,** *2005 Kern County Baseline Greenhouse Gas Emissions*). The 2020 forecasted GHG emissions inventory was estimated to be 27 $MMTCO_2e$ per year, of which the Electricity Consumption sector represents 31% followed by the Fossil Fuel Industry sector at 26% (SJVAPCD 2012).

As discussed under Impact 4.8-1, GHG emissions generated for the proposed project at buildout would be 1,053.32 $MTCO_2e$ per year. Plans considered in this analysis include the Kern COG RTP/SCS (see Section 4.8.3, *Regulatory Setting*, for description), which provides regional-scale measures to regulate, monitor, and control GHG emissions in Kern County. The RTP/SCS is based on an analysis that considers the entire County, and includes all projects involving changes in regional growth and land use in the County, as well as the Countywide vehicle traffic projections. Cumulative GHG emissions analyzed in the RTP/SCS were compared to regional GHG thresholds and analyzed under Statewide plans and regulations. This analysis concluded that the projected increase in GHG emissions from existing conditions to 2040 would primarily be due to changes in regional growth/land use; however, the RTP/SCS achieves GHG emissions reduction targets from mobile sources from 2005 levels by implementing a mix of land use strategies, transportation management, economic factors, and road projects.

As discussed previously, impacts associated with GHG emissions are cumulative in nature, rather than project-specific. These impacts are addressed above under Impacts 4.8 1 and 4.8-2. As discussed under Impact 4.8-1, the project is anticipated to be consistent with the adopted *Climate Change Scoping Plan* and other applicable adopted standards and regulations.

Based on projected emissions for the project at buildout, it is anticipated that GHG emissions from the proposed project as affected by scoping plan control measures and related regulatory programs would result in a 21% reduction of GHG emissions over the project BAU scenario as set forth in **Table 4.8-5,** *Comparison of Net BAU and Project Mitigated Emissions*.

Project impacts related to cumulative GHG emissions would be potentially significant. While implementation of MM 4.8-1 would encourage reduction in GHG emissions at a regional level, it would not provide a mechanism that guarantees GHG emission reductions on a cumulative basis. Kern County also lacks the jurisdiction and control over the many cumulative sources of GHG emissions, and over the global source of GHG emissions, that collectively contribute to climate change. Many other agencies with the requisite jurisdiction are taking steps to reduce

GHG emissions; however, Kern County cannot assure that these steps will ultimately be implemented or sufficient to address global climate change. Therefore, cumulative greenhouse gas impacts would be significant and unavoidable.

Mitigation Measures

Implement Mitigation Measure MM 4.8-1.

Level of Significance After Mitigation

With implementation of Mitigation Measure MM 4.8-1, cumulative impacts would be significant and unavoidable.

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Section 4.9
Hazards and Hazardous Materials

4.9.1 Introduction

This section of the Environmental Impact Report (EIR) describes the potential hazards (other than geologic hazards) associated with the project site, infrastructure, activities, and materials that could affect human health and the environment. Analysis in this section is based on information from the U.S. Department of Health and Human Services, California Department of Public Health, Kern County Planning and Natural Resources Department, the *Kern County Multi-Hazard Mitigation Plan* (Kern County 2012), and *Johe Ranch Mine Section 7, Township 30 South, Range 21 East, Kern County, CA, Phase I Site Assessment* (WZI Inc. 2018b), included as Appendix H to this EIR. Air pollutant emissions and associated health effects, including public exposure to Valley Fever spores are discussed in Section 4.3, *Air Quality*; impacts associated with geologic and seismic hazards are evaluated in Section 4.7, *Geology and Soils*; and impacts associated with flood hazards are discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR.

4.9.2 Environmental Setting

The project site is on the north and south sides of State Route (SR-) 58 in a rural area approximately 8.5 miles west of the unincorporated community of McKittrick. The project site is fenced with barbed wire to exclude the public from entering and consists of undeveloped rolling topography with some steep slopes and incised drainages.

According to the California Department of Conservation Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]), four abandoned wells are located within the 331-acre property, as shown on **Figure 3-3,** *Site Plan*. The four wells are located outside the proposed disturbance areas and described as follows:

1. Baker 1 (abandoned gas well);
2. Seaboard-Honolulu 14-7 (abandoned gas well);
3. Lizbet Gilbert 1 (abandoned gas well); and
4. Lynn 1 (abandoned well).

A valve box for a steel water line and a trough for watering cattle are located near the gated entrance to the property. The water line received water from a tank located off-site at the adjacent residence and was used for watering cattle. The valve box and water line are no longer in service. An area near the northern property boundary is utilized for storing farming equipment. Two parallel sets of high-voltage power transmission lines extend across the

southeast corner of the site. Several natural drainages traverse the site from southwest to the northeast.

A residence and several associated ranch buildings are currently located immediately south of the project site on the south side of SR-58. Oil and gas production at the Belgian Anticline Oil Field is located to the south and southeast of the site. The remainder of the surrounding properties are primarily undeveloped and utilized as grazing land for cattle.

The property is located within the administrative boundary of the Belgian Anticline Oil Field. According to CalGEM, four abandoned wells are located on the subject property. Per comments received from DOGGR, in response to the NOP/IS, the four wells within the project area are not abandoned to current Division standards as of August 29, 2018.

Regional Public Health and Hazardous Materials and Waste Sites

A database search of Federal, State, and local databases for the project area was performed to identify areas of current and historical release of hazardous materials, as well as locations that use, store, and/or dispose of these materials. The following sources were reviewed for public health and hazardous materials sites in the vicinity of the project site:

- The California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC) List of Hazardous Waste and Substances Sites (DTSC 2018a);
- The DTCS List of Hazardous Waste Facilities Subject to Corrective Action Pursuant to Section 25187.5 of the Health and Safety Code (DTSC 2018b);
- Phase I Environmental Site Assessment prepared for the Johe Ranch Mining Project (WZI Inc. 2018b)
- The State Water Resources Control Board (SWRCB) List of Leaking Underground Storage Tank Sites (SWRCB 2018a);
- The SWRCB List of Solid Waste Disposal Sites Identified by Water Board with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit (SWRCB 2018b); and,
- The SWRCB List of Active CDO [cease and desist orders] and CAO [cleanup and abatement order] Sites (SWRCB 2018c).
- The U.S. Environmental Protection Agency (USEPA) Map of Superfund Sites (USEPA 2018b); and
- The USEPA Map of Resource Conservation and Recovery Act Sites (USEPA 2018c).

According to the DTSC List of Hazardous Waste and Substances Sites, no National Priority List sites, Corrective Action Report sites, or State Hazardous Waste sites were identified on the project site or within a 0.5-mile radius of the project site; no Comprehensive Environmental Response, Compensation and Liability Information System sites, Resource Conservation and Recovery Information System Treatment, Storage, and Disposal Facility sites or Solid Waste Facility/Landfill sites were identified on the project site or within a 1-mile radius of the project site; and no Resource Conservation and Recovery Information System Large Quantity Generator sites or Underground Storage Tank (UST) sites were identified within a 1-mile radius of the project site (USEPA 2018b).

Hazardous Materials and Waste

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under California Code of Regulations (CCR) Title 22, the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity, (2) ignitability, (3) corrosiveness, and (4) reactivity (22 CCR Chapter 11 and Article 3). A hazardous material is defined in 22 CCR Section 66260.10 as:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials.

Available aerial imagery dating back to 1937 was reviewed and does not indicate evidence of previous agricultural production land uses at the project site. During preparation of the Phase I Site Assessment, the property owner, was interviewed and indicated portions of the property had historically been under cultivation with wheat, barley, and safflower but are now utilized as grazing land, and no herbicides, pesticides, or other chemicals had ever been stored on the site.

Therefore, the use of pesticides or agricultural chemicals, while potentially common on surrounding properties, is not known to have occurred on the project site. Consequently, the potential for buildup or drift of pesticide residues in the soil on the project site is expected to be low. It has been noted that the general area has been used for oil exploration and mining of diatomaceous earth.

The Cortese List of hazardous materials sites, compiled pursuant to California Government Code (CGC) Section 65962.5, does not identify any hazardous materials sites needing cleanup within the project site or immediate vicinity (SWRCB 2018c). According to the EDR Report,

no underground storage tanks have been located on the project site or on surrounding properties. No other areas of environmental concern were identified by the EDR Report on the project site or surrounding properties.

Disease Vectors

A disease vector is an insect or animal that carries a disease-producing micro-organism from one host to another. The Federal Insecticide, Fungicide and Rodenticide Act defines the term vector as "…any organism capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury, including mosquitoes, flies, fleas, cockroaches, or other insects and ticks, mites or rats." The accumulation of organic wastes would act as attractors for various vectors. In addition, any depressed areas, ponds, or drainage channels would provide areas for the breeding of mosquitoes.

Mosquitoes

Mosquitoes are of particular concern because of their abundance and distribution. In Kern County, mosquitoes are most abundant and active between May and October. Mosquitoes require standing water to breed and can be prolific in areas with standing water, such as wetlands.

Adult female mosquitoes can deposit eggs in a variety of aquatic habitats and other sources that contain water. The immature stages of each mosquito species develop in particular habitats. In general, there are four mosquito habitat groups: agricultural, industrial, domestic, and natural sources. Typical sites within these habitat groups include:

- **Agricultural Sources:** irrigated pastures, dairies, and orchards.
- **Industrial Sources:** sewage treatment ponds, flood plains, and drain ditches.
- **Domestic Sources:** containers, debris in and around ponds, bird baths, pet watering dishes, animal troughs, septic tanks, catch basins, roadside ditches, leaky sprinkler systems, and stagnant swimming pools.
- **Natural Sources:** wetlands and rain pools.

All species of mosquitoes require standing water to complete their growth cycle. Therefore, any standing body of water represents a potential mosquito breeding habitat. Although mosquitoes will typically stay close to suitable breeding habitat and blood-meal hosts, they are known to travel up to 10 miles under breezy conditions. The breeding period for mosquitoes depends on temperature but generally occurs in March through October.

Water quality also affects mosquito reproduction. Generally, poor-quality water (e.g., water with limited circulation, high temperature, high organic content) produces greater numbers of mosquitoes than high-quality water (e.g., water with high circulation, low temperature, low organic content). Typically, water bodies with water levels that slowly increase or recede produce greater numbers of mosquitoes than waterbodies with water levels that are stable or that rapidly fluctuate.

The project site is in the West Side Mosquito and Vector Control District.

Rodents

The accumulation of organic waste presents the potential for significant populations of mice and rats. Rodents can spread or accelerate the spread of disease from contaminated areas to uncontaminated areas via their droppings, feet, fur, urine, saliva, or blood. In addition, mice provide a food source that could attract wild predatory animals (e.g., skunks, foxes, coyotes, stray dogs), which could pose other disease problems. The site and surrounding areas are used for agriculture/grazing lands.

Valley Fever

Coccidioidomycosis, commonly known as Valley Fever, is primarily a disease of the lungs that is common in the southwestern United States and northwestern Mexico. The disease is of critical concern to Kern County. Valley Fever is caused by the fungus *Coccidioides immitis*, which grows in soils in areas of low rainfall, high summer temperatures, and moderate winter temperatures. These fungal spores become airborne when the soil is disturbed by winds, construction, farming, and other activities. In susceptible people and animals, infection occurs when a spore is inhaled. Valley Fever symptoms generally occur within 3 weeks of exposure. Valley Fever is not a contagious disease, and secondary infections are rare.

It is estimated that more than 4 million people live in areas where Valley Fever fungus is prevalent in the soils. Residents of Bakersfield, California, and Phoenix, Arizona, have shown positive skin-test reaction rates of 30–40%, meaning that about one-third of residents tested have had Valley Fever sometime in the past. Among those who have never had Valley Fever, the chance of infection is about 3% per year, but the longer one resides in an endemic area, the greater the risk. In the southwestern United States, there are 100,000 new infections each year.

People working in certain occupations such as construction, agriculture, and archaeology have an increased risk of exposure and disease because these jobs result in the disturbance of soils where fungal spores are found. Valley Fever infection is highest in California from June to November. In addition, many domestic and native animals are susceptible to the disease, including dogs, horses, cattle, coyotes, rodents, bats, and snakes. Most Valley Fever cases are very mild. It is estimated that 60% or more of infected people either have no symptoms or experience flu-like symptoms and never seek medical attention.

Wildfire

The behavior and characteristics of wildfires depend on several biophysical and anthropogenic (human-caused) factors. The biophysical variables are fuels (including composition, cover, and moisture content), weather conditions (particularly wind velocity and humidity), topography (slope and aspect), and ignitions (e.g., lightning). The anthropogenic variables are ignitions (e.g., arson, smoking, power lines) and management (wildfire prevention and suppression efforts).

Vegetation with low-moisture content is more susceptible to ignitions and burns more readily than vegetation with higher moisture content. Grasses tend to ignite more easily, burn faster, and burn for a shorter duration than woody vegetation, such as shrubs and trees. Continuity of fuels helps sustain wildland fires. High winds provide oxygen to wildfires and can also blow glowing embers of vegetation far ahead of the front of a fire, allowing fires to jump fuel breaks in some cases. Conditions of low relative humidity dry out fuels, increasing the likelihood of ignition and rate of fire spreading.

The project site is composed of non-native annual grassland with a few isolated shrubs; therefore, the fuel load at the project site is considerably less than it would be in heavily forested areas or areas with dense brush that would be expected to pose a significant fire hazard. Based on existing conditions, the primary fire risk at the project site would be a grassfire ignited from a natural or human source. The most likely period for a grassfire would be during the drier months of the year, typically from late March through late October. The project site is comprised of land that ranges from gently sloping to steeply sloping hillsides and the majority of the project site (i.e. those areas not adjacent to the proposed access road) would be accessible only by off-road fire fighting vehicles and equipment.

The Kern County Wildland Fire Management Plan documents the assessment of the wildland fire risk throughout the Local Responsibility Area (LRA) within the County. The majority of the project site is located within an area of high fire hazard, with the remainder of the project site located in an area of moderate fire hazard (CAL FIRE 2007).

The project site is located within a "Moderate" to "High" Fire Hazard Severity Zone (FHSZ) within the LRA (Kern County Fire Department 2009). Fire protection and prevention services are further discussed in Section 4.15, *Public Services*, of this EIR.

4.9.3 Regulatory Setting

Federal

U.S. Environmental Protection Agency

The USEPA was established in 1970 to consolidate in one agency a variety of Federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The USEPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. The EPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to States and Tribes the responsibility for issuing permits and for monitoring and enforcing compliance. Where national standards are not met, the EPA can issue sanctions and take other steps to assist the States and Tribes in reaching the desired levels of environmental quality.

Federal Toxic Substances Control Act/Resource Conservation and Recovery

The Federal Toxic Substances Control Act of 1976 and Resource Conservation and Recovery Act (RCRA) of 1976 established a USEPA-administered program to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The State Hazardous Waste Management Program, a more stringent version of the Federal RCRA program, is described in detail below.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law (United States Code [USC] Title 42, Chapter 103) provides broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. The CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Code of Federal Regulation [CFR] Title 40, Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). The CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Clean Water Act Spill, Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formerly the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, the USEPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans. A facility is subject to SPCC regulations if the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "Navigable Waters" of the United States.

Other Regulations

Other federal regulations overseen by the USEPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149, Water Programs; 40 CFR Parts 239–259, Solid Wastes; and 40 CFR Parts 260–279, Hazardous Waste. These regulations

designate hazardous substances under the Federal Water Pollution Control Act, determine the reportable quantity for each substance that is designated as hazardous, and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

Occupational Safety and Health Administration

The mission of the Occupational Safety and Health Administration (OSHA) is to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR Part 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may provide appropriate mitigation measures as required.

Per 29 CFR Section 1910.120(e), all employees working on-site exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site are required to receive training meeting the requirements of this paragraph before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards. These employees shall receive any necessary review training.

Mine Safety and Health Administration

The Mine Safety and Health Administration (MSHA) is an agency of the U.S. Department of Labor that administers the Federal Mine Safety and Health Act of 1977 to enforce compliance with mandatory safety and health standards as a means to promote improved safety and health conditions at mining and mineral processing operations in the United States.

National Weather Service

Under extreme fire weather conditions, the National Weather Service (NWS) issues Red Flag Warnings for all affected areas. A Red Flag Warning means that any ignition could result in a large-scale damaging wildfire. The project is location in the Los Angeles/Oxnard NWS region. Red Flag Warning criteria for the Los Angeles/Oxnard region consists of, for all zones except the Antelope Valley, dry fuels plus any one of the following: (1) relative humidity 15% or less with either sustained winds of 25 miles per hour (mph) or greater, or frequent gusts of 35 mph or greater (for a duration of 6 hours or more); (2) relative humidity 10% or less for an extended period of time (for a duration of 10 hours or more); or (3) widespread and/or significant dry lightning. For the Antelope Valley, criteria consist of dry fuels plus relative humidity 15% or less with sustained winds of 25 mph (for a duration of 8 hours or more).

State

California Department of Conservation Geologic Energy Management Division

CalGEM is a State agency that is responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. CalGEM's regulatory program promotes the sensitive development of oil, natural gas, and geothermal resources in California through sound engineering practices, pollution prevention, and the implementation of public safety programs. CalGEM requires any construction above or near plugged or abandoned oil and gas wells to be avoided, and remediation of wells to meet current CalGEM standards, including wells discovered during excavation or grading.

PRC Section 3208.1 authorizes the State Oil and Gas Supervisor of CalGEM to order the re-abandonment of a previously abandoned well when construction of any structure over or near a well could result in a hazard. The cost of re-abandonment operations is the responsibility of the owner or developer of a project upon which the structure would be located.

California Environmental Protection Agency

The CalEPA has primary oversight of the State's hazardous waste management programs. State regulations require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human and environmental health. Applicable State and local laws include the:

- Public Safety/Fire Regulations/Building Codes;
- Hazardous Waste Control Law;
- Hazardous Substances Information and Training Act;
- Air Toxics Hot Spots and Emissions Inventory Law;
- Underground Storage of Hazardous Substances Act; and
- Porter-Cologne Water Quality Control Act.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act of 1985, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act (HWCA) created the State hazardous waste management program, which is similar to but more stringent than the Federal RCRA program. The act is implemented by regulations contained in CCR Title 26, which describes the following required aspects for the proper management of hazardous waste:

- identification and classification;
- generation and transportation;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities and staff training; and
- closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the HWCA and CCR Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

Department of Toxic Substances Control

Within CalEPA, the DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the HWCA.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill (SB) 1082, introduced by Senator Charles Calderon (D-Whittier) and passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are:

- Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (a.k.a., Tiered Permitting);
- Aboveground Petroleum Storage Tank Spill Prevention Control and Countermeasure Plan;
- Hazardous Materials Release Response Plans and Inventory Program (also known as Hazardous Materials Disclosure or “Community-Right-To-Know”);
- California Accidental Release Prevention Program;

- Underground Storage Tank Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA. The Office of the State Fire Marshal participates in all levels of the CUPA program, including regulatory oversight, CUPA certifications, evaluations of the approved CUPAs, training, and education.

California Office of Emergency Services

To protect the public health and safety and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing Statewide standards for business and area plans relating to the handling and release or threatened release of hazardous materials. Basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and the health risks) needs to be available to firefighters, public safety officers, and regulatory agencies, and needs to be included in business plans in order to prevent or mitigate the damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code Article 1, Hazardous Materials Release Response and Inventory Program (Sections 25500–25520), and Article 2, Hazardous Materials Management (Sections 25531–25543.3).

Minimum Statewide standards for Hazardous Materials Business Plans (HMBPs) are established in 19 CCR, Public Safety, Division 2, OES, Chapter 4, Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans). These plans shall include the following:

1. a hazardous material inventory in accordance with Sections 2729.2–2729.7;
2. emergency response plans and procedures in accordance with Section 2731; and
3. training program information in accordance with Section 2732.

Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business shall prepare a HMBP if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following: 500 pounds of a solid substance, 55 gallons of a liquid, 200 cubic feet of compressed gas, a hazardous compressed gas in any amount, or hazardous waste in any quantity.

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than Federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol (CHP), is required by the laws and regulations of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by State regulations; or
- Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

California Emergency Response Plan

California has developed an Emergency Response Plan to coordinate emergency services provided by Federal, State, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is managed by the OES, which coordinates the responses of other agencies including the CalEPA, CHP, California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), Kern County Sheriff's Department, and Kern County Fire Department (KCFD).

Local

Kern County General Plan

The project site is located within the *Kern County General Plan*. The policies, goals, and implementation measures in the *Kern County General Plan* relevant to hazards and hazardous materials that are applicable to the project are provided below.

Chapter 4. Safety Element

4.1 Introduction

Goals

- **Goal 1.** Minimize injuries and loss of life and reduce property damage.

- **Goal 2.** Reduce economic and social disruption resulting from earthquakes, fire, flooding, and other geologic hazards by assuring the continuity of vital emergency public services and functions.

- **Goal 4.** Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards.

- **Goal 5.** Ensure the availability and effective response of emergency services following a catastrophic event.

- **Goal 7.** Ensure that adequate emergency services and facilities are available to the residents of Kern County through the coordination of planning and development of emergency facilities and services.

4.2 General Policies and Implementation Measure, Which Apply to More than One Safety Constraint

Policies

- **Policy 1**. That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oilfield areas, presently under way by various County departments, be continued.

- **Policy 2**. Those hazardous areas, identified as unsuitable for human occupancy, are guided toward open space uses, such as agriculture, wildlife habitat, and limited recreation.

- **Policy 3**. That the County government encourage public support of local, State, and Federal research programs on geologic, fire, flood hazards, valley fever, plague, and other studies so that acceptable risk may be continually reevaluated and kept current with contemporary values.

Implementation Measures

- **Implementation Measure A**. All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor's action could involve the establishment of a land use activity susceptible to such hazards.

- **Implementation Measure C**. Require detailed site studies for ground shaking characteristics, liquefaction potential, dam failure inundation, flooding potential, and fault rupture potential as background to the design process for critical facilities under County discretionary approval.

4.6 Wildland and Urban Fire

Hazard Identification

- **Access and Evacuation Routes.** Good planning principles, as well as existing policies and laws, dictate that all developments must be planned with circulation routes that will assure safe access for fire and other emergency equipment. The circulation routes must include secondary means of ingress and egress, consistent with topography, to meet emergency needs.

  The general circulation routes are provided throughout the County by Federal, State, and County-maintained road systems which are adequate for access and evacuation. State and County laws regulate the standards for new public circulation routes.

  Private circulation routes that are not maintained by the State or County are subject to the standards set forth in Kern County Ordinance No. G-1832.

- **Clearance of Vegetative Cover for Fire Control**. In 1963 the State of California enacted the Public Resources Code clearance law. This is a minimum Statewide clearance law of flammable vegetative growth around structures, especially in brush- and tree-covered watershed areas. The enactment of a local ordinance is necessary where more restrictive fire safety clearance measures are desirable to meet local conditions.

- **Fuel Breaks and Firebreaks**. Fuel breaks and/or firebreaks separating communities or clusters of structures from the native vegetation may be required. Such fuel breaks may be "greenbelts," as all vegetation need not be removed but thinned or landscaped to reduce the volume of fuel.

  All fuel and firebreaks are required to meet the minimum design standards of the Kern County Fire Chief.

  The Fire Department's Chief may require a fire plan for a development during the critical fire season. This plan should reflect the proposed course of action for fire prevention and suppression.

  The parcel size and setback distances of buildings placed thereon should be such that adequate clearance of flammable vegetation cover may be performed within the limits of the owner's parcel of land.

  Should the owner of a property fail to apply the required firebreak clearance, following proper notice, the County may elect to clear the firebreak vegetation and make the expense of the clearing a lien against the property upon which the work was accomplished.

- **Hazardous Fire Area.** The Hazardous Fire Areas consists mainly of wildlands, which are mountain and hill land in an uncultivated, more or less

natural state, covered with timber, wood, brush, and grasslands. This area includes some urban influence and agricultural use, such as exists around Isabella Lake and the Kern River, Woody/Glennville, Tehachapi/Cummings Valley, and Lebec/Frazier Park/Lake of the Woods.

The wildlands provide prime habitats for deer, mountain lions, bears, kit foxes, quail, chucker, wild turkeys, and condors. They also harbor fifteen identified and important rare botanic communities and vegetation associations.

The Kern County Hazardous Fire Area was established by an amendment to the Uniform Fire Code, Section 1.49H under Section 4016 of the Kern County Ordinance Code.

The boundaries of the Hazardous Fire Area are determined and publicly announced before the start of each annual "fire season" and is normally the period from April 15 to December 1 of each year, except when the Fire Chief extends this period.

The wildlands include valuable watersheds that must be preserved for receiving and passing water into surface streams and underground storage. Protection of the watersheds will prevent erosion and flood damages.

For the protection of our wildlands we must consider all factors which will aid in fulfilling the policy stated in the California Environmental Quality Act, Public Resources Code Section 21000 et seq., to "create and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations."

In implementing their Fire Prevention Program, Fire Department personnel periodically inspect the areas around all buildings for accumulations of flammable material and closure of openings of vacant buildings.

Policies

- **Policy 1.** Require discretionary projects to assess impacts on emergency services and facilities.
- **Policy 2.** The County will encourage the promotion of public education about fire safety at home and in the work place.
- **Policy 3.** The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- **Policy 4.** Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

- **Policy 5.** Require that all roads in wildland fire areas are well marked and that homes have addresses prominently displayed.

- **Policy 6.** All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

- **Implementation Measure A.** Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Kern County Wildland Fire Management Plan

The *Kern County Wildland Fire Management Plan* documents the assessment of wildland fire situations throughout the State Responsibility Areas (SRAs) within Kern County. The *Kern County Wildland Fire Management Plan* provides for systematically assessing the existing levels of wildland protection services and identifying high-risk and high-value areas that are potential locations for costly and damaging wildfires. The goal of the plan is to reduce costs and losses from wildfire by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. Based on this assessment, preventive measures are implemented, including the creation of wildfire protection zones.

Kern County Multi-Hazard Mitigation Plan

The purpose of hazard mitigation and *Kern County Multi-Hazard Mitigation Plan* is to reduce or eliminate long-term risk to people and property from natural hazards and their effects in Kern County. This plan has been prepared to meet the requirements of the Disaster Mitigation Act of 2000. The plan and planning process lay out the strategy that will enable Kern County to become less vulnerable to future disaster losses. The plan underwent a comprehensive update in 2011–2012 (Kern County 2012).

Kern County and Incorporated Cities Hazardous Waste Management Plan

In response to the growing public concern regarding hazardous waste management, Assembly Bill (AB) 2948 enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction.

The *Kern County and Incorporated Cities Hazardous Waste Management Plan* (Hazardous Waste Plan) was first adopted by Kern County and each incorporated City before September 1988 and was subsequently approved by the State Department of Health Services (Kern County 1991). The Hazardous Waste Plan was updated and incorporated by reference into the *Kern County General Plan* in 2004 as permitted by California Health and Safety Code Section 25135.7(b), and thus must be consistent with all other aspects of the *Kern County General Plan*.

The Hazardous Waste Plan provides policy direction and action programs to address current and future hazardous waste management issues that require local responsibility and involvement in Kern County. In addition, the Hazardous Waste Plan discusses hazardous waste issues and analyzes current and future waste generation in the incorporated Federal, State, County, and City lands. The purpose of the Hazardous Waste Plan is to coordinate local implementation of a regional action to effect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to equitably site needed hazardous waste management facilities; to promote on-site source reduction, treatment, and recycling; and to provide for the collection and treatment of small quantity hazardous waste generators. An important component of the Hazardous Waste Plan is the monitoring of hazardous waste management facilities to ensure compliance with Federal and State hazardous waste regulations. The siting criteria and any subsequent environmental documentation required pursuant to the California Environmental Quality Act (CEQA) would also ensure the mitigation of adverse impacts associated with the siting of any new hazardous waste facility.

Kern County Ordinance

Ordinance No. G-1832

Kern County Ordinance No. G-1832 dictates ingress and egress standards that allow access for fire apparatus. These design standards are enforced within the Hazardous Fire Area during the fire season.

Fuel breaks and/or fire breaks separating communities or clusters of structures from the native vegetation may be required. Such fuel breaks may be "greenbelts," as all vegetation need not be removed but rather thinned or landscaped to reduce the volume of fuel. All fuel and firebreaks shall meet the minimum design standards of the fire chief including the Maintenance of Defensible Space requirements of the Wildland-Urban Interface (WUI) Code, as follows:

- A firebreak shall consist of a strip, a minimum of 10 feet wide, cleared to mineral soil on each side of a road, or a width determined by the fire chief to be adequate for the general terrain and type of groundcover.
- Firebreaks are not to be used as roads, parking areas, or storage areas.
- All easements for fuel breaks for fire safety of built-up areas shall encompass access for firefighting personnel and equipment, which may mean motorized travel in some cases; such easements shall be dedicated for this specific purpose to an entity composed of the property owners. The property owners shall be charged with the maintenance of such easements.

4.9.4 Impacts and Mitigation Measures

This section analyzes the impacts associated with implementation of the project related to the risk of upset due to potential hazardous substances, including hazardous materials and/or

hazardous waste within the project site and the vicinity, as well as other hazards to public safety. The impact analysis describes the methods used to determine the project's impacts and lists the thresholds used to conclude the significance of an impact. Measures to mitigate (avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, as appropriate.

Methodology

This assessment is based on an evaluation of on-site and adjacent land conditions, as analyzed in *Johe Ranch Mine Section 7, Township 30 South, Range 21 East, Kern County, CA, Phase I Site Assessment* (WZI Inc. 2018b), included as Appendix H to this EIR, and the likelihood or ability of these conditions to affect components of the proposed project. This assessment included:

- A visual survey;
- A visual reconnaissance of the immediately adjacent sites;
- Client representative interviews;
- Review of readily available literature and historic documentation for the project site;
- Review of regulatory agency databases; and
- A search for environmental cleanup liens.

The project site is not on the list of projects related to hazardous wastes pursuant to Government Code Section 65962.5 of the California Government Code (Cortese List).

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to hazards and hazardous materials. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to hazards and hazardous materials if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school;

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 create a significant hazard to the public or the environment;

e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan, result in a safety hazard or excessive noise for people residing or working in the project area;

f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires;

h. Generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, if it would exceed the following qualitative threshold:

   The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

   i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and

   ii. Are associated with design, layout, and management of project operations; and

   iii. Disseminate widely from the property; and

   iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school;

- 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 the environment;

- For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard for people residing or working in the project area;

- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

- Impair implementation of or physically interfere with, an adopted emergency response plan or emergency evacuation plan;

Project Impacts

Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

The project would include the transport and use of flammable and other hazardous materials, such as diesel fuels. The transportation of hazardous materials is heavily regulated by both Federal and State agencies (see Section 4.9.3, *Regulatory Setting*). Enforcement of hazardous materials transport regulations is primarily the responsibility of the CHP when transport occurs on the State highway system; however, this analysis reasonably assumes that such materials would be transported in accordance with applicable regulations. Before any such materials are transported, the carrier must obtain a Hazardous Materials Transportation License (either temporary or otherwise) from the CHP. As part of that licensing process, the carrier's equipment and methods would be inspected by the CHP, and the carrier would be informed of the proper routes to and from the project site. In addition to the CHP license, transportation of hazardous materials would be required to follow all applicable Federal and State laws regarding such transport. All hazardous materials at the project would be handled and stored in compliance with the requirements set forth in applicable codes and regulations. The project proponent would store all fuels, oils, solvents, and any other hazardous materials in the manner specified by the manufacturer and in accordance with all applicable Federal, State, and local regulations.

Mitigation Measure MM 4.9-1 requires that an Emergency Response Plan be prepared for the project and approved by the KCFD. With implementation of Mitigation Measures MM 4.9-1 and MM 4.9-2, the project's potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials is considered less than significant.

Mitigation Measures

MM 4.9-1 Prior to commencement of operations as authorized by this approval, the project proponent shall prepare and obtain approval of an Emergency Response Plan from the Kern County Fire Department.

MM 4.9-2 During the life of the project, the project proponent/operator shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System

(CERS) at http://cers.calepa.ca.gov/ for review and approval. The HMBP shall:

A. Delineate hazardous material and hazardous waste storage areas

B. Describe proper handling, storage, transport, and disposal techniques

C. Describe methods to be used to avoid spills and minimize impacts in the event of a spill

D. Describe procedures for handling and disposing of unanticipated hazardous materials encountered

E. Establish public and agency notification procedures for spills and other emergencies including fires

F. Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site.

The project proponent/operator shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the approved HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 through MM 4.9-2, impacts would be less than significant.

Impact 4.9-2: The project would 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.

As described under Impact 4.9-1, operation of the project would require the use, storage, and handling of hazardous materials during the life of the project. Fire, accidental explosions of materials such as gasoline, and spills are some of the potential loss incidents associated with project implementation. In addition, the potential disruption of recorded or potentially unrecorded abandoned or active oil wells on the project site could result in the release of liquid hydrocarbon either at the ground surface or below ground and would be considered a significant impact.

According to CalGEM, four abandoned wells are located within the 331-acre property, as shown on **Figures 3-3a** and **3-3b,** *Site Plan*. The four wells are located outside the proposed disturbance areas and are described as follows:

1. Baker 1 (abandoned gas well);
2. Seaboard-Honolulu 14-7 (abandoned gas well);
3. Lizbet Gilbert 1 (abandoned gas well); and
4. Lynn 1 (abandoned well).

The project proponent would locate and flag the abandoned wells that occur within the proposed project disturbance areas. Per comments received from the CalGEM, in response to the NOP/IS, the four wells within the project area are not abandoned to current Division standards as of August 29, 2018. The comments also make the following general recommendations: (a) maintain physical access to all oil and gas wells, and (b) ensure that the abandonment of all oil and gas wells is to current standards.

The project would be required to comply with all Federal, State, and local regulations regarding the storage and use of any hazardous materials on-site, including OSHA, MSHA, and Cal/OSHA standards. With implementation of the plan discussed above, the project's potential to 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 is considered low. Mitigation Measures MM 4.9-2 through MM 4.9-5 would further reduce the potential for impacts associated with hazardous materials by requiring preparation of an HMBP (MM 4.9-2) and reporting, identifying, plugging, and avoiding any known or discovered wells (MM 4.9-3 and MM 4.9-5) in accordance with DOGGR's comments in their January 31, 2019, letter, provided in Appendix A of this EIR. As a result of regulatory compliance and implementation of mitigation measures, this impact is considered less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.9-2 and the following additional mitigation measures.

MM 4.9-3 The project proponent/operator shall continuously comply with the following:

A. In the event any abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation Division of Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]) shall be contacted for requirements and approval; copies of said approvals shall be submitted to the Kern County Planning and Natural Resources Department. The CalGEM may determine that remedial plugging operations may be required and shall be contacted and brought to the project site to make a proper assessment of the suspect materials.

MM 4.9-4 Prior to the commencement of ground-disturbing activities, the project proponent or contractor shall provide a site plan that clearly delineates the locations of all known oil and gas wells. A minimum 75-foot radius, within which no ground-disturbing activities shall occur, shall be delineated around

all known oil and gas wells. A copy of the map shall be submitted to CalGEM and the Kern County Planning and Natural Resources Department. Prior to initiating any ground-disturbing activities within 75 feet of a known oil or gas well, the project proponent shall consult with CalGEM.

MM 4.9-5 Prior to commencement of ground-disturbing activities, the project proponent or contractor shall:

A. Obtain written approval from the Kern County Planning and Natural Resources Department, for the size, materials, message, and a site plan showing the location of two signs warning of mining and reclamation operations (one at the existing access point to SR-58 and one at the proposed access point to SR-58);

B. Install signs as approved by the Kern County Planning and Natural Resources Department; and

C. Submit to the Kern County Planning and Natural Resources Department a photograph of each approved sign after installation.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-2 through 4.9-5, impacts would be less than significant.

Impact 4.9-3: The project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

As described in Section 4.9.2, *Environmental Setting*, the project site is in an area identified as having "Moderate" to "High" FHSZ within the LRA (Kern County Fire Department 2009). Wildland fires can be ignited on or spread to the project site from natural or human sources. Vegetation on the project site is present in the form of a sparse cover of non-native grassland. Ignition of grasslands would be most likely to occur during periods of initial surface clearing and excavation. Once vegetation is removed and excavation recesses into each mining area, vegetation fuel sources become limited or nonexistent within the mining areas. A risk of wildland fire ignition always exists when vehicles operate in or near potential fuel sources; however, with proper maintenance of equipment and standard avoidance and management measures, the risk would be reduced.

The site is not adjacent to urbanized areas; however, there are isolated residences, residential accessory structures, and structures utilized in conjunction with agriculture, in proximity to the project site. While the project is not anticipated to significantly increase the risk of wildfire, Mitigation Measure MM 4.9-1 would be implemented, which includes the development and approval of an Emergency Response Plan from the KCFD. Although impacts would be less than significant without implementation of mitigation, Mitigation Measure MM 4.9-1 would

further reduce the potential impacts from wildfire. Therefore, impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.9-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.9-1, impacts would be less than significant.

Impact 4.9-4: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, the proposed project would exceed the following qualitative thresholds: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

i. **Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and**
ii. **Are associated with design, layout, and management of project operations; and**
iii. **Disseminate widely from the property; and**
iv. **Cause detrimental effects on the public health or well-being of the majority of the surrounding population.**

The project does not include the generation, handling, or disposal of agricultural waste; thus, the project would not create a potential impact associated with that issue. The project would involve activities that could result in the potential to create temporary areas of standing water that could provide breeding areas for mosquitoes, flies, or rodents. These potential disease vectors could pose a potential hazard to personnel or the public. However, the limited disturbance areas and proposed contours as shown on **Figures 3-3a** and **3-3b,** *Site Plan*, combined with standard construction techniques to avoid creating areas of standing water and to manage waste and containers, are expected to result in a minimal, if any, increase in the potential for vector generation.

Although there would be limited, if any, increased potential for vector generation associated with the proposed project, this impact is considered potentially significant. Mitigation Measure MM 4.9-6 requires that food and garbage be properly disposed of in closed containers and regularly removed from the site. Implementation of this measure would reduce potential impacts associated with vectors and agricultural waste disposal to less than significant.

Mitigation Measures

MM 4.9-6 All food, garbage, and plastic shall be disposed of in closed containers and regularly removed from the site to minimize attracting animals to the site where they may be harmed.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.9-6, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis). Impacts associated with hazards and hazardous materials are generally site-specific and have limited potential to substantially contribute to other hazards associated with other projects and activities on a regional or local basis. Projects and activities within the County are subject to various regulatory requirements, similar to those discussed here, and would minimize the hazard potential of those activities. Kern County recognizes that hazards exist throughout the County and everyday life.

Impact 4.9-5: The project would contribute to cumulative hazards and hazardous materials impacts.

As described above, there are four known wells on the project site. None of the wells are active and, due to the distance from the area of disturbance to the wells, the risk of damaging them is low.

The project site is not included on a list of hazardous materials sites or immediately upstream of environmentally sensitive areas that could result in a release of hazardous materials into the environment, not directly related to the proposed project. Implementation of the proposed project is not anticipated to contribute to a cumulative hazardous materials impact due to generation of a substantial amount of waste. Furthermore, the proposed project would not significantly interfere with an adopted emergency response plan or emergency evacuation plan. The proposed project is not anticipated to contribute to a cumulative hazardous materials impact due to interference with an emergency route.

Uses proposed on the project site would include the permitted use of hazardous materials associated with operation of the mining and blending/screening activities. The project would also contribute to the number of trucks and storage containers hauling potentially hazardous materials on public roadways. Any hazardous mine waste generated by the proposed project would be disposed of in accordance with all Federal, State, and local regulations. This requires in part that an SPCC Plan be developed and implemented for the proposed project, which would address the storage and treatment of any spilled contaminants at the project site. Secondary containments would be used around fuel, oil, gas, and any other hazardous materials storage

areas. All hazardous waste materials would be removed from the project site by a certified contractor, and catchment berms would be constructed in vital areas to provide a tertiary level of hazardous material containment. Therefore, the potential for impacts associated with the routine transport, storage, and disposal of hazardous materials is considered less than significant.

The proposed project would be required to comply with all applicable Federal, State, and local regulations regarding the handling of hazardous materials. With implementation of these control measures and implementation of Mitigation Measures MM 4.9-1 through MM 4.9-6 included below, the proposed project would not result in significant impacts related to reasonably foreseeable upset or accidental conditions involving the release of hazardous materials into the environment. The proposed project would not contribute significantly to cumulative impacts associated with hazardous materials/risk of upset with implementation of the mitigation measures included below. Therefore, cumulative impacts would be less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM 4.9-1 through MM 4.9-6.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 through MM 4.9-6, cumulative impacts would be less than significant.

Section 4.10
Hydrology and Water Quality

4.10.1 Introduction

This section of the Environmental Impact Report (EIR) addresses potential impacts of the project on hydrology and water quality, describes the environmental and regulatory setting, and discusses mitigation measures to reduce impacts where applicable. Information and data to prepare this section was obtained from studies prepared by the project proponent and from publicly available sources, including the following:

- *Hydrology Study for Johe Ranch Mine, County of Kern, California*, prepared by LAV/Pinnacle Engineering, April 2019; included as Appendix I;
- Information from the Central Valley Regional Water Quality Control Board (RWQCB);
- Groundwater basin data from Bulletin 118 – Update 2003 published by the California Department of Water Resources (DWR 2006);
- Groundwater well data from the DWR Water Data Library;
- Climate data from the National Oceanographic and Atmospheric Administration (NOAA) Atlas 14 and the National Climatic Data Center (NCDC); and
- Flood hazard data from the Federal Emergency Management Agency (FEMA).

4.10.2 Environmental Setting

Regional

The project site is in the western area of Kern County within the foothills of the Temblor Range, and is characterized by hot, dry summers with daytime temperatures frequently above 100 degrees Fahrenheit (ºF), and cool winters with infrequent snow and temperatures seldom below freezing. According to the period of record monthly climate summary reported by the Western Regional Climate Center (WRCC) for the closest National Weather Service Cooperative Observer Program (COOP) Station to the project site (Buttonwillow Station), the region experiences minimum average annual temperatures of 49ºF, with the lowest average temperature (34.5ºF) occurring in December; maximum average annual temperatures of 77.9ºF, with the highest average temperature (98.4ºF) recorded in July; and average annual total precipitation of 5.64 inches (WRCC 2019).

The majority of the property is underlain by marine sediments consisting of diatomite of the Miocene age Monterey Formation, which outcrops throughout much of western Kern County. These deposits trend northwest and are moderately to tightly folded and locally faulted. The diatomite is overlain by a small area of Quaternary age non-marine sediments in the northwestern portion of the property which are identified as landslide deposits. The site is located to the west of the San Joaquin Valley Groundwater Basin within outcrops of the Miocene diatomite of the Monterey Formation. There is no known groundwater at the site and no water wells have been drilled on the property.

Surface Water

Tulare-Buena Vista Lakes Watershed

The project site is located within the Tulare-Buena Vista Lakes Watershed, which encompasses 5,446,400 acres of land in Fresno, Kings, Tulare, Kern, Madera, and San Luis Obispo Counties. Of the land within this watershed, approximately 23% is irrigated and approximately 50% is used for farming purposes, of which 50% is dedicated to crop production. The population within this watershed was recorded as 1.88 million in 2000 and is expected to increase to approximately 3.5 million by 2030.

Average annual precipitation within the Tulare-Buena Vista Lakes Watershed ranges from 7 to 10 inches, with the greatest rainfall occurring between the months of November and April. Major hydrologic features in this watershed include the Kings, Kaweah, Tule, and Kern Rivers, which all drain into the valley floor. Surface water within this watershed only drains north into the San Joaquin River during periods of significant rainfall; therefore, this watershed is considered a closed hydrologic entity.

As shown in **Figure 4.10-1,** *Water Resources Map*, the project site is located within the Willow Springs subwatershed (Hydrologic Unit Code [HUC] 180300121101) and crosses in to the Frazer Spring subwatershed (HUC 180300121102), which encompasses approximately 23.7 square miles and 26.5 square miles respectively, within the greater Tulare-Buena Vista Lakes Watershed in Kern County (California Department of Fish and Wildlife [CDFW] 2018).

Two drainage channels exist in this region, Temblor Creek and Salt Creek, but neither creek's associated tributaries extend through the project site. Temblor Creek meets up with Salt Creek in the Temblor Valley, approximately 5 miles from the project site. These drainages are best described as dry washes that only contain surface water after substantial rainfall. Elevations along the creeks range between 2,200 feet above mean sea level (msl) at the base and up to 2,900 feet above msl at the headwaters. The total watershed area of the project site is approximately 8.40 acres (LAV/Pinnacle Engineering 2019).

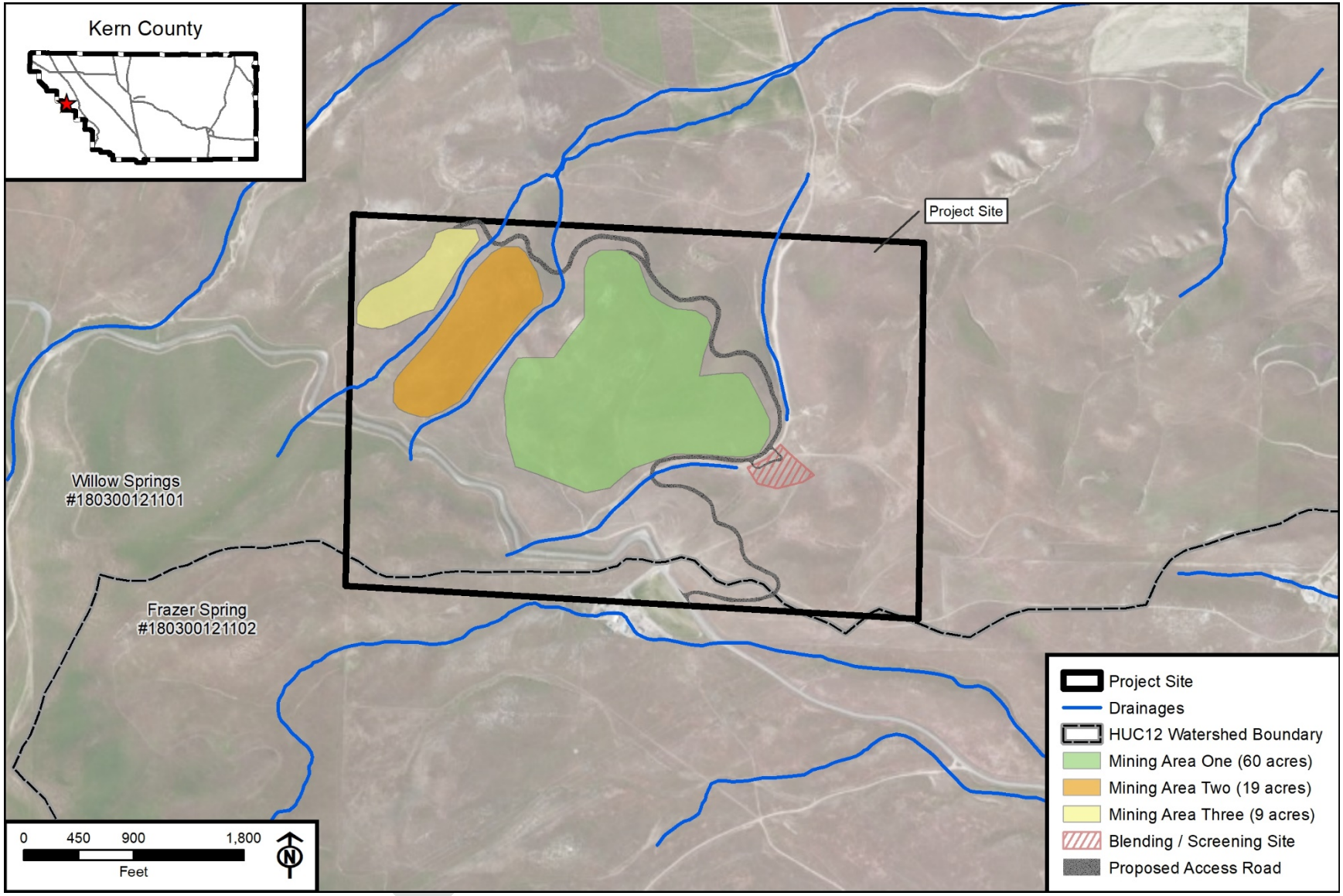

Figure 4.10-1
Water Resources Map

Surface Water Quality

The Federal Clean Water Act (CWA) Section 303(d) Threatened and Impaired Waters List, which identifies waterbodies that are impaired or are threatened to be impaired by pollutants, includes the following two features from the Tulare-Buena Vista Lakes Watershed: Mendota Pool, a freshwater reservoir in Fresno County, and the Lower Kings River. While Mendota Pool is impaired due to high selenium and mercury concentrations, the Lower Kings River is impaired by metals such as molybdenum; pesticides such as Toxaphene; other pollutants, such as sulfates, chlorides, total dissolved solids; and elevated salinity levels, measured as specific conductivity, as shown in **Table 4.10-1,** *Tulare-Buena Vista Lakes Watershed 303(d) Threatened and Impaired Waters List* (U.S. Environmental Protection Agency [USEPA] 2010, 2012a, 2012b).

Table 4.10-1 Tulare-Buena Vista Lakes Watershed 303(d) Threatened and Impaired Waters List

Waterbody Name	Cause of Impairment	Parent Cause of Impairment
Lower Kings River (35.9 miles)	Conductivity	Salinity/Total Dissolved Solids/Chlorides/Sulfates
	Molybdenum	Metals (other than Mercury)
	Chlorpyrifos	Pesticides
	Toxaphene	Pesticides
Mendota Pool (3,045 acres)	Mercury	Mercury
	Selenium	Metals (other than Mercury)

Source: USEPA 2010, 2012a, and 2012b.

According to the California Regional Water Quality Control Board (RWQCB), Central Valley Region, the source of salinity in the Lower Kings River can be attributed to either surface or subsurface agricultural drainage (USEPA 2012a). The California 2010 CWA Section 305(b) National Water Quality Inventory Report, which discloses conditions of all waterbodies in the State, including causes of impairment from types of pollution and likely sources of pollution, includes seven out of the seven waterbodies in the Tulare-Buena Vista Lakes Watershed listed as "impaired," as shown in **Table 4.10-2,** *Tulare-Buena Vista Lakes Watershed 305(b) Threatened and Impaired Waters List*. The causes of impairment are listed in **Table 4.10-3,** *Causes of Impairment for the Tulare-Buena Vista Lakes Watershed (Kings River)*.

Probable sources contributing to these impairments for the Tulare-Buena Vista Lakes Watershed include agriculture, baseflow depletion from groundwater withdrawals, and subsurface (hardrock) mining (USEPA 2010). Water impairment in this watershed is largely attributed to flow alterations, pathogens, metals, pesticides, and nutrients, all of which are common byproducts of agricultural production. The closed nature of this hydrologic unit and the lack of a natural drainage to the ocean contribute to the accumulation of pollutants in this region (USEPA 2009).

Table 4.10-2 Tulare-Buena Vista Lakes Watershed 305(b) Threatened and Impaired Waters List

Waterbody Name	Waterbody Size	Water Status
Deer Creek (Tulare County)	58.2 Miles	Impaired
Kaweah river, Lower	27.0 Miles	Impaired
Kern River, Lower	104.7 Miles	Impaired
Kings River, Lower	35.9 Miles	Impaired
Los Gatos Creek (Fresno County)	49.0 Miles	Impaired
Mendota Pool	4.8 Acres	Impaired
Tule River, Lower	80.4 Miles	Impaired

Source: USEPA 2016c.

Table 4.10-3 Causes of Impairment for the Tulare-Buena Vista Lakes Watershed (Kings River)

	Size of Assessed Waters with Listed Causes of Impairment	
Cause of Impairment	Cause of Impairment Group	State TMDL Development Status
Conductivity	Salinity/Total Dissolved Solids/ Chlorides/Sulfates	TMDL Needed
Molybdenum	Metals (other than Mercury)	TMDL Needed
Toxaphene	Pesticides	TMDL Needed
Toxicity	Total Toxics	TMDL Needed
Alkalinity, Carbonate as $CaCO_3$	pH/Acidity/Caustic Conditions	TMDL Needed

TMDL = Total Maximum Daily Loads
Source: USEPA 2016d.

Groundwater

The project site is located to the west of the San Joaquin Valley Groundwater Basin, in the Kern County Groundwater Subbasin (Groundwater Basin Number 5-022.14). The Kern County Groundwater Subbasin is the largest groundwater basin in California, encompassing approximately 3,040 square miles (1,945,000 acres) in Kern County (DWR 2006). It is bounded by the Kern County line and the Tule Groundwater subbasin to the north, granite bedrock of the Sierra Nevada foothills and Tehachapi Mountains to the east and southeast, and marine sediment of the San Emigdio Mountains and Coast Ranges to the west and southwest (DWR 2006). Primary surface water features within this subbasin include the Kern River and Poso Creek. Active faults include the Edison, Pon-Poso, and White Wolf Faults. Precipitation ranges from an average of 5 inches at the subbasin interior, to 9–13 inches at the margins of the subbasin (DWR 2006). Land uses within this subbasin are approximately 66% agricultural, 3% urban, and 31% natural (Burton and Belitz 2012). The Kern County Groundwater Subbasin is under the jurisdiction of the Central Valley RWQCB.

Groundwater Quantity

The Kern County Groundwater Subbasin is comprised of sediments from the Tertiary and Quaternary age, including the Olcese and Santa Margarita Formations, Tulare Formation, Kern River Formation, older alluvium/stream deposits, and younger alluvium and coeval (similarly aged) flood basin deposits (DWR 2006). The Kern County Water Agency (KCWA) estimated the total groundwater storage in this subbasin to be approximately 40,000,000 acre-feet (AF) and dewatered aquifer storage to be approximately 10,000,000 AF (DWR 2006).

Recharge projects in the KCWA service area include the Kern Water Bank, City of Bakersfield recharge area, Pioneer Project recharge and recovery facilities, and Rosedale-Rio Bravo Water Storage District/Allen Road Complex well field. DWR purchased approximately 19,600 acres of land to be used for the Kern Water Bank, which is a banking/extraction program that will ultimately provide as much as 100,000 AF (32.6 million gallons [MG]) of annual dry-season removal of water for the California State Water Project (SWP). The City of Bakersfield has, for many years, maintained a 2,800-acre recharge area adjacent to the Kern River as a "banking" site. The Rosedale-Rio Bravo Water Storage District maintains a 179-acre recharge basin facility on Allen Road, as well as several hundred acres of channels and basins within or near Goose Lake Slough. KCWA has identified the need for long-range groundwater supply planning for the urban Bakersfield area. Resolution No. 21-93, adopted by the KCWA Board on May 27, 1993, established a policy for meeting the future water supply requirements. The KCWA Water Supply Project was initiated to replace a portion of the groundwater currently being pumped with surface water supplies and to use imported water as recharge to supply ongoing groundwater pumping.

Groundwater Quality

The 2018 RWQCB Basin Plan includes groundwater quality objectives based on the following beneficial uses: municipal, agricultural, industrial service, and industrial process supply. In general, the groundwater quality in the Kern County Subbasin, including the Bakersfield area, is suitable for such beneficial uses, except where contamination has occurred.

Trace elements are naturally present in the minerals in rocks and soils, and in the water that comes into contact with those materials. As of 2012, trace elements were present at high concentrations in 20% of the primary aquifers, and at moderate concentrations in 27% of the primary aquifers in the Kern County Subbasin. Trace elements present at high concentrations in more than 2% of primary aquifers included arsenic, antimony, boron, and vanadium. Trace elements detected at high concentrations at less than 2% of the primary aquifers in the Kern County Subbasin included lead, thallium, and selenium. Fluoride is a minor element that was present at high concentrations in 4% of the primary aquifers and at moderate concentrations in 2% of the primary aquifers.

Radioactivity is the release of energy or energetic particles, a process that occurs naturally in groundwater from the decay of naturally occurring thorium and uranium isotopes in minerals of aquifer sediments. In the Kern County Groundwater Subbasin, radioactivity, radium, and uranium were detected at high concentrations in 6% of the primary aquifers, and at moderate concentrations in 13% of the primary aquifers.

Low concentrations of nutrients, such as nitrate, are naturally present in groundwater; however, high and moderate nutrient concentrations in groundwater are generally a result of human activities. Human activities and land uses such as the application of fertilizers, concentration of livestock, and use of septic systems can produce nitrogenous waste that can leach into groundwater. In the Kern County Groundwater Subbasin, nitrate was detected at high concentrations in 5% of the primary aquifers and at moderate concentrations in 13% of the primary aquifers.

Aesthetic properties of water, such as taste, color, and odor, can be affected by constituents, such as total dissolved solids (TDS), sulfate, and chloride. Other problems, such as scaling and staining, can occur as a result of constituents such as iron and manganese. Upper limits for TDS, sulfate, and chloride have been established by the State of California for drinking water. TDS was found to be present at high concentrations (greater than the upper limit) in approximately 14% of the primary aquifers, and at moderate concentrations (between the recommended and upper limit) in 17% of the primary aquifers in the Kern County Groundwater Basin. Sulfate was found to be present at high concentrations in approximately 8% of the primary aquifers, and at moderate concentrations in 6% of the primary aquifers in the Kern County Groundwater Basin. Chloride was detected at high concentrations in 2% of the primary aquifers, and at moderate concentrations in 4% of the primary aquifers in the Kern County Groundwater Basin.

Additional naturally occurring elements, iron and manganese, were detected at high concentrations in 13% of the primary aquifers, and at moderate concentrations in 6% of the primary aquifers (Burton and Belitz 2012).

Local Setting

Surface Water

The project site is located within a gently to steeply sloping topographical area with elevations that range between 2,200 and 2,800 feet above msl. All watercourses in the vicinity of the project are ephemeral. Additionally, mine pits are not proposed within any naturally defined drainage courses. Four unnamed drainage channels cross the property, draining to the northeast, as shown in **Figure 4.10-1,** *Water Resources Map*. Close to the southeastern boundary of the site, the site is split between two watersheds: the Willow Springs subwatershed and the Frazer Spring subwatershed. The watershed areas for Willow and Frazer Springs are 23.7 and 26.5 square miles, respectively. The combined flow at the western side of the property has a watershed area of approximately 50.2 square miles.

The drainages flow from higher elevations southwest of the project site and eventually converge at lower elevations with another unnamed ephemeral drainage within the Willow Springs Valley. Further review of the topographical maps for the project site and surrounding areas reveals that the drainages continue to flow through portions of the Temblor Range and terminate within the Temblor Valley, which presently contains the Cymric Oil Field. However, the drainages appear to be heavily disturbed by agricultural activities approximately 1 mile downstream from the project site boundary. The drainages have a v-shaped profile in the higher elevations of the project site and eventually widen into sandy bottom drainages in the lower

elevations of the site. Except for one channel within the western portion of the project site, most of the channels observed did not connect to ephemeral drainages that occur nearby. Flow between these drainages was found to be interrupted by various topographical features and/or previous disturbances within the area.

Groundwater

The project site is located within the southern portion of the San Joaquin Valley Groundwater Basin, in the Kern County Subbasin (Basin Number 5-22.14). The Kern County Subbasin encompasses approximately 1,945,000 acres (3,040 square miles) within Kern County. The Kern County Groundwater Subbasin is bounded on the north by the Kern County line and the Tule Groundwater Subbasin, on the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi Mountains, and on the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges. Principal rivers and streams within this subbasin include the Kern River and Poso Creek. Depth of water-bearing formations is estimated to range from 300 to 600 feet below grade. The subbasin is estimated to support approximately 40,000,000 AF of total water in storage and 10,000,000 AF of dewatered aquifer storage. Average well depths within this groundwater basin range from 150 to 1,200 feet below grade. The primary source of groundwater recharge is in the form of recharge of applied irrigation water (DWR 2006). Groundwater in the western portion of the subbasin primarily contains sodium sulfate- to calcium sodium sulfate-type water. The average TDS of groundwater is 400–450 milligrams/liter (mg/L) with a range of 150–5,000 mg/L. Impairments associated with groundwater in this subbasin include shallow groundwater, high TDS, sodium chloride, sulfate, and elevated arsenic concentrations (DWR 2006).

Flooding

The project site is located within an area categorized as being within FEMA Flood Hazard Zone X, as shown in **Figure 4.10-2,** *Flood Zone Map*. The Zone X FEMA flood zone designation defines areas with a minimal flood hazard, and is usually depicted on Flood Insurance Rate Maps as above the 500-year flood level. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood (FEMA 2008).

4.10.3 Regulatory Setting

The project would be subject to County, State, and Federal water quality regulations, as discussed below. Existing operations at the site are presently subject to the same or similar regulations.

Federal

Clean Water Act

The CWA (33 United States Code [USC] Section 1251 et seq.), formally the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States.

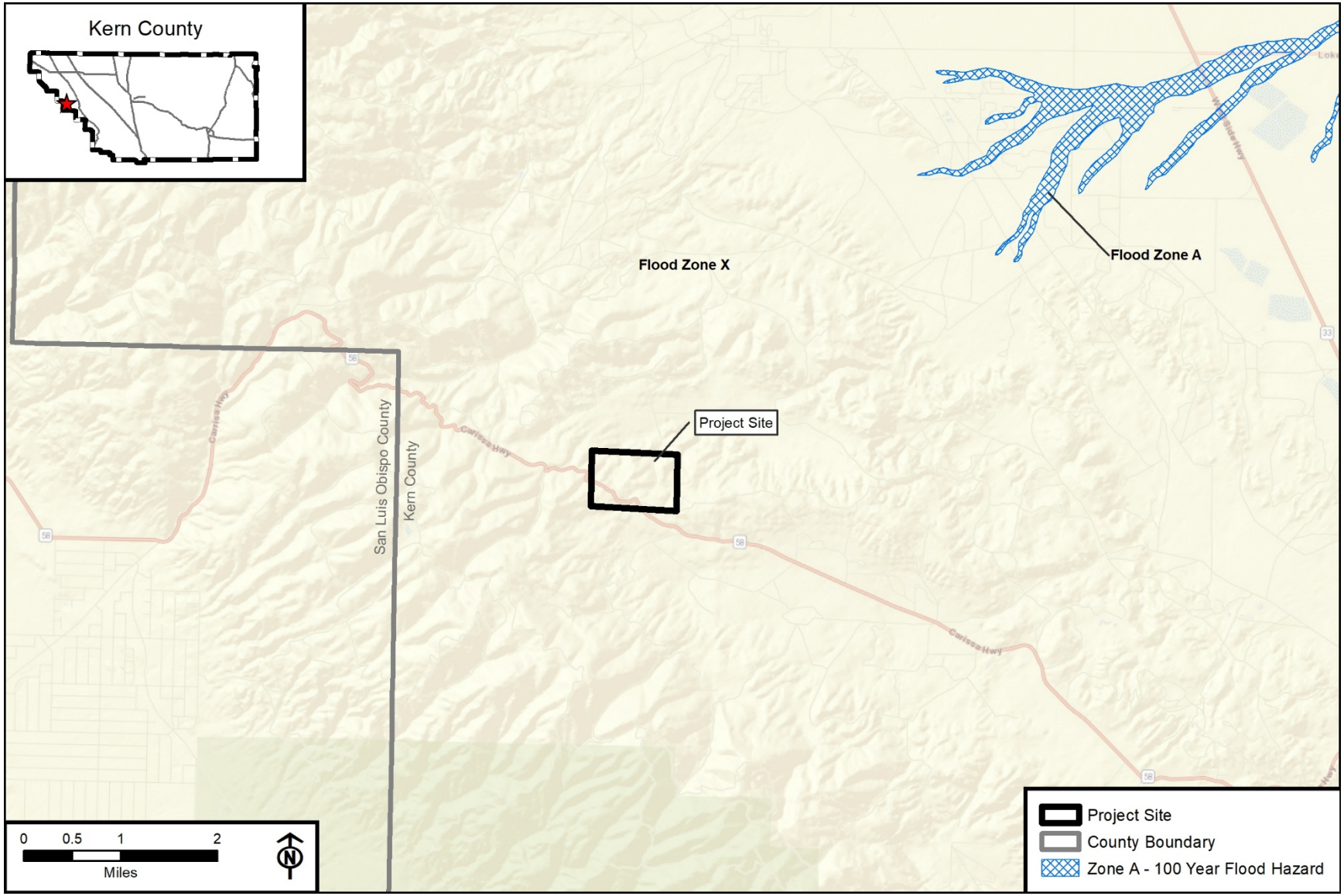

Figure 4.10-2
Flood Zone Map

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and has given the USEPA the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain nonpoint source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs. The project is within the jurisdiction of the Central Valley RWQCB.

Section 401, Water Quality Certification

Section 401 of the CWA requires that, prior to issuance of any Federal permit or license, any activity, including river or stream crossing during road, pipeline, or transmission line construction, that may result in discharges into waters of the United States must be certified by the State, as administered by the RWQCB. This certification ensures that the proposed activity does not violate Federal and/or State water quality standards.

Section 402, National Pollutant Discharge Elimination System

Section 402 of the CWA authorizes the State Water Resource Control Board (SWRCB) to issue an NPDES General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.

- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.

- Perform inspections of all BMPs.

For the project, NPDES regulations are administered by the Central Valley RWQCB. Projects that disturb 1 or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permits.

Section 404, Discharge of Dredged or Fill Materials

Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the United States, including wetlands. For purposes of CWA Section 404, the limits of non-tidal waters extend to the Ordinary High Water (OHW) line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil,

and presence of debris. When an application for a Section 404 permit is made, the Applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the United States where practicable;
- Minimized unavoidable impacts on waters of the United States and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the United States or wetlands. A Water Quality Certification pursuant to CWA Section 401 is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the Central Valley RWQCB. Project activities would adhere to Federal and State water quality standards and would be in compliance with CWA Sections 401 and 404.

Section 403, Water Quality Standards and Implementation Plans

Section 303(d) of the CWA (33 USC 1250, et seq., at 1313[d]) requires states to identify "impaired" water bodies as those that do not meet water quality standards. States are required to compile this information in a list and submit the list to the USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, States are required to prioritize waters and watersheds for future development of Total Maximum Daily Load (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, prepare the Section 303(d) list, and develop TMDL requirements.

National Flood Insurance Program

FEMA is responsible for conducting floodplain studies and publishing Flood Insurance Rate Maps (FIRM) that delineate flood hazard areas. FEMA manages the National Flood Insurance Program (NFIP). This program makes Federally backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. Kern County is a participating jurisdiction in the NFIP and therefore all new development must comply with the minimum requirements of the NFIP.

State

California Department of Water Resources

DWR's major responsibilities include preparing and updating the California Water Plan to guide development and management of the State's water resources; planning, designing, constructing, operating, and maintaining the State Water Resources Development System; regulating dams; providing flood protection; assisting in emergency management to safeguard life and property; educating the public; and serving local water needs by providing technical assistance. In addition, DWR cooperates with local agencies on water resources investigations, supports watershed and river restoration programs, encourages water conservation, explores

conjunctive use of ground and surface water, facilitates voluntary water transfers, and, when needed, operates a State drought water bank.

Sustainable Groundwater Management Act

A series of three bills passed by the California legislature were signed by Governor Brown on September 16, 2014. These three bills, Assembly Bill (AB) 1739, Senate Bill (SB) 1168, and SB 1319, together comprise the Sustainable Groundwater Management Act (SGMA) of 2014. The SGMA provides a structure under which local agencies are to develop sustainable groundwater management programs. The SGMA applies directly to basins or subbasins designated by DWR as high- or medium-priority basins. The Kern County Groundwater Subbasin (Subbasin) has been ranked has a high-priority basin and is subject to the requirements of SGMA.

The SGMA requires the establishment of a Groundwater Sustainability Agency (GSA), development of a Groundwater Sustainability Plan (GSP), and achievement of groundwater sustainability within 20 years. The GSAs allow for locally controlled groundwater management and provide tools and authorities for these local agencies to achieve sustainability goals. For medium- and high-priority basins, the GSAs must have been established by June 30, 2017. Any local water or land use agency or combination of local agencies overlying a groundwater basin may elect to be a GSA. Once established, the GSA must prepare a GSP, which must be reviewed and approved by DWR. The GSP must be adopted by January 31, 2022. The purpose of the GSP is to define the measures that will be implemented to achieve the sustainability goals developed by the GSA. In addition, subsequent General Plan updates must take into consideration the groundwater sustainability objectives and the components of the GSP.

Senate Bill 610

SB 610 was passed on January 1, 2002, amending California state law to require detailed analysis of water supply availability for large development projects. An SB 610 Water Supply Assessment (WSA) must be prepared if the following three conditions are met:

1. the project is subject to California Environmental Quality Act (CEQA) under California Water Code Section 10910;

2. the project meets criteria to be defined as a "Project" under California Water Code Section 10912; and

3. the applicable water agency's current Urban Water Management Plan does not account for the water supply demand associated with the project.

A project would meet the definition of "Project" per California Water Code Section 10912(a) if it is:

- a proposed residential development of more than 500 dwelling units;
- a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;

- a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- a proposed hotel or motel, or both, having more than 500 rooms;
- a proposed industrial, manufacturing, or processing plant or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- a mixed-use project that includes one or more of the projects specified in this subdivision; or
- a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Porter-Cologne Water Quality Control Act

The SWRCB regulates water quality through the Porter-Cologne Water Quality Act (Porter-Cologne Act) of 1969, which contains a complete framework for the regulation of waste discharges to both surface waters and groundwater of the State. On the regional level, the project falls under the jurisdiction of the Central Valley RWQCB, which is responsible for the implementation of Federal and State water quality protection statutes, regulations, and guidelines. The Central Valley RWQCB has developed a Water Quality Control Plan (Basin Plan) to show how the quality of the surface and ground waters in the Tulare Lake Basin should be managed to provide the highest water quality reasonably possible. The Basin Plan lists the various beneficial uses of water within the region; describes the water quality that must be maintained to allow those uses; describes the programs, projects, and other actions necessary to achieve the standards established in the plan; and summarizes plans and policies to protect water quality.

State Water Rights Permit

The State of California has required parties to obtain a permit to divert surface water for beneficial uses since 1914 under provisions of the State Constitution and the California Water Code. A water rights permit specifies the place of diversion and the beneficial uses for which the water may be diverted. The permit will also typically specify the maximum annual diversion quantity and may specify the maximum diversion rate. Permit holders must file reports with the SWRCB documenting annual diversions.

California Fish and Game Code Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFW in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State, and requires any person, State or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;

- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

If it is determined that any project-related actions would have the potential to necessitate a Streambed Alteration Agreement, then such an agreement would be prepared and implemented prior to construction of the project, thus maintaining compliance with Section 1602 of the California Fish and Game Code. A Streambed Alteration Agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the project. The CDFW must comply with CEQA before it may issue a final Streambed Alteration Agreement; therefore, the CDFW must wait for the Lead Agency to fully comply with CEQA before it may sign a draft Streambed Alteration Agreement, thereby making it final.

California Water Code Section 13260

Under the Porter-Cologne Act, California Water Code Section 13260 requires that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, other than into a community sewer system, must submit a report of waste discharge to the applicable RWQCB. "Waste" is defined in the Basin Plan to include any waste or deleterious material including, but not limited to, waste earthen materials (such as soil, silt, clay, rock, or other organic or mineral material) and any other waste as defined in California Water Code Section 13050(d). Any actions related to the project that would be applicable to California Water Code Section 13260 would be reported to the Central Valley RWQCB.

NPDES General Construction Permit

The NPDES was established per 1972 amendments to the Federal Water Pollution Control Act, in order to control discharges of pollutants from point sources (Section 402). As described above, under "Federal," 1987 amendments to the CWA created a new section of the act devoted to stormwater permitting (Section 402[p]), with individual States designated for administration and enforcement of the provisions of the CWA and the NPDES permit program. The SWRCB issues both general permits and individual permits under this program for construction activities and for industrial activities.

Projects disturbing more than 1 acre of land during construction are required to file a Notice of Intent (NOI) with the SWRCB to be covered under the State NPDES Construction General Permit for discharges of stormwater associated with construction activity. The project proponent must control measures that are consistent with the State Construction General Permit. A Construction SWPPP must be developed and implemented for each site covered by the Construction General Permit. A Construction SWPPP describes BMPs the discharger will use to protect stormwater runoff and reduce potential impacts to surface water quality through the construction period. The Construction SWPPP must contain the following: a visual

monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

Industrial Storm Water General Permit

The State Industrial Storm Water General Permit Order 97-03-DWQ (Industrial General Permit) is an NPDES permit that regulates discharges associated with 10 broad categories of industrial activities. A new Industrial General Permit was adopted by the State on April 1, 2014, and became effective on July 1, 2015. Facilities that discharge stormwater associated with industrial activity requiring a General Permit are listed by category in 40 Code of Federal Regulations (CFR) Section 122.26(b)(14.) The facilities can be publicly or privately owned. Mining is one of the industries regulated under this permit.

The project proponent must control measures that are consistent with the State General Permit. A SWPPP must be developed and implemented for each site covered by the General Permit. A SWPPP should include BMPs designed to reduce potential impacts to surface water quality through the construction period.

The Industrial General Permit requires implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The Industrial General Permit also requires the development of an Industrial SWPPP and a monitoring plan. Through the Industrial SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce stormwater pollution are described. The Industrial SWPPP must identify, and discharges must implement, a set of minimum BMPs. Implementation of the minimum BMPs, in combination with any advanced BMPs necessary to reduce or prevent pollutants in industrial stormwater discharges, serve as the basis for compliance with technology-based effluent limitations and water quality based receiving water limitations.

The project would be required to comply with the General Industrial Permit. If the project is determined to not discharge to surface waters at any time, then the mine operator could seek an exemption from stormwater permitting requirements from the Central Valley RWQCB.

Groundwater Management Act of 1992

The Groundwater Management Act of 1992, commonly referred to as AB 3030, is designed to provide local public agencies with increased management authority over groundwater resources. Groundwater is a valuable natural resource within California, and AB 3030 ensures safe production and quality by encouraging local agencies to work cooperatively to manage groundwater resources within their jurisdictions (California Water Code Section 10750).

Local

Kern County General Plan

The policies, goals, and implementation measures in the *Kern County General Plan* for hydrology and water quality applicable to the project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below, but, as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space, and Conservation Element

1.3 Physical and Environmental Constraints

Goals

- **Goal 1.** To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

Policies

- **Policy 1.** Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

- **Policy 2.** In order to minimize risk to Kern County residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. The ordinances will establish conditions, criteria and standards for the approval of development in hazard areas.

- **Policy 3.** Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.

- **Policy 6.** Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby minimizing the extent of topographic alteration required and reducing soil erosion while maintaining soil stability.

- **Policy 7.** Ensure effective slope stability, wastewater drainage, and sewage treatments in areas with steep slopes are adequate for development.

- **Policy 8.** Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.

- **Policy 9.** Construction of structures that impede water flow in a primary floodplain will be discouraged.

- **Policy 10.** The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.

- **Policy 11.** Protect and maintain watershed integrity within Kern County.

Implementation Measures

- **Implementation Measure F.** The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.

- **Implementation Measure H.** Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.

- **Implementation Measure I.** Designated flood channels and water courses, such as creeks, gullies, and riverbeds, will be preserved as resource management areas or in the case of urban areas, as linear parks whenever practical.

- **Implementation Measure J.** Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.

- **Implementation Measure N.** Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.9 Resource

Goals

- **Goal 3.** Ensure the development of resource areas minimize effects on neighboring resource lands.

Policies

- **Policy 11.** Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

1.10 General Provisions

1.10.6 Surface Water and Groundwater

Policies

- **Policy 34.** Ensure that water quality standards are met for existing users and future development.

- **Policy 39.** Encourage the development of the County's ground water supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

- **Policy 41.** Review development proposals to ensure adequate water is available to accommodate projected growth.

- **Policy 43.** Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

- **Policy 44.** Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practicable.

- **Policy 46.** In accordance with the Kern County Development Standards, tank truck hauling of domestic water for land developments or lots within new land developments is not permitted.

Implementation Measures

- **Implementation Measure U.** The Kern County Environmental Health Services Department will develop guidelines for the protection of groundwater quality which will include comprehensive well construction

standards and the promotion of ground water protection for identified degraded watersheds.

- **Implementation Measure W.** Applications for General or Specific Plan Amendments will include sufficient data for review to facilitate desirable new development proposals consistent with General Plan policies, using the following criteria and guidelines:

    i. The provision of adequate water, sewer, and other public services to be used.

    ii. The provision of adequate on-site nonpublic water supply and sewage disposal if no public systems are available or used.

- **Implementation Measure X.** Encourage effective ground water resource management for the long-term economic benefit of the County through the following:

    i. Promote ground water recharge activities in various zone districts.

    ii. Support for the development of Urban Water Management Plans and promote Department of Water Resources grant funding for all water providers.

    iii. Support the development of Ground Water Management Plans.

    iv. Support the development of future sources of additional surface water and ground water, including conjunctive use, recycled water, conservation, additional storage of surface water and ground water and desalination.

- **Implementation Measure Y.** Promote efficient water use by utilizing measures such as:

    i. Requiring water-conserving design and equipment in new construction.

    ii. Encouraging water-conserving landscaping and irrigation methods.

    iii. Encouraging the retrofitting of existing development with water conserving devices.

Kern County Ordinance

Title 17 – Buildings and Construction

Chapter 17.28 – Kern County Grading Code

The purpose of the Kern County Grading Code is to safeguard life, limb, property, and the public welfare by regulating grading on private property. All applicable requirements of the Kern County Grading Code will be applied during implementation of the project. All required grading permit(s) shall be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to hydrology and water quality are provided below.

Section 17.28.140 – Erosion Control

A. Slopes. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

B. Other Devices. Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.

C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Section 17.28.170 – Grading Inspection

A. General. All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.

B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.

D. Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

E. Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.

F. Building Official. The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.

G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.

H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:

    1. The civil engineer, soils engineer, or engineering geologist, has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.

2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

Chapter 17.48 – Kern County Floodplain Management

Any construction that takes place within areas of special flood hazards, areas of flood-related erosion hazards, and areas of mudslide (i.e., mudflow) hazards within the jurisdiction of unincorporated Kern County will comply with the requirements and construction design specifications of this ordinance. Any required development permits will be obtained prior to commencement of construction activities.

Title 19 – Zoning Ordinance

Chapter 19.70 – Floodplain Combining District

Section 19.70.040 – Prohibited Uses

All other uses not permitted by Sections 19.70.020 and 19.70.030 of this chapter or accessory thereto under Section 19.08.110 are prohibited in an FP District, including:

A. All uses prohibited by the base district with which the FP district is combined;

B. All uses that will likely increase the flood hazard or affect the water-carrying capacity of the floodplain beyond the limits resulting from encroachment as specified in Section 19.70.130 of this chapter;

C. Dumping, stockpiling or storage of floatable substances or other materials which, in the opinion of the Kern County engineering and survey services department, will add to the debris load of the stream or watercourse, unless protected by flood control devices approved by the Kern County engineering and survey services department and constructed in accordance with Section 19.70.130 of this chapter;

D. Storage of junk or salvage operations;

E. Oil storage tanks or processing equipment, unless floodproofed or sufficiently elevated above the base flood elevation, as determined by the Kern County engineering and survey services department;

F. Individual sewage disposal systems (e.g., septic tank systems), unless protected by flood control devices approved by the Kern County engineering, surveying, and permit services department and constructed in accordance with the requirements of the Kern County public health services department so as to minimize infiltration of floodwaters into the systems and discharges from the systems into the floodwaters;

G. Sources of water supply (e.g., wells, springs, etc.) unless protected by flood control devices approved by the Kern County engineering and survey services department and constructed in accordance with the requirements of the Kern County health department so as to minimize infiltration of floodwaters;

H. Any use which endangers the temporary safeguards erected for flood protection.

4.10.4 Impacts and Mitigation Measures

Methodology

This section presents the CEQA impact analysis related to potential hydrology and water quality impacts associated with the project. This analysis compares the baseline conditions for the affected environment relevant to hydrology and water quality, as presented above in Section 4.10.2, *Environmental Setting*, with conditions that would occur due to construction, operation, and reclamation activities as part of the project. Because many of the activities that will occur as part of the project are similar, if not identical, to many of the current activities occurring at the site under existing (baseline) conditions, this analysis appropriately focuses on the differences between the existing operations and operations that would occur as a result of the project. These differences primarily relate to the rate of mining and processing, addition of product streams (e.g., concrete and asphalt processing plant, concrete batch plant), and expansion of the area and depth of mining and reclamation. This comparison of baseline conditions to conditions with the project is evaluated in consideration of several significance criteria, as defined below. The analysis utilizes information from *Hydrology Study for Johe Ranch Mine, County of Kern, California* (LAV/Pinnacle Engineering 2019; included as Appendix I), as well as the sources described in Section 4.10.1, *Introduction*.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on hydrology and water quality. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to hydrology and water quality if it would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

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 the addition of impervious surfaces, in a manner which would:

    i. result in a substantial erosion or siltation on- or off-site

    ii. substantially increase the rate of amount of surface runoff in a manner which would result in flooding on-or offsite;

    iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

    iv. impede or redirect flood flows;

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas.

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Project Impacts

Impact 4.10-1: The project would violate water quality standards or waste discharge requirements.

Development of the project would result in surface disturbance with reduced permeability. As proposed, maximum exposed land would be 20 acres at any given time (WZI Inc. 2019a), and 93.67 acres would be subject to disturbance over the life of the project. Potential impacts to water quality, including the potential to violate water quality standards or waste discharge requirements, could occur during construction and mining activities and from releases of stormwater from the project site that contains sediment or other pollutants introduced to surface

water flowing through the site. These potential impacts are evaluated further below. Note that the potential for release of hazardous materials and other chemicals used during project construction, operation, and reclamation are addressed in Section 4.9, *Hazards and Hazardous Materials*.

Ground Disturbance and Soil Erosion

Primary soil-disturbing activities that would occur during construction and mining activities include grading of roads and processing areas. These grading and construction activities would have the potential to cause water quality degradation resulting from soil disturbance. Disturbance of soil during construction could result in soil erosion and subsequent water quality degradation through increased turbidity and sediment transport within the drainage channels on the project site. The project proponent would be required to prepare Construction SWPPPs for ground disturbance activities during construction and would also be required to maintain an appropriate Industrial SWPPP throughout the duration of the project. Preparation of the SWPPP is required by Federal and State law, and these documents and compliance with the stormwater management and reporting requirements to be specified therein are, therefore, considered part of the project. Compliance with the SWPPP requirements and implementation of appropriate BMPs would prevent the discharge of sediment and polluted surface water during construction activities associated with the project. Therefore, the potential impact associated with soil disturbance during construction of project facilities is considered less than significant.

Degradation of Surface Water and Groundwater Quality

The project is subject to all applicable Federal, State, and County water quality regulations. This includes, but is not limited to, required adherence to the Federal CWA, NPDES requirements, the National Flood Insurance Act, requirements of the DWR, the California Fish and Game Code, the California Water Code, the *Kern County General Plan*, and the Kern County Zoning Ordinance. Development of the project would result in a significant impact to hydrology and water quality if associated construction activities, operations, or mining areas would create conditions that would result in the violation of any water quality or waste discharge standards. Such violations could occur through the creation of erosion, sedimentation, and/or polluted runoff; the accidental release of potentially hazardous materials required during operational activities; or the discharge of contaminated groundwater during dewatering activities. Appropriate BMPs and compliance with applicable regulations would be implemented to reduce potential water quality impacts to a less-than-significant level. Therefore, this impact is considered less than significant with mitigation.

Mitigation Measures

MM 4.10-1 Prior to any ground-disturbing activities, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the Regional Water Quality Control Board—Central Valley Region. The SWPPP shall be designed to minimize runoff and shall specify best management practices to prevent all pollutants from contacting stormwater, with the intent of keeping sedimentation or any other pollutants

from moving off-site and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and contracts. Recommended best management practices may include:

A. stockpiling and disposing of material properly;

B. protecting existing storm drain inlets and stabilizing disturbed areas;

C. implementing erosion controls;

D. properly managing construction materials; and

E. managing waste, aggressively controlling litter, and implementing sediment controls.

MM 4.10-2 The project proponent shall obtain approval of a Spill Prevention Control and Countermeasures Response Plan from the Kern County Public Health Services Department/Environmental Health Services Division and the California Department of Water Resources.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant.

Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

There are no groundwater resources or water wells located within the project site. As described in Section 4.18, *Utilities and Service Systems*, the project would receive water from the West Kern Water District (WKWD), which supplies groundwater from 15 wells, with five wells located in the north well field and eight wells located in the south well field. The south well field is located approximately 15 miles northeast of the City of Taft while the north well field is located approximately 3 miles northwest of the south well field. The WKWD has a contract for surface water from the California State Water Project (SWP). The SWP is the largest State-built, multi-purpose water project in the country. Water purchased from the SWP through the KCWA is utilized to replenish the groundwater basin beneath the vicinity of the WKWD's groundwater banking area. KCWA (according to DWR Bulletin 118) (DWR 2006) estimates total groundwater in storage in the Kern Groundwater Subbasin to be nearly 40,000,000 AF and dewatered storage to be 10,000,000 AF. Water banking by WKWD is performed in the Kern River Fan area and began in 1966. All the surface water deliveries to WKWD are banked and later recovered from wells, except for direct industrial water deliveries to La Paloma Power Plant.

Non-potable water would be utilized for dust control and during reclamation activities. This water would be obtained from the WKWD in accordance with a will-serve letter for up to 1 AF

of water per year, obtained from a nearby water supply line, and would be transported to the project site via water truck. Since the WKWD's primary water supply would be from the SWP and the WKWD has banked approximately 200,000 AF of surplus water, it will have the capacity to provide up to 1 AF per year during single-dry and multiple-dry years. Based on this assessment, long-term water demands for the project would be relatively minor and can be met primarily by available produced oil field water sources with a minor contribution of surface/groundwater from the WKWD. Additionally, following completion of reclamation activities, the site would be returned to undeveloped grazing land, would be pervious, and would not result in a permanent demand for groundwater. Therefore, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge and impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.10-3: The project would 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 the addition of impervious surfaces, in a manner which would result in substantial erosion and/or sedimentation on-site or off-site.

As discussed previously, the site consists primarily of rolling topography with some steep slopes and incised drainages. The site is not located within a Floodplain Safety Overlay District or Dam Inundation Overlay. The following drainage channels are present within the project site:

1. Blue line drainage channel (channel 1), located between Mine Areas 2 and 3.
2. Intermittent drainage channel (channel 2), located between Mine Areas 2 and 1.
3. Intermittent drainage channel (channel 3), located on the east side just north of Mine Area 1.
4. Intermittent drainage channel (channel 4), located between the project site entrance and Mine Area 1.

Development of the project would result in surface disturbance with reduced permeability. As proposed, maximum exposed land would be 20 acres at any given time (WZI Inc. 2019a), and 93.67 acres would be subject to disturbance over the life of the project. As proposed, at a minimum, impacts to drainage channels will be mitigated with the installation of culverts to allow for natural drainage to continue through the project site. There are no diversion structures or erosion control facilities currently on-site.

Based on the Hydrology Study prepared for the proposed project (LAV/Pinnacle Engineering 2019; see Appendix I), pre- and post-development stormwater runoff volumes have been modelled and quantified, as shown in **Table 4.10-4,** *Pre- and Post-Development Stormwater Runoff Volumes*.

Table 4.10-4 Pre- and Post-Development Stormwater Runoff Volumes

Location	Description	Total Runoff Volume (50-year Storm Event [acre-feet])
Mine Area 1	Existing (Undeveloped)	7.3
	Proposed (Developed)	12.2
	Volume Differential – Mine 1	4.9
	Retention Volume Provided	290.0
Mine Area 2	Existing (Undeveloped)	3.5
	Proposed (Developed)	5.2
	Volume Differential – Mine 2	1.6
	Retention Volume Provided	14.3
Mine Area 3	Existing (Undeveloped)	0.9
	Proposed (Developed)	1.6
	Volume Differential – Mine 3	0.7
	Retention Volume Provided	2.1

As shown in **Table 4.10-4,** *Pre- and Post-Development Stormwater Runoff Volumes*, the project would result in an increase in stormwater runoff within each of the proposed mining areas; however, the mine excavations are proposed to drain internally, sloping "inward," such that any silts or eroded materials are captured and prevented from entering the stormwater stream and leaving the site. With regards to the proposed access road, flood control infrastructure such as culverts would be installed as necessary to address potential alteration of the existing drainage pattern within the project site and potential increase in the rate and amount of surface runoff, which could result in on- and off-site erosion and siltation.

Although the various agencies may have slightly different criteria for the design storm, all typically require any project to retain the differential in total stormwater runoff between developed conditions and pre-project or undeveloped conditions. Kern County Standards typically require the "10-year, 5-day" storm to calculate the total stormwater runoff and size of retention basins. In this case, under "developed" conditions, there is no increase in "hardscape," such as roofs, concrete, or pavement. Since the soil type is consistent throughout the site, it can be argued that the proposed mine would not result in any change from historical runoff. However, temporary removal of vegetation and modification of the natural terrain to be more hydraulically efficient would reduce infiltration and increase runoff. The differential in total stormwater runoff between "developed" and "undeveloped" conditions should be retained. Mitigation has been included to ensure on-site drainage and the differential in total stormwater runoff is retained; therefore, impacts would be less than significant with mitigation.

Mitigation Measures

In addition to Mitigation Measures MM 4.10-1 and MM 4.10-2, the following measure shall be implemented.

MM 4.10-3 Prior to commencement of mining, the project proponent shall obtain approval of a detailed Drainage Plan from the Kern County Public Works Department and the California Department of Water Resources.

The Drainage Plan shall: (a) identify the exact location of the drainage channels on-site, and (b) include updated calculations to match the channels in the Plan, accounting for the impacts:

A. on changes in channel slope;

B. to junctions with other channels;

C. on backwater effects from downstream culverts;

D. caused by a determination of the level of channel maintenance required for the channels to effectively route high flow events through the site; and

E. caused by potential head cutting, after mining activities cease.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3, impacts would be less than significant.

Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff which would result in flooding on- or off-site.

As discussed under Impact 4.10-3, the project would alter the existing drainage patterns on the site through the excavation of mine pits and through construction of the proposed access road. Development of the project would result in surface disturbance with reduced permeability. The mine pits would drain inward and serve as on-site flood control features. With regards to the proposed access road, flood control infrastructure such as culverts would be installed as necessary to address potential alteration of the existing drainage pattern within the project site and potential increase in the rate and amount of surface runoff, which could result in on- and off-site flooding. Implementation of Mitigation Measure MM 4.10-3 would ensure potential impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-3, impacts would be less than significant.

Impact 4.10-5: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

As discussed in Impacts 4.10-3 and 4.10-4, the project could increase runoff and the potential for polluted runoff downslope to the north of the project site. However, the project would require stormwater facilities to capture and manage substantial volumes of stormwater runoff, including the potential for large sediment volumes and debris flows. The project would include on-site flood control features, such as culverts, to reduce runoff volumes.

Surface Mining and Reclamation Act (SMARA) Section 3706(d) requires that stormwater conveyance structures be designed for the 20-year, 1-hour storm event. Kern County Engineering Bulletin 11-02 (December 21, 2011) and the County Development Standards require stormwater facilities to be capable of managing the 10-year, 5-day rainfall event. Mitigation Measures MM 4.10-1 through MM 4.10-3 are recommended, requiring that prior to commencement of mining, the project proponent shall prepare and obtain approval of a SWPPP, a Spill Prevention Control and Countermeasures Response Plan, and a detailed Drainage Plan from the Kern County Public Works Department and the DWR. Implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3 would reduce this impact to less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3, impacts would be less than significant.

Impact 4.10-6: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.

As discussed under Impact 4.10-4, the project would alter the existing drainage patterns on the site through the excavation of mine pits and through construction of the proposed access road, which would result in surface disturbance with reduced permeability. The mine pits would drain inward and serve as on-site flood control features. With regards to the proposed access road, flood control infrastructure such as culverts would be installed as necessary to address potential alteration of the existing drainage pattern within the project site and potential increase in the rate and amount of surface runoff, which could redirect flood flows. Implementation of Mitigation Measure MM 4.10-3 would ensure potential impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-3, impacts would be less than significant.

Impact 4.10-7: The project would result in flood hazard, tsunami, or seiche zones, the project would risk release of pollutants due to project inundation.

The project site is not located within a designated flood hazard area, tsunami hazard area, or seiche zone. Due to the rolling hill topography and well-drained soil conditions present on-site, the project is not expected to result in the release of pollutants due to project inundation. Additionally, the project would be required to comply with a SWPPP, and any hazardous mine waste generated by the proposed project would be disposed of in accordance with all applicable Federal, State, and local regulations. A Fuel and Oil Spill Contingency Plan would also be prepared to address the treatment of any spilled contaminants at the project site. Secondary containments would be used around fuel, oil, gas, and any other hazardous materials storage areas to further reduce the potential for the release of hazardous materials at the site. No hazardous waste is expected to be generated from the project; however, in the case of a fuel spill or other hazardous material contaminating the project site, the waste would be removed from the project site by a certified contractor.

As discussed in Impact 4.10-3, the proposed project is proposed to include the modification of existing drainages and the construction of culverts to manage stormwater on the project site. Based on the evaluation provided in the Hydrology Study (LAV/Pinnacle Engineering 2019), the mine pits and other drainage control features (such as culverts, sediment basins, sediment traps, etc.) would be sufficient to control stormwater flows. Therefore, impacts associated with creating or contributing runoff water that would exceed the capacity of existing or planned

stormwater drainage systems, or providing substantial additional sources of polluted runoff, are considered less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3, impacts would be less than significant.

Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Ground-disturbing activities associated with the project could potentially degrade water quality through erosion and subsequent sedimentation of drainages. Additionally, accidental release of potentially harmful materials, such as engine oil and diesel fuel, could degrade the water quality of nearby streams. Preparation of and compliance with a SWPPP (MM 4.10-1), a Spill Prevention Control and Countermeasures Response Plan (MM 4.10-2), and a detailed Drainage Plan (MM 4.10-3) would reduce potential impacts to be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 through 4.10-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project. (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.) The geographic area for cumulative impacts to hydrology and water quality includes the local ephemeral drainages, watershed, and the local groundwater basin. Potential hydrology and water quality impacts associated with the construction and operation of the project, including water quality degradation due to erosion, sedimentation, or the release of hazardous materials, would be limited to this geographic area.

Impact 4.10-9: The project would contribute to cumulative hydrology and/or water quality impacts.

The existing use of the project site is grazing land. There are no current or proposed projects in the geographic area of the project that would cumulatively contribute to the violation of any

water quality standards or waste discharge requirements. Cumulative projects are not expected to result in substantial depletion of groundwater supplies or interference with groundwater recharge, alteration of existing drainage patterns in a matter which would result in substantial runoff/erosion/siltation, or substantial flooding or creation or contribution of stormwater runoff. No cumulative impacts would occur; therefore, no additional mitigation measures are proposed.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 through MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 through MM 4.10-3, cumulative impacts would be less than significant.

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Section 4.11
Land Use and Planning

4.11.1 Introduction

This section of the Environmental Impact Report (EIR) addresses potential land use impacts that would result from the project. The following discussion addresses existing environmental conditions in the affected environment, evaluates the project's consistency with applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project implementation.

4.11.2 Environmental Setting

Regional Setting

The project site is in the Mountain Geographic Region of unincorporated Kern County, approximately 8.5 miles west of the unincorporated community of McKittrick, California. The Mountain Geographic Region includes the following subareas: Belridge, Westside, Frazier Park, Tehachapi, and Lake Isabella. The project site is located within the Westside Regional Planning Subarea within the Mountain Geographic Area. The Westside Subarea encompasses the western portion of the county. The Cities of Taft and Maricopa are in the area, along with the unincorporated communities of South Taft, Ford City, Taft Heights, and McKittrick. The economy of the Westside Subarea is resource-based. Oil exploration and production provide a large segment of the employment base, with clay mineral extraction also occurring in the area. Several correctional institutions also provide an additional source of employment in this area (Kern County 2016).

Local Setting

The proposed project would be in a rural area in western Kern County identified as portions of Kern County Assessor's Parcel Numbers (APNs) 156-070-01, 156-070-02, and 156-070-10. The project site is comprised of 331 acres of gently sloping to steeply sloping topography that generally ranges in elevation from 2,100 feet above mean sea level (msl) at the northeastern corner of the property to 2,800 feet above msl near the southwestern property line. The property is fenced to exclude the public and is utilized for cattle grazing and contains four abandoned wells. Several drainage channels are located on the project site, generally draining from the southwest through the site in a generally northeasterly direction. According to the Federal Emergency Management Agency (FEMA), the project site is "Zone X – Area of Minimal Flood Hazard" (FEMA 2008).

The project site is subject to the *Kern County General Plan* and Kern County Zoning Ordinance. The project site is comprised of the following map code designations: 8.3/2.4

(Extensive Agriculture with a minimum of 20-acre parcel size and steep slope), 8.3 (Extensive Agriculture with a minimum of 20-acre parcel size), 8.4/2.4 (Mineral and Petroleum with a minimum of 5-acre parcel size and steep slope), 8.4 (Mineral and Petroleum with a minimum of 5-acre parcel size), and 8.4/2.2 (Mineral and Petroleum with a minimum of 5-acre parcel size and on a landslide hazard overlay) (**Table 4.11-1,** *Existing Uses, Zoning, and Land Use Designations*; **Figure 4.11-1,** *Existing Kern County General Plan Designations*). The entire project site and surrounding areas are currently zoned A (Exclusive Agriculture) (**Figure 4.11-2,** *Existing Kern County Zoning Classifications*). Definitions of land use designations and zoning classifications are provided below.

Table 4.11-1 Existing Uses, Zoning, and Land Use Designations

Parcel	Existing Land Use	General Plan Land Use Designation	Existing Zoning Classification
Project Site			
Portion of the Project Site on APN 156-070-01	Grazing	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.2 (Mineral and Petroleum (min. 5-acre parcel size) / Landslide Overlay) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
Portion of the Project Site on APN 156-070-02	Grazing	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay)	A (Exclusive Agriculture)
Portion of the Project Site on APN 156-070-10	Grazing	8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)
Surrounding Parcels			
North	Grazing, diatomaceous earth mining operation	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay)	A (Exclusive Agriculture)
South	Grazing, residence, shop building, agricultural storage	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract))	A (Exclusive Agriculture)

Table 4.11-1 Existing Uses, Zoning, and Land Use Designations

Parcel	Existing Land Use	General Plan Land Use Designation	Existing Zoning Classification
	buildings, chicken coop	8.3/2.2 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Landslide Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.2 (Mineral and Petroleum (min. 5-acre parcel size) / Landslide Overlay) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	
East	Grazing	8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)	A (Exclusive Agriculture)
West	Grazing	8.3 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract)) 8.3/2.4 (Extensive Agriculture (min. 20-acre parcel size, 80 acres with Williamson Act Contract) / Steep Slope Overlay) 8.4 (Mineral and Petroleum (min. 5-acre parcel size)) 8.4/2.4 (Mineral and Petroleum (min. 5-acre parcel size) / Steep Slope Overlay)	A (Exclusive Agriculture)

Kern County General Plan Map Provisions

Map Code 2.2 Physical and Environmental Constraint – Landslide

Areas of down-slope ground movement identified on the Kern County Seismic Hazard Atlas.

Map Code 2.4 Physical and Environmental Constraint – Steep Slope

Land with an average slope of 30% or steeper.

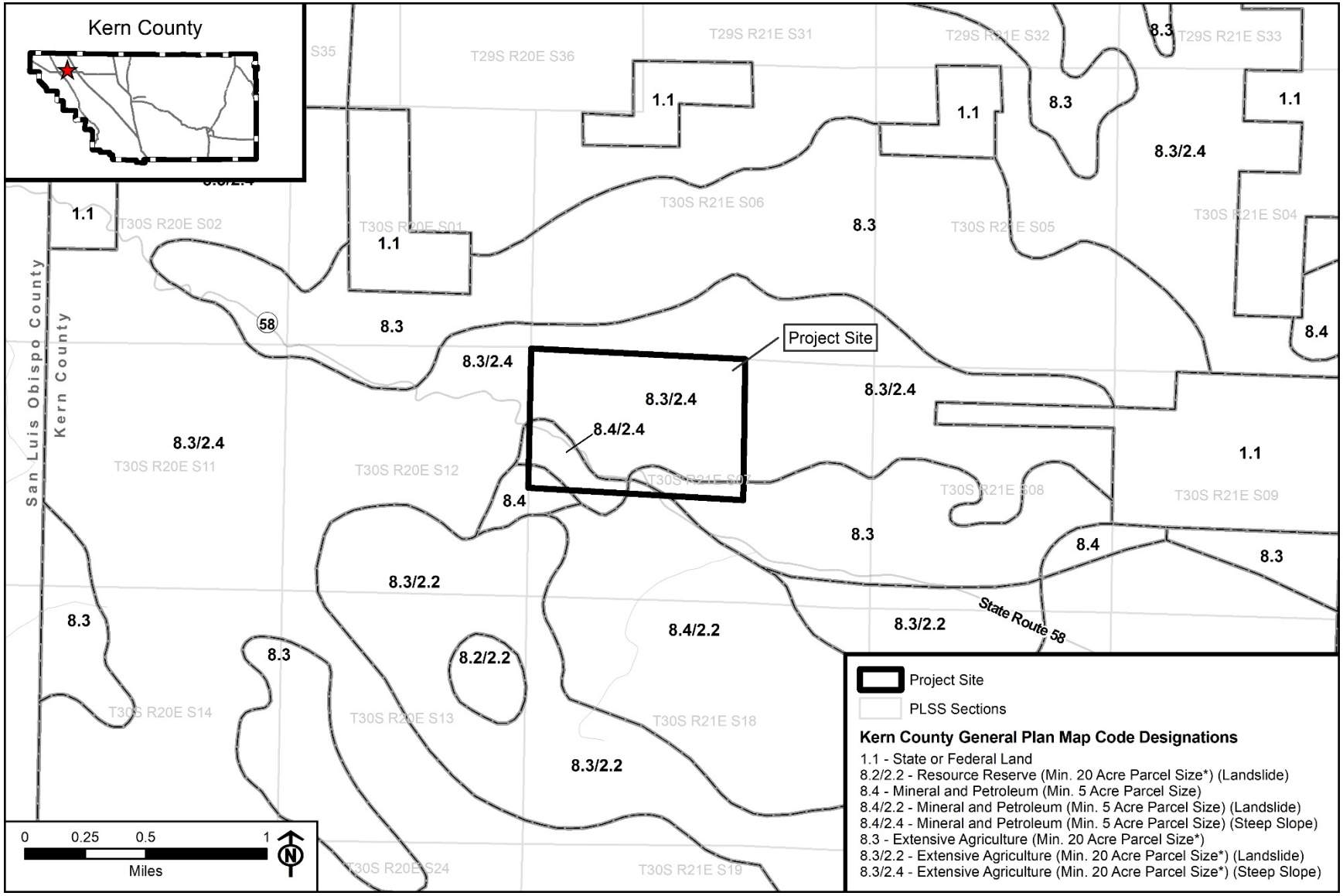

Figure 4.11-1
Existing Kern County General Plan Designations

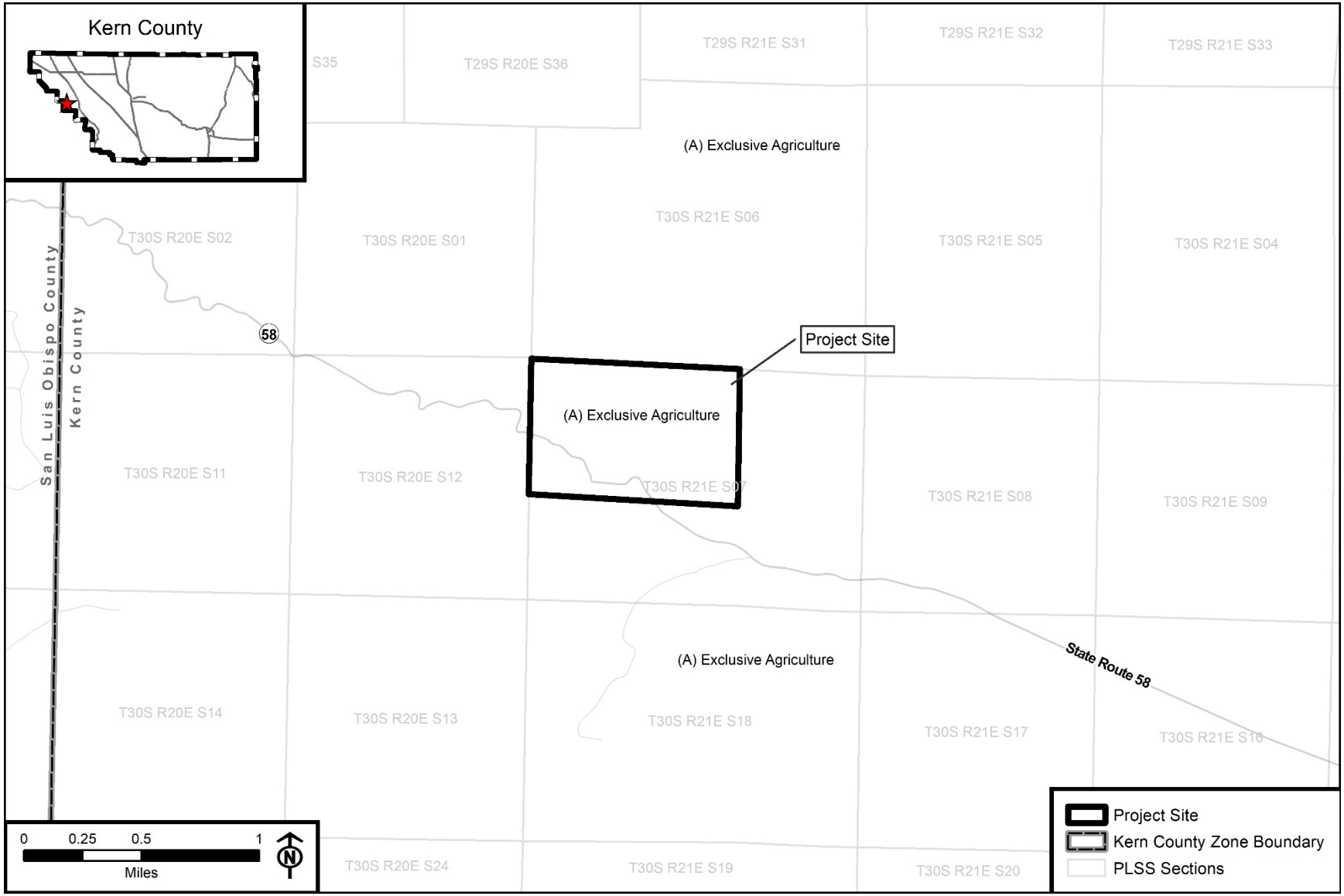

Figure 4.11-2
Existing Kern County Zoning Classifications

Map Code 8.3 – Extensive Agriculture

Agricultural uses involving large amounts of land with relatively low value-per-acre yields, such as livestock grazing, dry land farming, and woodlands. Minimum parcel size is 20 acres gross, except lands subject to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size shall be 80 acres gross.

Uses shall include, but are not limited to, livestock grazing, dry land farming, ranching facilities, wildlife and botanical preserves, irrigated croplands, and timber harvesting; one single-family dwelling unit; water storage or groundwater recharge areas; mineral, aggregate, and petroleum exploration and extraction; recreational activities, such as gun clubs and guest ranches; and land within development areas subject to significant physical constraints.

Map Code 8.4 – Mineral and Petroleum

Areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Uses are limited to activities directly associated with the resource extraction. Minimum parcel size is 5 acres gross.

Uses shall include, but are not limited to, mineral and petroleum exploration and extraction, including aggregate extraction; extensive and intensive agriculture; mineral and petroleum processing (excluding petroleum refining); natural gas and geothermal resources; pipelines; power transmission facilities; communication facilities; equipment storage yards; and borrow pits.

Kern County Zoning Classifications

A – Exclusive Agriculture (Zoning Ordinance Chapter 19.12)

The purpose of the Exclusive Agriculture (A) district is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the A district are limited primarily to agricultural uses and other activities compatible with agricultural uses. Resource extraction and energy development uses, including mining and mineral extraction pursuant to Chapter 19.100, is permitted within this zone classification subject to securing a conditional use permit in accordance with the standards and procedures set out in Chapter 19.104.

4.11.3 Regulatory Setting

Local

Land use and planning decisions within and adjacent to the project site are guided and regulated by the *Kern County General Plan* and Kern County Zoning Ordinance. The *Kern County General Plan* contains goals, objectives, and policies and provides an overall foundation for

establishing land use patterns. The Kern County Zoning Ordinance contains regulations through which the *Kern County General Plan* provisions are implemented.

Applicable goals, policies, and implementation measures for each resource analyzed have been identified in their respective Regulatory Setting section in Sections 4.1 through 4.17 of this EIR. The goals and policies listed in each section of Chapter 4 that have the potential to conflict with the project are considered for consistency with the project in **Table 4.11-2,** *Project Consistency with Applicable Plans, Policies, and Regulations*.

This section lists all applicable goals, objectives, policies, and implementation measures adopted for the purpose of avoiding or mitigating an environmental effect not previously identified in the above-referenced sections as they relate to land use planning and the project. The project's consistency with the *Kern County General Plan* and Kern County Zoning Ordinance is discussed under Impact 4.11-1.

Kern County General Plan

California Government Code 65300 requires Kern County to prepare and adopt a general plan. Its purpose is to give long-range guidance to Kern County officials making decisions affecting the growth and resources of unincorporated Kern County. The *Kern County General Plan* helps to ensure that day-to-day planning and land use decisions are in conformance with the long-range program designed to protect and further the public interest. It will be periodically reviewed and updated as the goals and requirements of the community evolve and change.

Each of the resource sections in Chapter 4 of this EIR list goals and policies of the *Kern County General Plan* of particular potential relevance to that resource subject. An evaluation of the project's potential to conflict with policies of the *Kern County General Plan* is presented in **Table 4.11-2,** *Project Consistency with Applicable Plans, Policies, and Regulations*, and discussed in Impact 4.11-1.

Kern County Ordinance

Title 19 – Zoning Ordinance

The Kern County Zoning Ordinance establishes the basic regulations under which land is developed. This includes allowable uses, building setback requirements, and development standards. Pursuant to State law, the zoning ordinance must be consistent with the *Kern County General Plan*. **Table 4.11-2,** *Project Consistency with Applicable Plans, Policies, and Regulations*, lists the zoning designation for the project site. The applicable zoning district is defined below.

Chapter 19.12 – Exclusive Agriculture (A) District

Section 19.12.010 – Purpose and Application

> The purpose of the Exclusive Agriculture (A) District is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural

uses. Permitted land uses in this district include agriculture, commercial uses, utility lines and substations, resource extraction, energy development, and miscellaneous accessory structures related to permitted uses. Permitted uses in the A District subject to a CUP include the following:

- mining and mineral extraction pursuant to Chapter 19.100 of the County Zoning Ordinance

Chapter 19.100 – Surface Mining Operations

Section 19.100.010 – Purpose and Application

The purpose of this chapter is to regulate surface mining operations consistent with the requirements of the California Mining and Reclamation Act (Public Resources Code Sections 2710 et seq.) and the State Policy for Surface Mining and Reclamation Practice (Title 14 of the California Administrative Code, sections 3500 et seq.). The requirements of this chapter are applicable to any surface mining operation undertaken in unincorporated Kern County, except for those operations specifically exempted by Sections 2714 or 2776 of the California Public Resources Code.

Chapter 19.104 – Conditional Use Permits

Section 19.104.010 – Purpose and Application

The purpose of this chapter is to establish procedures and general standards for the review and approval of Conditional Use Permits authorized by various sections of this title. Whenever a use is listed in any section of this title as a use permitted subject to securing a Conditional Use Permit, it shall be approved only if it is consistent with the County General Plan and meets all requirements of this title and subject to any conditions deemed appropriate by the decision-making authority.

Section 19.104.040 – Basis for Approval

The decision-making authority may approve or conditionally approve an application for a Conditional Use Permit if it finds all of the following:

A. The proposed use is consistent with the goals and policies of the applicable General or Specific Plan.

B. The proposed use is consistent with the purpose of the applicable district or districts.

C. The proposed use is listed as a use subject to a Conditional Use Permit in the applicable zoning district or districts or a use determined to be similar to a listed conditional use in accordance with the procedures set out in Sections 19.08.030 through 19.08.080 of this title.

D. The proposed use meets the minimum requirements of this title applicable to the use.

E. The proposed use will not be materially detrimental to the health, safety, and welfare of the public or to property and residents in the vicinity.

Table 4.11-2 Project Consistency with Applicable Plans, Policies, and Regulations

Applicable Plan, Policy, or Regulation	Consistency Analysis
Chapter 1. Land Use, Open Space, and Conservation Element	
1.3 Physical and Environmental Constraints	
Goal 1. To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.	**Consistent:** The project site is in a remote area with limited adjacent land uses. Mining activities and reclamation activities are subject to Federal, State, and local safety regulations and would not pose a substantial risk to people or property.
Policy 1. Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.	**Consistent:** The Geotechnical Engineering Investigation Report (BSK Associates 2019) and the Hydrology Study (LAV/Pinnacle Engineering 2019) conducted for the project determined that the project would not result in an unmitigated significant impact associated with seismic or flood hazards.
Policy 2. In order to minimize risk to Kern County residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. These ordinances will establish conditions, criteria, and standards for the approval of development in hazard areas.	**Consistent:** The project site is within the 2.2 (Landslide) and 2.4 (Steep Slope) physical and environmental constraints overlay, requiring the project to adhere to standard grading practices to prevent soil instability and erosion. The project does not propose residential development and is not within any other hazardous areas, including physically or environmentally constrained areas; therefore, the proposed project would be consistent with this *Kern County General Plan* policy.
Policy 3. Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.	**Consistent:** The project is within 8.3 Extensive Agriculture and 8.4 Mineral and Petroleum general plan land use designations and zoned A (Exclusive Agriculture). The project would be a compatible use with this zoning designation. The project would be within the 2.2 and 2.4 Steep Slope physical and environmental constraints overlay, requiring the project to adhere to standard grading practices to prevent soil instability and erosion. The project is not located within any other hazardous areas, including physically or environmentally constrained areas; therefore, the proposed project would be consistent with this *Kern County General Plan* policy.

Table 4.11-2 Project Consistency with Applicable Plans, Policies, and Regulations

Applicable Plan, Policy, or Regulation	Consistency Analysis
Policy 6. Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby minimizing the extent of topographic alteration required and reducing soil erosion while maintaining soil stability.	**Consistent:** The project would be within the 2.2 (Landslide) and 2.4 Steep Slope physical and environmental constraints overlay, requiring the project to adhere to standard grading practices to prevent soil instability and erosion. Development associated with the project would be for mining purposes and no structures are proposed. When the mining operations are complete, the project area would be reclaimed to a maximum slope of 3:1 (horizontal:vertical) and revegetated in accordance with the approved reclamation plan, which is intended in part to prevent soil erosion and to maintain soil stability; therefore, the proposed project would be consistent with this *Kern County General Plan* policy.
Policy 8. Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.	**Consistent:** The Hydrology Study (LAV/Pinnacle Engineering 2019) conducted for the project determined that the project would not result in an unmitigated significant impact associated with stormwater.
Policy 9. Construction of structures that impede water flow in a primary floodplain will be discouraged.	**Consistent:** The Hydrology Study (LAV/Pinnacle Engineering 2019) conducted for the project determined that the project would not result in an unmitigated significant impact associated with stormwater.
1.9 Resource	
Goal 1. To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.	**Consistent:** The proposed project would be on land designated by the *Kern County General Plan* as 8.4 Mineral and Petroleum and 8.3 Extensive Agriculture. The proposed uses would be compatible with the existing land use designation and zoning and would beneficially impact the economic strength derived from mineral resources in the area and would not have a negative impact on the economic strength derived from the petroleum, agriculture, or rangeland resources in the area. Therefore, the proposed project would be consistent with this *Kern County General Plan* goal.
Goal 2. Protect areas of important mineral, petroleum, and agricultural resource potential for future use.	**Consistent:** Implementation of the proposed project would utilize existing mineral resources within the project site. The mineral resources analysis conducted for this EIR determined that the project would result in production and making mineral resources available for beneficial use within Kern County and surrounding areas. Therefore, the proposed project would be consistent with this *Kern County General Plan* goal.
Goal 3. Ensure the development of resource areas minimize effects on neighboring resource lands.	**Consistent:** The properties surrounding the proposed project site are designated by the *Kern County General Plan* as Extensive Agriculture and Mineral and Petroleum, as is the project site. The proposed use (mineral extraction) is listed among the included uses within these land use designations, and therefore is consistent with the goals, policies, and implementation measures of these land use designations. Neighboring resource lands (petroleum, agriculture) would not be adversely affected.

Table 4.11-2 Project Consistency with Applicable Plans, Policies, and Regulations

Applicable Plan, Policy, or Regulation	Consistency Analysis
Policy 2. In areas with a resource designation on the General Plan map, only industrial activities which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with the General Plan.	**Consistent:** Blending and screening of the resource (diatomaceous earth and overburden materials) would be conducted on-site on an as-needed basis according to customer demand for refined product. A processing screener would be utilized on an as-needed basis. Blending of different types of diatomaceous earth would be conducted as necessary with the use of a loader.
Policy 11. Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.	**Consistent:** The project would maintain the existing drainage through the project site.
Policy 14. Emphasize conservation and development of identified mineral deposits.	**Consistent:** The project would develop an identified mineral deposit.
Policy 17. Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.	**Consistent:** The mineral resources analysis conducted for this EIR determined that the project site is not located within lands classified as MRZ-2, as designated by the State of California.
1.10 General Provisions	
Policy 15. Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	**Consistent:** This EIR documents Kern County's environmental review of the project under CEQA and includes an evaluation of public services finding the project impact less than significant.
Policy 19. In considering discretionary projects for which an EIR must be prepared pursuant to the California Environmental Quality Act (CEQA), the appropriate decision-making body, as part of its deliberations, will ensure that: a) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and b) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the CEQA.	**Consistent:** This EIR documents Kern County's environmental review of the project under CEQA and includes an evaluation of air quality impacts. The project would result in less-than-significant air pollutant emissions after mitigation.
Policy 20. The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Eastern Kern Air Pollution Control District on ministerial permits.	**Consistent:** The project would be subject to the San Joaquin Valley Air Pollution Control District (SJVAPCD) rules, including Regulation VIII, which serves to minimize fugitive dust emissions.
Policy 21. The County shall support air districts' efforts to reduce PM_{10} and $PM_{2.5}$ emissions.	**Consistent:** The project would be subject to the SJVAPCD rules, including Regulation VIII which serves to minimize fugitive dust emissions.
Policy 25. The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.	**Consistent:** This EIR documents the County's environmental review of the project under CEQA and includes an evaluation of cultural resources impacts. The Cultural Resources Assessment prepared for the project (Three Girls and a Shovel, LLC 2008) stipulates in part that no prehistoric or

Table 4.11-2 Project Consistency with Applicable Plans, Policies, and Regulations

Applicable Plan, Policy, or Regulation	Consistency Analysis
	historic archaeological sites were located as a result of the survey, and it therefore recommends the following: 1) No further archaeological work is necessary, unless cultural resources are unearthed during development. Should cultural resources, either historic or prehistoric, be discovered during development, work must halt in the area of the finds until they can be assessed by a qualified archaeologist. 2) Should human remains be discovered at any time, work must halt and the Kern County Coroner be notified immediately (Section 7050.5 of the Health and Safety Code). The Lead Agency has proposed incorporation of mitigation measures consistent with the above recommendations
Policy 27. Threatened or endangered plant and wildlife species should be protected in accordance with State and Federal laws.	**Consistent:** The analysis in this EIR considers potential effects on Threatened and Endangered species and the project would be required through mitigation and through regulatory compliance to minimize impacts on special-status species.
Policy 32. Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.	**Consistent:** The project is subject to compliance with applicable requirements.
Policy 39. Encourage the development of the County's ground water supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.	**Consistent:** A Water Supply Assessment has been submitted for the proposed project, which stipulates in part that that long term water demands for the project would be relatively minor and can be met primarily by available produced oil field water sources with a minor contribution of surface/groundwater from the Western Kern Water District.
Policy 40. Encourage utilization of community water systems rather than the reliance on individual wells.	**Consistent:** A Water Supply Assessment has been submitted for the proposed project, which stipulates in part that that long term water demands for the project would be relatively minor and can be met primarily by available produced oil field water sources with a minor contribution of surface/groundwater from the Western Kern Water District.
Policy 41. Review development proposals to ensure adequate water is available to accommodate projected growth.	**Consistent:** A Water Supply Assessment has been submitted for the proposed project (WZI Inc. 2018c), which stipulates in part that that long-term water demands for the project would be relatively minor and can be met primarily by available produced oil field water sources with a minor contribution of surface/groundwater from the Western Kern Water District.

Table 4.11-2 Project Consistency with Applicable Plans, Policies, and Regulations

Applicable Plan, Policy, or Regulation	Consistency Analysis
Policy 44. Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.	**Consistent:** The Hydrology Study (LAV/Pinnacle Engineering 2019), Water Supply Assessment (WZI Inc. 2018c), and Geotechnical Engineering Investigation Report (BSK Associates 2019) conducted for the project determined that the project would not adversely affect flow conveyance capacity. Kern County is recommending inclusion of mitigation measures requiring the project proponent/operator to submit and obtain approval a Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasure Plan (SPCC) to control potential water quality impacts.
Policy 47. Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	**Consistent:** The project aesthetic impact analysis identifies the requirement for the project to use lighting that minimizes potential spill and night lighting impacts.
Policy 48. Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	**Consistent:** The project aesthetic impact analysis identifies the requirement for the project to use lighting that minimizes potential spill and night lighting impacts.
Chapter 2 Circulation Element	
Goal 5. Maintain a minimum Level of Service (LOS) D for all roads throughout the County.	**Consistent:** As discussed in Section 4.16, *Transportation and Traffic*, of this EIR, under all present and future traffic scenarios, including the impact of the project, the Traffic Impact Study prepared for this project (LAV/Pinnacle Engineering 2018) has shown that all intersections and street segments, in their present form, are estimated to operate at a LOS "A."
Chapter 3 Noise Element	
Goal 1. Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	**Consistent:** The Noise Impact Analysis (WZI Inc. 2019c) conducted for this EIR determined that the project would not result in a significant noise impact; thus, the project would not conflict with this policy.
Policy 1. Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.	**Consistent:** The Noise Impact Analysis (WZI Inc. 2019c) conducted for this EIR determined that the project would not result in a significant noise impact; thus, the project would not conflict with this policy.
Policy 4. Utilize good land use planning principles to reduce conflicts related to noise emissions.	**Consistent:** The Noise Impact Analysis (WZI Inc. 2019c) conducted for this EIR determined that the project would not result in a significant noise impact; thus, the project would not conflict with this policy.
Policy 5. Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels: a. 65 dB-Ldn or less in outdoor activity areas. b. 45 dB-Ldn or less within living spaces or other noise sensitive interior spaces.	**Consistent:** The Noise Impact Analysis (WZI Inc. 2019c) conducted for this EIR determined that the project would not result in a significant noise impact; thus, the project would not conflict with this policy.
Policy 7. Employ the best available methods of noise control.	**Consistent:** The Noise Impact Analysis (WZI Inc. 2019c) conducted for this EIR determined that the project would not result in a significant noise impact; thus, the project would not conflict with this policy.

Table 4.11-2 Project Consistency with Applicable Plans, Policies, and Regulations

Applicable Plan, Policy, or Regulation	Consistency Analysis
Chapter 4 Safety Element	
4.5 Landslides, Subsidence, Seiche, and Liquefaction	
Policy 1. Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.	**Consistent:** The analysis in this EIR determines that the project would have a less-than-significant impact associated with potential liquefaction.
Policy 3. Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	**Consistent:** The Hydrology Study (LAV/Pinnacle Engineering 2019); Water Supply Assessment (WZI Inc. 2018c); and Geotechnical Engineering Investigation Report (BSK Associates 2019) performed for the project determined that the project would not result in an unmitigated significant impact.
4.6 Wildland and Urban Fire	
Policy 4. Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.	**Consistent:** The project has direct access from State Route 58 for emergency vehicle access if necessary.
Policy 6. All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.	**Consistent:** The project will comply with the adopted Fire Code and Fire Department requirements.

4.11.4 Impacts and Mitigation Measures

Methodology

For the purposes of this analysis, relevant documents (particularly the *Kern County General Plan* and Kern County Zoning Ordinance) were consulted and a site visit was performed. The project's consistency with plans and policies for each environmental topic area is summarized below and is described in greater detail in the relevant environmental topic sections of Chapter 4.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to land use and planning. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to land use and planning if it would:

a. Physically divide an established community; or

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.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- Physically divide an established community; and
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Project Impacts

Impact 4.11-1: The project would 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.

The project proposes the approval of a Conditional Use Permit (CUP) for the development of a new mining operation, to mine diatomaceous earth and overburden material, to be operated by Diatom, LLC (project proponent) at the project site in western Kern County. The *Kern County General Plan* and Kern County Zoning Ordinance establish land use policies and regulations that are applicable to the proposed project. **Table 4.11-2,** *Project Consistency with Applicable Plans, Policies, and Regulations*, summarizes the proposed project's general consistency with applicable goals and policies. Many of the issue areas evaluated in **Table 4.11-2,** *Project Consistency with Applicable Plans, Policies, and Regulations*, are discussed in more detail in corresponding sections of this EIR.

The project as proposed, including implementation of mitigation measures provided in this EIR, would not conflict with the *Kern County General Plan* or the Kern County Zoning Ordinance. The proposed mining operation is considered a compatible use within A (Exclusive Agriculture) zone, subject to securing a Conditional Use Permit (CUP). Portions of the project site (i.e., land within the boundaries of APNs 156-070-01 and 156-070-10) are currently under an active Williamson Act contract. The property owner is not proposing to cancel the Williamson Act contract and the site would be reclaimed for use as grazing land. Under Section 17.64.050 of the Williamson Act, mining is considered a compatible use of contracted land but is required to follow the reclamation standards adopted by the Mining and Geology Board, pursuant to Public Resources Code (PRC) Section 2773, including the applicable performance standards for prime agricultural land and other agricultural land, and no exceptions to these standards may be permitted. As discussed in Section 4.2, *Agriculture and Forest Resources*, of this EIR, the project would be required to comply with Mitigation Measure 4.2-1 on portions of the project subject to Williamson Act contracts. Compliance with Mitigation Measure MM 4.2-1 would not conflict with the existing Williamson Act contracts and would not require any changes to the existing *Kern County General Plan* or zoning designations. The project proposes mining and extraction activities in an area zoned to allow such uses, and the proposed project would be implemented and reclaimed consistent with the Surface Mining and Reclamation Act (SMARA).

The project is within the 2.4 Steep Slopes overlay and would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices related to grading and erosion control. Additionally, the project would adhere to standard grading practices as specified in Chapter 70 of the Uniform Building Code (UBC) which would conform to Chapter 19.88 of the Kern County Zoning Ordinance (Hillside Development). Therefore, the project would be consistent with Kern County policies related to development within the 2.4 Steep Slopes environmental and physical constraints overlay. Implementation of mitigation measures identified in this EIR would result in the proposed project remaining consistent with the policies of the *Kern County General Plan* and would reduce this impact to be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-9, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-9, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The geographic scope for cumulative land use impact considerations includes closely related past, present, and reasonably foreseeable future projects within the vicinity of the project site. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.)

Impact 4.11-2: The project would contribute to cumulative land use and planning impacts.

With regard to conflicts with any land use plan, policies, or regulations, including Habitat Conservation Plans, issuance of the requested CUP, implementation of the project's reclamation plan, and implementation of the mitigation measures in this EIR would ensure project compliance with applicable goals, policies, and regulations implemented by Kern County.

Limited planned or future projects are anticipated in the area that would create a potential for land use conflicts with the project. The analysis in this EIR considers existing land uses when

determining potential impacts (e.g., visual, noise, air quality, etc.) and considers these impacts on a cumulative basis. Cumulatively, impacts associated with air pollutant emissions (on a local and regional basis) are found to be significant. However, neither these impacts nor other less-than-significant cumulative or project-specific impacts identified in this EIR are anticipated to contribute to cumulative land use impacts. Therefore, the project's contribution to cumulative land use impacts is considered less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-9, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3, MM 4.2-1 through MM 4.2-3, MM 4.3-1 through MM 4.3-9, MM 4.4-1 through MM 4.4-9, MM 4.5-1 through MM 4.5-3, MM 4.7-1 through MM 4.7-5, MM 4.8-1, MM 4.9-1 through MM 4.9-6, MM 4.10-1 through MM 4.10-3, MM 4.13-1 through MM 4.13-2, MM 4.15-1, and MM 4.16-1 through MM 4.16-3, cumulative impacts would be less than significant.

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Section 4.12
Mineral Resources

4.12.1 Introduction

This section of the Environmental Impact Report (EIR) describes the existing environment and regulatory setting in regard to mineral resources. It also describes the impacts on mineral resources that would result from implementation of the proposed project and any necessary mitigation measures that would reduce these impacts. The information in this section is based on the *Kern County General Plan*, California Department of Conservation (CDOC) documents and maps, and the 2000 California Geological Survey (CGS).

4.12.2 Environmental Setting

The Environmental Setting discusses the existing conditions related to mineral resources within the project area, which includes the project site.

Regional Setting

Mineral and petroleum resources are basic to Kern County's economy. Kern County produces more oil than any other California county. Borax, cement production, and construction aggregates also constitute major economic mineral resources within the County. As new recovery technologies come into use, petroleum extraction is expected to continue in economic importance. An increasing demand for borax, cement, and construction aggregates is also expected to continue (Kern County 2009). In 1999, the State Geologist analyzed 2,971 square miles of land in Kern County to determine the location of mineral resource zones throughout the County. The mineral resource zone (MRZ) categories are defined as follows:

MRZ-1: Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits.

MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain inferred mineral resources as determined by their lateral extension from proven

deposits or their similarity to proven deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.

MRZ-3a: Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration could result in reclassification of all or part of these areas into MRZ-2a or MRZ-2b categories.

MRZ-3b: Areas containing inferred mineral occurrences of undetermined mineral resource significance. Further exploration could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.

MRZ-4: Areas containing no known mineral occurrence.

Table 4.12-1, *Classified Mineral Resources within Kern County*, demonstrates the classified mineral resources within Kern County that are part of the MRZ-2 group and, therefore, have a demonstrated mineral significance (as opposed to the MRZ-3 group, which has an underestimated mineral significance).

Table 4.12-1 Classified Mineral Resources Within Kern County

Mineral Resource	MRZ Classification	Number of Areas	Total Acreage
Borates	MRZ-2a and 2b	2	2,564
Limestone	MRZ-2a	4	2,008
	MRZ-2b	2	157
Silica	MRZ-2a	1	119
Pozzolan (essential cement additive)	MRZ-2b	1	72
Gold	MRZ-2a	3	849
Gold	MRZ-2b	8	6,619
Dimension Stone	MRZ-2a	2	527

Source: Koehler 1999.

Site Characteristics

General geologic conditions in the project area are described in Section 4.7, *Geology and Soils*, of this EIR. The project site is not located within a designated MRZ; however, it is located within the administrative boundary of the Belgian Anticline Oil Field. According to the CDOC Geologic Energy Management Division (CalGEM; formerly the Division of Oil, Gas, and Geothermal Resources [DOGGR]), four abandoned wells are located within the 331-acre project site, as shown on **Figure 3-3,** *Site Plan*. The four wells are located outside the proposed disturbance areas and are described as follows:

1. Baker 1 (abandoned gas well);
2. Seaboard-Honolulu 14-7 (abandoned gas well);
3. Lizbet Gilbert 1 (abandoned gas well); and
4. Lynn 1 (abandoned well).

Oil and gas production at the Belgian Anticline Oil Field is located to the south and southeast of the site. The remainder of the surrounding properties are primarily undeveloped and utilized as grazing land for cattle.

Per a letter submitted to the Kern County Planning and Natural Resources Department on February 7, 2019, the Bureau of Land Management (BLM) stated that the BLM manages the oil and gas mineral estate under the parcels associated with the proposed project (portions of Kern County Assessor's Parcel Numbers [APNs] 156-070-01, 156-070-02, and 156-070-10). Therefore, BLM oil and gas rights would be superior to the surface mining operations.

There are two approved surface mining operations located in the vicinity of the project site, both of which produce aggregates: State Mine ID #91-15-0036 (Conditional Use Permit [CUP] 14, Map 117), located approximately 2.5 miles east of the project site, and State Mine ID #91-15-0038 (CUP 4, Map 96), located approximately 1.4 miles north of the project site.

4.12.3 Regulatory Setting

State

California Department of Conservation Geologic Energy Management Division

CalGEM is a State agency responsible for regulating the drilling, operation, and permanent closure of oil, gas, and geothermal wells. CalGEM also regulates certain pipelines and facilities associated with production and injection, as well as wells and other facilities using science and sound engineering practices to protect the public and the environment.

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act (SMARA) of 1975 (Public Resources Code [PRC] Sections 2710–2796) regulates surface mining operations to assure that adverse environmental impacts are minimized, and mined lands are reclaimed to a usable condition. SMARA encourages the production, conservation, and protection of the State's mineral resources and requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision makers and considered before land-use decisions are made that could preclude mining (Koehler 1999).

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for mineral resources applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all

policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space, and Conservation Element

1.9 Resource

Goals

- **Goal 1.** To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations that will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources or diminish the other amenities that exist in the County.

- **Goal 2.** To protect areas of important mineral, petroleum, and agricultural resource potential for future use.

- **Goal 3.** To ensure that the development of resource areas minimizes effects on neighboring resource lands.

Policies

- **Policy 2.** In areas with a resource designation on the General Plan map, only industrial activities which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with this General Plan.

- **Policy 14.** Emphasize conservation and development of identified mineral deposits.

- **Policy 15.** Agriculture and other resource uses will be considered a consistent use in areas designated for Mineral and Petroleum Resource uses on the General Plan.

- **Policy 25.** Discourage incompatible land use adjacent to Map Code 8.4 (Mineral and Petroleum) areas.

Implementation Measures

- **Implementation Measure H.** Use the California Geological Survey's latest maps to locate mineral deposits until the regional and Statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

- **Implementation Measure K.** Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).

4.12.4 Impacts and Mitigation Measures

Methodology

CDOC publications, the *Kern County General Plan* map, and aerial photos were evaluated to identify potential conflicts of the project's presence and operations with mineral resource extraction. Using these resources and professional judgment, mineral resources impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to mineral resources. A project could have a significant adverse effect on mineral resources if it would:

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; or

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.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue area would result in no impacts or less-than-significant impacts and it was therefore scoped out of requiring further review in this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- 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.

Project Impacts

Impact 4.12-1: The project would 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.

The project would result in the productive use of diatomaceous earth and overburden material present on the project site, and would therefore result in the loss of the availability of a known mineral resource of value to the region, through the extraction and sale/use of the diatomaceous earth and overburden material. However, because the project would produce and make these mineral resources available for beneficial use within Kern County and surrounding areas, this loss is not considered adverse in terms of the County's environmental review pursuant to the CEQA. Further, the proposed end use of cattle grazing would not preclude future additional mineral extraction on the site.

All applicable regulations of CalGEM will be adhered to with regards to the four known wells that exist on the project site (all of which are abandoned and outside of the proposed disturbance), as well as any unknown wells that may be discovered. No wells are proposed in conjunction with the proposed project. Because the project would use mineral resources, would not preclude the future extraction of additional mineral resources, and would not result in the loss of availability of any known Statewide or regionally important mineral resources, this evaluation concludes that the project would have a less-than-significant impact associated with the loss of availability of a known mineral resource of value to the region or residents of the state.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis). However, the geographic scope for cumulative impacts to mineral resources includes all of Kern County. This geographic scope of analysis is appropriate because the loss of availability of mineral resources anywhere in the County would combine with mineral resource impacts of the project to result in a cumulative impact associated with the Countywide loss of an important mineral resource.

Impact 4.12-2: The project would contribute to cumulative mineral resources impacts.

The proposed project would make productive use of the mineral resources extracted at the site and would make these mineral resources available for beneficial use within Kern County and surrounding areas. The project would not preclude future on-site mineral resource development, nor would it result in the loss of a locally important mineral resource recovery site. The project's productive use of mineral resources from the site would not have the potential to result in a considerable contribution to a cumulative impact when considered in combination with impacts from past, present, or reasonably foreseeable projects that could result in the loss of an important mineral resource. Therefore, the proposed project would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site and would not contribute to any cumulative impacts to mineral resources.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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Section 4.13
Noise

4.13.1 Introduction

This section of the Environmental Impact Report (EIR) addresses the potential noise impacts associated with construction and operation of the project. It describes the existing noise conditions on the project site, the regulatory setting, the impacts of the project, and feasible mitigation measures to reduce impacts. The information in this section is based on the *GF Industries Noise Impact Assessment, Kern County, California* (WZI Inc. 2019c; included as Appendix J.1 of this EIR) and on the *Johe Ranch Project – Noise Impact Assessment (Noise Study) Supplemental Memo* (WZI Inc. 2020d; included as Appendix J.2 of this EIR).

Terminology

The following is a brief discussion of common noise terminology and descriptors used in this section.

- **Noise:** Loud, unpleasant, unexpected, or otherwise undesirable sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:
    - Subjective effects (dissatisfaction, annoyance);
    - Interference effects (communication and sleep interference, learning);
    - Physiological effects (startle response); and
    - Physical effects (hearing loss).
- **Sound:** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as human ears or a microphone.
- **Ambient Noise Level:** The composite noise from all sources resulting in the normal, existing level of environmental noise at a given location. The ambient level is typically defined by the equivalent sound pressure level (Leq).
- **Background Noise Level:** The underlying ever-present lower-level noise that remains in the absence of intrusive or intermittent sounds. Distant sources, such as traffic, typically make up the background. The background level is generally defined by the L90 percentile noise level, which is defined as the level exceeded for 90% of the time.
- **Intrusive:** Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration,

frequency, time of occurrence, tonal content, the prevailing ambient noise level, and the sensitivity of the receiver. The intrusive level is generally defined by the L10 percentile noise level, which is defined as the level exceeded for 10% of the time.

- **Decibel (dB):** A measure of sound or vibration amplitude on a logarithmic scale that indicates the squared ratio of sound pressure or vibration velocity root-mean-squared (RMS) amplitude to a reference sound pressure or vibration amplitude. For sound, the reference pressure is 20 micropascals.

- **A-Weighted Decibel (dBA):** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Sound Pressure Level (Leq):** The equivalent steady-state sound or vibration level that would contain the same acoustical or vibration energy in a stated period of time.

- **Day-Night Average Sound Level (Ldn):** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. A noise source that has an Leq that is constant throughout a 24-hour period would have an Ldn that is 6 dB higher than the Leq. For example, a noise source that operates at 60 Leq and operates 24 hours a day would have an Ldn of 66 dB.

- **Hertz (Hz):** A unit of frequency. The number of times per second that the sine wave of sound repeats itself, or that the sine wave of a vibrating object repeats itself.

- **Community Noise Equivalent Level (CNEL):** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.

Ldn and CNEL values rarely differ by more than 1 dB. As a matter of practice, Ldn and CNEL values are considered to be equivalent and are treated as such in this assessment. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level (California Department of Transportation [Caltrans] 2009).

Noise is a by-product of human activities. Noise is generally defined as unwanted sound. The range of sound pressure perceived as sound is extremely large. The decibel is the preferred unit for measuring sound, since it accounts for these variations using a relative scale adjusted to the range of hearing (referred to as the A-weighted decibel of dBA). The A-weighted decibel is a method of sound measurement that assigns weighted values to selected frequency bands in an attempt to reflect how the human ear responds to sound. The range of human hearing is from 0 dBA (the threshold of hearing) to about 140 dBA (the threshold for pain). Examples of noise and their A-weighted decibel levels are shown in **Table 4.13-1,** *Typical Noise Levels*.

Table 4.13-1 Typical Noise Levels

Noise Level (dBA)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock band
80–90	Diesel truck at 50 feet	Loud television at 3 feet, food blender at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area, heavy traffic at 300 feet	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast/recording studio

Source: Caltrans 2009.

To calculate the noise level at a given distance from a noise source, the noise levels are modeled using the Inverse Square Law of Noise Propagation (Caltrans 2009), which states that noise decreases by approximately 6 dBA with every doubling of the distance from the source. **Table 4.13-2,** *Noise Level Changes with Distance from Source*, indicates how noise levels would decrease with distance from the source of noise, using the Inverse Square Law of Noise Propagation.

Table 4.13-2 Noise Level Changes with Distance from Source

Distance from Source of Noise (feet)	Noise Level (dB)
50	91
100	85
500	71
1,000	65
2,500	57
5,000	51

Source: Caltrans 2009.

Vibration

Vibration is defined as the mechanical motion of earth or ground, building, or other type of structure induced by the operation of any mechanical device or equipment located upon or affixed thereto. Vibration generally results in an oscillatory motion in terms of the displacement, velocity, or acceleration of the ground or structure(s) that causes a normal person to be aware of the vibration by means such as, but not limited to, sensation by touch or visual observation of moving objects.

The effects of ground-borne vibration include movements of building floors, rattling of windows, and shaking of items on shelves or hangings on the walls. In extreme cases, vibration can cause damage to buildings. The noise radiated from the motion of the room surfaces is called ground-borne noise. Typical levels of ground-borne vibration are listed in **Table 4.13-3,** *Typical Levels of Ground-Borne Vibration*. The vibration motion normally does not provoke the same adverse human reactions as the noise unless there is an effect associated with the shaking of the building. In addition, the vibration noise can only occur inside buildings. Similar to the propagation of noise, vibration propagated from the source to the receptor depends on the receiving building (i.e., the weight of the building), soil conditions, layering of the soils, the depth of groundwater table, etc.

Table 4.13-3 Typical Levels of Ground-Borne Vibration

Response	Velocity Level[1]	Typical Sources (at 50 Feet)
Minor cosmetic damage of fragile buildings	100	Blasting from construction projects
Difficulty with tasks such as reading a video display terminal (VDT) screen	90	Bulldozers and other heavy-tracked construction equipment
Residential annoyance, infrequent events	80	Rapid transit, upper range
Residential annoyance, frequent events	70	High speed rail, typical
Approximate threshold for human perception	60	Bus or truck, typical
None	50	Typical background vibration

[1] RMS vibration velocity level in vibration decibels (VdB) relative to 10^{-6} inches/second.
Source: Caltrans 2009.

4.13.2 Environmental Setting

The project site is located in a rural area of the San Joaquin Valley in unincorporated Kern County that is dominated by vacant, undeveloped land used for grazing, agriculture, and oil and mineral production land uses. Currently, the project site is undeveloped and is being used for grazing. Due to the general lack of development in the area, ambient noise levels are mainly generated by traffic on nearby State Route (SR) 58 and adjacent roads. The noise levels generated by vehicles are dependent upon various factors such as the number of vehicles, type of vehicles (i.e., automobiles, motorcycles, sport utility vehicles [SUVs], and trucks), type of tire, and speed of vehicles. Otherwise, the project site and surrounding land uses have few ongoing activities that would generate substantial sustained sources of noise.

WZI Inc. collected ambient noise monitoring data for the project site (WZI Inc. 2019c). The monitoring data indicate typical road noise and other contributing noise sources such as passing vehicles and aircraft are typical for the area. Results from noise monitoring are shown in **Table 4.13-4,** *Ambient Noise Monitoring Results*, and on **Figure 4.13-1,** *Ambient Noise Monitoring Results*.

Table 4.13-4 Ambient Noise Monitoring Results

Location	Date	L_{50}	L_{10}	L_5	L_{MAX}	L_{EQ}	L_{dn}	CNEL
At intersection of existing access road and SR 58	12/26/2018	33.3	40.1	44.2	75.6	47.3	54	54.7

Source: WZI Inc. 2019

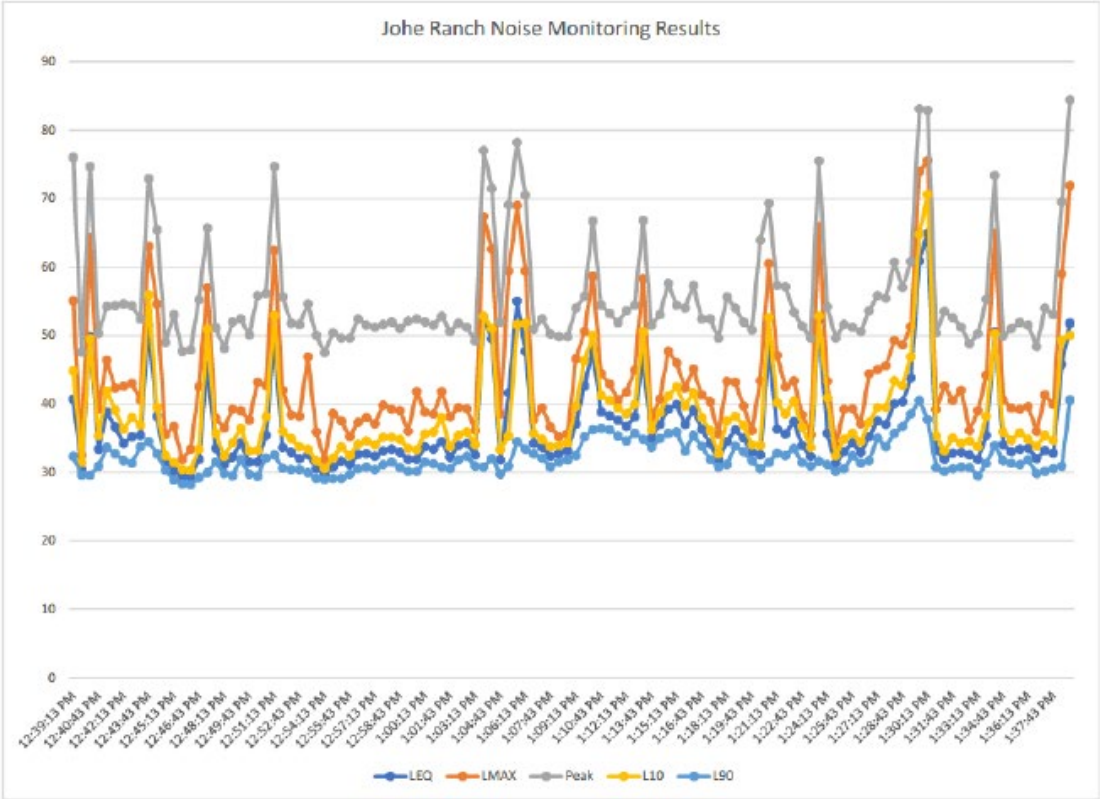

Figure 4.13-1
Ambient Noise Monitoring Results

Noise analysis for proposed projects typically focuses on "sensitive receptors" (i.e., residences, hotels, churches, auditoriums, schools, libraries, hospitals, and parks). As discussed previously, the project site and surrounding land are primarily undeveloped and used for grazing livestock. There are four residences located in the project vicinity. One residence is located directly adjacent to the project boundary and is owned by the property owner. The other three private single-family residences are located approximately 0.5 mile west, 0.7 mile east, and 1 mile south of the project site. The locations of these sensitive receptors in relation to the project site are shown on **Figure 4.13-2,** *Noise Sensitive Receptors Map*.

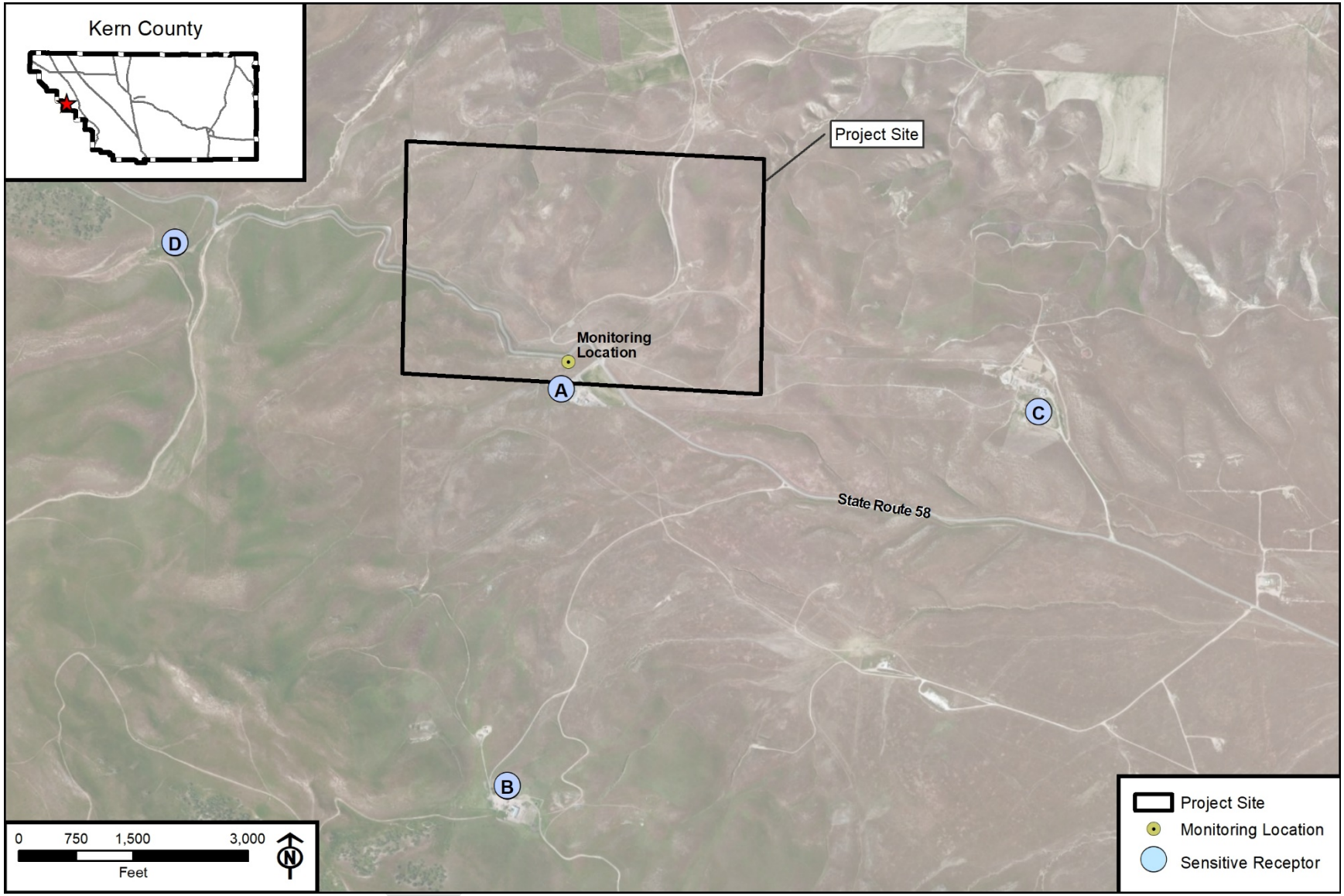

Figure 4.13-2
Noise Sensitive Receptors Map

4.13.3 Regulatory Setting

State

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each County and City adopt a General Plan that includes a Noise Element, which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. The purpose of the general plan noise element is to "limit the exposure of the community to excessive noise levels."

The California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

The State of California's noise insulation standards are codified in the California Code of Regulations (CCR), Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are developed near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

Local

Kern County General Plan

The *Kern County General Plan* Noise Element identifies goals, policies, and implementation measures that are used to guide development with regard to noise. The Noise Element establishes reasonable standards for maximum desired noise level in Kern County and provides an implementation program for addressing noise within the County. The *Kern County General Plan* Noise Element identifies residential areas, schools, convalescence and acute care hospitals, parks and recreational areas, and churches as noise-sensitive land uses. In noise-sensitive areas, exterior noise levels generated by new projects are to be mitigated to 65 dB Ldn or less in outdoor activity areas and 45 dB Ldn or less within interior living spaces or other noise-sensitive interior spaces.

The Noise Element specifies the maximum exterior and interior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports, and railroads. In addition, the Noise Element identifies noise polices designed to protect, create, and maintain an environment free from noise that may jeopardize the health or welfare of sensitive receptors, or degrade quality of life. To ensure the that residents of Kern County are protected from excessive noise, the Noise Element identifies a policy to review

discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

While Kern County specifies maximum exterior and interior noise levels for new developments impacted by transportation noise sources, such as arterial roads, freeways, airports and railroads, it does not identify any specific exterior noise criteria for mineral and petroleum land use, such as the proposed project. To limit the noise exposure to noise-sensitive land uses, Kern County has defined an exterior noise standard of 65 dBA CNEL and an interior noise standard of 45 dBA CNEL.

The following *Kern County General Plan* goals, policies, and implementation measures have been identified as having potential applicability to the project:

Chapter 3. Noise Element

3.2 Noise Sensitive Areas

Goals

- **Goal 1.** Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.

Policies

- **Policy 1.** Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

- **Policy 2.** Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health (DOSH).

- **Policy 3.** Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.

- **Policy 4.** Utilize good land use planning principles to reduce conflicts related to noise emissions.

- **Policy 5.** Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels:

    a. 65 dB Ldn or less in outdoor activity areas.

    b. 45 dB Ldn or less within living spaces or other noise sensitive interior spaces.

- **Policy 7.** Employ the best available methods of noise control.

Implementation Measures

- **Implementation Measure A**. Utilize zoning regulations to assist in achieving noise-compatible land use patterns.

- **Implementation Measure C.** Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.

- **Implementation Measure F.** Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB Ldn and interior noise levels in excess of 45 dB Ldn.

- **Implementation Measure G.** At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

    a. Be the responsibility of the applicant.

    b. Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

    c. Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.

- **Implementation Measure I.** Noise analyses shall include recommended mitigation, if required, and shall:

    a. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

    b. Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.

    c. Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

    d. Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

- **Implementation Measure J.** Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

Kern County Ordinance

The operational (stationary source) noise impacts are regulated by the Kern County Code of Ordinances, Title 8 - Health and Safety, Chapter 8.36 - Noise Control. Chapter 8.36 focuses on loud and raucous noise, public address systems, broadcasting, and construction noise.

Title 8 – Health and Safety

Chapter 8.36 – Noise Control

Operational Noise Standards

While, Chapter 8.36 of the Kern County Code of Ordinances describes prohibited sounds, Kern County has not established specific exterior noise limits to control the stationary source noise impacts associated with mining operations. Instead, Kern County has adopted implementation policies within the Noise Element to require commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise-sensitive land use to exterior noise levels in excess of 65 dBA CNEL and interior noise levels in excess of 45 dBA CNEL.

Construction Noise Standards

The Kern County Code of Ordinances does not contain specific noise level limits applicable to construction activities; however, it does provide prohibited hours during which no construction activity may take place. According to Section 8.36.020.H, it is unlawful for any person "to create noise from construction between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance 150 feet from the construction site." Thus, noise associated with construction activities between the hours of 6:00 a.m. and 9:00 p.m. on weekdays and between 8:00 a.m. and 9 p.m. on weekends would not be subject to limitations under the ordinance.

Vibration

Kern County does not include thresholds of significance for vibration levels. Per the Federal Transit Administration (FTA), engineered concrete and masonry buildings (no plaster) susceptible to vibration damage begin to experience structural damage at vibration levels of 0.3 inches per second Peak Particle Velocity (PPV) (FTA 2006, Table 12-3).

4.13.4 Impacts and Mitigation Measures

Methodology

Noise that would be generated by the project falls into three general categories: (1) noise generated from mining, blending/screening, and reclamation over the life of the project; (2) noise generated from off-site transportation activities associated with the project; and (3) noise generated in conjunction with site preparation (grading of the proposed access road, grading of the proposed blending and screening site, and setup of the equipment that will operate within the blending and screening site). Noise measurements were collected within the project area to assess the impact of project-related noise on sensitive receptors in the immediate vicinity of the project location. WZI Inc. recorded and documented sound levels at the location as identified on **Figure 4.13-2,** *Noise Sensitive Receptors Map*. This data was gathered over a 1-hour duration. WZI Inc. assessed the Audible Noise Impacts using Finite Element Analysis, and used a multi-tiered approach to noise assessment in order to assess the potential noise impacts from this specific project.

Noise was modeled using a finite element model, the Environmental Noise Model (ENM). The ENM was used to generate a noise contour plot for the given construction sources, with consideration given to the topography and terrain conditions. The topography of the project for the model consists of open foothill and two existing residential structures near the site—one directly adjacent to the south (south of SR 58), and the other approximately 0.7 mile east from the project site. The model results are based on the given wind directions and specified speed. Prevailing wind conditions are from the west–southwest quadrant (250 degrees) at 10 feet per second (measured at 30 feet above ground). The second diurnal shift direction indicates winds can come from 45 degrees and are modeled at the same speed. Additional details pertaining to the methodologies used for collecting monitoring data and modeling project noise are included in the Noise Impact Assessment prepared by WZI Inc. (refer to Appendix J.1).

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to noise. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to noise if it would result in:

a. Generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies;

b. Generation of, excessive ground borne vibration or ground borne noise levels;

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

d. For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels; and

- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

Project Impacts

Impact 4.13-1: The project would generate a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

The proposed mine is scheduled to operate from 6:00 a.m. to 7:30 p.m., Monday through Friday, with a maximum of 10 employees on-site at any time. The life of the proposed surface mining operation is proposed to be 50 years.

A grader would be utilized for grading of the haul road and a pad for the blending and screening site, and incidental maintenance (e.g., regrading of portions of the haul road affected by heavy rains). Diatomaceous earth and overburden material would be excavated by loader. The loader would either load material directly into dump trucks or move the material so as to form it into small temporary stockpiles before loading it into dump trucks. Two loaders would be located on the project site; however, only one would be operating at any given time. A dozer or ripper would be rented for a short duration to loosen material as necessary. Diatomaceous earth would undergo processing (i.e., blending and/or screening) as necessary at the 2.42-acre blending and screening site, as previously described, prior to being exported from the project site. A maximum of 5 acres would be mined daily.

Noise from the proposed project would be generated during mining, processing operations, and reclamation, as well as by the operation of haul trucks. The Noise Element sets a 65-dB limit on exterior noise levels for stationary sources (i.e., non-transportation) at sensitive receptors and the County's Noise Control Ordinance (County Code Section 8.36.020 et seq.) prohibits a variety of nuisance noises.

To estimate potential noise impacts from on-site construction and operational noise at locations adjacent to the project site, WZI Inc. modeled equipment noise for off-highway trucks, a haul/dump truck, a tractor/loader/backhoe equipment, and a screener/stockpile at different

locations within the project site, as shown on **Figure 4.13-3,** *Modeled Equipment Locations Map*.

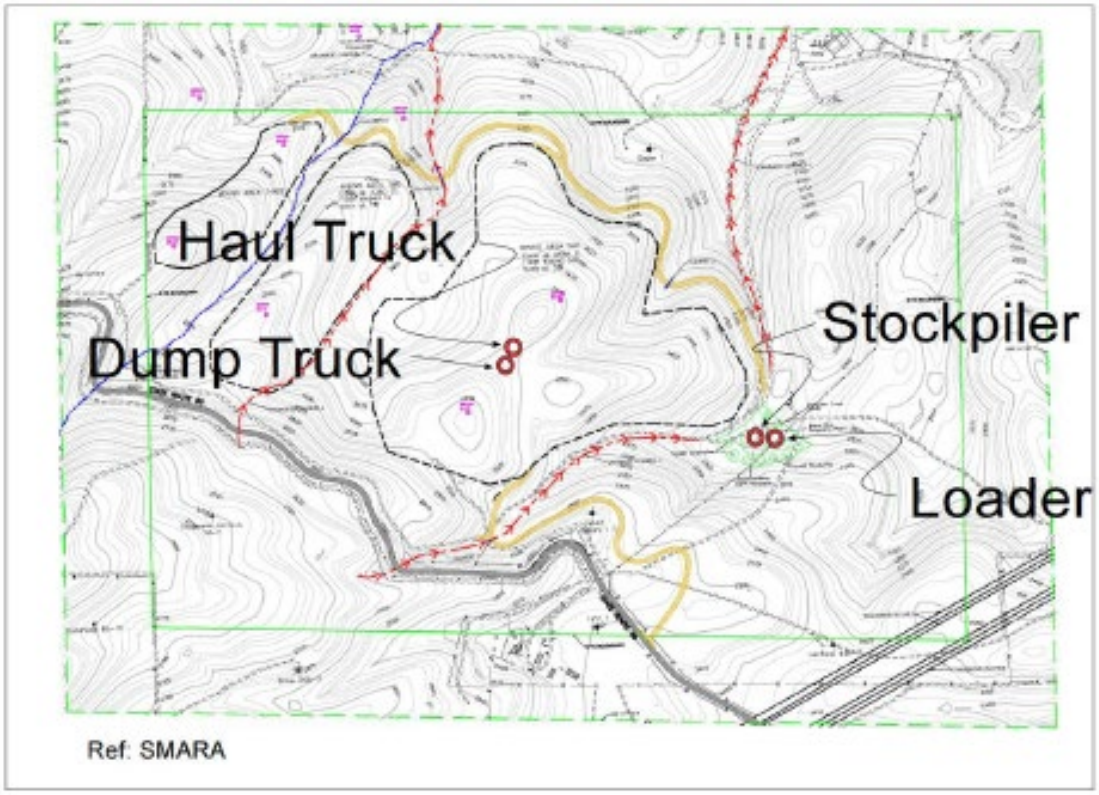

Figure 4.13-3
Modeled Equipment Locations Map

The results of noise modeling and estimated project noise levels at sensitive receptors, assuming winds from 250 degrees, would increase from ambient levels of approximately 47.3 dBA to a maximum of approximately 48.6 dBA.

Modeling results indicate project noise combined with ambient noise from the tractors/loaders/backhoes and off-highway trucks would be significantly less than the Noise Element threshold of 65 dBA. The incremental increase in noise levels are expected to range from less than 43 dBA to a combined high of 48.6 dBA. The conversion of 48.6 dB L50 to CNEL results in a noise level of 56 (55.3) dBA Ldn. All modeled daytime noise impact results are below the Kern County standard of 65 dBA. Following completion of mining activities, the project site would be reclaimed for use as grazing, which is anticipated to result in noise levels similar to current ambient conditions.

Based on the noise monitoring and modeling results prepared by WZI Inc., implementation of the proposed project is not expected to generate a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance (65 dBA); however, Mitigation Measures MM 4.13-1 and MM 4.13-2 are included to ensure project activities would be conducted in a manner that

would not exceed Kern County's established thresholds. Therefore, this impact would be less than significant with mitigation.

Mitigation Measures

MM 4.13-1 The project proponent shall establish a Noise Disturbance Coordinator for the proposed project. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground-disturbing activities.

MM 4.13-2 A sign, legible at a distance of 50 feet, shall be posted at the project site entrance on State Route 58, stating a Surface Mining and Reclamation Plan (Johe Ranch [Conditional Use Permit 17, Map 117]) has been approved for the site, and a telephone number where noise complaints can be registered with the Noise Disturbance Coordinator. Documentation that the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1 and MM 4.13-2, impacts would be less than significant.

Impact 4.13-2: The project would generate excessive ground borne vibration or ground borne noise levels.

The proposed project does not include drill or blast activities. Therefore, there would be no excessive ground-borne vibration or ground-borne noise levels associated with drilling or blasting activities. Construction-generated vibration is not expected to exceed Caltrans recommended standards of 0.2 inches per second PPV; therefore, construction impacts are considered to be less than significant.

Vibration sources associated with long-term operation of the proposed project would consist of trucks maneuvering through the proposed project site and on the adjacent segment of SR 58. Truck vibration levels are not expected to exceed the Caltrans-recommended standard of 0.2 inches per second PPV. Vibration generated by on-site truck activity would have no potential to cause structural damage to off-site structures due to the low level of vibration that would be generated and the distance between the proposed project site and the nearest off-site structures; therefore, operational impacts are also considered to be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.13-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

As discussed under Impact 4.13-1 above, based on the noise monitoring and modeling results prepared by WZI Inc., implementation of the proposed project is not expected to generate a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance (65 dBA); however, mitigation is included to ensure project activities would be conducted in a manner which would not exceed the County's established thresholds. Additionally, noise impacts associated with the project would only be temporary. The life of the operation is proposed to be 50 years. Following completion of mining activities, the site would be reclaimed and returned to undeveloped conditions and used for grazing, which would not result in a permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Therefore, impacts are considered less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The cumulative setting for noise is the buildout of the General Plan and the other projects in the vicinity of the project. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects within a 6-mile radius of the project. **Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact analysis first identifies whether a cumulatively significant impact exists in the given resource area. If one exists, the analysis then determines whether the project will make a considerable contribution to that impact. Where a cumulative impact is severe, even a small contribution may be considerable.

Impact 4.13-4: The project would contribute to cumulative noise impacts.

As noted above, the results of the project-related noise analysis for this project indicate that the project would have a less-than-significant impact. The project's contribution to the future noise levels would be minor and would not result in a cumulatively considerable contribution to cumulative noise levels or noise impacts. No proposed projects have been identified within proximity to the project site that would substantially increase cumulative noise levels. Even for the sensitive receptor located immediately adjacent to the project site (Receptor 1), noise impacts associated with mining (if they were to occur at all) would be temporary and less than significant. The project would not result in a significant impact on either a project-specific or cumulative basis.

The noise levels associated with construction and operation of the proposed project would be consistent with the standards established by the *Kern County General Plan* and Kern County Noise Ordinance. Additionally, noise levels associated with the proposed project would only result in minor, less-than-significant effects to surrounding sensitive receptors.

The proposed project would result in increased traffic noise levels along SR 58 during the proposed 50-year lifespan of the proposed project. Based on the traffic study prepared for this project and the noise analysis prepared by WZI Inc. (2019c), the proposed project would not independently cause traffic noise levels to exceed the Kern County exterior noise standard for residential and other noise-sensitive uses at 100 feet from the roadway centerlines.

The predicted near-term and cumulative (long-term) traffic noise levels along this roadway would be increased at the sensitive receptors during the lifespan of the proposed project; however, the modeled noise exposure levels would be below the County's established threshold of 65 dB Ldn and would be considered acceptable pursuant to the Kern County exterior noise standards. Therefore, impacts to the cumulative noise setting associated with the proposed project would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.13-1 and MM 4.13-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1 and MM 4.13-2, cumulative impacts would be less than significant.

Section 4.14
Population and Housing

4.14.1 Introduction

This section of the Environmental Impact Report (EIR) addresses potential impacts of the project on population, housing, and employment and provides an overview of current population estimates, projected population growth, current housing, employment trends, and the regulatory setting. Sources of information and data provided in this section include, but are not limited to, the *Kern County General Plan* and Housing Element, and demographic information from the California Department of Finance (DOF) and the U.S. Census Bureau.

4.14.2 Environmental Setting

Regional and Local Population Trends

With an area of 8,202 square miles, Kern County is the third largest county in California. Because of its size, the Kern County Housing Element divides the County into nine subareas. The project site is located in the Westside subarea (Kern County 2016):

> The Westside subarea encompasses the western portion of the county. The cities of Taft and Maricopa are located in the area, along with the unincorporated communities of South Taft, Ford City, Taft Heights, and McKittrick. The economy of the Westside subarea is resource based. Oil exploration and production provide a large segment of the employment base, with clay mineral extraction also occurring in the area. Several correctional institutions also provide an additional source of employment in this area.

The project site is located in a rural, undeveloped area and is surrounded by undeveloped grazing land, with the exception of a residence, shop building, agricultural storage buildings and chicken coop, all of which are located on the south side of State Route (SR) 58.

According to the California DOF, Kern County's total population was 896,031 in 2017. The total population as of January 1, 2018, was 906,563, which represents a 1.1% increase from 2017, and as of January 1, 2019, the total population was 916,464 persons, an increase of 2.3% from 2017 and 1.1% from 2018. Kern County has experienced significant migratory growth in the last decade, and the natural increase in population has remained fairly constant. However, due to economic conditions, population trends have been reverting to historic trends, which reflect 3% growth per year. The County's population is projected to be over 1,000,000 by July 1, 2020. These trends are reflected in **Table 4.14.1,** *Kern County Population Trends*.

Table 4.14-1 Kern County Population Trends

Area	2017 Total Population	2018 Total Population	2019 Total Population	Percent Change 2017–2019	Percent Change 2018–2019
Incorporated	583,235	591,088	598,458	2.6	1.2
Unincorporated	312,796	315,475	318,006	1.6	0.8
Total	**896,031**	**906,563**	**916,464**	**2.3**	**1.1**

Source: California DOF 2019

Regional and Local Housing Trends

Housing as a whole in Kern County continues to grow. In 2017, Kern County had a total of 296,594 housing units, and in 2019, there were 299,674 units. Of the total housing units, approximately 73% were in single-unit structures, 18% were in multi-unit structures, and 8% were mobile homes. These trends are reflected in **Table 4.14-2,** *Kern County Housing Trends*.

Table 4.14-2 Kern County Housing Trends

Area	2017 Total Housing Units	2019 Total Housing Units	Percent Change 2017–2019
Incorporated Vacancy Rate	182,167 (8.1%)	184,701 (8.3%)	1.4
Unincorporated Vacancy Rate	114,427 (14.3%)	114,973 (14.5%)	0.04
Total (Percent Vacant)	**296,594 (10.5%)**	**299,674 (10.7%)**	**0.1**

Source: California DOF 2019

Regional and Local Employment Trends

Kern County's economy is based on agriculture, oil, aerospace, trade, transportation, utilities, and warehousing services. Despite this economic diversification, the overall performance of the County has been mixed in recent years when compared to the State and other Counties. This is due in part to the cyclical and uncertain nature of oil and aerospace, which are often affected by many external factors. Further, the agricultural sector consists largely of lower paying and often seasonal employment, which limits the positive multipliers within the economy. One of the key industries in the County is value-added agriculture. New industries such as transportation, logistics, and warehousing are emerging and growing in the County. Aerospace potential is driven by the emergence of private-sector space-travel activities, as well as other private sector aerospace activities and government contracts related to the County's two military bases. Between 2013 and 2017, for the employable population 16 years and older, 521,019 persons (or 58.1%) were in the labor force (California DOF 2019).

Several industries provide employment opportunities in Kern County. **Table 4.14-3,** *Industries in Kern County*, summarizes the industries in Kern County as well as the percent of the County

population that each industry employs based on the 2010 U.S. Census data, which is the most recent available data.

Table 4.14-3 Industries in Kern County

Industry	Percent of Population
Agriculture, forestry, fishing, hunting, and mining	14.0
Construction	7.4
Manufacturing	5.3
Wholesale trade	3.2
Retail trade	11.0
Transportation, warehousing, and utilities	5.3
Information	1.4
Finance, insurance, real estate, and rental and leasing	4.6
Professional, scientific, management, administrative, and waste management services	8.3
Educational, health, and social services	19.3
Arts, entertainment, recreation, accommodation, and food services	8.0
Other services (except public administration)	4.8
Public administration	7.4

Source: Kern County Planning and Natural Resources Department 2016.

As noted in **Table 4.14-3,** *Industries in Kern County*, educational, health, and social services; agriculture, forestry, fishing, hunting, and mining; and retail trade industries provided the greatest amount of County employment opportunities in 2010. The top three fastest growing occupations between 2008 and 2018 were projected to be security and fire alarm system installers, mixing and blending machine workers, home health aides, and occupational/physical therapist assistants/aides. Mining and logging employment were predicted to increase by about 6.5%, employing approximately 11,400 workers by 2018. Kern County employment projections between 2008 and 2018 by industry type in 2010 are shown in **Table 4.14-4,** *2008–2018 Industry Employment Projections, Bakersfield Metropolitan Statistical Area (MSA), Kern County*, which is the most recent available data.

Table 4.14-4 2008–2018 Industry Employment Projections, Bakersfield Metropolitan Statistical Area (MSA), Kern County

	Annual Average Employment		Employment Change	
Industry Title	2008	2018	Numerical	Percent
Health Care and Social Assistance	23,600	33,300	9,700	41.1
Education Services, Health Care and Social Assistance	25,500	35,800	10,300	40.4
Professional, Scientific, and Technical Services	10,500	14,100	3,600	34.3
Wholesale Trade	7,700	10,200	2,500	32.5
Educational Services (Private)	1,900	2,500	600	31.6

Table 4.14-4 2008–2018 Industry Employment Projections, Bakersfield Metropolitan Statistical Area (MSA), Kern County

	Annual Average Employment		Employment Change	
Industry Title	2008	2018	Numerical	Percent
Professional and Business Services	25,000	31,300	6,300	25.2
Administrative and Support and Waste Management and Remediation Services	12,200	14,800	2,600	21.3
Nondurable Goods (311-316,322-326)	8,000	9,700	1,700	21.3
Leisure and Hospitality	21,500	25,900	4,400	20.5
Accommodation and Food Services	19,100	23,000	3,900	20.4
Total Nonfarm	238,000	277,900	39,900	16.8
Arts, Entertainment, and Recreation	2,500	2,900	400	16.0
Trade, Transportation, and Utilities	44,700	51,200	6,500	14.5
Local Government	41,700	47,200	5,500	13.2
Manufacturing	13,700	15,500	1,800	13.1
State and Local Government	51,700	58,000	6,300	12.2
Real Estate and Rental and Leasing	3,300	3,700	400	12.1
Transportation, Warehousing, and Utilities	9,600	10,700	1,100	11.5
Government	61,500	68,600	7,100	11.5
Retail Trade	27,400	30,300	2,900	10.6
Information	3,000	3,300	300	10.0
Construction	16,500	18,000	1,500	9.1
Federal Government	9,800	10,600	800	8.2
State Government	10,000	10,800	800	8.0
Financial Activities	8,900	9,500	600	6.7
Mining and Logging	10,700	11,400	700	6.5
Other Services (excludes 814-Private Household Workers)	7,000	7,400	400	5.7
Finance and Insurance	5,500	5,800	300	5.5
Durable Goods (321,327,331-339)	5,700	5,800	100	1.8
Management of Companies and Enterprises	2,400	2,400	0	0.0
Total	**49,600**	**48,800**	**-800**	**-1.6**

Note: This represents the most recent available data. Projections of employment by industry data were not available in May or June 2012, when the California Economic Development Department Kern County Profile was accessed.

Source: Kern County Planning and Natural Resources Department 2016

4.14.3 Regulatory Setting

State

California Housing Element Law

The California Housing Element Law, enacted in 1969, is implemented by the California Department of Housing and Community Development (HCD), one of 13 departments within the California Business, Transportation and Housing Agency. The HCD is responsible for reviewing local government housing elements for compliance with State law and providing written comments to the local government. Using the information provided by local governments in its housing element, the HCD determines the regional housing need for each County and allocates funding to meet this need to the council of governments for distribution to its jurisdictions. The HCD also oversees distribution of funding related to the regional housing need by the council of governments to the local governments to ensure that funds are appropriately allocated.

Local

Kern County General Plan

The project site is in unincorporated Kern County and is subject to the *Kern County General Plan*. The policies, goals, and implementation measures in the *Kern County General Plan* for population and housing applicable to the project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below, but, as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space, and Conservation Element

1.0 General Provisions

Goals

- **Goal 1.** Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Policies

- **Policy 6.** The County shall ensure the fair treatment of people of all races, cultures, incomes and age groups with respect to the development, adoption, implementation and enforcement of land use and environmental programs.

- **Policy 7.** In administering land use and environmental programs, the County shall not deny any individual or group the enjoyment of the use of land due to race, sex, color, religion, ethnicity, national origin, ancestry, lawful occupation or age.

- **Policy 8.** The County shall ensure that new industrial uses and activities are sited to avoid or minimize significant hazards to human health and safety in a manner that avoids over concentrating such uses in proximity to schools and residents.

Implementation Measures

- **Implementation Measure A.** The Kern Council of Governments (COG) will monitor population growth and its subsequent development effects to identify the distribution of population increases and the capabilities of governmental and public agencies to provide new development with adequate services and facilities in a fiscally acceptable manner.

1.6 Residential

Goals

- **Goal 2.** Ensure the provision of safe and amenable living environments and the promotion of efficient and economical use of land.

- **Goal 3.** Discourage scattered urban density development within Kern County that is not supported by adequate infrastructure.

- **Goal 7.** Minimize land use conflicts between residential and resource, commercial, or industrial land uses.

Policies

- **Policy 3.** The owners of individually residentially zoned lots of record will, in any event, retain the right to develop a housing unit structure regardless of the General Plan designation, provided County development ordinance criteria are met.

- **Policy 5.** Discourage premature urban encroachment into areas of intense agriculture areas.

- **Policy 9.** Development in areas without adequate infrastructure or development that places a burden on public services (i.e., fire, sheriff, parks, and libraries) shall be discouraged.

Implementation Measures

- **Implementation Measure A.** All General Plan Amendments, zone changes, conditional use permits, discretionary residential developments of five or more dwelling units, and variations from height limits established by zoning for properties which are located in the Airport Influence Areas or near a military airport shall be reviewed by the Planning Department for compatibility with the Kern County Airport Land Use Compatibility Plan.

- **Implementation Measure G.** Discretionary project applicants shall provide documentation of adequate public infrastructure and services which include, but are not limited to:

    1. Fire protection.
    2. Police protection.
    3. Sewage disposal.
    4. Water service including quality and quantity.
    5. Documentation that water conservation measures have been considered.

- **Implementation Measure I.** Discretionary projects located within a Moderate, High, or Extreme Fire Hazard Zone shall abide by building materials and construction requirements set forth by the Kern County Fire Department and Office of Emergency Services.

Kern County 2015–2032 Housing Element Update

The Housing Element is a separate element of the *Kern County General Plan*. Each County and City is required by California housing law to develop a housing element, one of the seven general plan elements, in order to qualify for allocation of State regional housing funding. To receive regional housing funds, each County and City must update its general plan housing element on a regular basis (generally, every 5 years). The housing element must incorporate policies and identify potential sites that would accommodate the County's or City's share of the regional housing needs. Because the project would not include new housing, the goals and policies of the Housing Element largely do not apply to the project. The current (as of July 2016) version of the Housing Element was approved on April 26, 2016, and covers the 2015–2023 planning period.

Kern Council of Governments

The Kern Council of Governments (COG) acts as an area-wide planning agency. COGs assist local governments with multi-jurisdictional issues such as air quality, transportation, water quality, energy, and housing. The Kern COG serves this purpose for Kern County. Kern COG and its member agencies include the County and the 11 incorporated cities within Kern County. The primary function of the Kern COG is to address regional transportation issues, but it also

functions as the state-designated Census Data Center Affiliate. The Kern COG facilitates comprehensive planning and intergovernmental coordination.

Under California housing law, the HCD is responsible for estimating the relative share of California's projected population growth that would occur in each County in the State based on California DOF population projections and historical growth trends. Based on the projected growth in the number of households in Kern County between 2008 and 2013, the HCD calculated the number of additional units that need to be available during that period. In turn, the Kern COG is required by State law to determine the portion of funding for regional housing to be allocated to each jurisdiction within the region.

To do this, the Kern COG developed a Regional Housing Needs Assessment (RHNA) for the period between 2013 and 2023 (Kern COG 2014). The plan addresses comprehensive housing needs for all income levels in the Kern County region. Need is based on available census data, market demand for housing, employment opportunities, the availability of suitable sites, public facilities, commuting patterns, and population projections. Future housing needs refer to the projected amount of housing a community is required to plan for during a specified planning period. The RHNA supports communities in anticipating growth so that they can grow in a way that enhances quality of life; improves access to jobs, transportation, and housing; and avoids adversely affecting the environment. Each of the local governments has an opportunity to comment on the allocations proposed by the Kern COG.

The Kern COG is required to assign regional housing shares to the Cities within its region on a similar 5-year schedule. The shares of the regional need are allocated before the end of the cycle so that the Counties and Cities can amend their housing elements by the deadline. The Kern COG has determined the additional housing construction needed by 2023 is 67,675 units for the entire County, and 21,581 units for unincorporated areas of the County.

4.14.4 Impacts and Mitigation Measures

Methodology

Population, housing, and employment in the area were evaluated by reviewing data available from the U.S. Census Bureau, California DOF, Kern COG, *Kern County General Plan*, Kern Economic Development Strategy, and 2007 RHNA.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to population and housing. Both documents state that a project would normally be considered to have a significant impact related to population and housing if it would:

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); or

b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts and were therefore scoped out of requiring further review in this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Project Impacts

Impact 4.14-1: The project would induce substantial unplanned population growth in an area, either directly or indirectly.

Typical established local thresholds of significance for population and housing growth pursuant to State CEQA *Guidelines* Section 15064.7 include effects that would induce substantial growth or concentration of a population beyond County projections; alter the location, distribution, density, or growth rate of the population beyond that projected in the *Kern County General Plan* Housing Element; result in a substantial increase in demand for additional housing; or create a development that significantly reduces the ability of the County to meet housing objectives set forth in the *Kern County General Plan* Housing Element.

The project could increase employment through the addition of up to 10 new jobs. The employees who would fill the new jobs would likely come from the resident local population, and the project would not result in a substantial increase in the population or a substantial change in the demand for new housing; therefore, no environmental impacts associated with the provision of new housing would occur as a result of the project. This impact would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.14-2: The project would displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

There is only one residence in the area surrounding the project site, located to the south of the project site. No population would be displaced as a result of the project, and the project would not require construction of replacement housing elsewhere. Therefore, no impact would be associated with displacement of people and construction of replacement housing.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

There would be no impact.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis). The geographic scope for cumulative impacts to population and housing includes past, present, and reasonably foreseeable projects located within the project region.

Impact 4.14-3: The project would contribute to cumulative population and housing impacts.

The project is expected to create a maximum of 10 jobs that would largely be filled by existing residents located within reasonable commuting distance and would therefore not contribute to substantial population growth and related demand for housing. Similarly, the project would not increase the development of any new housing, businesses, or new infrastructure during construction or operation. Furthermore, growth in the Kern County area has been accounted for in various regional and local plans and projections. Accordingly, the project would not result in a cumulatively considerable incremental contribution to significant cumulative impacts on population and housing.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Cumulative impacts would be less than significant.

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Section 4.15
Public Services

4.15.1 Introduction

This section of the Environmental Impact Report (EIR) addresses potential impacts of the project on public services, which include fire protection, law enforcement services, schools, parks, medical services, and other public facilities. This section also describes relevant environmental and regulatory settings and discusses mitigation measures to reduce impacts, where applicable.

4.15.2 Environmental Setting

The Environmental Setting section discusses the setting for the public services analysis, providing a summary of fire and police protection, schools, parks, and other public facilities with that have the potential to be affected by the project.

Fire Protection

The Kern County Fire Department (KCFD) provides primary fire protection, fire prevention, emergency medical, and rescue services to more than 500,000 people in unincorporated areas of Kern County and the Cities of Arvin, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The KCFD protects an area that covers more than 8,000 square miles and includes regional transportation corridors such as Interstate (I-) 5. The KCFD operates 46 full-time fire stations and one seasonal station, and is divided into seven battalions for operational management. Currently, the KCFD is staffed with 25 battalion chiefs, 169 captains, 162 engineers, 179 firefighters, two fire helicopter pilots, seven heavy fire equipment specialists, two hazardous materials response teams, two urban search and rescue teams, and six bulldozer operators. The KCFD is equipped with 55 fire engines, 41 patrols, four trucks, two helicopters, and one aircraft rescue firefighting unit (KCFD 2018).

The project site would continue to be served by the nearest KCFD fire station, which is Station 24 – McKittrick, located approximately 8.5 miles east of the project site at 23252 Blue Star Memorial Highway, in the community of McKittrick. This station would be the primary responder to a fire or emergency at the proposed project site; however, in the event of a major fire, other stations would be called on to respond, as necessary.

As new growth and development occurs within the County, additional personnel and/or facilities will be required to meet increased demands for service. Each battalion covers a large geographical area and includes seven to nine fire stations. The project area is located in Battalion 2, which includes six stations that cover the western portion of unincorporated Kern County. The stations closest to the proposed project site, with the exception of the primary

station mentioned above, are Stations 25, 23, and 21. Station 25 is located at 100 Marisola in the community of Buttonwillow, approximately 17.42 miles northeast of the project site; Station 23 is located at 100 Broadway Street in the community of Fellows, approximately 16.9 miles southeast of the project site; and Station 21 is located at 303 10th Street in the City of Taft, approximately 21.8 miles southeast of the project site. Station 24 was built in 1989 and has a response area of 308 square miles. The standard response time goal employed by KCFD is that no more than 6 minutes should pass between the time someone calls 911 and the time the engine/personnel arrive on scene (KCFD 2015).

Kern County has mutual-aid agreements with the Los Angeles County Fire Department (LACFD) in the event that KCFD is unable to be the primary responder to an emergency. The LACFD has 170 fire stations throughout Los Angeles County. The LACFD is divided into 22 battalions. The nearest LACFD fire station to the project site is Station 77, located approximately 70 miles southeast of the project site in Lebec, California. Kern County applies and utilizes the National Fire Code set forth by the National Fire Protection Association (NFPA), California Fire Code, California Building Code (CBC), and Kern County Ordinance Code to regulate fire safety.

Police Protection

Kern County Sheriff's Department

The Kern County Sheriff's Office (KCSO) provides law enforcement services in the project area. The KCSO, which enforces Federal, State, and local laws, is responsible for jail system management, bailiff and prisoner transportation services to the courts, search and rescue operations, coroner services, and civil processing (serving lawsuit papers), among other responsibilities. It also operates the Inmate Reception Center, Lerdo Maximum Security Facility, Lerdo Minimum/Medium Security Facility, Lerdo Pre-Trial Facility, Mojave Jail, and Ridgecrest Jail (KCSO 2018).

KCSO headquarters are located at 1350 Norris Road in the City of Bakersfield. In addition, there are 13 substations that provide patrol services and all have access to department support services. Substations are staffed by police, investigators, and supervisors, and each substation has access to all department support services. Currently, the KCSO is staffed with 1,202 sworn and civilian employees, 567 deputy sheriffs, 338 detention deputy positions, and 297 professional support staff (KCSO 2018). The proposed project site would be served by the nearest substation, the Buttonwillow Substation, located approximately 17 miles northeast of the proposed project site at 181 East First Street in the community of Buttonwillow.

Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Response times vary because the nearest responding patrol car may be anywhere in the patrol area and not at the nearest substation. The Buttonwillow Substation serves the northwestern portion of Kern County, which includes the townships and communities of Buttonwillow, Lost Hills, Belridge, Blackwells Corner, Keck's Corner, Spicer City, and Devil's Den, and the unincorporated areas around the Cities of Shafter and Wasco. This area encompasses about 1,500 square miles of farming, ranching, and oil industries. Average response time for KCSO is 5 minutes or less for

an emergency or immediate-response incident (e.g., a crime that is under way and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life threatening).

Response time to an emergency at or near the proposed project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time will be longer than the average times given above. The response time for a nonemergency call could be 8 minutes or more, depending on staffing and the number of other calls for service.

California Highway Patrol

The California Highway Patrol (CHP) oversees response to emergency incidents on California's highways, assisting other public agencies responding to emergency incidents, and promoting the safe and efficient movement of people and goods on California's highways to minimize loss of life, injuries, and property damage. CHP officers patrol state highways and implement CHP's other law enforcement activities (e.g., drug interception, vehicle theft investigation and prevention, vehicle inspections, accident investigations, and public awareness campaigns) with the support of the non-uniformed personnel assigned to area and division offices.

CHP has eight divisions that provide services throughout California. The Bakersfield Office of the CHP, at 29449 Stockdale Highway in the City of Bakersfield, is the closest office and dispatch center, located approximately 25 miles east of the project site.

Schools

The project site is located in the Maricopa Unified School District. The nearest school to the project site is McKittrick Elementary School located approximately 8 miles east of the project site. Midway Elementary School is located approximately 16 miles southeast of the project site. Multiple schools are located approximately 20 miles southeast of the project site, in and around the City of Taft.

Parks

The Kern County Parks and Recreation Department operates and maintains about 40 neighborhood parks throughout the County, as well as several public buildings that also are used for recreational purposes. The department also operates and maintains eight regional parks: Buena Vista Aquatic Recreational Area, Greenhorn Mountain Park, Leroy Jackson Park, Kern River County Park, Lake Isabella, Lake Woollomes, Metro Recreation Center, and Tehachapi Mountain Park. These parks provide more than 19,422 acres of parkland for recreational purposes. Buena Vista Aquatic Recreational Area is the closest County regional park to the project (located approximately 29.5 miles southeast of the project site, west of I-5). The area offers activities such as boating, fishing, and camping.

The California State Parks Service owns, maintains, and operates one State park (Red Rock Canyon), two State historic parks (Fort Tejon and Tomo-Kahni), and one State reserve (Tule Elk) in Kern County. Red Rock Canyon State Park is approximately 101 miles east of the

project site, Fort Tejon State Historic Park is approximately 58.5 miles southeast of the project site, Tomo-Kahni State Historic Park is approximately 82 miles southeast of the project site, and Tule Elk State Reserve is approximately 23 miles east of the project site.

Other Public Facilities

The Kern County Public Health Services Department, Emergency Medical Services Division (EMS) is the lead agency for the EMS system in Kern County. Kern County EMS is responsible for coordinating all system participants, which includes the public, emergency service providers, and hospitals throughout the County. The department provides various training programs for Kern County EMS, such as certification and recertification for local EMS personnel (Kern County EMS 2012).

Six hospitals are located in the City of Bakersfield. The two hospitals closest to the project, with emergency departments, are Mercy Southwest Hospital and Mercy Hospital of Bakersfield, both located in the City of Bakersfield.

Other public services include Federal post offices (in Maricopa, Taft, Buttonwillow, Bakersfield, and Pine Mountain Club) and City and County libraries (in Taft, Frazier Park, Lebec, Buttonwillow, and Bakersfield).

4.15.3 Regulatory Setting

State

California Department of Forestry and Fire Protection

Under Title 14 of the California Code of Regulations (CCR), the California Department of Forestry and Fire Protection (CAL FIRE) has the primary responsibility for implementing wildfire planning and protection for State Responsibility Areas (SRAs). CAL FIRE develops fire safe regulations and issues fire safe clearances for land within the service areas of fire districts in each SRA. There are more than 31 million acres of California's privately-owned wildlands under CAL FIRE's jurisdiction (CAL FIRE 2012).

In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies that may occur on a daily basis, including residential or commercial structure fires, automobile accidents, heart attacks, drowning victims, lost hikers, hazardous material spills on highways, train wrecks, floods, and earthquakes. Through contracts with local government, CAL FIRE provides emergency services in 36 of California's 58 counties (CAL FIRE 2012).

CAL FIRE adopted Fire Hazard Severity Zone maps for SRAs in November 2007. Fire hazard is a way to measure the physical fire behavior and use this information to predict the damage a fire is likely to cause. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and, most importantly, the burning fire brands (embers) that the fire sends ahead of the flaming front. The majority of the project site is located within

an area of high fire hazard, with the remainder of the project site located in an area of moderate fire hazard, as shown on **Figure 4.19-2,** *Fire Hazard Severity Zones for State Responsibility Areas*, in Section 4.19, *Wildfire* (CAL FIRE 2007).

Local

Kern County General Plan

The project site is located within the *Kern County General Plan*. The policies, goals, and implementation measures in the Kern County General Plan applicable to public services as related to the project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project; therefore, they are not listed below.

Chapter 1. Land Use, Open Space, and Conservation Element

1.4 Public Facilities and Services

Policies

- **Policy 1.** New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

- **Policy 6.** The County will ensure adequate fire protection to all Kern County residents.

- **Policy 7.** The County will ensure adequate police protection to all Kern County residents.

Implementation Measures

- **Implementation Measure B**. Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.

- **Implementation Measure L.** Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.10 General Provisions

Goals

- **Goal 1.** Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1 Public Services and Facilities

Policies

- **Policy 9.** New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.

- **Policy 15.** Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

- **Policy 16.** The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Chapter 4. Safety Element

4.1 Introduction

Goals

- **Goal 1.** Minimize injuries and loss of life and reduce property damage.

- **Goal 2.** Reduce economic and social disruption resulting from earthquakes, fire, flooding, and other geologic hazards by assuring the continuity of vital emergency public services and functions.

- **Goal 6.** Prepare the County for effective response to, and rapid beneficial recovery from the occurrence of a catastrophic event.

4.6 Wildland and Urban Fire

Policies

- **Policy 1.** Require discretionary projects to assess impacts on emergency services and facilities.
- **Policy 3.** The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- **Policy 4.** Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- **Policy 6.** All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

- **Implementation Measure A.** Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Kern County Wildland Fire Management Plan

The *Kern County Wildland Fire Management Plan 2009* (KCFD 2009) documents the assessment of wildland fire situations throughout the SRAs within Kern County. The Wildland Fire Management Plan provides for systematically assessing the existing levels of wildland protection services and identifying high-risk and high-value areas that are potential locations for costly and damaging wildfires. The goal of the plan is to reduce costs and losses from wildfire by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. Based on this assessment, preventive measures are implemented, including the creation of wildfire protection zones.

Capital Improvement Plan

The changing fiscal landscape in California during the past 30 years has steadily undercut the financial capacity of local governments to fund infrastructure. Faced with these trends, Kern County has adopted a policy of "growth pays its own way" through use of a public facilities mitigation program. The primary policy objective of this program is to ensure that new development pays the capital costs associated with growth.

In 2008, Kern County adopted a Capital Improvement Plan (CIP) that identifies the best current understanding of the public facilities that will be needed to accommodate new development anticipated through 2030 (Kern County 2007). The CIP further identified appropriate existing facility demand standards to be used as a basis for estimating future facility needs and level of service. The adopted CIP includes a summary of proposed service levels for the included facilities and a conceptual list of planned projects, upon which the CIP was based. The scope

of services includes parks, libraries, sheriff (public protection and investigation), fire, animal control, public health, landfill/transfer stations, and general government. Roads and sewer costs and impacts are not part of this program.

Continued growth within the County and the associated impacts resulting from that growth have increased the demands on Countywide public services and have made it difficult to not only implement and fund many of those facilities identified within the CIP, but to maintain existing public service demand standards as growth occurs. In short, despite the increase in property taxes generated as a result of the proposed project and other similar projects within the County, public services and facilities are still underfunded and unable to maintain existing and adopted service standards.

The purpose of the Public Facilities Mitigation Program is to identify impacts on public services and identify the monetary CEQA mitigation necessary to meet the facilities associated with that growth. The following categories have been identified to help determine which specific public needs would be impacted by the proposed project: countywide public protection facilities; sheriff patrol and investigation facilities; library facilities; animal control facilities; park facilities; fire facilities; waste management facilities; public health facilities; and general government facilities.

4.15.4 Impacts and Mitigation Measures

Methodology

Public services in the area were evaluated to determine whether they are adequate to provide needed services for construction and operation of the proposed project and whether they would be adversely affected by the proposed project. The evaluation is based on professional judgment, an analysis of project consistency with the goals and policies of the *Kern County General Plan*, and the significance criteria established by Appendix G of the State CEQA *Guidelines*.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on public services. Both documents state that a project would normally be considered to have a significant impact related to public services if it would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental 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:

   - Fire Protection;

- Police Protection;
- Schools;
- Parks; or,
- Other Public Facilities.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- Schools;
- Parks; or,
- Other public facilities.

Project Impacts

Impact 4.15-1: The project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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.

Fire Protection

A community's requirements for fire protection facilities are based on the number of residents and workers in the primary service area. Service demand is tied primarily to population because emergency medical calls typically constitute the majority of responses provided by a fire department. As the population of the service area increases, so does the number of emergency calls and the need for fire protection and emergency response facilities. The proposed project would include the construction and development of a diatomaceous earth and overburden material mine on an existing vacant, undeveloped property currently used for grazing purposes. The *Kern County Wildland Fire Management Plan* documents the assessment of the wildland fire risk throughout the SRA within the County (KCFD 2009). The project site is located within a "moderate" and a "high" fire hazard severity zone within the SRA (KCFD 2009; CAL FIRE 2007).

The proposed project would increase the number of ignition sources in a currently undeveloped area of Kern County and would include the storage and use of fuels and other hazardous materials. Mining operations would be conducted from 6:00 a.m. to 7:30 p.m., Monday through Friday, with a maximum of 10 employees on-site at any one time. Construction activities associated with the proposed project could increase the potential for wildfire ignition and the spread of wildfire. However, the potential for wildfire is limited because vegetation on the project site and adjacent areas is sparse and availability of vegetative fuel build-up is limited.

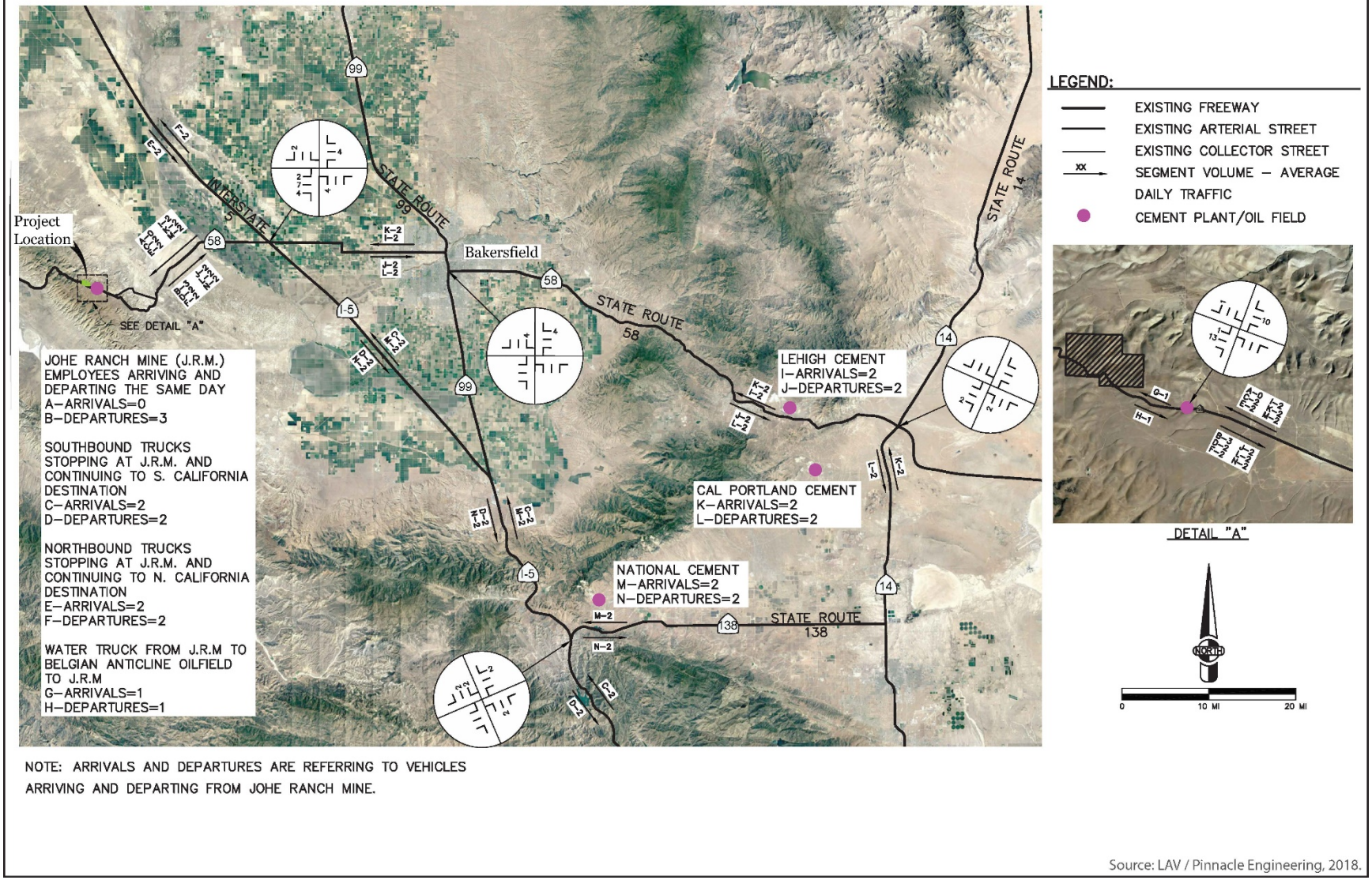
The equipment associated with the construction and operation of the proposed project would cause a negligible increase in fire potential. The proposed project would include emergency access routes and other safety features that would incorporate plans for fire protection. Within the proposed construction areas, vegetation would be controlled by mechanical methods to minimize fire risk.

The project is located within a moderate and high fire hazard area, an SRA, and the jurisdiction of the KCFD Battalion 2 and Station 24. Station 24 is further supported by Stations 21, 23, and 25 in the event of increased demand. Current fire protection and prevention staff and facilities are sufficient to continue to provide fire protection and emergency response services to the project area due to lack of development. Because the project would not generate a substantial permanent on-site population and is not within a severe wildland fire hazard area, it is anticipated that personnel and equipment from KCFD Battalion 2 and Station 24 would be sufficient to respond to fire at the project site.

Police Protection

KCSO provides police protection for the project site and surrounding areas, and the Buttonwillow Substation provides primary law enforcement services to the project area. This substation is located approximately 17 miles east of the project site. Additionally, the proposed project site would be located in the CHP's Central Division, approximately 51 miles northwest of the Bakersfield CHP Office. Both residents and workers in unincorporated portions of Kern County benefit from the patrol and investigation services provided by the KCSO. Demand for such services is related to the County's combined residential and worker populations in the unincorporated areas. Although the potential is low, the proposed project may attract vandals or other security risks that could increase demand for law enforcement services at the project site, compared to existing conditions. The Buttonwillow Substation is responsible for serving a large area consisting of farming and ranching communities that experience rural industrial thefts. As a result, patrol deputies work closely with the Sheriff's Rural Crime Investigation Unit to prevent and deter agricultural, livestock, and oilfield related crimes. The Buttonwillow Substation is sufficiently equipped with staff and facilities capable of providing law enforcement services for the proposed project. The proposed project is not expected to require an expansion of existing law enforcement staff or facilities. Development projects in this area of Kern County typically experience theft during the construction phase of the project; however, crime is not common during operation of developed facilities.

To ensure safety of the public and the facilities, the project site would be fenced and signs would be posted per Mine Safety and Health Administration (MSHA) requirements. Access to the site would be controlled and limited to the areas surrounding the project site during construction and operation, thereby minimizing the need for police surveillance. Construction activities may temporarily increase traffic volumes along surrounding roadways proposed for use as haul routes, including State Route (SR) 138, SR 14, SR 58, and I-5 (**Figure 4.15-1,** *P.M. Project-Generated Traffic*). However, project personnel commuting to the project site via these roadways would be required to adhere to all traffic laws. The increase in trip generation associated with workers commuting to the site during construction would be temporary and would not adversely affect the CHP's ability to patrol the roadways. The additional traffic would not result in the need for new or altered public service facilities.



NOTE: ARRIVALS AND DEPARTURES ARE REFERRING TO VEHICLES ARRIVING AND DEPARTING FROM JOHE RANCH MINE.

Source: LAV / Pinnacle Engineering, 2018.

Figure 4.15-1
P.M. Project-Generated Traffic

The proposed project would have a maximum of 10 employees on-site at any given time. This population is not anticipated to increase the need for law enforcement services. Although it is conceivable that a slight increase in the need for emergency response could occur, this potential increase would be limited and is not expected to result in the need for new or physically altered governmental facilities to maintain acceptable service ratios, response times, or other performance objectives for police protection service. Nonetheless, Mitigation Measure MM 4.15-1 is recommended. This mitigation measure requires the project proponent to work with Kern County to determine how the use of sales and use taxes from construction and operation of the project can be maximized.

Mitigation Measures

MM 4.15-1 The project proponent shall work with Kern County to determine how the use of sales and use taxes from construction and operation of the project can be maximized. This process shall include the project proponent obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing, and billing purposes and registering this address with the State Board of Equalization. The project proponent shall allow Kern County to use this sales tax information publicly for reporting purposes.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The cumulative setting for the public services impacts includes buildout of the *Kern County General Plan*. The cumulative study area related to public services is based on the service area for each of the fire and police stations serving the proposed project site. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The geographic scope for cumulative impacts to public services includes closely related past, present, and reasonably foreseeable probable future projects. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project. **Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.

Impact 4.15-2: The project would contribute to cumulative impacts on public services.

As discussed above, the project is not anticipated to result in an increased need for new or expanded public services or facilities. However, over time, population growth in the project region will require additional emergency and medical services, school, and recreational facility capacity. Although the project would add a limited number of new jobs and would not substantially contribute to the need for new public facilities, Kern County recognizes through

the *Kern County General Plan* that a need exists for discretionary development to contribute funding for future expansion of public service facilities. The *Kern County General Plan* contains the provision that new discretionary development pays its proportional share of local costs of infrastructure improvements required to service such development. Through these fees and the public services and facilities they are ultimately used for, impacts on public services caused by future projects are addressed. Although the applicability of the proportional fee for public services on the project will be determined by Kern County during project approval considerations, the fees paid by development toward public facilities minimizes potential impacts and the project would not result in a substantial contribution to cumulative impacts on public facilities. As discussed under Impact 4.15-1, above, MM 4.15-1 is recommended and requires the project proponent work with Kern County to determine how the use of sales and use taxes from construction of the project can be maximized. The measure would also serve to minimize potential cumulative impacts on public facilities.

Mitigation Measures

Implement Mitigation Measure MM 4.15-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure 4.15-1, cumulative impacts would be less than significant.

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Section 4.16
Transportation and Traffic

4.16.1 Introduction

This section of the Environmental Impact Report (EIR) addresses potential impacts of the project on transportation and traffic, describes the environmental and regulatory settings, and discusses mitigation measures that would reduce impacts, where applicable. Information in this section is based primarily on the *Traffic Impact Study for the Johe Ranch Mine* (TIS) (LAV/Pinnacle Engineering 2018), included in Appendix K of the EIR.

4.16.2 Environmental Setting

Regional and Local Roadway Facilities

The project site is in a rural, remote area of Kern County, approximately 8.5 miles east of the community of McKittrick. McKittrick is an unincorporated Kern County community with a population of roughly 115. The following is a description of roads in the vicinity of the project site, which are anticipated to be impacted to some extent by the project (**Figure 4.16-1,** *Project Location and Existing Street Network*.

State Route (SR-) 58 is a designated east-west highway that is a two-lane road in the vicinity of the project. As stated, SR-58 is the only point of ingress and egress for the project. In the vicinity of the project, the alignment of SR-58 is very curvy and has numerous hills and sags. Generally, the road has a double-yellow center stripe to prohibit passing. In most segments, sight distance is not sufficient for safe passing. Again, the roadway has two paved lanes without shoulders; however, an occasional turn-out is provided. Although SR-58 does connect populated areas along SR-99 with U.S. Route 101 (US 101), it is a less-preferred route to and from the California Coast due to limited laneage and said curvy alignment. The westerly terminus of SR-58 is at its junction with US 101 near San Luis Obispo, which is roughly 117 miles west of its intersection with SR-99. The easterly terminus of SR-58 is at Interstate 15 (I-15) in Barstow, roughly 125 miles east of SR-99.

In addition to US 101, SR-58 also connects SR-43, SR-33, I-5, SR-99, SR-14, and US 395.

Reward Road is a designated east–west arterial that is a two-lane road in the vicinity of the project and passes through McKittrick. Reward Road intersects SR-58 roughly 3.5 miles east of the project.

SR-33 is a designated two-lane, north–south highway with its northerly terminus at I-5 near Tracy and its southerly terminus at SR-1/US 101 in Ventura. SR-33 also connects SR-132, SR-152, SR-180, SR-198, SR-46, SR-58, SR-166, and SR-126. SR-33 and SR-58 share 1 mile of their alignment through McKittrick.

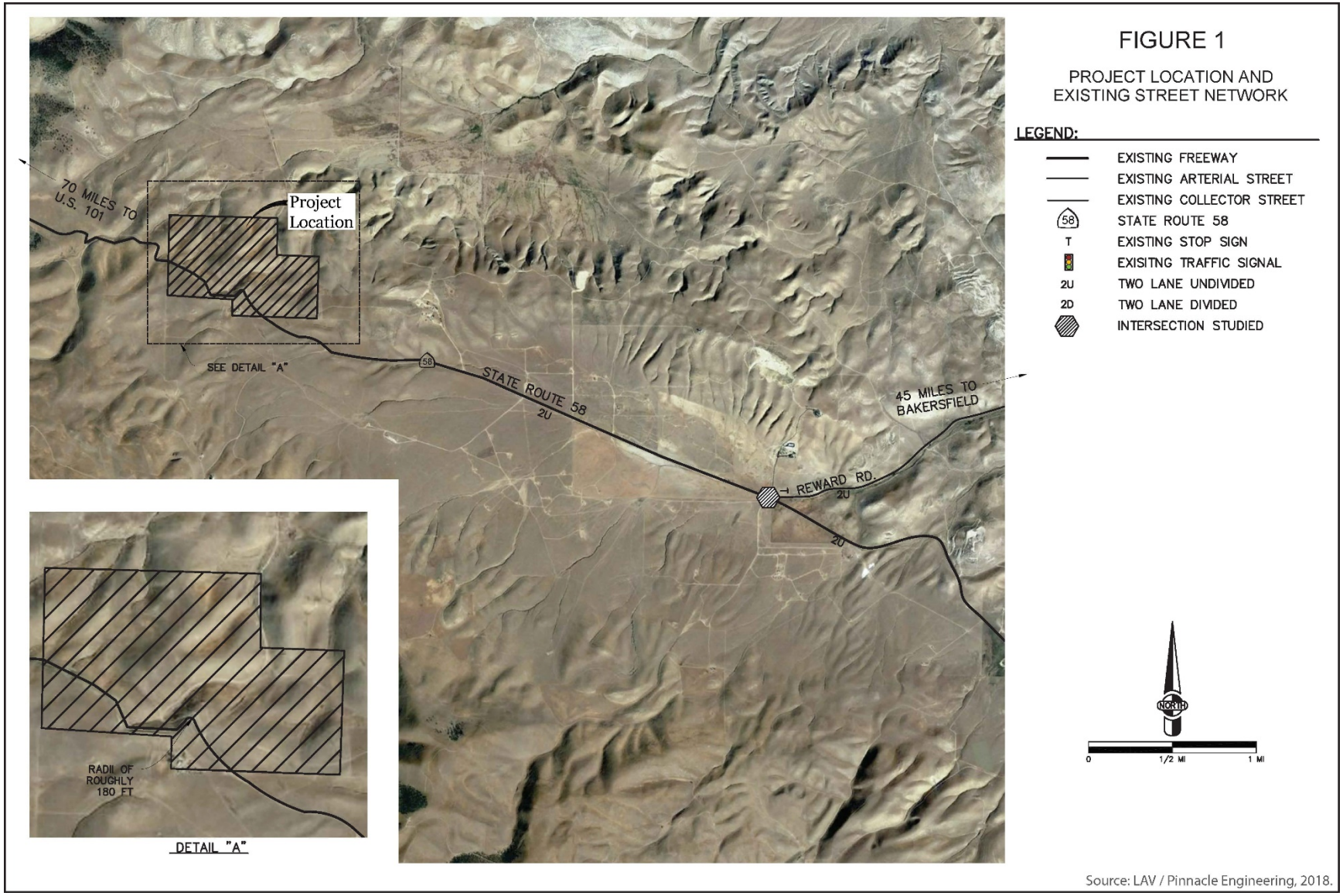

Figure 4.16-1
Project Location and Existing Street Network

Non-Motorized Transportation

There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways.

Other Transit Facilities

Railways

The closest operated mainline railway is the Union Pacific Railroad located approximately 8 miles east and northeast of the project site at its closest.

Public Transit

Public transportation in Kern County is provided by Kern Regional Transit, which offers 16 fixed routes throughout the County and a dial-a-ride public transportation service for residents in Frazier Park, Kern River Valley, Lamont, Mojave, Rosamond, and Tehachapi. No public transit routes pass or stop near the project site.

Airport Facilities

The project area is not located within the sphere of influence of any airport as identified by the Kern County Airport Land Use Compatibility Plan (ALUCP). The nearest airport to the project site is the Elk Hills/Buttonwillow Airport, which is a public airport/public use airport, located approximately 15 miles to the southeast.

Existing Traffic Volumes and Levels of Service

Traffic counts were performed for the existing street network to determine existing intersection volumes, turning movements, and traffic flow patterns. Future year traffic volumes are estimated by applying annual growth rates derived from the Kern Council of Governments (Kern COG) modeling to existing counts. Traffic counts were performed during the morning and evening peak periods during weekdays, excluding Mondays, Fridays, holidays, and days preceding or following holidays. Weekdays before or after holidays are not representative of normal traffic patterns and thus are not counted or included in the database. Counts were performed during the morning peak period between 6:30 a.m. and 8:30 a.m., as well as the evening peak period between 4:00 p.m. and 6:00 p.m. The peak 1-hour period within the window counted was determined, as well as the peak-hour volume. Often the peak hour for one intersection or street is slightly different than others. In the TIS, conservatively, the highest 1-hour volumes for each intersection or street segment within the peak periods were used for analysis in this report.

The evening peak hour, as opposed to the morning peak hour, yielded the highest 1-hour volume. Therefore, the intersection of SR-58 and Reward Road was analyzed for the evening peak periods. It should be noted that the evening existing peak hour traffic volume counts were as much as 30% higher than the morning peak-hour field counts. **Figure 4.16-2,** *Year*

3018 Existing A.M. Peak Hour Volumes and Turning Movements, and **Figure 4.16-3,** *Year 2018 Existing P.M. Peak Hour Volumes and Turning Movements*, show the peak-hour volumes during the morning and evening peak period, respectively, for all facilities counted. These figures also show the actual turning movements at all counted intersections.

Level of Service

Level of Service (LOS) is the generally accepted gauge for describing the quality of operation of either a road segment or street intersection. Other attributes of operational quality associated with each LOS are volume to capacity ratio (v/c), vehicle delay through an intersection, and reserve capacity of an intersection approach. For each type of street segment or intersection analysis, the LOS criteria vary slightly.

LOS for every type of roadway or intersection are described thoroughly in the *Highway Capacity Manual* (Transportation Research Board National Research Council 2010); however, **Table 4.16-1,** *Level of Service for Signalized Intersections*, **Table 4.16-2,** *Level of Service for Unsignalized Intersections*, and **Table 4.16-3,** *Level of Service for Highways and Arterials*, provide brief descriptions of LOS.

Table 4.16-1 Level of Service for Signalized Intersections

LOS	Stopped Delay per Vehicle (secs)
A	< 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	>60.0

Source: LAV/Pinnacle Engineering 2018

Table 4.16-2 Level of Service for Unsignalized Intersections

LOS	Reserve Capacity (PCPH)*	Expected Delay to Minor Street Traffic
A	≥ 400	Little or no delay
B	300-399	Short traffic delay
C	200-299	Average traffic delay
D	100-199	Long traffic delay
E	0-99	Very long traffic delay
F	Note 1	See Note 1

* PCPH = passenger cars per hour
Note 1: When demand volume exceeds the capacity of the lane, extreme delays will be encountered. This condition usually warrants improvement to the intersection.
Source: LAV/Pinnacle Engineering 2018

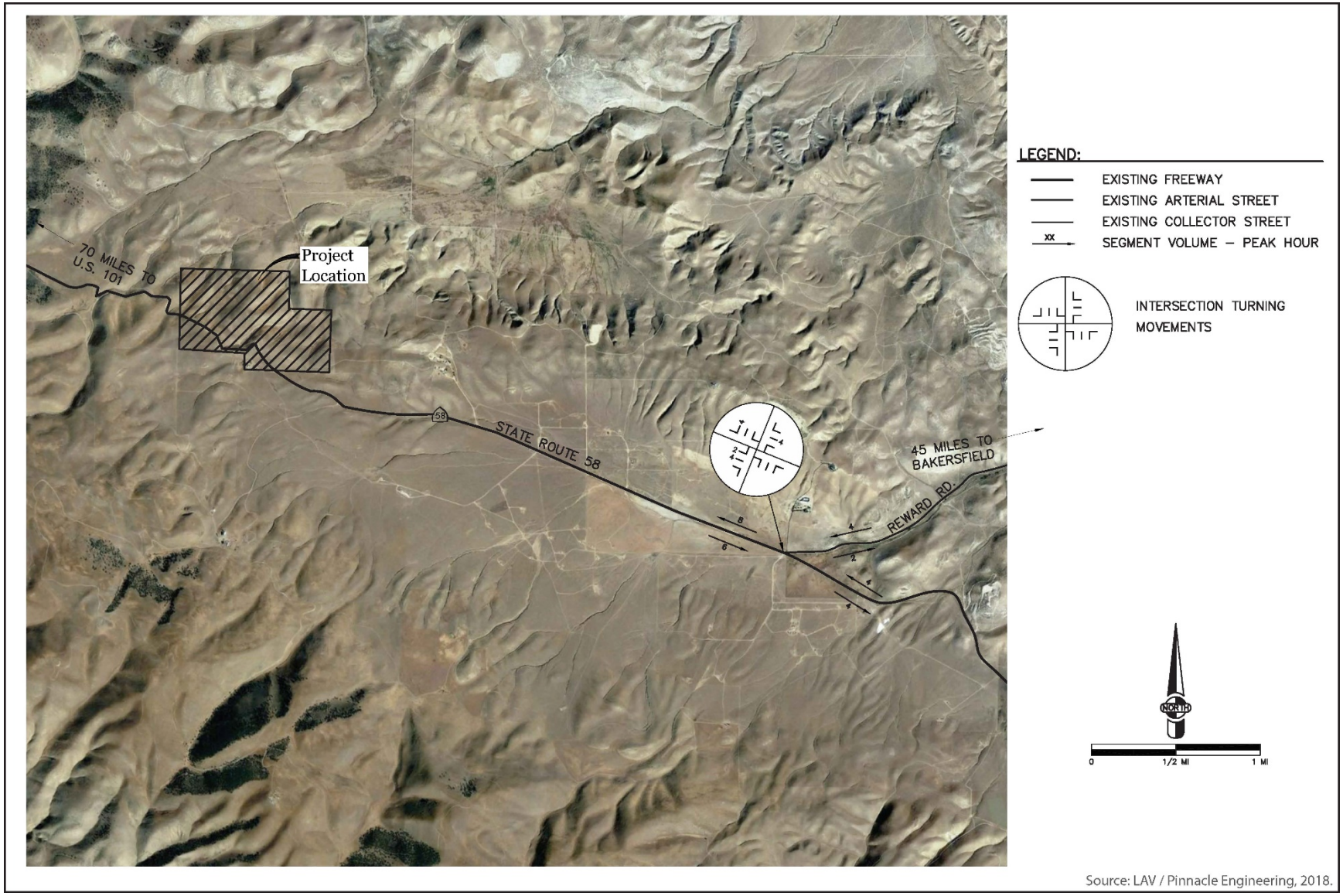

Figure 4.16-2
Year 2018 Existing A.M. Peak Hour Volumes and Turning Movements

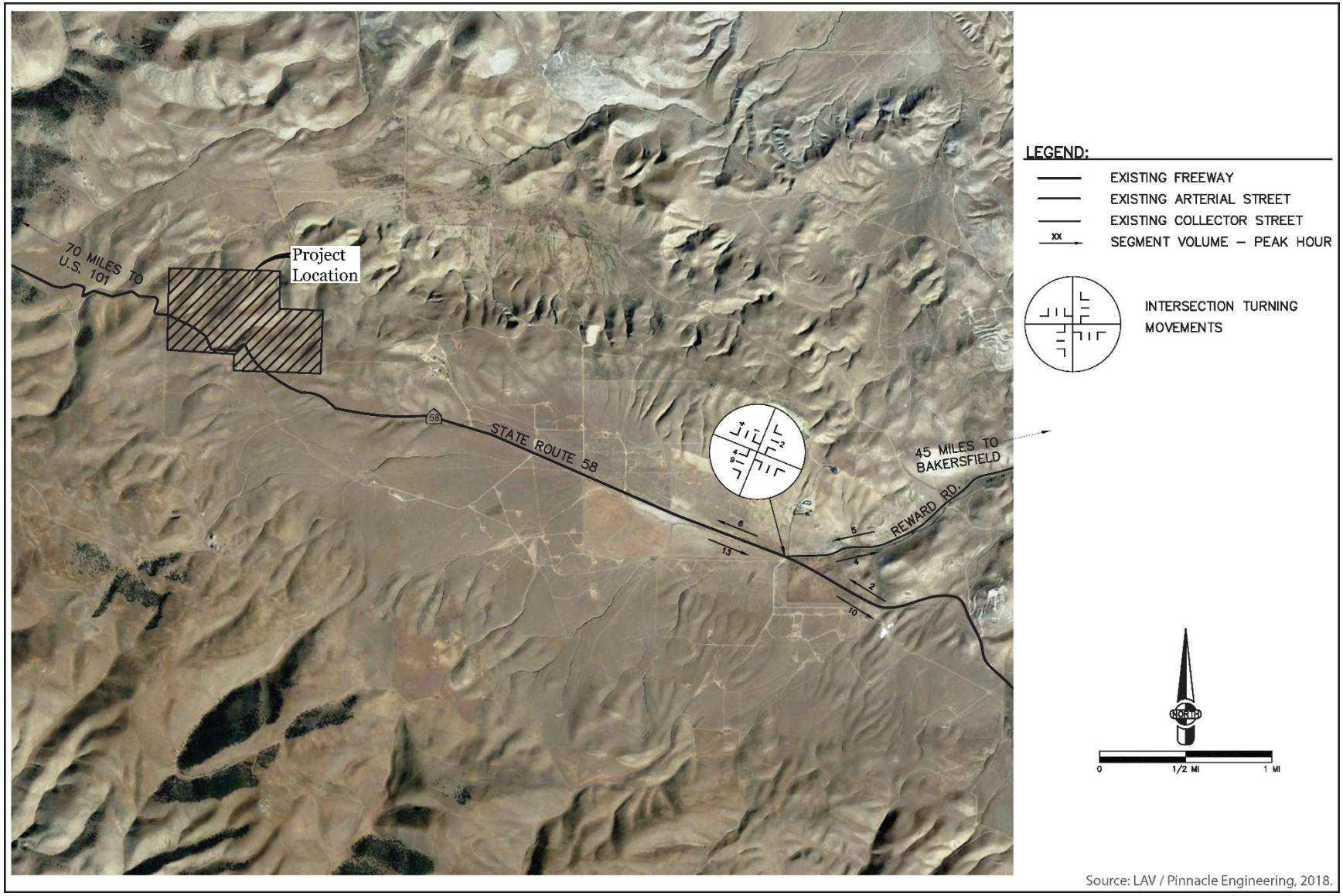

Figure 4.16-3
Year 2018 Existing P.M. Peak Hour Volumes and Turning Movements

Table 4.16-3 Level of Service for Highways and Arterials

LOS	Description
A	Free flow conditions, unimpeded ability to maneuver and pass, very little delay, no platoons, highest average travel speeds.
B	Mostly free flow conditions; presence of other vehicles begins to be noticeable. Passing is required to maintain speeds, slightly less average travel speeds than LOS A.
C	Traffic density clearly affects the ability to pass and maneuver within the stream. Speeds are reduced to about 50 miles per hour (mph) on highways and to about 50% of the average on urban arterials.
D	Unstable flow. Speeds are reduced from 40–60% of normal. Passing demand is high although mostly impossible on two-lane highways. Traffic disruptions usually cause extensive queues.
E	Very unstable flow at or near capacity. Passing and maneuvering virtually impossible. Extensive platooning on highways and queuing on arterials. Speeds range from 20 mph or less on arterials and two-lane highways, and up to 50 mph on multi-lane highways.
F	Forced or breakdown flow. Demand exceeds capacity. Vehicles experience short spurts of movement followed by stoppages. Intersection congestion, long queues, and delays are common.

Source: LAV/Pinnacle Engineering 2018

4.16.3 Regulatory Setting

Federal

Federal Aviation Administration

The Federal Aviation Administration (FAA) regulates aviation at the Elk Hills/Buttonwillow Airport, and other regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to Code of Federal Regulations (CFR) Title 14, Part 77.9, any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA of:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
    - Within 20,000 feet of a public use or military airport that exceeds a 100:1 surface from any point on the runway where the longest airport runway exceeds 3,200 feet in actual length;
    - Within 10,000 feet of a public use or military airport that exceeds a 50:1 surface from any point on the runway where the longest airport runway is less than 3,200 feet in actual length; and
    - Within 5,000 feet of a public use heliport that exceeds a 25:1 surface;
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above standards;

- When requested by the FAA; and

- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Failure to comply with the provisions of Federal Aviation Regulation (FAR) Part 77 is subject to civil penalty under Section 902 of the Federal Aviation Act of 1958, as amended, and pursuant to United States Code (USC) Title 49, Section 46301(a).

State

California Department of Transportation

The California Department of Transportation (Caltrans) has jurisdiction over State highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. The following Caltrans regulations apply to potential transportation and traffic impacts of the proposed project:

- **California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load):** Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

- **California Street and Highway Code Sections 660-711, 670-695:** Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and County highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

Local

Kern County General Plan

The *Kern County General Plan* Circulation Element sets forth goals, policies, and implementation measures related to transportation improvements. Issues discussed in the Circulation Element include new roads, upgrading of roads for future growth, scenic highway corridors, congestion management, truck transportation, and air and rail issues.

Chapter 2. Circulation Element

2.1 Introduction

Goals

- **Goal 4.** Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.

- **Goal 5.** Maintain a minimum Level of Service (LOS) D for all roads throughout the County unless the roads are part of an adopted Community Plan or Specific Plan which utilizes Smart Growth policies that encourage efficient multi-modal movements.

2.3 Highways

2.3.3 Highway Plan

Goals

- **Goal 5.** Maintain a minimum Level of Service (LOS) D.

Policies

- **Policy 1.** Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and midsection lines. This is because the road centerline can be determined by an existing survey.

- **Policy 2.** This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond Year 2010. Where Planning Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert Regions for arterial right-of-way. The County shall routinely protect all mid-section lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and mid-section lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and mid-section "grid" will comprehensively apply to the Mountain Region.

- **Policy 3.** This plan's road width standards are listed below. These standards do not include State highway widths that would require additional right-of-way for rail transit, bike lanes and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.

    - Expressway [Four Travel Lanes] Minimum 110-foot right-of-way

    - Arterial [Major Highway] Minimum 110-foot right-of-way (County Standard 110-feet);

    - Collector [Secondary Highway] Minimum 90-foot right-of-way (County Standard 90-feet);

- Commercial-Industrial Street Minimum 60-foot right-of-way (County Standard 60-feet);

- Local Street [Select Local Road] Minimum 60-foot right-of-way (County Standard 60-feet).

Implementation Measure

- **Implementation Measure A.** The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that include road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4 Future Growth

Goals

- **Goal 1.** To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

- **Policy 2.** The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below LOS D. Utilization of the California Environmental Quality Act (CEQA) process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build off-site transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

- **Policy 4.** As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary, then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

- **Policy 5.** When there is a legal lot of record, improvement of access to county, city or State roads will require funding by sources other than the

County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

- **Policy 6.** The County may accept a developer's road into the County's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measures

- **Implementation Measure A.** The County should relate traffic levels to road capacity and development levels. To accomplish this Roads Department and Planning Department should set up a monitoring program. The program would identify traffic volume to capacity ratios and resulting level of service. The geographic base of the program would be traffic zones set up by Kern Council of Governments.

- **Implementation Measure C.** Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.5 Other Modes

2.5.1 Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

- **Goal 1.** Provide for Kern County's heavy truck transportation in the safest way possible.

- **Goal 2.** Reduce potential overweight trucks.

- **Goal 3.** Use State Highway System improvements to prevent truck traffic in neighborhoods. Policies

Policies

- **Policy 1.** Caltrans should be made aware of the heavy truck activity on Kern County's roads.

- **Policy 2.** Start a program that monitors truck traffic operations.

- **Policy 3.** Promote a monitoring program of truck lane pavement condition.

Chapter 4. Safety Element

4.6 Wildland and Urban Fire

Policies

- **Policy 4.** Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Kern Council of Governments Congestion Management Program

All urbanized areas with a population larger than 200,000 residents are required to have a Congestion Management System, program, or process. The Kern COG refers to its congestion management activities as the Congestion Management Program (CMP); Kern COG was designated as the Congestion Management Agency.

The CMP provides a systematic process for managing congestion and information regarding: (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet State and local needs. The purpose of the CMP is to ensure that a balanced transportation system is developed that relates population growth, traffic growth, and land use decisions to transportation system LOS performance standards and air quality improvement. The program attempts to link land use, air quality, transportation, and advanced transportation technologies as integral and complementary parts of this region's plans and programs.

The purpose of defining the CMP network is to establish a system of roadways that will be monitored in relation to established LOS standards. At a minimum, all State highways and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways. Kern County has 18 designated State highways.

2018 Regional Transportation Plan/Sustainable Communities Strategy

The latest Regional Transportation Plan (RTP) was prepared by Kern COG and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between Federal, State, regional, and local agencies. Included in the 2018 RTP is the Sustainable Communities Strategy (SCS) required by California's Sustainable Communities and Climate Protection Act of Senate Bill (SB) 375. The California Air Resources Board (CARB) set Kern County greenhouse gas (GHG) emissions reductions from passenger vehicles and light-duty trucks at 5% per capita by 2020 and 10% per capita by 2035, as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA), ensuring consistency between low-income housing needs and transportation planning. Kern COG engaged in the

RHNA process concurrently with the development of the 2018 RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can provide sufficient housing for all economic segments of the population and ensure that the State's housing goals are met.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS also provides opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to improve economic vitality, air quality, the health of communities, and transportation and public safety; promote the conservation of natural resources and undeveloped land; and increase access to community services, regional and local energy independence, and opportunities to help shape the community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing Federal, State, and local sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to State and Federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future state bonding programs, and mileage-based user fees.

The 2018 RTP promotes a more efficient transportation system that calls for fully funding alternative transportation modes, while emphasizing transportation demand and transportation system management approaches for new highway capacity. The Constrained Program of Projects includes projects that move the region toward a financially constrained and balanced system. Constrained projects have undergone air quality conformity analysis to ensure that they contribute to the Kern region's compliance with Federal and State air quality rules.

Kern County Airport Land Use Compatibility Plan

The Kern County ALUCP establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses. The project area is not located within the sphere of influence of any airport as identified by the Kern County ALUCP. The nearest airport to the project site is the Elk Hills/Buttonwillow Airport, which is a public airport/public use airport, located approximately 15 miles to the southeast.

4.16.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to transportation and traffic for the proposed project. It describes the methods used to determine the impacts of the project and lists the thresholds used to determine the significance of each impact. Measures to mitigate

(i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, where applicable.

Methodology

The transportation and traffic analysis presented in this section is based largely on the findings of the TIS prepared for the project (LAV/Pinnacle Engineering 2018), included in Appendix K of the EIR. The analysis considers the potential for increases in motor vehicle trips associated with the project to degrade traffic LOS resulting in or contributing to unacceptable conditions. Specific methodologies used for the various impacts discussed herein are described as relevant in the various impact sections.

A brief step-by-step description used for analysis in the TIS and this section is provided below:

1. Existing conditions of the project and surrounding area are surveyed, including traffic volumes, laneage, and intersection control.

2. Project-generated traffic, based on the proposed land use, is estimated and distributed onto the existing street network.

3. Using growth rates extracted from the Kern COG computer traffic model, Future Traffic Volumes are estimated for Year 2040 and any earlier year that is considered "opening day" for the project. However, in this case, mining operations are intended to commence as soon as possible upon regulatory approvals. Thus, present-day conditions were considered "opening day," and therefore no interim analysis was performed.

4. The estimated project-generated traffic is added to existing traffic volumes, and to future traffic volumes (estimated as described in Item 3 above), to determine the total traffic for present and future years.

5. Street segments and intersections are then analyzed for LOS for the various scenarios: A) Existing conditions with No Project; B) Existing Conditions with Project; C) Year 2040 with No Project; D) Year 2040 with Project, and as discussed in following items; and E) if necessary, Year 2040 with Project and Proposed Mitigation Improvements. If warranted, streets and intersections, with the addition of project traffic, are analyzed for an "opening day" scenario. However, since the mine intends to commence operation as soon as permitting is approved, existing conditions were considered representative of "opening" day.

   Mitigation or capacity/LOS improvements are then determined for any of the above scenarios that result in an unacceptable LOS. Resultant or "after mitigation" LOSs are determined for proposed mitigation improvements. If improvements to the facility are funded by the regional transportation impact fee (RTIF), they are evaluated for adequacy under future traffic conditions. The project's obligation for funding of any needed mitigation improvements that are not already funded by the RTIF program is

also determined. The project's obligation, in very simplified terms, is the ratio of project-generated traffic to total estimated future year traffic volume.

Future Year Traffic Volumes

Future traffic for Year 2040 was estimated by applying growth rates derived from the Kern COG computer traffic model. (Kern COG is an association of County and City governments created to address regional transportation issues. Kern COG maintains a computer traffic model for Kern County, which includes monitoring of demographic trends.)

Table 4.16-4, *Projected Average Annual Growth Rates*, shows the Kern COG traffic model projections for SR-58 in the project site's vicinity for Years 2015 and 2042. As shown in **Table 4.16-4**, the average annual growth rate was calculated to be 1.6% for SR-58.

Table 4.16-4 Projected Average Annual Growth Rates

Item No.	Road Segment	From	To	Year 2015 Average Daily Volume	Year 2042 Average Daily Volume	Average Annual Growth Rate (%)	Factor: Year 2018 to Year 2040
1.	SR-58	SR-33	Reward Road	146	227	1.6%	1.4328

Source: LAV/Pinnacle Engineering 2018

Figure 4.16-4, *Year 2040 Existing P.M. Peak Hour Volumes and Turning Movements*, shows the Year 2040 peak-hour volumes and turning movements that were extrapolated using a 1.6% average annual growth rate (with and without project-generated traffic) for the evening peak-hour period.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect on transportation and traffic. Both documents state that a project would normally be considered to have a significant impact related to transportation and traffic if it would:

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3 (b);

c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

d. Result in inadequate emergency access.

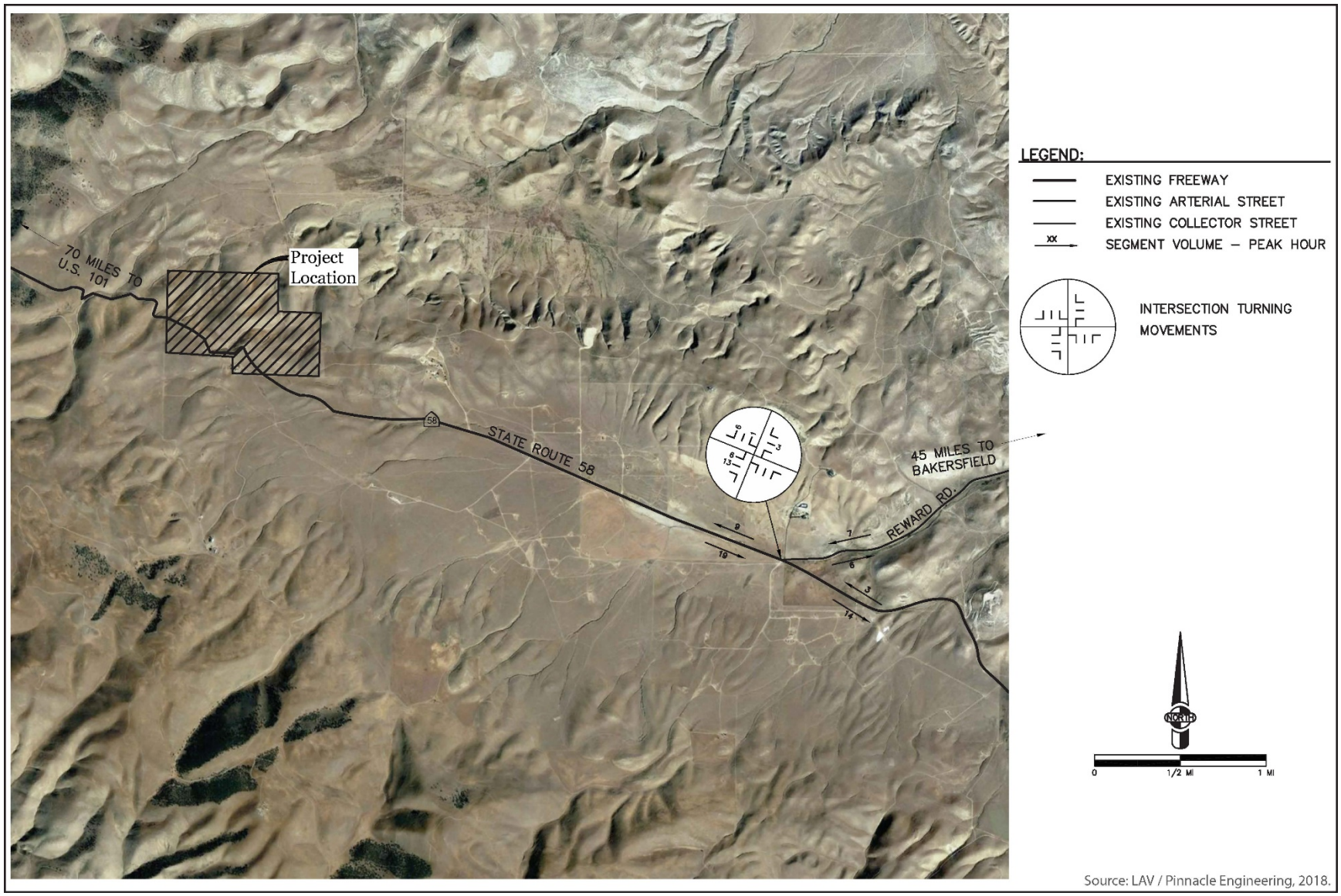

Figure 4.16-4
Year 2040 Existing P.M. Peak Hour Volumes and Turning Movements

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts and were therefore scoped out of requiring further review in this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas:

- Conflict with an applicable congestion management program, including, but not limited to, LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways:
    - Metropolitan Bakersfield General Plan LOS C
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Project Impacts

Impact 4.16-1: The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Project-generated traffic was distributed onto the existing street network based on existing patterns. In accordance with Kern County criteria, any street segment or intersection currently operating at or above LOS C must be analyzed if it receives 50 or more project-generated peak-hour trips. If the facility currently operates at LOS D, E, or F, the analysis threshold drops to 40, 20, and 10 trips, respectively.

The following lists the various scenarios that were analyzed for LOS:

1. Existing Year 2018 A.M. Peak Hour without Project ("No Project" Scenario). These volumes are actual traffic counts and are shown on **Figure 4.16-2,** *Year 2018 Existing A.M. Peak Hour Volumes and Turning Movements*.

2. Existing Year 2018 P.M. Peak Hour without Project ("No Project" Scenario). These volumes are actual traffic counts, and are shown on **Figure 4.16-3,** *Year 2018 Existing P.M. Peak Hour Volumes and Turning Movements*.

3. P.M. Project-Generated Traffic, as referenced on Figure **4.16-5,** *P.M. Project-Generated Traffic*.

4. Year 2018 P.M. Peak Hour Volumes and Turning Movements Plus Project-Generated Traffic. These volumes can be referenced on **Figure 4.16-6,** *Year 2018 Existing P.M. Peak Hour Volumes and Turning Movements Plus Project-Generated Traffic*.

5. Year 2040 P.M. Peak Hour Volumes without the addition of Project-Generated Traffic ("No Project" Scenario). These volumes can be referenced on **Figure 4.16-4,** *Year 2040 Existing P.M. Peak Hour Volumes and Turning Movements*.

6. Year 2040 P.M. Peak Hour Volumes and Turning Movements Plus Project-Generated Traffic. These volumes can be referenced on **Figure 4.16-7,** *Year 2040 Existing P.M. Peak Hour Volumes and Turning Movements Plus Project-Generated Traffic*.

7. If warranted, LOS calculations were performed for the facility with proposed mitigation improvements.

The morning peak-hour field count for SR-58 and Reward Road yielded volumes that were as much as 30% less than the evening peak-hour traffic count. The P.M. peak hour was considered the "worst case" scenario and used for the analysis.

In typical traffic studies, project-generated vehicular trips are estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 9th Edition (ITE 2012; hereinafter referred to as the ITE Manual). The ITE Manual provides mathematical correlations between various land uses and trip generation. The ITE Manual provides average rates for each land use type and, in some cases, a fitted mathematical curve. However, the ITE Manual does not provide trip generation rates for mining operations.

In this case, the origins of trips to the mine, as well as destination of trips from the mine, are well documented. Trip generation from the mining operation will consist of arrivals and departures of employees, water trucks, and dump trucks that pick up and transport diatomaceous earth and overburden material to various destinations.

Table 4.16-5, *Johe Ranch Mine – Project Trip Generation: Average Daily Traffic, AM & PM Peak Hour and Breakdown of Arrivals and Departures*, indicates the project is estimated to generate 118 average daily trips (ADT), 26 evening peak-hour trips, and 26 morning peak-hour trips. These include the arrivals and departures of three employees, a water truck, and dump trucks that pick up and haul the mined product to various destinations.

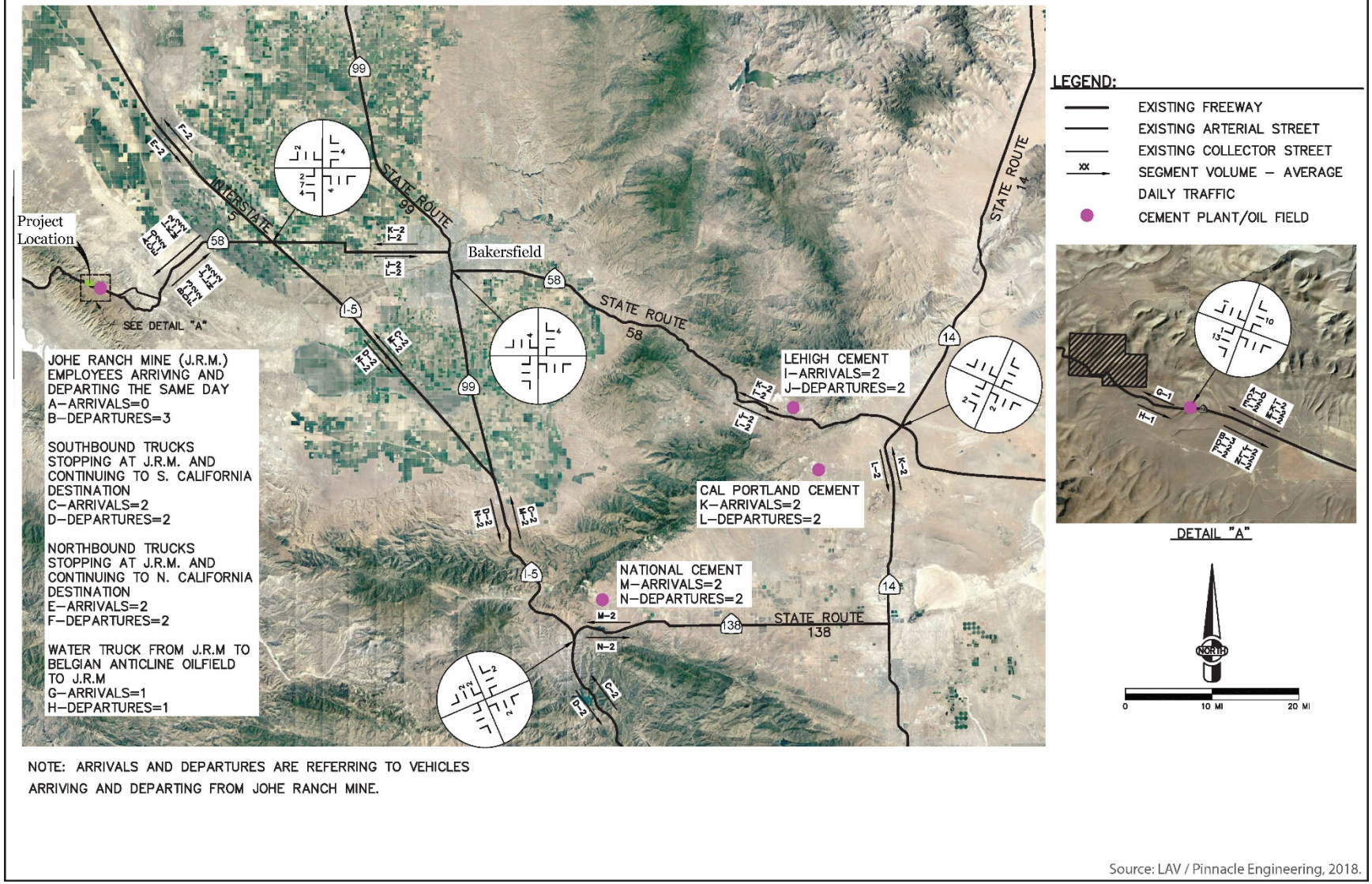

Figure 4.16-5
P.M. Project-Generated Traffic

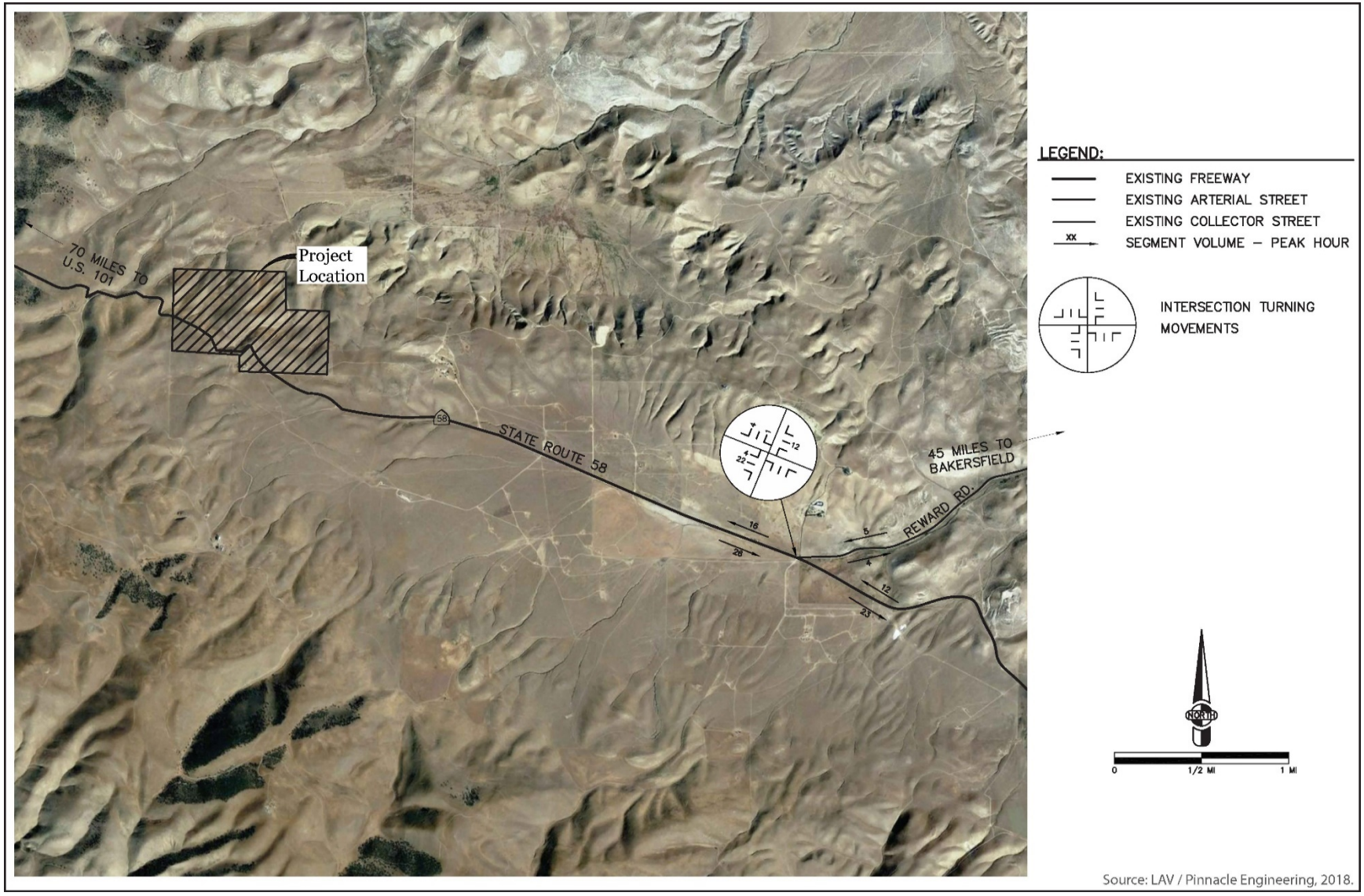

Figure 4.16-6

Year 2018 Existing P.M. Peak Hour Volumes and Turning Movements Plus Project-Generated Traffic

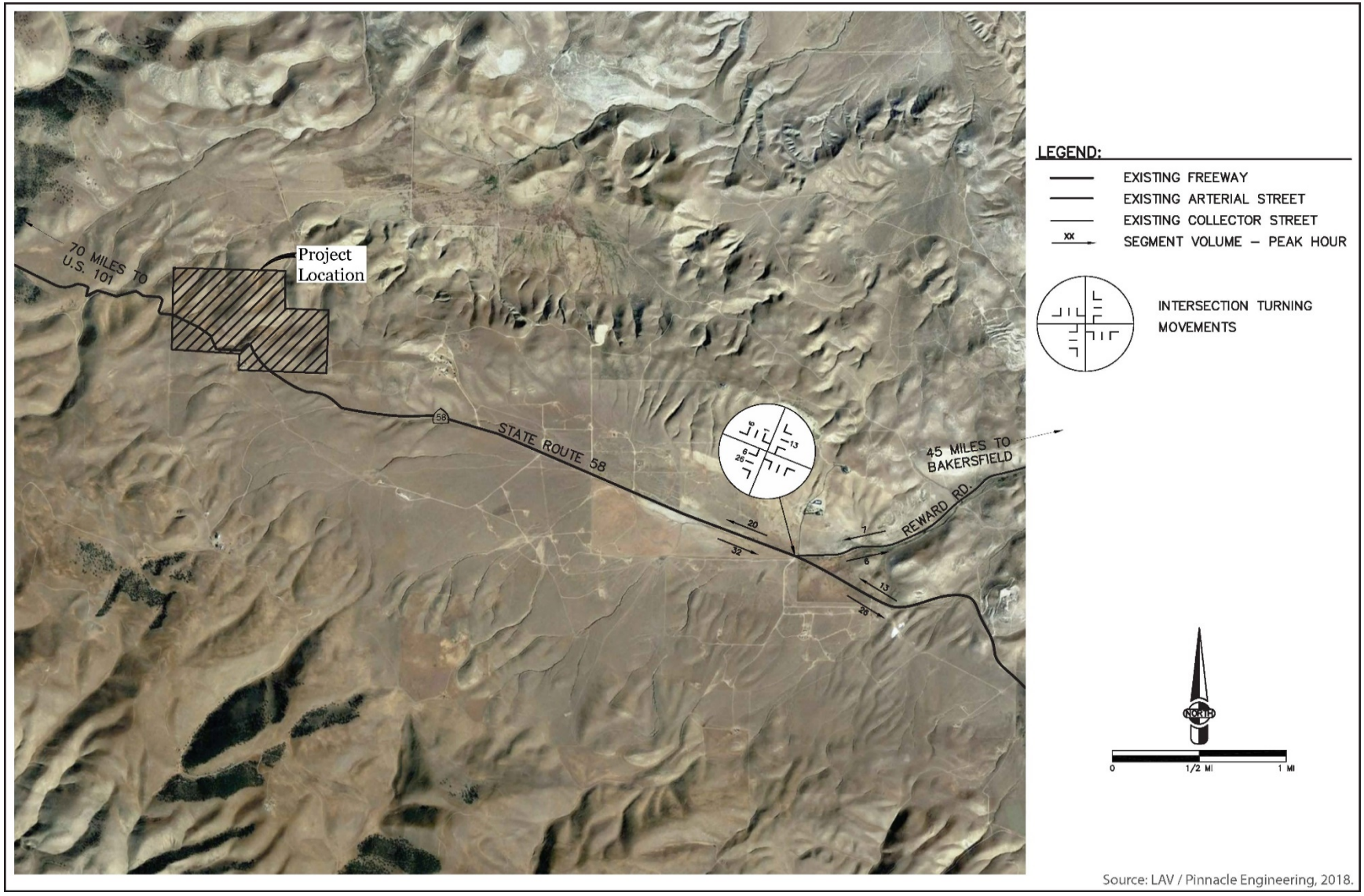

Figure 4.16-7

Year 2040 Existing P.M. Peak Hour Volumes and Turning Movements Plus Project-Generated Traffic

Table 4.16-5 Project Trip Generation: Average Daily Traffic, AM & PM Peak Hour and Breakdown of Arrivals and Departures

Item No.	Origin to Destination	24 Hour Trips – ADT		Peak Hour Trips – AM & PM			
				AM Peak Hour		PM Peak Hour	
		Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
1	National Cement in Lebec to Johe Ranch Mine	10	0	2	0	2	0
2	Johe Ranch Mine to National Cement in Lebec	0	10	0	2	0	2
3	Johe Ranch Mine Employees arriving and departing same day	3	3	3	0	0	3
4	Water Trucks arriving and departing same day	6	6	1	1	1	1
5	Southbound Trucks stopping at Johe Ranch Mine & continuing to Southern Cal Destinations on same day	10	10	2	2	2	2
6	Northbound Trucks stopping at Johe Ranch Mine & continuing to various northerly destinations on same day	10	10	2	2	2	2
7	Lehigh Cement in Tehachapi to Johe Ranch Mine	10	0	2	0	2	0
8	Johe Ranch Mine to Lehigh Cement in Tehachapi	0	10	0	2	0	2
9	Cal Portland Cement in Mojave to Johe Ranch Mine	10	0	2	0	2	0
10	Johe Ranch Mine to Cal Portland Cement in Mojave	0	10	0	2	0	2
	TOTALS	**59**	**59**	**14**	**11**	**11**	**14**
	TOTALS – ADT, AM Peak Hr., PM Peak Hr.:	***118***		***25***		***25***	
	Percentage of ADT	***100%***		***22%***		***22%***	

Note: Since the above trip quantities are taken from transportation logs, there was no reason or other justification to take reductions due to the phenomena known as "capture," "pass-bys," or diverted link trips.

Trip Distribution and Assignment

A significant portion of the weekday trips to and from the project during the peak hour of adjacent street traffic are anticipated to be primary trips. Therefore, project-generated trips were distributed onto the street networks based on the mine's existing transportation records. The distribution of project traffic generated during the peak hour of the adjacent street network is shown on **Figure 4.16-4,** *Year 2040 Existing P.M. Peak Hour Volumes and Turning Movements*. This figure represents known transportation routes from or to the known destinations shown in **Table 4.16-5,** *Johe Ranch Mine – Project Trip Generation: Average Daily Traffic, AM & PM Peak Hour and Breakdown of Arrivals and Departures*. Since trip

generation and distribution are based on reliable data, with known destinations, there was no justification to take reductions due to assimilation.

Level of Service Analysis

LOS calculation methods were taken from the above-referenced Highway Capacity Manual. Computer software from "McTrans Highway Capacity" package was used to facilitate extensive calculations. All computer-generated reports have been included in Appendix K of this report. Summaries of the LOS calculations for the various scenarios described are included in the following tables:

- **Table 4.16-6,** *Projected Average Annual Growth Rates,* shows the results of the intersection Level of Service calculations; and

- **Table 4.16-7,** *Street Segment Level of Service,* shows the results of Level of Service calculations for various street segments within the scope of this study.

Calculations yielded an LOS A for any and all scenarios.

Traffic Signal Warrant Analysis

Non-signalized intersections within the project vicinity were analyzed for satisfaction of the Peak Hour Volume Warrant as described in Section 9 of the Caltrans Traffic Manual and the *Manual of Uniform Traffic Control Devices* (MUTCD). A brief explanation of the intersection warrant analysis is provided below.

The MUTCD prescribes "tests" that are conducted to determine the need for installation of a traffic signal; these tests are referred to as "warrants." The MUTCD list minimum signal warrants, which have been adopted by Caltrans and most California agencies, including the City of Bakersfield and Kern County. These warrants consist of evaluation of various criteria that have been determined as critical for the installation of a signal. The warrant criterion has been derived empirically.

In actual practice, justification for signal installation is usually based on satisfaction of several warrants as well as poor LOS for multiple movements. In keeping within the scope of the TIS, non-signalized intersections were evaluated for signalization, including expansion of the intersection, based solely on satisfaction of the Peak Hour Signal Warrant described in the MUTCD.

Table 4.16-8, *Peak Hour Warrant Analysis,* provides intersection volumes and indicates whether the Peak Hour Warrant is satisfied for all existing and future scenarios. In the single case analyzed, the intersection of SR-58 and Reward Road, a traffic signal was not warranted. **Table 4.16-6,** *Projected Average Annual Growth Rates,* herein also provides a column indicating whether the Peak Hour Warrant was satisfied for each scenario. There was not an intersection scenario, present day or future, that met the minimum thresholds to warrant a traffic signal.

Table 4.16-6 Projected Average Annual Growth Rates

Item No.	Intersection	Time Period	Contract	Northbound			Southbound			Eastbound			Westbound			Comp LOS	Intersection Delay (sec/veh)	Peak Hour Warrant Met (Yes/No)
				Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
1	SR-58 and Reward Road	Year 2018 P.M. Existing	1W	-	-	-	A	-	A	A	A	-	-	-	-	A	8.6	No
		Year 2018 P.M. with Project	1W	-	-	-	A	-	A	A	A	-	-	-	-	A	8.7	No
		Year 2040 P.M. without Project	1W	-	-	-	A	-	A	A	A	-	-	-	-	A	8.6	No
		Year 2040 P.M. with Project	1W	-	-	-	A	-	A	A	A	-	-	-	-	A	8.8	No

Source: LAV/Pinnacle Engineering 2018

Table 4.16-7 Street Segment Level of Service

Item No.	Street Segment	Limits	Existing Laneage	Year 2018 Existing P.M. Volumes		Year 2018 P.M. Plus Project Traffic		Year 2040 P.M. Without Project Traffic		Year 2040 P.M. Plus Project Traffic	
				PH Vol (vph) (wb/eb) or (sb/nb)	LOS	PH Vol (vph) (wb/eb) or (sb/nb)	LOS	PH Vol (vph) (wb/eb) or (sb/nb)	LOS	PH Vol (vph) (wb/eb) or (sb/nb)	LOS
1	SR-58	Project Location/ Reward Road	2	6/13	A	16/26	A	9/19	A	20/32	A

Source: LAV/Pinnacle Engineering 2018

Table 4.16-8 Peak Hour Warrant Analysis

Item No.	Existing Non-Signalized Intersection	Year 2018 Existing P.M. Volumes			Year 2018 Existing P.M. Plus Project Traffic			Year 2040 P.M. Volumes			Year 2040 P.M. Plus Project Traffic		
		Highest Minor Approach Volume (vph)	Total Major Approach Volume (vph)	Peak Hour Warrant Satisfied	Highest Minor Approach Volume (vph)	Total Major Approach Volume (vph)	Peak Hour Warrant Satisfied	Highest Minor Approach Volume (vph)	Total Major Approach Volume (vph)	Peak Hour Warrant Satisfied	Highest Minor Approach Volume (vph)	Total Major Approach Volume (vph)	Peak Hour Warrant Satisfied
1	SR-58 and Reward Road	5	15	No	5	38	No	7	22	No	7	45	No

Source: LAV/Pinnacle Engineering 2018

Impact Determination and Mitigation

Mitigation is normally considered necessary if a particular intersection or street segment under any existing or future scenario (with or without the addition of project-generated traffic) is anticipated to function at less than LOS C. Generally, the objective of traffic mitigation is to restore LOS to a C or better.

A more complicated issue is funding for traffic mitigation improvements and the project's obligation or share of those costs. If mitigation is warranted, and degradation of the facility is a direct result of anticipated project traffic, the project will usually have an obligation to fund all or part of required mitigation improvements. Funding from the project can be a pro-rata amount, based on a formula of percentage of traffic to total traffic. However, there are variations on this formula depending on the governing agency. The project's obligation for funding mitigation can also be adjusted based on other factors to include agency traffic impact fees and contributions from other projects. In this case, the project will likely pay a Kern County Transportation Impact fee. However, the analysis indicated no roadway or intersection improvements were needed to mitigate LOS.

As discussed in detail earlier in this section, a poor operational LOS for multiple movements and satisfaction of the Peak Hour Warrant were considered justification for installation of a traffic signal or upgrading an existing signalized intersection (to full expansion in accordance with all local standards).

Degradation of the LOS of a street segment to less than C, whether or not attributable to project traffic, was considered justification for mitigation. However, as indicated by the LOS calculations results shown in **Table 4.16-6,** *Projected Average Annual Growth Rates,* and **Table 4.16-7,** *Street Segment Level of Service*, there were no scenarios, present or future, that warranted mitigation. All facilities are estimated to function at a very good LOS well into the future.

Under all present and future traffic scenarios, including the impact of the project, the TIS prepared for this project has shown that all intersections and street segments, in their present form, are estimated to operate at a LOS A. Therefore, the project has no obligation to fund any improvements that enhance or better LOS.

There are no pedestrian or public transit facilities in the vicinity of the project. No elements of the project that would create the potential to conflict with alternative transportation programs have been identified; therefore, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, or pedestrian facilities.

Kern County received a comment letter from Caltrans in response to the NOP/IS circulated for this project that indicated Caltrans has not located the encroachment permit that authorized the existing access to SR-58. Caltrans also indicated that any new access would need to be approved by Caltrans. Mitigation has been included to ensure the project is consistent with all Caltrans policies; therefore, impacts would be less than significant with mitigation.

Mitigation Measures

MM 4.16-1 Prior to commencement of operations as authorized by this approval, the project proponent shall submit verification that an encroachment permit(s), authorizing all proposed access point(s) to State Route 58 to be utilized during the life of the permit, has been granted from Caltrans to the current owner of the project site.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.16-1, impacts would be less than significant.

Impact 4.16-2: The project would conflict or be inconsistent with State CEQA *Guidelines* Section 15064.3.

As discussed under Impact 4.16-1, the project is estimated to generate 118 ADT, 26 evening peak hour trips, and 26 morning peak hour trips. These include the arrivals and departures of three employees, a water truck, and dump trucks that pick up and haul the mined product to various destinations. Project impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.16-3: The project would substantially increase hazards due to a design feature.

As discussed under Impact 4.16-1, based on the results of the engineering design process for the project's site entrance, a single intersection poses a potential hazard with respect to speed. The existing intersection to the project site (which would be used in conjunction with ranching operations) and the proposed intersection (which would be used in conjunction with mining and reclamation) at the project entrance would require an analysis of sight distance, the purpose of which is to ensure that driveway location meets minimum stopping sight distance requirements given the prevailing speeds on SR-58. After implementation of signage, if required per the analysis of sight, the project would not contribute to an increase in hazards due to a design feature and therefore will not have a significant impact. Therefore, this impact would be less than significant with mitigation.

Mitigation Measures

MM 4.16-2 Prior to commencement of operations as authorized by this approval, the project proponent/operator shall submit design plans for the proposed

driveway serving mining and reclamation activities that conform to the sight distance requirements specified in Chapter 200 of the Highway Design Manual and other applicable standards necessary to receive an encroachment permit from Caltrans. These plans shall include a sight distance analysis prepared by an appropriately licensed design professional and signage warning of trucks entering the roadway consistent with the California Manual on Uniform Traffic Control Devices.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.16-2, impacts would be less than significant.

Impact 4.16-4: The project would result in inadequate emergency access.

As discussed under Impacts 4.16-1 and 4.16-2, LOS would not be impacted by the implementation of the proposed project. However, the proposed project could result in inadequate emergency access if proposed project designs fail to meet appropriate standards, fail to provide adequate truck access, or would result in hazardous conditions. Implementation of the following mitigation measure would ensure adequate emergency access is maintained. Therefore, this impact would be less than significant with mitigation.

Mitigation Measures

MM 4.16-3 Prior to the commencement of operations as authorized by this approval, the project proponent shall contact State and local emergency response agencies (California Highway Patrol, Kern County Sheriff's Office, and Kern County Fire Department) to provide information on the timing and location of any traffic control measures required to complete the project. Emergency response agencies would be notified of any change to traffic control measures as the project proceeds, so that emergency response providers can modify their response routes to ensure that response time would not be affected.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.16-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Section 3.7, *Cumulative Effects Overview*, of this EIR discusses cumulative projects near the project. (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.) The geographic scope for

transportation and traffic cumulative impacts is western Kern County and the Bakersfield area. This geographic scope of analysis is appropriate for transportation and traffic due to the regional nature of transportation and traffic impacts that could occur within the entire Kern County transportation network.

Impact 4.16-5: The project would contribute to cumulative transportation and traffic impacts.

With regard to a cumulative increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system resulting in a conflict to applicable plans, ordinances, and policies, as well as cumulatively exceeding LOS standards on County roads or State highways, future development of Kern County would result in additional vehicle trips and contribute to congestion on area roadways that would likely be traveled by vehicles associated with the project. In addition, future residential development of Kern County would increase the overall number of vehicle trips within the County through the increase in population. As discussed under Impact 4.16-1, the traffic impact analysis of horizon year 2040 considers the potential for regional growth. Thus, the analysis and conclusions under Impact 4.16-1 also reflect a cumulative analysis, and the project would not result in a significant contribution to LOS deficiencies in the surrounding road network but would contribute to potential safety hazards and regional emergency access. With implementation of Mitigation Measures MM 4.16-1 through MM 4.16-3, impacts would be less than significant under both project-specific considerations and cumulative conditions.

Mitigation Measures

Implement Mitigation Measures MM 4.16-1 through MM 4.16-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.16-1 through MM 4.16-3, cumulative impacts would be less than significant.

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Section 4.17
Tribal Cultural Resources

4.17.1 Introduction

This section of the Environmental Impact Report (EIR) provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed project. The analysis in this section is based on the results of the Native American consultation conducted by Kern County for purposes of compliance with California Environmental Quality Act (CEQA) requirements prompted by Assembly Bill (AB) 52, located in Appendix E of this EIR.

This section is based on *A Cultural Resources Assessment of Approximately 240 Acres West of McKittrick, Kern County, California* (Three Girls and a Shovel, LLC 2008), which details the results of a cultural resources records search and field survey for the project, and *Results of a Paleontological Resources Constraints Analysis for the Proposed Johe Ranch Mine Project, Kern County, California* (SWCA Environmental Consultants [SWCA] 2018), which includes a paleontological resources records search and literature review. These reports are provided in Appendices E and G of this EIR, respectively. These studies were conducted in compliance with Section 5024.1 of the California Public Resources Code (PRC) and CEQA to identify archaeological, historic built architectural, paleontological, and other cultural resources in the project area.

4.17.2 Environmental Setting

Existing Tribal Cultural Resources

Native American Correspondence and Assembly Bill 52 Consultation

On October 25, 2017, Kern County sent consultation notification letters via certified mail to Native American groups on Kern County's Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation. **Table 4.17-1,** *Summary of AB 52 Consultation Efforts*, summarizes Kern County's consultation efforts to date. To date, two responses have been received. In response to the AB 52 notification, Twenty-Nine Palms Band of Mission Indians Tribal Historic Preservation Officer (THPO), Anthony Madrigal, Jr., stated in a letter that he is not aware of any archaeological/cultural sites or properties in the project area that pertain to the Twenty-Nine Palms Band of Mission Indians, has no interest in the project, and defers to the comments of other affiliated tribes. Additionally, Mr. Madrigal stated that if there are inadvertent discoveries of archaeological remains or resources, construction should stop immediately, and the appropriate agency and tribe(s) should be notified. In response to the AB 52 notification, San Manuel Band of Mission Indians Cultural Resources Analyst, Jessica Mauck, emailed stating the project area is located outside of Serrano ancestral

territory and the San Manuel Band of Mission Indians will not be requesting consulting party status with the Lead Agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to these legal and regulatory mandates. The two responses received did not request government-to-government consultation pursuant to AB 52.

Table 4.17-1 Summary of AB 52 Consultation Efforts

Tribe/Organization	Consultation Type	Date Letter Mailed	Response Received
San Manuel Band of Mission Indians (Attn: Ann Brierty)	AB 52	10/25/17	San Manuel Band of Mission Indians responded in an email dated October 30, 2017, that the project area is located outside of Serrano ancestral territory.
Torres Martinez Desert Cahuilla Indians (Attn: Michael Mirelez)	AB 52	10/25/17	No response.
Twenty-Nine Palms Band of Mission Indians (Attn: Anthony Madrigal Jr.)	AB 52	10/25/17	Twenty-Nine Palms Band of Mission Indians responded in a letter dated December 19, 2017, that the THPO is not aware of any archaeological/ cultural sites or properties in the project area that pertain to the Tribe.
Twenty-Nine Palms Band of Mission Indians (Attn: Darrell Mike)	AB 52	10/25/17	No response.

4.17.3 Regulatory Setting

Federal

National Historic Preservation Act Section 106

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 United States Code [USC] 470f), and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a Federal permit), Section 106 of the NHPA requires Federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the NRHP. As indicated in NHPA Section 101(d)(6)(A), properties of traditional religious and cultural importance to a Tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 CFR 60.4.

National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the NHPA, as "an authoritative guide to be used by Federal, State, and local governments, private groups and

citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR Section 60.2). The NRHP recognizes both historical-period and prehistoric properties, including archaeological sites, that are significant at the national, State, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior 1995):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing (U.S. Department of the Interior 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from Federal and Tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any Federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American Tribe claiming affiliation.

State

California Register of Historical Resources

Under PRC Section 5024.19(a), the California Register of Historical Resources (CRHR) was created in 1992, and implemented in 1998, as "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in, or formally determined eligible for listing in, the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1**. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2**. It is associated with the lives of persons important in our past.
- **Criterion 3**. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- **Criterion 4**. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, Title 14 California Code of Regulations [CCR] Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions. However, archaeological sites may also be recommended eligible under CRHR Criteria 1, 2, and/or 3.

California Historical Landmarks

California Historical Landmarks are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have Statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the Kern County Board of Supervisors (or the City or Town Council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of California Historical Landmark #770. California Historical Landmarks #770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

1) It is the first, last, only, or most significant of its type in the State or within a large geographic region (northern, central, or southern California);

2) It is associated with an individual or group having a profound influence on the history of California; or

3) It is a prototype of, or an outstanding example of, a period, style, architectural movement, or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (County or City) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

1) It is the first, last, only, or most significant of its type within the local geographic region (County or City);

2) It is associated with an individual or group having a profound influence on the history of the local area; or

3) It is a prototype of, or an outstanding example of, a period, style, architectural movement, or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires Lead Agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. The State CEQA *Guidelines* (14 CCR Section 15064.5) recognize that a historical resource includes:

1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR;

2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and

3) any object, building, structure, site, area, place, record, or manuscript which a Lead Agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the Lead Agency, provided the Lead Agency's determination is supported by substantial evidence in light of the whole record.

The fact that a resource does not meet the three criteria outlined above does not preclude the Lead Agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a Lead Agency determines that an archaeological site is a historical resource, the provisions of CEQA Section 21084.1 and State CEQA *Guidelines* Section 15064.5 apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of a historical resource, the Lead Agency must identify potentially feasible measures to mitigate these effects (State CEQA *Guidelines* Sections 15064.5(b)(1) and (4)).

If an archaeological site does not meet the historical resource criteria contained in the State CEQA *Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in CEQA Section 21083.2, a unique archaeological resource is an archaeological artifact, object, or site for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;

- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the Lead Agency determines that a project would have a significant effect on unique archaeological resources, the Lead Agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.2(b)). If preservation in place is not feasible, mitigation measures shall be required.

The State CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (State CEQA *Guidelines* Section 15064.5(c)(4)).

Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerry "Jerry" Brown, Jr. on September 25, 2014. The act amended PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a Lead Agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the State CEQA *Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a Lead Agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the Lead Agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the Lead Agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the Lead Agency's formal notification and the Lead Agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the Lead Agency, or otherwise failed to engage in the consultation process, or if the Lead Agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the Lead Agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the Lead Agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the Lead Agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Paleontological Resources

Consideration of paleontological resources is required by CEQA (see Appendix G of the State CEQA *Guidelines*). Other State requirements for paleontological resource management are found in PRC Chapter 1.7, Section 5097.5, Archaeological, Paleontological, and Historical Sites. This statute specifies that State agencies may undertake surveys, excavations, or other operations as necessary on State lands to preserve or record paleontological resources.

No State or local agencies have specific jurisdiction over paleontological resources. No State or local agency requires a paleontological collecting permit to allow for the recovery of fossil

remains discovered as a result of construction-related earth moving on State or private land in a project site.

California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another State agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency."

California Native American Graves Protection and Repatriation Act

Codified in California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection and Repatriation Act (Cal NAGPRA) is consistent with the Federal NAGPRA. Intended to "provide a seamless and consistent state policy to ensure that all California Indian human remains and cultural items be treated with dignity and respect," Cal NAGPRA also encourages and provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8025 established a Repatriation Oversight Commission to oversee this process. The Cal NAGPRA also provides a process for non- Federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

California Health and Safety Code Sections 7050 and 7052

California Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code Section 622.5

California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

Public Resources Code Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Kern County General Plan

The policies, goals, and implementation measures in the *Kern County General Plan* for tribal cultural resources applicable to the project are provided below. The *Kern County General Plan* contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the *Kern County General Plan* are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation Element

1.10 General Provisions

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policies

- **Policy 25.** The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

- **Implementation Measure K.** Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.
- **Implementation Measure L.** The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.
- **Implementation Measure N.** The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
- **Implementation Measure O.** On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

4.17.4 Impacts and Mitigation Measures

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G

of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to tribal cultural resources.

A project would have a significant impact on tribal cultural resources if it would:

a. 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:

    i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources defined in Public Resources Code section 5020.1 (k); or

    ii. 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 Resource Code section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe.

Project Impacts

Impact 4.17-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Kern County sent tribal consultation letters for the proposed project to the following recipients pursuant to AB 52 in October 2017:

- San Manuel Band of Mission Indians (Attn: Ann Brierty);
- Torres Martinez Desert Cahuilla Indians (Attn: Michael Mirelez);
- Twenty-Nine Palms Band of Mission Indians (Attn: Anthony Madrigal Jr.); and
- Twenty-Nine Palms Band of Mission Indians (Attn: Darrell Mike).

Kern County received two responses to the AB 52 consultation letters: one from the Twenty-Nine Palms Band of Mission Indians and one from the San Manuel Band of Mission Indians. The Twenty-Nine Palms Band of Mission Indians provided a letter stating that the THPO is not aware of any archaeological or cultural sites or properties in the project area that pertain to the Twenty-Nine Palms Band of Mission Indians, and the THPO has no interest in the project and defers to the comments of other affiliated tribes. Additionally, the Twenty-Nine Palms

Band of Mission Indians stipulated that if there are inadvertent discoveries of archaeological remains or resources, construction should stop immediately, and the appropriate agency and tribe(s) should be notified. The San Manuel Band of Mission Indians provided a letter indicating that the project area is located outside of Serrano ancestral territory and, as such, the Tribe would not be requesting consulting party status with the Lead Agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to these legal and regulatory mandates.

While no tribal cultural resources have been identified within or immediately adjacent to the project site, the potential exists for tribal cultural resources to be encountered. Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3 would reduce impacts to a less-than-significant level.

The Lead Agency notes that Section 21080.3.2(a) of AB 52 reads as follows:

> As a part of the consultation pursuant to Section 21080.3.1, the parties may propose mitigation measures, including, but not limited to, those recommended in Section 21084.3, capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource. If the California Native American tribe requests consultation regarding alternatives to the project, recommended mitigation measures, or significant effects, the consultation shall include those topics. The consultation may include discussion concerning the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and, if necessary, project alternatives or the appropriate measures for preservation or mitigation that the California Native American tribe may recommend to the Lead Agency.

Pursuant to Section 21080.3.2(b)(1) of AB 52, the Lead Agency considers the consultation concluded, as the Lead Agency is proposing inclusion of Mitigation Measures MM 4.5-1 through MM 4.5-3, which specifically address the request made by the Twenty-Nine Palms Band of Mission Indians (if there are inadvertent discoveries of archaeological remains or resources, construction should stop immediately, and the appropriate agency and tribe(s) should be notified). Mitigation Measures MM 4.5-1 through MM 4.5-3 would mitigate or avoid a significant effect, if a significant effect exists, on tribal cultural resource(s).

However, the Lead Agency notes that that Section 21080.3.2 (c) of AB52 states, as follows:

1) This section does not limit the ability of a California Native American tribe or the public to submit information to the Lead Agency regarding the significance of the tribal cultural resources, the significance of the project's impact on tribal cultural resources, or any appropriate measures to mitigate the impact.

2) This Section does not limit the ability of the Lead Agency or project proponent to incorporate changes and additions to the project as a result of the consultation, even if not legally required.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, impacts would be less than significant.

Impact 4.17-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe.

As discussed previously, no tribal cultural resources were identified within the project area through the tribal consultation efforts, the records search, or the pedestrian survey; however, tribal cultural resources could still be encountered during ground-disturbing project activities. Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3 would reduce impacts to a less than significant level.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the projects discussed in Chapter 3, *Project Description*, and as shown in **Table 3-6,** *Cumulative Project List*, would have on tribal cultural resources. The geographic scope for cumulative impacts to cultural resources includes all western Kern County. Analysis of cumulative impacts takes into consideration the entirety of impacts that the projects, zone changes, and general plan amendments discussed in Section 3.7, *Cumulative Effects Overview*, would have on cultural resources. Analysis of cumulative impacts considers the entirety of impacts that the projects,

zone changes, and general plan amendments discussed in Section 3.7 would have on tribal cultural resources. This geographic scope of analysis is appropriate because the archaeological and historical resources within this radius are expected to be similar to those in the project site because their proximity, similar environments, landforms, and hydrology would result in similar land use and thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity.

Impact 4.17-2: The proposed project would contribute to cumulative tribal cultural resources impacts.

Cumulative development within western Kern County has the potential to result in cumulative impacts to tribal cultural resources, if present. As discussed previously, there are no known tribal cultural resources within the project site. Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3 would minimize the potential for the proposed project to result in impacts to unknown tribal cultural resources if discovered during project activities. Implementation of the proposed project would not result in off-site impacts to tribal cultural resources, and it is expected that other development projects within western Kern County would be required to mitigate for their individual impacts to tribal cultural resources. Consequently, the incremental effects of the project, after mitigation, would not have the potential to make a considerable contribution, in combination with impacts from past, present, or reasonably foreseeable projects to a cumulative significant impact on cultural resources under CEQA. As a result of these factors and with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, the project would not have the potential to substantially contribute to cumulative impacts to tribal cultural resources.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, cumulative impacts would be less than significant.

Section 4.18
Utilities and Service Systems

4.18.1 Introduction

This section of the Environmental Impact Report (EIR) addresses the project's potential impacts on certain utilities and services: water, electricity, natural gas, solid waste, wastewater, and stormwater. This section also provides the environmental and regulatory settings and discusses mitigation measures to reduce impacts where applicable. The analysis in this section is partially based on information provided in the following documents, and incorporated by reference herein:

- *Hydrology Study for Johe Ranch Mine, County of Kern, California* (LAV/Pinnacle Engineering 2019, included as Appendix I);
- *Johe Ranch Mine, Section 7, Township 30 South, Range 21 East, Kern County, CA Water Supply Assessment* (WZI Inc. 2018, included as Appendix K); and
- *Johe Ranch Mine, Section 7, Township 30 South, Range 21 East Kern County, CA Energy Study* (WZI Inc. 2019b, included as Appendix F).

4.18.2 Environmental Setting

The following section describes the existing conditions on the project site and surrounding area as relevant to utilities and service systems.

Water

Throughout Kern County, three sources of water are available: natural, manmade, and reclaimed. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Manmade sources include runoff that has been treated and stored in reservoirs or other manmade catchment structures. Reclaimed water is wastewater that has been conveyed to a treatment plant and then treated to a degree that makes it suitable for specific uses, such as irrigation. Reclaimed water is not potable (drinkable) and must be conveyed in a separate system to ensure no possibility of direct human consumption. Potable water is used for drinking, washing, flushing, recreational purposes, and other domestic uses. The ability to supply water is a function of both available sources and conveyance capacity. Sources of water supply available in Kern County are described below.

State Water Project

The State Water Project (SWP) is the nation's largest State-built, multi-purpose water project, and serves as California's principal water storage and delivery system. Authorized by the

legislature in 1959, the SWP includes a system of 28 dams and reservoirs, 660 miles of aqueducts, and 26 pumping and generating plants. The SWP includes 20 major reservoirs that can hold 5.8 million acre-feet (AF), with annual deliveries averaging up to 3 million AF.

The SWP, which is maintained and operated by the California Department of Water Resources (DWR), is utilized to store water and distribute it to 29 urban and agricultural water suppliers in northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and southern California. In the early 1960s, DWR began entering into individual SWP Water Supply Contracts with urban and agricultural water supply agencies located throughout northern, central, and southern California for SWP water supplies. The SWP provides supplemental water to 20 million Californians and more than 600,000 acres of irrigated farmland (DWR 2018a). Of the contracted water supply, 70% is delivered to urban users and 30% is delivered to agricultural users.

Kern County Water Agency

The Kern County Water Agency (KCWA) is one of 29 water agencies (commonly referred to as "contractors") that have a SWP Water Supply Contract with DWR. Each SWP contractor's SWP Water Supply Contract includes a "Table A," which lists the maximum amount of water an agency may request each year throughout the life of the contract. Table A is used to determine each contractor's proportionate share, or "allocation," of the total SWP water supply DWR determines to be available each year. The KCWA's current annual Table A amount is 982,730 acre-feet per year (AFY) (DWR 2018b).

While Table A identifies the maximum annual amount of water an SWP contractor may request, the amount of SWP water actually available and allocated to the KCWA varies from year to year. The factors affecting SWP deliveries are discussed in detail in the *State Water Project Draft Delivery Capability Report* (DWR 2018b), which was subsequently finalized in March 2018, and includes hydrology, the amount of water in reservoirs at the beginning of the year, regulatory and operational constraints, and the total amount of water requested by DWR contractors. In the Capability Report, DWR recommends analyses for SWP contractors to use in water supply planning.

Water Supply

The project would use water from the West Kern Water District (WKWD) and produced oil field water from the TRC Operating Company production facilities at the Cymric Oil Field located approximately 5 miles northeast of the project site, in accordance with will-serve letters from both providers included in Appendix K. The project site is located to the west of the boundary of the WKWD and is not located within the boundaries of any water district; however, the WKWD currently provides water service to the project site through an existing 3-inch water service connection. There are no surface water features in WKWD, largely due to the arid conditions. Surface water used in WKWD is imported from the SWP in northern California, or the Kern River. The WKWD water supply is obtained from eight groundwater wells and is treated before it enters the distribution system of more than 250 miles of pipeline. The WKWD infrastructure also includes 11 pumping plants and 25 water storage tanks.

The WKWD has a contract for surface water from the SWP. Water purchased from the SWP through the KCWA is utilized to replenish the groundwater basin beneath the vicinity of the WKWD's groundwater banking area. KCWA (according to DWR Bulletin 118 [DWR 2016]) estimates total groundwater in storage in the Kern Groundwater Subbasin to be nearly 40,000,000 AF and dewatered storage to be 10,000,000 AF. Water banking by the WKWD is performed in the Kern River Fan area and began in 1966. All the surface water deliveries to the WKWD are banked and later recovered from wells, except for direct industrial water deliveries to La Paloma Power Plant.

In addition to current sources, the WKWD plans to evaluate the economic and technical feasibility of a recycled water program. This could provide 400 AFY. The District also has several banking and exchange programs that provide a regular supply to the District. **Table 4.18-1,** *West Kern Water District Water Supplies – Current and Projected*, shows the existing and anticipated future water supplies for the WKWD:

Table 4.18-1 West Kern Water District Water Supplies – Current and Projected

	2015						
Water Source	**Actual Volume**	**Level of Treatment of Source Water**	**2020**	**2025**	**2030**	**2035**	**2040**
Purchased Water	0	-	0	0	0	0	0
Groundwater (recovered from local bank)	12,700	Disinfection	0	0	0	0	0
Imported Surface Water[1]	1,300	None	19,200	19,200	19,200	19,200	19,200
Recycled Water	0	Tertiary	400	400	400	400	400
Desalinated Water	0	-	0	0	0	0	0
Stormwater Use	-	-	0	0	0	0	0
Transfers	0	-	0	0	0	0	0
Buena Vista Water Storage District	5,000	None	6,500	6,500	6,500	6,500	6,500
Exchanges							
Rosedale-Rio Bravo Water Storage District	0	None	5,300	-	-	-	-
Kern-Tulare Water District	2,000	None	650	650	650	650	-
Total	**21,000**		**32,050**	**26,750**	**26,750**	**26,750**	**26,100**
Estimated Demands[2]	***21,000***		***20,400***	***20,500***	***20,6900***	***20,700***	***20,800***

[1] For years 2020 to 2040, imported surface water based on 61% reliability of 31,500 SWP contract supply.
[2] Demands based on 2020 goal of 189 gallons per capita per day (GPCD) and population growth of 0.4% per year. Industrial demands are assumed to be 1,000 AFY lower than 2015 value (due to recent cancellation of some water purchases) and no assumed growth in future industrial demand.
Source: LAV/Pinnacle Engineering 2019

Electricity

Electrical service is available in the project area through connection to the Pacific Gas and Electric Company (PG&E) distribution system. Power lines extend through the southeastern corner of the property, but no electrical transformers are located within the project site. No electrical service is proposed to be utilized in conjunction with the proposed project.

Natural Gas

PG&E and the Southern California Gas Company (SoCalGas), a subsidiary of Sempra Energy, are the natural gas providers in Kern County; however, there is no known natural gas service to the project site. No natural gas service is proposed to be utilized in conjunction with the proposed project.

Wastewater

The project is not expected to generate a significant amount of wastewater. All wastewater produced during the life of the project would be collected in portable toilet facilities and transported by truck to an approved off-site facility for disposal.

Solid Waste

The *Kern County and Incorporated Cities Integrated Waste Management Plan* (Kern County 1991) addresses issues pertaining to nonhazardous waste disposal and other waste facilities. The Waste Management Plan identifies issues, goals, policies, regulations, and enforcement, as well as the transfer, storage, and disposal of solid waste.

Kern County is served by seven Class III landfills: Metropolitan Bakersfield (Bena), Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi. These facilities accept nonhazardous solid waste only. The proposed project would be served by the Taft Landfill, which is located approximately 20 miles southeast of the project site and 27 miles west of the City of Bakersfield. The Taft Landfill, located at 13351 Elk Hills Road, is owned and operated by the Kern County Public Works Department. The Taft Landfill is located on approximately 172 total acres, with approximately 85 acres permitted for refuse disposal. The landfill accepts construction/demolition, industrial, and mixed municipal wastes.

As of August 27, 2018, the Taft Landfill is authorized to receive an annual average collection of 800 tons per day. The maximum permitted design capacity of the Taft Landfill is 11,000,000 cubic yards, and the current remaining capacity is 7,380,708 cubic yards. The facility operates 7 days per week, with the exception of five County holidays. The estimated closure date for the Taft Landfill is December 31, 2076 (California Department of Resources Recycling and Recovery [CalRecycle] 2018).

Stormwater

The project site consists primarily of rolling topography with some steep slopes and incised drainages. The site is not located within a Floodplain Safety Overlay District or Dam Inundation Overlay. The following are drainage channels present within the project site:

1. Blue line drainage channel (channel 1), located between Mine Areas 2 and 3.
2. Intermittent drainage channel (channel 2), located between Mine Areas 2 and 1.
3. Intermittent drainage channel (channel 3), located on the east side just north of Mine Area 1.
4. Intermittent drainage channel (channel 4), located between the project site entrance and Mine Area 1.

There are no diversion structures or erosion control facilities currently on-site. Stormwater runoff is discussed in more detail in Section 4.7, *Geology and Soils*, and Section 4.10, *Hydrology and Water Quality*, of this EIR.

4.18.3 Regulatory Setting

Federal

National Pollution Discharge Elimination System Permit

Discharge of treated wastewater to surface waters of the United States, including wetlands, requires a National Pollutant Discharge Elimination System (NPDES) permit. In California, the Regional Water Quality Control Boards (RWQCBs) administer the issuance of these federal permits. Obtaining an NPDES permit requires preparation of detailed information, including characterization of wastewater sources, treatment processes, and effluent quality.

Because the site is larger than 1 acre, it requires compliance with NPDES criteria, including preparation of a Storm Water Pollution Prevention Plan (SWPPP) and the inclusion of Best Management Practices (BMPs) to control erosion and off-site transport of soils. Additional information on the project's NPDES permitting requirements, as well as SWPPP requirements, is presented in Section 4.10, *Hydrology and Water Quality*, of this EIR.

State

California Energy Commission

The California Energy Commission (CEC) regulates the provision of natural gas and electricity within the State. The CEC is the State's primary energy policy and planning agency. Created in 1974, the CEC has five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts (MW) or larger, promoting energy efficiency through appliance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing the State response to energy emergencies.

California Department of Resources Recycling and Recovery

CalRecycle, formerly the California Integrated Waste Management Board (CIWMB), is the State agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency (CalEPA). CalRecycle develops regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. CalRecycle works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 (Public Resources Code [PRC] 40050 et seq. or Assembly Bill [AB] 939, codified in PRC 40000), administered by CalRecycle, requires all County and local governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25% by the year 1995 and 50% by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

Central Valley Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine RWQCBs, collectively referred to as the California Water Board. The SWRCB sets Statewide policy for the implementation of Federal and State laws and regulations. The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans), which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. The project is within the jurisdiction of the Central Valley RWQCB, which is responsible for the implementation of Federal and State water quality protection statutes, regulations, and guidelines.

California Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California.

California Department of Water Resources

The DWR is a department within the California Resources Agency. The DWR is responsible for the State of California's management and regulation of water usage.

Senate Bill 610

Senate Bill (SB) 610 was passed on January 1, 2002, amending California law to require detailed analysis of water supply availability for large development projects. An SB 610 Water Supply Assessment (WSA) must be prepared if the following three conditions are met:

1. The project is subject to the California Environmental Quality Act (CEQA) under California Water Code (CWC) Section 10910;

2. The project meets criteria to be defined as a "Project" under CWC Section 10912; and

3. The applicable water agency's current Urban Water Management Plan (UWMP) does not account for the water supply demand associated with the project.

A project would meet the definition of "Project" per CWC Section 10912 if it is:

- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area; or

- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.

The projected water supply may be determined to be sufficient or insufficient for the proposed project, per CWC Section 10910, through evaluation of the following:

- If the projected water demand associated with the proposed project was not accounted for in the most recently adopted UWMP, or the public water system has no UWMP, the water assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

California Solid Waste Reuse Recycling Access Act

The California Solid Waste Reuse and Recycling Access Act of 1991 (California PRC Chapter 18) addressed the State's lack of adequate areas for collecting and loading recyclable materials, which resulted in a significant impediment to diverting solid waste from landfills. The act required State and local agencies to tackle issues related to access to solid waste collecting and loading areas to promote source reduction, recycling, and composting programs. It also required local agencies to adopt ordinances pertaining to the provision of areas for collecting and loading recyclable materials from development projects.

Local

Kern County General Plan

The project site is located within the *Kern County General Plan*. The goals, policies, and implementation measures in the *Kern County General Plan* for utilities applicable to the project are provided below.

Chapter 1. Land Use, Open Space, and Conservation Element

1.4 Public Facilities and Services

Policies

- **Policy 1.** New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

- **Policy 3.** Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.

- **Policy 13.** The County shall ensure landfill capacity for the residents and industry of Kern County.

Implementation Measures

- **Implementation Measure C.** Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

- **Implementation Measure D.** Involve utility providers in the land use and zoning review process.

1.10 General Provisions

Goals

- **Goal 1.** Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1 Public Services and Facilities

Policies

- **Policy 9.** New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

- **Policy 12.** All methods of sewage disposal and water supply shall meet the requirements of the Kern County Public Health Services Department and the California Regional Water Quality Control Board. The County's Public Health Services Department shall periodically review and modify, as necessary, its requirements for sewage disposal and water supply, and shall comply with any new standards adopted by the State for implementation of

Government Code Division 7 of the Water Code, Chapter 4.5 (Section 13290-13291.70 (Assembly Bill 885) (2000).

- **Policy 15.** Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

- **Policy 16.** The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

4.18.4 Impacts and Mitigation Measures

Methodology

Potential impacts associated with the project were developed based on analysis of existing settings, consultation with Kern County, and review of the project design. The discussion below describes project-specific impacts and provides measures that would be incorporated to mitigate and reduce potential impacts to the extent feasible.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect related to utilities and service systems. The Kern County Environmental Checklist states that a project would normally be considered to have a significant impact related to utilities and service systems if it would:

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;

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

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.

e. Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts. Therefore, no further analysis is required in this EIR based on the scoping review. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- Exceed wastewater treatment requirements of the applicable RWQCB; and
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Project Impacts

Impact 4.18-1: The project would 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.

Water

Water used during mining and reclamation activities (with the exception of domestic drinking water supply, which would be from bottled water) would consist of produced water from adjacent oil field operations and water from the WKWD, as summarized in **Table 4.18-2,** *Proposed Water Use*, below.

Table 4.18-2 Proposed Water Use

Water Source	Annual Water Usage (Gallons)	Total Water Usage (Gallons)
Produced Water from Adjacent Oil Field Operations	7,800,000	156,000,000 total gallons (over project lifespan) obtained from produced water from adjacent oil field operations.
West Kern Water District	325,780	6,515,600 total gallons (over the project lifespan) obtained from West Kern Water District.
TOTAL	**8,125,780**	**162,515,600 total gallons (over project lifespan)**

The produced oil field water would be obtained from the TRC Operating Company production facilities at the Cymric Oil Field located approximately 5 miles northeast of the project site in accordance with a will-serve letter from TRC to provide 30,000 gallons of water per day. The water would be trucked to the site. Upon completion of mining in each of the mining areas, potable water would be utilized for dust control during reclamation activities. This water would be obtained from the WKWD in accordance with a will-serve letter for up to 1 AF of water per year, obtained from a nearby water supply line, and would be transported to the project site via water truck. Since the WKWD's primary water supply would be from the SWP and the WKWD has banked approximately 200,000 AF of surplus water, it will have the capacity to provide up to 1 AF per year during single-dry and multiple-dry years. Based on this assessment, long-term water demands for the project would be relatively minor and can be met primarily by available produced oil field water sources with a minor contribution of surface/groundwater from the WKWD.

Prior to application of produced water from oil field operations on the project site, all necessary permits and approvals would be obtained from the Central Valley RWQCB. As previously indicated, the domestic drinking water supply would be from bottled water. Portable toilets serviced by a contractor would be used for domestic sewage. The project demand is not anticipated to exceed water supplies, and no new or expanded entitlements or water supply infrastructure would be required.

Wastewater

The project would generate a minimal volume of wastewater. A maximum of 10 employees would be on-site at any given time. Portable toilets would be used during project operations. Wastewater generated during the life of the project would be contained within portable toilet facilities, which would be serviced by a contractor. The Kern County Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and a condition of approval would require the project proponent to provide documentation of a portable toilet pumping contract. Therefore, the project would not exceed wastewater treatment requirements of the Central Valley RWQCB and would not require new or relocated wastewater facilities.

Stormwater

Implementation of the project would result in: (a) decreased capacity of the project site to absorb stormwater, due to compaction of areas proposed to be disturbed in conjunction with the project; and (b) alteration of the existing pattern and concentration of runoff. As discussed previously, all watercourses in the vicinity of the project are ephemeral. Additionally, mine pits are not proposed within any naturally defined drainage courses, which is anticipated to avoid the need for drainage control along these courses. However, the proposed mine haul/access road is proposed to traverse three of the four defined watercourses. The Lead Agency is recommending mitigation measures to address stormwater, including submittal and approval of a detailed Drainage Plan. Obtaining approval of a Drainage Plan may potentially include, in part, mitigating impacts to drainage channels with the installation of culverts to allow for natural drainage to continue through the project site. If unmitigated, storm events could cause excessive erosion, sedimentation, and transport of pollutants. The project must

comply with the requirements of the State's General Permit under the NPDES program. The permit's requirements include preparation of a SWPPP. Through prescribing BMPs, the objective of the SWPPP is to reduce or eliminate sediment or other pollutants from entering stormwater runoff. The SWPPP shall identify the precise implementation of BMPs, and implementation of the BMPs outlined in the SWPPP would avoid and/or minimize potential impacts such as erosion, sedimentation, and runoff that could result from construction of the project within the project site.

Electric Power, Natural Gas, and Telecommunication Facilities

The project would not require connections or result in other impacts to electrical, natural gas, or telecommunication facilities. The project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunications facilities; therefore, impacts would be less than significant. The project may require construction of new stormwater drainage facilities, as discussed above.

Mitigation Measures

Implement Mitigation Measure MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-3, impacts would be less than significant.

Impact 4.18-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

As discussed under Impact 4.18-1, since the WKWD's primary water supply would be from the SWP and the WKWD has banked approximately 200,000 AF of surplus water, it will have the capacity to provide up to 1 AF per year during single-dry and multiple-dry years. Additionally, as discussed under Impact 4.18-1, produced oil field water would be obtained from the TRC Operating Company in accordance with a will-serve letter from TRC to provide 30,000 gallons of water per day. Based on this assessment, long-term water demands for the project would be relatively minor and can be met primarily by available produced oil field water sources with a minor contribution of surface/groundwater from the WKWD. Therefore, impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.18-3: The project would 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.

As proposed, all overburden material (typically considered as non-marketable waste in the mining industry) that is excavated during mining activities would be exported from the project site and sold; as such, no mineral waste is proposed to be generated in conjunction with the project. However, minimal amounts of solid waste are anticipated to be generated, such as food/packaging waste from employees and replacement parts for vehicles/equipment. Therefore, the project is not expected to generate a substantial amount of solid waste that would exceed the capacity of local landfills. To ensure proper disposal of the solid waste generated as a result of project implementation, Mitigation Measure MM 4.18-1 will be implemented. With implementation of this mitigation measure, impacts with regard to solid waste generation and disposal would be less than significant.

Mitigation Measures

MM 4.18-1 During operations as authorized by this approval, debris and waste generated shall be recycled to the extent feasible.

A. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance and Trash Abatement/Pest Management Program.

B. The Recycling Coordinator shall facilitate the recycling of all construction waste through coordination with contractors, local waste haulers, and/or facilities that recycle construction/demolition wastes.

C. The on-site Recycling Coordinator shall also be responsible for ensuring that wastes that require special disposal are handled according to the State and County regulations that are in effect at the time of disposal.

D. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to commencement of operations as authorized by this approval.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.18-1, impacts would be less than significant.

Impact 4.18-4: The project would comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.

The 1989 California Integrated Waste Management Act (AB 939) requires Kern County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measure MM 4.18-1 would ensure compliance with waste diversion and recycling requirements by requiring recycling during the life of the project. The proposed project would be required to comply with all Federal, State, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, implementation of the project would result in less-than-significant impacts regarding compliance with management and reduction statutes and regulations related to solid waste.

Mitigation Measures

Implement Mitigation Measure MM 4.18-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.18-1, impacts would be less than significant.

Cumulative Setting Impacts and Mitigation Measures

Cumulative Setting

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project. (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific projects considered in the cumulative impact analysis.) The geographic scope for cumulative impacts to utilities and service systems includes closely related past, present, and reasonably foreseeable probable future projects.

Impact 4.18-5: The project would contribute to cumulative impacts to utilities and service systems.

Impacts of the project would be cumulatively considerable if they would have the potential to cause significant effects in combination with similar impacts of other past, present, or reasonably foreseeable projects; however, as discussed above, the project would place few demands on water, stormwater drainage, and wastewater and solid waste disposal. As discussed in the previous impact analyses, the project would generate a minimal volume of wastewater, would require water for dust suppression and would have sufficient water supply available to serve the project, would not generate a substantial amount of stormwater runoff, and would not require electrical, natural gas, or telecommunication connections. The project

would contribute a less-than-significant amount of solid waste to a local landfill and would comply with all applicable Federal, State, and local regulations related to solid waste. Thus, the project would not require or result in the construction of new utility facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The project would generate a minimal amount of waste and is not expected to affect Kern County landfills significantly. However, the generation of waste from cumulative projects could result in a cumulative impact. To ensure that the project reduces the amount of waste sent to landfills, Mitigation Measure MM 4.18-1 would require debris and waste to be recycled to the extent feasible. In addition, this mitigation measure requires that an on-site recycling coordinator be designated by the project proponent to facilitate recycling efforts. Therefore, the project's contribution to this impact would be less than significant. Other planned projects are expected to comply with all applicable Federal, State, and local waste reduction policies as well. Therefore, the project would not be expected to combine with impacts from past, present, or reasonably foreseeable projects and result in a cumulative impact on landfills. Because the project would not require the use of existing utilities and service systems, existing facilities would not need to be expanded. Additionally, the project would not result in a cumulative impact on landfills. Although the project's impacts on utilities and service systems would not be cumulatively considerable, Mitigation Measure MM 4.18-1 would require debris and waste to be recycled to the extent feasible, in addition to requiring a recycling coordinator to facilitate recycling efforts.

Mitigation Measures

Implement Mitigation Measures MM 4.10-3 and MM 4.18-1.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-3 and MM 4.18-1, cumulative impacts would be less than significant.

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Section 4.19
Wildfire

4.19.1 Introduction

This section of the Environmental Impact Report (EIR) discusses potential impacts related to wildland wildfire impacts. The analysis in this section is based on review of the project plans, information from the California Department of Forestry and Fire Protection (CAL FIRE), and Kern County Fire Hazards Severity Zone (FHSZ) Maps.

4.19.2 Environmental Setting

Site Characteristics and Fire Environment

The project site primarily consists of annual (non-native) grassland (Padre Associates, Inc. 2019c). Existing development in the project vicinity includes scattered rural residences, electrical lines, two surface mining operations, and State Route (SR) 58. CAL FIRE maps FHSZs, based on factors such as fuel, slope, and fire weather, to identify the degree of fire hazard throughout California (e.g., moderate, high, very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and are therefore of greater concern. According to the CAL FIRE Kern County Fire Hazard Severity Zone Maps for Responsible Areas, the project site is classified as Local Responsibility Area (LRA) Moderate and High (**Figure 4.19-1,** *Fire Hazard Severity Zones for Local Responsibility Areas*) and is classified as State Responsibility Area (SRA) Moderate and High (**Figure 4.19-2,** *Fire Hazard Severity Zones for State Responsibility Areas*). The project site is outside of areas identified by CAL FIRE as having very high risk.

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses CAL FIRE's California Statewide Fire Map that shows the history of fires back through 2013 (CAL FIRE 2019a) and CAL FIRE's Fire and Resource Assessment Program (FRAP) Fire Perimeters: Wildfires 1950–2018 map (CAL FIRE 2019b).

Based on a review of these maps, no fires in recorded history have burned across the project site. The closest recorded fires, based on a review of CAL FIRE's California Statewide Fire Maps, were the Boulder Fire, which occurred in June 2019 approximately 8.22 miles west of the project site, and the Belmont Fire, which occurred in May 2019 approximately 11.35 miles west of the project site.

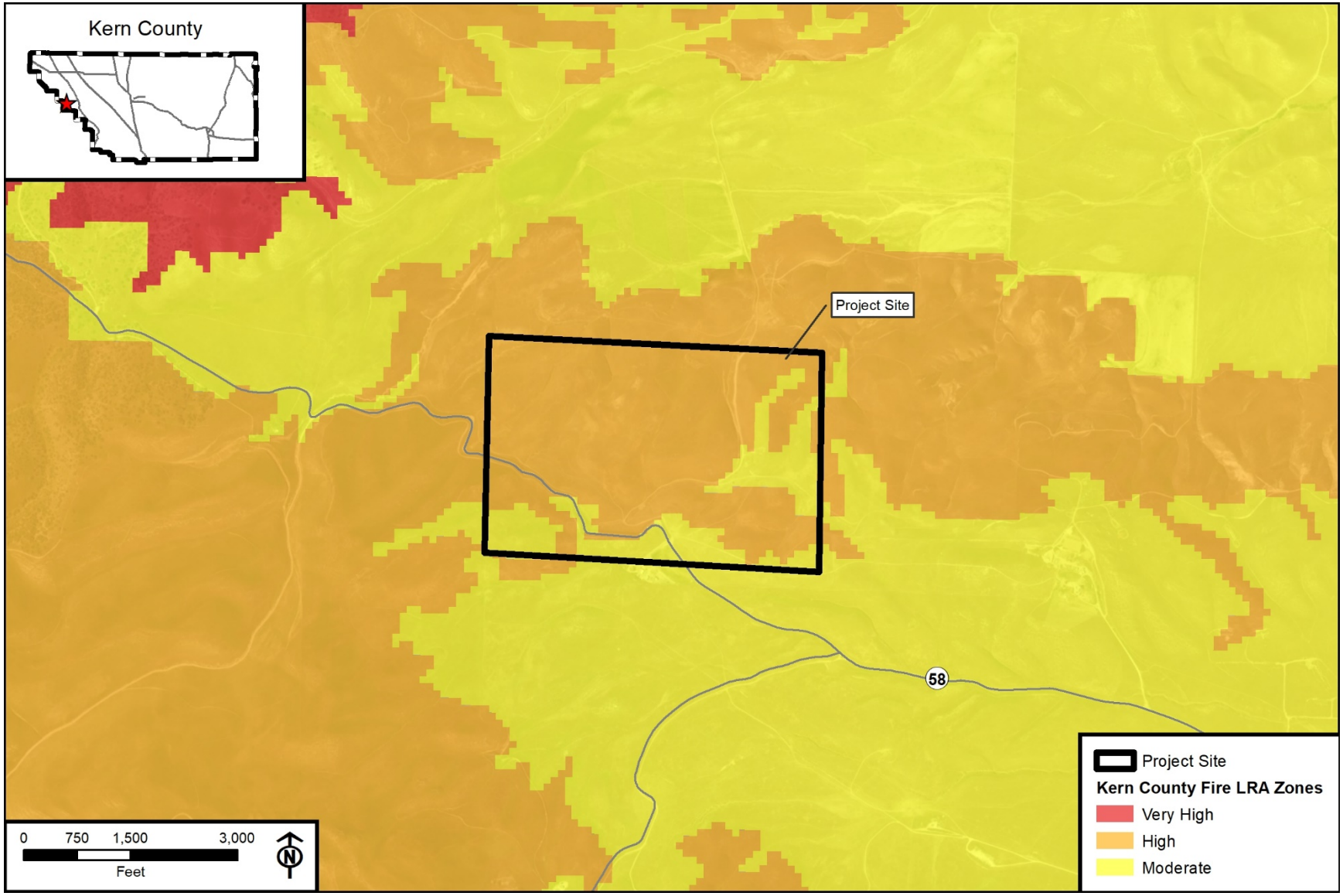

Figure 4.19-1
Fire Hazard Severity Zones for Local Responsibility Areas

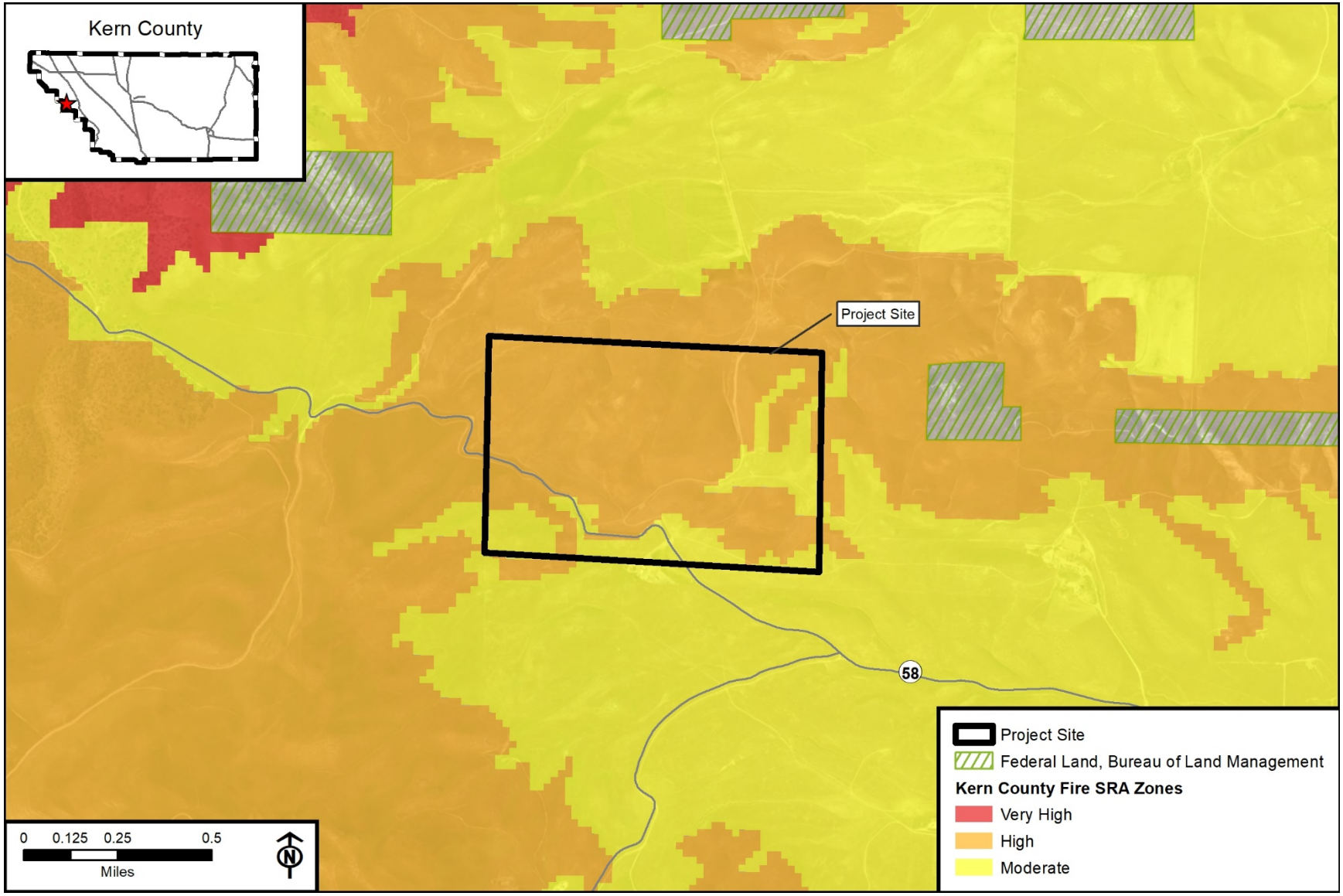

Figure 4.19-2
Fire Hazard Severity Zones for State Responsibility Areas

Vegetation (Fuels)

The project site is entirely dominated by California Annual (non-native) Grassland series. An annual grassland community is characterized by a sparse-to-dense cover of low (less than 3.3 feet [1 meter]) annual grasses and native and non-native herbaceous species (Padre Associates, Inc. 2019c). The annual grassland community is dominated by introduced species, such as slender wild oat (*Avena barbata*), brome grasses (*Bromus* sp.), and stork's-bill (*Erodium* sp.), which have replaced the native vegetation. The non-native grassland community within the project site ranges from sparse to dense cover of annual grasses and forbs with flowering culms up to 1 meter in height. This type of vegetation can contribute fuel in the event of a wildfire.

4.19.3 Regulatory Setting

State

2016 California Fire Code

The 2016 California Fire Code (California Code of Regulations [CCR] Title 24, Part 9) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. Chapter 6 (Building Services and Systems) of the Fire Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems are addressed, including emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the Fire Code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface (WUI) areas.

2016 California Building Code Chapter 7A

Chapter 7 of the 2016 California Building Code details the materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a WUI Fire Area. A WUI Area is defined in Section 702A as a geographical area identified by the State as an FHSZ in accordance with California Public Resources Code (PRC) Sections 4201–4204 and California Government Code Sections 51175–51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. The building code details the materials, systems, and assemblies used for structural fire resistance and fire-resistance-rated

construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

Public Resources Code Sections 4291–4299

PRC Sections 4291–4299 et seq. require that brush, flammable vegetation, or combustible growth within 100 feet of buildings be maintained. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability may be maintained, as may single specimens of trees or other vegetation that is maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Additionally, the PRC outlines infraction fees, certification, and compliance procedures applicable with State and local building standards, including those described in California Government Code Section 51189(b).

Local

Kern County General Plan

Chapter 4. Safety Element

Chapter 4.6 Wildland and Urban Fire

Policies

- **Policy 1.** Require discretionary projects to assess impacts on emergency services and facilities.
- **Policy 4.** Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- **Policy 6.** All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

- **Implementation Measure A.** Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release, and/or explosion due to handling of dangerous and hazardous materials; conditions hazardous to life or property in the occupancy and use of buildings and premises; the operation, installation, construction, and location of attendant equipment; the installation

and maintenance of adequate means of egress; and providing for the issuance of permits and collection of fees therefore (Kern County 2019).

Kern County Fire Department Wildland Fire Management Plan

The Kern County Fire Department (KCFD) Wildland Fire Management Plan adopted in 2009 assesses the wildland fire situation throughout the SRA within the County. The plan includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local area. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and losses. The project site is located within the Moderate and High FHSZs (KCFD 2009).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018, is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local area. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and levels of service to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit accomplishments, which, in 2017, included completion of a number of fuel reduction projects, hosted three wildfire safety expos in Battalions 1, 5, and 7, and the award of three SRA fuel reduction grants for a total of $500,000. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69% of Kern County areas are within an SRA. The County is broken up into six different fuel management areas: Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 2 and in the service area of Station 24 (KCFD 2018).

4.19.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts associated with wildfires have been evaluated using a variety of resources, including CAL FIRE maps showing FHSZs, FRAP, and fire history; vegetation data from *Botanical Survey for the Johe Ranch Mine Project in Kern County, California* (Padre Associates, Inc. 2019c) and *Hydrology Study for Johe Ranch Mine, County of Kern, California* (LAV/Pinnacle Engineering 2019); project location maps; and project characteristics. Wildfire impacts are considered on the basis of: (1) off-site wildland fires that could impact the proposed project; and (2) on-site generated combustion that could affect surrounding areas. Using the aforementioned resources and professional judgment, impacts

were analyzed according to California Environmental Quality Act (CEQA) significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist (updated in May 2019) identify the following criteria, as established in Appendix G of the State CEQA *Guidelines*, to determine if a project could potentially have a significant impact with respect to wildfires.

A project would have a significant impact with respect to wildfires if it would be located in or near SRAs or lands classified as very high FHSZs, and if the project would:

a. Substantially impair an adopted emergency response plan or emergency evacuation plan;

b. Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;

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; or

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.

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts and, therefore, scoped out of this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding the following impacts:

- Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Project Impacts

Impact 4.19-1: The project would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds, and other factors.

As discussed in Chapter 3, *Project Description*, the project proponent proposes to employ open pit mining techniques to mine diatomaceous earth and overburden material on 88 acres within the 331-acre project site; the project does not include the development of residential uses on the project site. The project site and surrounding areas are primarily undeveloped and used for grazing livestock. There are two residences (both of which are single-family residences)

located in the project vicinity: one is located approximately 200 feet south of the project site boundary and is owned by the property owner of the project site, and the other is located approximately 0.7 mile east of the project site.

As described in Section 4.16.2, *Environmental Setting*, and shown in **Figure 4.19-1,** *Fire Hazard Severity Zones for Local Responsibility Areas*, and **Figure 4.19-2,** *Fire Hazard Severity Zones for State Responsibility Areas*, the project site is located in an area identified as having Moderate and High FHSZ within the LRA and SRA (Kern County 2009). Vegetation on the project site is present in the form of a sparse cover of annual grassland. Ignition of grasslands would be most likely to occur during periods of initial surface clearing and excavation. Once vegetation is removed and excavation recesses into each mining area, vegetation fuel sources would become limited or nonexistent within the mining areas. The project would include a proposed access road along the north and east boundaries of the mining area, which would serve as a wildland fire buffer.

The project would allow for mining to occur on 88 acres. As proposed, the maximum exposed land would be 20 acres at any given time; of that 20 acres:

a. Disturbed land not being mined daily (15 acres) will be covered in dust palliative to prevent wind erosion during periods of inactivity.

b. Disturbed land being mined daily (5 acres) will be watered three times per day.

Fire risk would be heightened during weather conditions with warm temperatures, low humidity, and strong winds. Heavy equipment (loaders and potentially a grader) would initially remove vegetation in proposed disturbance areas (e.g., mining areas, access road, blending and screening site), which would increase wildfire risk. However, after vegetation is removed in an area, wildfire risks would be reduced. The KCFD, which would provide fire protection service to the project site, would have the necessary tools to extinguish any fires that may be generated on the project site.

Proposed disturbed areas, comprising 92.27 acres, would be required to be reclaimed. Such reclamation would require those 92.27 acres to be revegetated in accordance with the approved reclamation plan. Proposed revegetation is intended to support an end use of cattle grazing. It is anticipated the reclaimed vegetation would not pose a greater wildfire risk than the existing vegetation. As proposed, the reclamation plan would include reseeding with the following seed mix:

- Blando brome (*Bromus hordeaceus*):12 pounds per acre
- rose clover (*Trifolium hirtum*):16 pounds per acre
- big squirrel tail (*Elymus multisetus*): 3 pounds per acre
- nodding needle grass (*Stipa cernua*): 3 pounds per acre
- lupine (*Lupinus microcarpus*): 2 pounds per acre

Additionally, as proposed, the reclamation plan proposes the following success criteria:

- 67.5% cover; and
- A species richness of five species per square meter (i.e., the five species referenced above).

Given that the design of the project, including vegetation clearing during site preparation, would make the potential for a fire to occur on the project site unlikely, the potential for wildfires to occur on the project site is considered low and the project is not expected to exacerbate wildfire risks. The project would not include any new residential uses and only a maximum of 10 employees would be on-site at any time. Therefore, in the unlikely event of a wildfire, the project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Similarly, as discussed in Section 4.9, *Hazards and Hazardous Materials*, in the event that a wildfire impacted the project site, it is not expected that hazardous materials from the project would be released into the environment. The project would not, 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 a wildfire. Impacts would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.19-2: The project would 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.

As discussed in Chapter 3, *Project Description*, the project site is currently accessible from SR 58 only via an existing unnamed, unpaved access road that extends north through the site from SR 58. As proposed, during the life of the proposed surface mining and reclamation plan, all mining and reclamation-related access will be limited to the proposed access road that extends north through the site from SR 58 (and the aforementioned existing access road from SR 58 will be maintained only for use by the property owner on an as-needed basis for ranch operations). Upon the project site being deemed fully reclaimed, the project site would be accessible from SR 58 only via the aforementioned existing unpaved, unnamed access road. The access point for the proposed access road is located approximately 250 feet south along SR 58 from the access point for the existing access road. As proposed, the new access road would be composed of native earthen material covered with an oil sand dust suppressant. Construction of the new access road would provide improved access through the site and is not expected to exacerbate fire risk or result in temporary or ongoing impacts to the environment. The project would not require the installation or maintenance of other infrastructure that would exacerbate fire risk or result in

temporary or ongoing impacts to the environment. Furthermore, upon completion of mining activities, all mining equipment would be removed from the site and the areas proposed to be disturbed (92.27 acres) would be reclaimed to their current use as cattle grazing land; therefore, this impact would be less than significant.

Mitigation Measures

Mitigation is not required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.19-3: The project would 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.

As described in Section 4.10, *Hydrology and Water Quality*, the site consists primarily of rolling topography with some steep slopes and incised drainages. The site is not located within a Floodplain Safety Overlay District or Dam Inundation Overlay. The following drainage channels are present within the project site:

1. Blue line drainage channel (channel 1), located between Mine Areas 2 and 3.
2. Intermittent drainage channel (channel 2), located between Mine Areas 1 and 2.
3. Intermittent drainage channel (channel 3), located on the east side just north of Mine Area 1.
4. Intermittent drainage channel (channel 4), located between the project site entrance and Mine Area 1.

The elevation of the project site ranges from approximately 2,800 feet above sea level near the southwestern corner to approximately 2,075 feet above sea level near the northeast corner. Surrounding downslope areas consist of undeveloped grazing land. As discussed previously, all watercourses in the vicinity of the project are ephemeral. Additionally, mining is not proposed within any naturally defined drainage courses, which is anticipated to avoid the need for drainage control along these courses. However, as part of this project, the proposed access road would traverse three defined watercourses (channels 1, 2, and 4 as referenced above). As proposed, at a minimum, culverts would be installed to allow for natural drainage to continue through the project site.

In the event of a wildfire, vegetative cover, which acts to stabilize the soil, would be removed. Without regrowth of vegetation, exposed soils would increase the rate and amount of runoff following a rain event. As described in Section 4.10, *Hydrology and Water Quality*, runoff would be channeled into defined drainage facilities that are designed to carry peak flows. Runoff patterns are not expected to change following a wildfire, as water would continue to be

directed through natural drainage courses, as proposed through culverts, and potentially through other fire-resistant drainage facilities. As described in Section 4.7, *Geology and Soils*, the project site is generally underlain by stable soils and the slope stability analysis for the project concludes that the project's proposed slopes would achieve a suitable factor of safety. Specifically, proposed slopes are as follows:

- Maximum operational slopes for the mining areas, and the blending and screening site, would be 2:1 (horizontal:vertical).
- Maximum final reclaimed slopes for the mining areas, and the blending and screening site, would be 3:1 (horizontal:vertical).
- Maximum operational slopes for proposed access road would be 1:1.75 (horizontal:vertical).
- Maximum final reclaimed slopes for proposed access road would be 1:1.75 (horizontal:vertical).

Nonetheless, in order to reduce the potential of exposing people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving unstable soil, the Lead Agency is recommending Mitigation Measure MM 4.7-1, which specifies maximum slopes and depth of mining; Mitigation Measure MM 4.7-2, which requires engineered plans which identify maximum daily operational slopes for the mine; and Mitigation Measure MM 4.7-3, which requires engineered plans for flood control facilities. Additionally, Mitigation Measures MM 4.10-1 would require approval of a Stormwater Pollution Prevention Plan (SWPPP), Mitigation Measure MM 4.10-2 would require approval of a Spill Prevention Control and Countermeasures Response Plan, and Mitigation Measure MM 4.10-3 would require approval of a detailed Drainage Plan. The foregoing mitigation measures are intended to minimize potential impacts related to stormwater runoff and drainage. Therefore, with implementation of the foregoing mitigation measures, impacts would be less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Section 3.7, *Cumulative Effects Overview,* of this EIR discusses cumulative projects near the project (**Table 3-6,** *Cumulative Projects List*, in Chapter 3, *Project Description*, lists specific

projects considered in the cumulative impact analysis). Impacts associated with wildfire hazards are generally site-specific and have limited potential to substantially contribute to other hazards associated with other projects and activities on a local or regional basis. Projects and activities within the County are subject to various regulatory requirements, similar to those discussed here, and would minimize the hazard potential of those activities. Kern County recognizes that wildfire hazards exist throughout the County and everyday life.

Impact 4.19-4: The project would contribute to cumulative wildfire impacts.

Cumulative hazards from wildfire would be exacerbated by additional construction and operation of development within the County and region along the WUI and areas designated by CAL FIRE as High FHSZs. Projects within this area would introduce additional fire hazard-related risks that would place additional people and structures at risk of damage. Further, the heightened potential for future fire hazards from the influence of climate change and warmer conditions would contribute to the potential for a higher frequency, intensity, and size of fires that may occur in the project area and overall region. Adherence to the California Fire Code, County Municipal Code, and policies within the *Kern County General Plan* Safety Element, as well as review of discretionary projects by the KCFD, would reduce potential wildfire hazards; however, given the high potential for wildfire in High FHSZs, the potential for cumulative development to exacerbate wildfire hazards is potentially significant.

The severity of potential hazards for individual projects would depend on the location, type, and size of development and the specific hazards associated with individual sites. Discretionary projects proposed in the County would be required to undergo individual environmental review, including review of potential impacts related to wildfire hazards that are applicable to that particular development site and proposed use. As described previously, the project site is in an area identified as having "moderate" to "high" FHSZ within the LRA (Kern County 2009). Vegetation on the project site is present in the form of a sparse cover of non-native grassland. Ignition of grasslands would be most likely to occur during periods of initial surface clearing and excavation. Once vegetation is removed and excavation recesses into each mining area, vegetation fuel sources become limited or nonexistent within the mining areas. A risk of wildland fire ignition always exists when vehicles operate in or near potential fuel sources; however, with proper maintenance of equipment and standard avoidance and management measures, the risk would be reduced. Therefore, potential impacts related to wildland fires associated with the project would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-3 and MM 4.10-1 through MM 4.10-3, cumulative impacts would be less than significant.

Chapter 5

Consequences of Project Implementation

5.1 Environmental Effects Found to be Less than Significant

Section 15128 of the California Environmental Quality Act (CEQA) *Guidelines* requires that an Environmental Impact Report (EIR) "contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." Kern County has engaged the public in the scoping of the environmental document. Comments received during scoping have been considered in the process of identifying issue areas that should receive attention in the EIR. The contents of this EIR were established based on a Notice of Preparation/Initial Study (NOP/IS) prepared in accordance with the State CEQA *Guidelines* and on public and agency input received during the scoping process. Issues that were found to have no impact or less-than-significant impacts during preparation of the NOP/IS do not need to be addressed further in this EIR. Based on the findings of the NOP/IS and the results of scoping, a determination was made that the EIR would contain a comprehensive analysis of all environmental issues identified in Appendix G of the State CEQA *Guidelines*.

After further study and environmental review in this EIR, direct and indirect project-level impacts of the project would be less than significant or could be reduced to less-than-significant levels with mitigation measures for the following issue areas:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

5.2 Significant Environmental Effects that Cannot Be Avoided

Section 15126.2(c) of the State CEQA *Guidelines* requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less-than-significant levels. Potential environmental effects of the proposed project and proposed mitigation measures are discussed in detail in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR.

As discussed in Chapter 4, all project-specific impacts would be reduced to a level that is less than significant with implementation of proposed mitigation, with the exception of Impact 4.8-3. Therefore, the project would not result in any project-specific impacts that would be significant and unavoidable.

Table 5-1, *Summary of Significant and Unavoidable Impacts of the Project*, lists the significant and unavoidable impacts identified in this EIR.

Table 5-1 Summary of Significant and Unavoidable Impacts of the Project

Resource	Impact
Greenhouse Gas Emissions	Impact 4.8-3: Cumulative Greenhouse Gas Emissions Impacts

5.3 Significant Irreversible Impacts

The State CEQA *Guidelines* provide the following direction for the discussion of irreversible changes (Section 15126.2[d]):

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Determining whether the project would result in significant irreversible impacts requires a determination of whether key resources would be degraded or destroyed with little possibility of restoration.

Implementation of the proposed project would result in the temporary conversion of the proposed disturbance areas (e.g., mine areas, proposed access road, blending and screening site) that are currently used for cattle grazing. Cattle grazing area would temporarily be

discontinued in the aforementioned disturbance areas during mining; however, upon final reclamation, the site would be reclaimed to be suitable for grazing.

Development of the project would irretrievably commit materials and energy to the construction and maintenance of the project. Renewable, nonrenewable, and limited resources that would likely be consumed as part of the development of the proposed project would include, but are not limited to, oil, gasoline, sand and gravel, water, concrete, and similar materials.

5.4 Significant Cumulative Impacts

According to Section 15355 of the State CEQA *Guidelines*, the term "cumulative impacts" "refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Individual effects that may contribute to a cumulative impact may be from a single project or a number of separate projects. Individually, the impacts of a project may be relatively minor, but when considered along with impacts of other closely related or nearby projects, including newly proposed projects, the effects could be cumulatively considerable.

This EIR has considered the potential cumulative effects of the proposed project and each resource section in Chapter 4 contains a subsection discussing the analysis of potential cumulative impacts associated with that resource. As discussed in Section 4.8, *Greenhouse Gases*, of this EIR, project impacts related to cumulative greenhouse gas (GHG) emissions would be potentially significant. While implementation of Mitigation Measure MM 4.8-1 would encourage reduction in GHG emissions at a regional level, it would not provide a mechanism that guarantees GHG emission reductions on a cumulative basis. Kern County also lacks the jurisdiction and control over the many cumulative sources of GHG emissions, and over the global source of GHG emissions, that collectively contribute to climate change. Many other agencies with the requisite jurisdiction are taking steps to reduce GHG emissions; however, Kern County cannot assure that these steps will ultimately be implemented or sufficient to address global climate change. Therefore, Impact 4.8-3 would be significant and unavoidable.

5.5 Growth Inducement

Section 21100(b)(5) of CEQA requires an EIR to discuss how a proposed project, if implemented, could induce growth and the impacts of that induced growth (see also State CEQA *Guidelines* Section 15126). The sections below discuss the evaluation methods used for this analysis followed by the anticipated growth effects of the project.

5.5.1 Evaluation Methods

CEQA requires the EIR to specifically discuss (State CEQA *Guidelines* Section 15126.2[e]):

the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Evaluation of the growth-inducing impacts of the project is based on a qualitative analysis of the direct impacts of constructing and operating the project and the indirect impacts that could result from use of the project. This evaluation of potential growth-inducing impacts addresses whether the project would directly or indirectly:

- foster economic, population, or housing growth;
- remove obstacles to growth;
- increase population growth that would tax community service facilities; or
- encourage or facilitate other activities that cause significant environmental impacts.

Section 15126.2(e) of the State CEQA *Guidelines* states specifically, "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." In other words, growth inducement is not to be considered adverse per se; impacts on resources resulting from growth may be too far removed from the actions of the agency to require mitigation by the agency. The goal of the EIR in this regard, therefore, is one of disclosure.

5.5.2 Growth Effects of the Project

As described in Chapter 3, *Project Description*, the project is a proposed diatomaceous earth open pit mining facility. The proposed mine is scheduled to operate from 6:00 a.m. to 7:30 p.m., Monday through Friday, with a maximum of 10 employees on-site at any time. The life of the proposed surface mining operation is proposed to be 50 years. Employees would likely come from the resident local population and would not result in a substantial increase in the population. Thus, the project would have minimal, if any, growth-inducing impacts associated directly or indirectly with population increase in the area.

The project would not extend or expand infrastructure to serve adjacent parcels, nor would it expand infrastructure capacity beyond the level necessary to serve the project. Thus, the project would not make infrastructure available to adjacent parcels and would not induce growth that might not otherwise occur.

Chapter 6
Alternatives

6.1 Introduction

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) describes a range of reasonable alternatives to the project or to the location of the project site that could feasibly avoid or lessen any significant environmental impacts of the project while attaining most of the project's basic objectives. An EIR also must compare and evaluate the environmental effects and comparative merits of the alternatives. The EIR need not consider every conceivable alternative, but it must consider a "reasonable range" of potentially feasible alternatives that will foster informed decision making and public participation. (CEQA Guidelines Section 15126.6(c).)

The following list is a summary of the key alternatives provisions of the State CEQA *Guidelines* (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

- The No-Project Alternative shall be evaluated, along with its impacts. The No-Project analysis shall discuss the existing conditions at the time the notice of preparation was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

- The range of alternatives required in an EIR is governed by a "rule of reason;" therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.

- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.

- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and informed decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives, as described in Section 15126.6(f)(1) of the State CEQA *Guidelines*, are environmental impacts, site suitability, economic viability,

availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project proponent could reasonably acquire, control, or otherwise have access to an alternative site. An EIR need not include consideration of an alternative whose effects could not be reasonably identified, whose implementation is remote or speculative, and that would not achieve the basic project objectives.

6.2 Alternatives Eliminated from Further Consideration

State CEQA Guidelines Section 15126.6(c) requires that an EIR identify alternatives that were considered and rejected as infeasible, and briefly explain the reasons for rejection. Among the factors that may be used to eliminate alternatives from detailed consideration in any EIR are: (1) failure to meet most of the basic project objectives; (2) infeasibility; and (3) inability to avoid significant environmental impacts. The following alternatives were initially considered but were eliminated from further consideration in this EIR because they do not meet project objectives and/or were infeasible.

6.2.1 Alternative Locations

State CEQA *Guidelines* Section 15126.6(f)(2)(a) states that "only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." An alternative location would require the identification and design of a mine at another location within the project region capable of producing up to 6,600,000 tons of material (6,200,000 tons of diatomaceous earth and 400,000 tons of overburden material), or the identification of multiple mine locations that could achieve that combined capacity.

Successful development of a mine at an alternative location would depend on a number of geologic, environmental, and economic factors. Site-specific studies would be required to evaluate a new site and its adequacy to support mining. Issues to be addressed for a new site are dominated by availability and suitability. The site must be available for purchase or long-term lease with abundant material to justify the investment necessary to permit and operate a mining operation. Extensive overall feasibility studies would need to be prepared to evaluate the following environmental and logistical concerns:

- quality and quantity of material to meet customer specifications;
- water supply availability;
- distance to markets and potential increases in haul truck trip distances;
- available truck routes, road design, and existing and predicted future traffic volumes and levels of service;
- proximity to a state highway;
- existing and future surrounding land uses;
- effects of the mining on surrounding land uses, including aesthetics, air pollutants, light, and noise;

- potential impacts to groundwater and surface water quality and consumption;
- potential impacts to biological resources, including special-status species and their habitat;
- potential presence of and impacts to significant cultural and paleontological resources; and
- options and costs for reclamation and use of site after mining.

No specific location with attributes necessary to accomplish the project objectives is known in enough detail to be identified as a specific alternative site. Because of the multiple and undetermined site conditions that could exist at an alternative location, the Lead Agency does not possess sufficient information to determine whether potential mining sites at alternative locations are available to feasibly meet the project objectives.

Finally, the significant and unavoidable cumulative impacts of the project are associated with greenhouse gas (GHG) emissions. Mining at an alternative site would not be expected to have a reduced impact associated with GHG emissions compared to the proposed project.

For the reasons discussed above, the Lead Agency has eliminated alternative locations from further consideration.

6.2.2 Phased Approach

Kern County considered a phased approach alternative to reduce potential adverse visual impacts. Specifically the phased approach alternative would have required all mining and reclamation in Mining Area 2 to be completed prior to beginning work in Mining Areas 1 and 3; additionally, within each of the three mining areas, all work would begin at the northern end and proceed toward the south. This alternative would allow for the same availability to overall reserves of the project area. However, the phased approach was considered to not be a feasible option for implementation of proposed mining activities and an ineffective solution to address potential visual impacts. Therefore, the phased approach alternative was eliminated from further consideration.

6.3 Alternatives Analyzed in this EIR

The following alternatives have been evaluated for their feasibility and their ability to achieve the project objectives while avoiding, reducing, or minimizing the potentially significant and unavoidable impacts identified for the project. These alternatives (with the exception of the No-Project Alternative) could meet some of the project objectives. The degree to which these alternatives substantially lower the significant impacts identified for the project is evaluated.

6.3.1 Alternative A: No-Project Alternative

Description

Implementation of the No-Project Alternative (Alternative A) would mean that the project site would remain as it is under existing conditions (undeveloped, grazing land), and mining and reclamation would not occur. As such, Lead Agency approval of a Conditional Use Permit (CUP) for a surface mining operation and reclamation plan would not be applicable. Under this alternative, none of the project objectives discussed above would be met.

Impacts

The No-Project Alternative would not result in any of the adverse impacts identified for the proposed project.

6.3.2 Alternative B: Reduced Footprint Alternative

Description

The Reduced Footprint Alternative (Alternative B) would eliminate Mining Area 3 from the proposed project, thereby reducing the proposed mining footprint in the northwest portion of the project site by approximately 9 acres, as well as reducing the project's mineral reserves by an anticipated 660,000 tons. Additionally, the reduced footprint alternative would reduce the proposed 1.85 acres of disturbance in conjunction with the proposed access road, as this access road would only need to extend far enough to provide access to Mining Areas 1 and 2. This alternative would reduce the availability of access to overall reserves of the project area. The estimated reserves permitted, however, would still meet most of the project's objectives to provide a quality mineral resource suitable to meet customer specifications for the proposed 50-year life of the operation. The impacts from implementing the Reduced Footprint Alternative would be similar to the proposed project but of a lesser intensity (based on the reduced acreage for operations), specifically related to aesthetics. The Reduced Footprint Alternative further incorporates mitigation measures recommended in Chapter 4, *Environmental Impact Analysis*.

Impacts

Aesthetics

As described in Section 4.1, *Aesthetics,* alterations to Mining Area 2 would be the least visible as seen from State Route (SR) 58 since it is lower in elevation and situated between Mining Areas 1 and 3. Approaching the project from the westbound direction of SR 58, the lowering of Mining Area 1 (which presumably would be the first ridge to be lowered) would open-up views to Mining Areas 2 and 3 and their associated disturbance. Approaching the project from the eastbound direction, the area corresponding to Mining Area 3 would help block views of disturbed Mining Areas 1 and 2, until Mining Area 3 is mined. Therefore, if Mining Area 3 is no longer proposed to be mined, it would serve as a visual barrier for Mining Areas 1 and 2 for the duration of the project as well as after final reclamation has been achieved, and would

reduce overall visual impacts of the project. Therefore, Alternative B would result in reduced aesthetic impacts compared to those identified for the proposed project.

Agriculture and Forest Resources

Alternative B would result in no mining-related disturbance, which would not reduce the amount of grazing land on the project site for the duration of the project. Therefore, Alternative B would result in slightly reduced agriculture and forest resource impacts compared to those identified for the proposed project.

Air Quality

Alternative B would result in similar air quality impacts as those identified for the project, but for a lesser intensity. This alternative would result in similar air pollutant emissions on an hourly, daily, and annual basis as the proposed project; however, these impacts are anticipated to cease 5 years sooner (i.e., a life of operations of 45 years rather than 50 years) than the project's impacts due to the reduction in permitted mineral quantities (however, considering it may take longer than the aforementioned 45 years to extract the proposed quantity of material, the project is proposing to be operated until the proposed quantity of material is fully extracted).

Biological Resources

Under Alternative B, the elimination of approximately 9 acres in the northwest portion of the project area would avoid potential impacts to the westernmost ephemeral drainage present within the project area (between Mining Areas 2 and 3), as the proposed access road would only be extended far enough to access Mining Area 2 (therefore not traversing the westernmost ephemeral drainage). This alternative would also result in the reduction of 9 acres of grazing land being temporarily disturbed as a result of mining activities. Alternative B would result in similar but slightly reduced impacts to biological resources compared to the proposed project.

Cultural Resources

Alternative B would result in similar cultural resource impacts as those identified for the project, but of a lesser intensity. Because this alternative eliminates approximately 9 acres from mining disturbance in the project area, this alternative would reduce the potential for disturbance of any cultural resources or human remains that may be located in that 9-acre area.

Energy

Alternative B would result in similar impacts related to energy as those identified for the project, but of a lesser intensity considering elimination of Mining Area 3. This alternative would result in similar energy usage on an hourly, daily, and annual basis as the proposed project; however, these impacts are anticipated to cease 5 years sooner than the project's impacts due to the reduction in permitted mineral quantities, as described above.

Geology and Soils

Alternative B would result in similar geology and soils impacts as those identified for the project, but of a lesser intensity.

Greenhouse Gas Emissions

Alternative B would result in similar GHG emission impacts as those identified for the project, but of a lesser intensity. This alternative would result in similar cumulative GHG emissions impacts; however, these impacts would cease approximately 5 years sooner than the project's identified impacts, as described above, due to reduction in permitted aggregate reserves.

Hazards and Hazardous Materials

Alternative B would result in similar hazards and hazardous materials impacts as those identified for the proposed project.

Hydrology and Water Quality

Alternative B would result in similar hydrology and water quality impacts as those identified for the project, but of a lesser intensity. Per Alternative B, the westernmost ephemeral drainage (between Mining Areas 2 and 3) would not be impacted since the proposed access road would only be extended far enough to access Mining Area 2 (therefore not traversing the westernmost ephemeral drainage).

Land Use and Planning

Alternative B would result in similar land use and planning impacts as those identified for the proposed project.

Mineral Resources

Alternative B would result in similar mineral resource impacts as those identified for the proposed project.

Noise

Alternative B would result in similar noise impacts as those identified for the proposed project; however, the duration of project noise under Alternative B is anticipated to be reduced by 5 years, as described above, compared to the proposed project.

Population and Housing

Alternative B would result in similar population and housing impacts as those identified for the proposed project.

Public Services

Alternative B would result in similar public service impacts as those identified for the proposed project.

Transportation and Traffic

Alternative B would result in similar transportation and traffic impacts as those identified for the project, but of a lesser intensity, given that operations would require fewer vehicle trips as operations are anticipated to cease 5 years sooner than the proposed project, as described above.

Tribal Cultural Resources

Alternative B would result in similar tribal cultural resource impacts as those identified for the project, but of a lesser intensity. Because this alternative eliminates approximately 9 acres from mining disturbance in the project area, this alternative would reduce the potential for disturbance of any tribal cultural resources that may be located in that 9-acre area.

Utilities and Service Systems

Alternative B would result in similar utility and services system impacts as those identified for the proposed project, but of a lesser intensity. As this alternative eliminates approximately 9 acres in the northwest portion of the project site corresponding to Mining Area 3 and thus reduces the life of the operation, this alternative would reduce overall water demand and solid waste generated during operations.

Wildfire

Alternative B eliminates an approximately 9-acre area corresponding to Mining Area 3. Similar to the proposed project, this alternative would implement Mitigation Measure MM 4.9-1, which would require the project proponent to prepare and obtain approval of an Emergency Response Plan from the Kern County Fire Department (KCFD), which would further reduce the fire risks on-site. Similar to the proposed project, Alternative B would not include significant risks related to downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfires. Alternative B would likely result in a slightly lesser impact than the proposed project due to the reduced footprint, as well as an anticipated reduction in the life of operations by 5 years compared with the proposed project, as described above.

6.3.3 Alternative C: Reduced Depth of Mining Alternative

Description

The Reduced Depth of Mining Alternative (Alternative C) would reduce the final pit depths in the project area, as shown in **Table 6-1,** *Alternative C Reduced Depth of Mining Details*. Under Alternative C, the mining depths would range from 32 feet for Mine Area 3 to a maximum depth of 129.6 feet in Mine Area 1, compared to the maximum depth of 162 feet in Mine Area 1 as described under the proposed project. Alternative C would result in the production of 5,286,917 tons of diatomaceous earth plus overburden material, 1,313,083 fewer tons compared to the proposed project.

Table 6-1 Alternative C Reduced Depth of Mining Details

Project Detail	Proposed Project	Alternative C (Reduced Depth of Mining)
Tonnage of material (diatomaceous earth plus overburden material) to be mined	6,600,000 tons	3,550,057 tons from Mine Area 1
		1,197,661 tons from Mine Area 2
		539,199 tons from Mine Area 3
Depth of excavation of Mine Area 1	162 feet	129.6 feet
Depth of excavation of Mine Area 2	125 feet	100 feet
Depth of excavation of Mine Area 3	40 feet	32 feet
Life of Operation	50 years; however, considering it may take longer than 50 years to extract the proposed quantity of material, the project is proposed to be operated until the proposed quantity of the material is fully extracted.	40 years; however, considering it may take longer than 40 years to extract the proposed quantity of material, the project is proposed to be operated until the proposed quantity of the material is fully extracted.

Alternative C would limit the overall permitted mineral reserves as compared to the proposed project. This alternative would not change the surface acreage disturbed; however, it would increase the surface area disturbance in proportion to the amount of material excavated. Although this alternative would reduce the amount of material mined and the overall life of the operation, it would still achieve the project objectives. However, a reduced depth of mining alternative would not reduce hourly, daily, or annual production and, thus, would not reduce air pollutant emissions for these durations. Nonetheless, this alternative is anticipated to reduce the intensity of impacts, as mining operations are anticipated to cease approximately 10 years earlier under Alternative C than the proposed project, although operations would continue until the proposed quantity of material is fully extracted. The Reduced Depth of Mining Alternative further incorporates all mitigation measures recommended for the proposed project.

Impacts

Aesthetics

Potential visual impacts under Alternative C would be similar to those described for the proposed project since the same surface area would be disturbed and differences in pit depth would not be visible from public views. Therefore, visual impacts that would result from Alternative C are considered to be comparable to the proposed project.

Agriculture and Forest Resources

Alternative C would result in a similar disturbance area to the proposed project during mining activities, and the disturbed areas would be reclaimed and returned to grazing land following all mining and reclamation activities. Therefore, Alternative C would result in similar agriculture and forest resource impacts compared to those identified for the proposed project.

Air Quality

Alternative C would result in similar air quality impacts as those identified for the project, but of a lesser intensity. This alternative would result in similar air pollutant emissions on an hourly, daily, and annual basis as the proposed project; however, these impacts are anticipated to cease 10 years earlier than the proposed project due to the reduction in permitted reserves.

Biological Resources

Alternative C would result in a similar disturbance area to the proposed project during mining activities, and the disturbed areas would be reclaimed and returned to grazing land following mining. Therefore, Alternative C would result in similar biological resource impacts compared to those identified for the proposed project.

Cultural Resources

Alternative C would result in similar cultural resources impacts as those identified for the proposed project, but of a lesser intensity. Alternative C reduces the depth of the three Mining Areas (see **Table 6-1,** *Alternative C Reduced Depth of Mining Details*). Although the potential for cultural resources to be present at deeper depths (depths mined per the proposed project but avoided per Alternative C) is remote, nonetheless, implementation of Alternative C would eliminate the potential for disturbance of any cultural resources that may be located at such deeper depths.

Energy

Alternative C would result in similar impacts related to energy as those identified for the proposed project, but of a lesser intensity since the heavy equipment and haul truck usage to mine and transport the reduced quantity of diatomaceous earth plus overburden material over an expected shorter project life would require less energy.

Geology and Soils

Alternative C would result in similar geology and soils impacts as those identified for the proposed project.

Greenhouse Gas Emissions

Alternative C would result in similar GHG emission impacts as those identified for the proposed project, but of a lesser intensity. This alternative would result in similar cumulative GHG emissions impacts; however, these impacts would cease approximately 10 years prior to the proposed project due to the reduction in permitted material reserves.

Hazards and Hazardous Materials

Alternative C would result in similar hazards and hazardous materials impacts as those identified for the proposed project.

Hydrology and Water Quality

Alternative C would result in similar hydrology and water quality impacts as those identified for the proposed project.

Land Use and Planning

Alternative C would result in similar land use and planning impacts as those identified for the proposed project.

Mineral Resources

Alternative C would result in similar mineral resource impacts as those identified for the proposed project.

Noise

Alternative C would result in similar noise impacts as those identified for the proposed project; however, the duration of project noise under Alternative C is anticipated to be reduced by 10 years compared to the proposed project.

Population and Housing

Alternative C would result in similar population and housing impacts as those identified for the proposed project.

Public Services

Alternative C would result in similar public services impacts as those identified for the proposed project.

Transportation and Traffic

Alternative C would result in similar transportation and traffic impacts as those identified for the project, but of a lesser intensity, given that operations would require fewer vehicle trips, as operations are anticipated to cease 10 years sooner than the proposed project.

Tribal Cultural Resources

Alternative C would result in similar tribal cultural resources impacts as those identified for the proposed project, but of a lesser intensity. Alternative C reduces the depth of the three Mining (see **Table 6-1,** *Alternative C Reduced Depth of Mining Details*). Although the potential for tribal cultural resources to be present at deeper depths (depths mined per the proposed project but avoided per Alternative C) is remote, nonetheless, implementation of Alternative C would eliminate the potential for disturbance of any tribal cultural resources that may be located at such deeper depths.

Utilities and Service Systems

Alternative C would result in similar utility and service systems impacts as those identified for the project, but of a lesser intensity. As this alternative would reduce the amount of material extracted by 1,313,083 tons and reduce the life of the operation, this alternative would reduce overall water demand and solid waste generated during operations.

Wildfire

Similar to the proposed project, Alternative C would implement Mitigation Measure MM 4.9-1, which would require the project proponent to prepare and obtain approval of an Emergency Response Plan from the KCFD, which would further reduce the fire risks on-site. Similar to the proposed project, Alternative C would not include significant risks related to downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfires. Alternative C would likely result in slightly less impact than the proposed project due to an anticipated reduction in the life of operations by 10 years.

6.4 Summary of Alternatives Comparison

The proposed project is preferred over the other alternatives considered for environmental and other reasons. **Table 6-2,** *Alternatives Impact Comparison Summary,* compares the relative degree of potential environmental impacts of each of the alternatives with the proposed project.

Table 6-2 Alternatives Impact Comparison Summary

Resource Area	Alternative A (No Project)	Alternative B (Reduced Footprint)	Alternative C (Reduced Depth of Mining)
Aesthetics	-	-	=
Agriculture and Forest Resources	-	-	=
Air Quality	-	-	-
Biological Resources	-	-	=
Cultural Resources	-	-	-
Energy	-	-	-
Geology and Soils	-	=	=
Greenhouse Gas Emissions	-	-	-
Hazards and Hazardous Materials	-	=	=
Hydrology and Water Quality	-	-	=
Land Use and Planning	-	=	=
Mineral Resources	-	=	=
Noise	-	-	-
Population and Housing	-	=	=
Public Services	-	=	=
Transportation and Traffic	-	-	-
Tribal Cultural Resources	-	-	-
Utilities and Service Systems	-	-	-
Wildfire	-	-	-

6.5 Environmentally Superior Alternative

An EIR must identify the environmentally superior alternative to the proposed project. Alternative A, the No-Project Alternative, is environmentally superior to the proposed project and would not result in the physical environmental impacts identified for the proposed project. However, the No-Project Alternative would not meet any of the objectives of the proposed project. Under State CEQA *Guidelines* Section 15126.6(e)(2), if the environmentally superior alternative is the No-Project Alternative, then an environmentally superior alternative must be identified among the other alternatives.

As described above, Alternative B would reduce environmental impacts related to aesthetics, agriculture and forest resources, air quality, biological resources, cultural resources, energy, greenhouse gas emissions, hydrology and water quality, noise, transportation and traffic, tribal cultural resources, utilities and service systems, and wildfire compared to the proposed project.

Alternative B would result in a disadvantage over the project because it would reduce the amount of reserves and overall life of the project as described above; however, Alternative B would be a feasible alternative that meets all of the project objectives while reducing potential impacts of the proposed project. Alternative B, Reduced Footprint Alternative, is therefore considered to be the environmentally superior alternative for the purposes of this analysis.

Chapter 7
Response to Comments

This chapter is being reserved for, and will be included with, the Final EIR.

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Chapter 8

Organizations and Persons Consulted

8.1 Federal

United States Army Corps of Engineers, Regulatory Division

United States Bureau of Land Management (Caliente/Bakersfield)

United States Department of Agriculture, Natural Resources Conservation Service

United States Environmental Protection Agency Region IX Office

United States Fish and Wildlife Service, Division of Ecological Services

United States Postal Service

8.2 State of California

California Air Resources Board

California Highway Patrol, Buttonwillow Area

California Highway Patrol, Planning & Analysis Division

California Regional Water Quality Control Board, Central Valley Region

California State University, Bakersfield – Library

California Department of Conservation, Division of Oil and Gas

California Department of Conservation, Division of Recycling

California Department of Conservation, Office of Land Conservation

California Department of Conservation, Division of Mine Reclamation

California Department of Fish and Wildlife

California Department of Transportation District 06

California Department of Transportation District 09

California Mining and Geology Board

California Native American Heritage Commission

California Office of the State Geologist

California State Clearinghouse

8.3 Regional and Local

Adams, Broadwell, Joseph & Cardozo

California City Planning Department

Center on Race, Poverty & the Environmental/CA Rural Legal Assistance Foundation

Chumash Council of Bakersfield

City of Arvin

City of Bakersfield Planning Department

City of Bakersfield Public Works Department

City of Delano Planning Department

City of Maricopa

City of McFarland

City of Ridgecrest

City of Shafter

City of Taft

City of Tehachapi

City of Wasco

County of Ventura Resource Management Agency, Planning Division

David Laughing Horse Robinson

Defenders of Wildlife

Diatom LLC

GF Industries

Inyo County Planning Department

Joyce LoBasso

Kern Audubon Society

Kern Council of Governments

Kern County Administrative Officer

Kern County Agriculture Department

Kern County Environmental Health Services Department

Kern County Fire Department

Kern County Library, Beal

Kern County Library, Beal Local History Room

Kern County Library, Buttonwillow Branch

Kern County Parks & Recreation

Kern County Public Works Department/Building & Development/Development Review

Kern County Public Works Department/Building & Development/Floodplain

Kern County Public Works Department/Buildings & Development/Code Compliance

Kern County Public Works Department/Buildings & Development/Survey Department

Kern County Public Works Department/Operations & Maintenance/Regulatory Monitoring and Reporting

Kern County Sheriff's Department, Administration

Kern County Superintendent of Schools

Kern County Water Agency

Kern High School District

Kern Valley Indian Council

Kern Valley Indian Council, Historic Preservation Office

Kings County Planning Agency

Kitanemuk & Yowlumne Tejon Indians

LIUNA

Los Angeles County Regional Planning Department

Lozeau Drury LLP

McKittrick School District

Native American Heritage Council of Kern County

North West Kern Resource Conservation District

Pacific Gas and Electric Company, Land Projects

Rosedale-Rio Bravo Water District

San Bernardino County Planning Department

San Joaquin Valley Air Pollution Control District

San Luis Obispo County Planning Department, Planning and Building

Santa Barbara County Resource Management Department

Santa Rosa Rancheria

Sierra Club, Kern Kaweah Chapter

SoCal Gas, Distribution Department

SoCal Gas, Transmission Department

SoCal Gas, Transportation Department

Southern San Joaquin Valley Information Center

Taft City School District

Tejon Indian Tribe

Tubatulabals of Kern County

Tulare County Planning and Development Department

Tule River Indian Tribe

Verizon California, Inc.

West Side Mosquito Abatement District

West Side Recreation & Park District

WZI Inc.

Chapter 9
List of Preparers

9.1 Lead Agency

Kern County Planning and Natural Resources Department

Lorelei H. Oviatt, AICP – Director

Craig M. Murphy – Assistant Director

Katrina A. Slayton – Advanced Planning Division Chief

Terrance Smalls – Supervising Planner

Randall Cates – Planner III

9.2 Technical Assistance

SWCA Environmental Consultants

Bill Henry, AICP – Project Director

Emily Creel, J.D. – Planning Team Lead/Senior Environmental Planner

Jacqueline Markley, AICP – Project Manager/Environmental Planner

Kyle Bachand – Environmental Planner

Leroy Laurie – Cultural Resources Specialist

Alyssa Bell, PhD – Lead Paleontologist

Travis Belt – Senior Biologist

Robert Carr, ASLA – Visual Resource Specialist

Kevin Howen – GIS/CADD Specialist

Jaimie Jones – Technical Editor

Central Coast Transportation Consulting

Joe Fernandez, AICP – Transportation Principal

Travis Low – Transportation Engineer

Ambient Air Quality and Noise Consulting

Kurt Legleiter – Principal/Air Quality and Noise Specialist

Geosyntec Consultants

Maygan Cline – Geology, Groundwater, and Hazards Specialist

Donna Bodine – Surface Water and CEQA Specialist

Gordon Thrupp – Geology, Groundwater and Hazards Specialist

Chapter 10
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Chapter 11
Acronyms and Abbreviations

The following definitions are of acronyms and abbreviations used in the EIR:

ºF	Degrees Fahrenheit
A	Exclusive Agriculture (Zoning District)
AB	Assembly Bill
ACBM	Asbestos Containing Building Material
ACI	American Concrete Institute
ADT	Average Daily Trips
AERMOD	AERMIC Model
AF	Acre-Feet
AFY	Acre-Feet Per Year
AISC	American Institute of Steel Construction
ALUCP	Airport Land Use Compatibility Plan
APCD	Air Pollution Control District
APN	Assessor's Parcel Number
AU	Animal Unit
AUM	Animal Unit Months
AQIA	Air Quality Impact Analysis
ASCE	American Society of Civil Engineers
BAT	Best Available Technology
BAU	Business-As-Usual
BACT	Best Available Control Technology
BCT	Best Conventional Pollution Control Technology
BENA	Bakersfield Metropolitan Sanitary Landfill
BGEPA	Bald and Golden Eagle Protection Agency
bgs	Below Ground Surface
BLM	Bureau of Land Management
BMP	Best Management Practice
BNLL	Blunt-Nosed Leopard Lizard
BPS	Best Performance Standards
CAA	(Federal) Clean Air Act
CAAA	(Federal) Clean Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalGEM	(California) Geologic Energy Management Division
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency

Cal/NAGPRA	California Native American Grave Protection and Repatriation Act
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CGC	California Government Code
CGS	California Geological Survey
CH_4	Methane
CHL	California Historic Landmark
CHP	California Highway Patrol
CIWMB	California Integrated Waste Management Board
cm	Centimeter
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COOP	Cooperative Observer Program
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
dB	Decibel
dBA	A-Weighted Decibel

DI	Drilling Island
DMR	(California) Division of Mine Reclamation
DOF	Department of Finance
DOSH	(California) Department of Occupational Safety and Health
DOGGR	Division of Oil, Gas, and Geothermal Resources
DPM	Diesel Particulate Matter
DTSC	(California) Department of Toxic Substances Control
DWR	(California) Department of Water Resources
EIR	Environmental Impact Report
EKAPCD	Eastern Kern Air Pollution Control District
EMFAC	Emission Factors
EMS	Emergency Medical Services
ENM	Environmental Noise Model
EO	Executive Order
EPA	(Federal) Environmental Protection Agency
ESA	(Federal) Endangered Species Act
FAM	Financial Assurance Mechanism
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FHSZ	Fire Hazard Severity Zones
FIRM	Flood Insurance Rate Map
FR	Federal Register
FRAP	Fire and Resource Assessment Program
FS	Forest Service
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GFI	GF Industries
GWh	Gigawatt Hour
GIS	Geographic Information System
GKR	Giant Kangaroo Rat
GPS	Global Position System
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	Global Warming Potential
H_2O	Water
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
HARP	Hotspots Analysis Reporting Program Data
HASP	Health and Safety Plan

HCD	Housing and Community Development
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbon
HMBP	Hazardous Material Business Plan
HSWA	Hazardous and Solid Waste Act
HUC	Hydrologic Unit Code
HZ	Hertz
I-5	(U.S.) Interstate 5
IBC	International Building Code
IPaC	Information for Planning and Conservation
IS	Initial Study
KCFD	Kern County Fire Department
KCGP	Kern County General Plan
KCSO	Kern County Sheriff's Office
KCWA	Kern County Water Agency
Kern COG	Kern Council of Governments
KVA	Key Viewing Area
kWh	Kilowatt-Hour
L_{50}	Median Noise Level
LACFD	Los Angeles County Fire Department
LACM	National History Museum of Los Angeles County
Ldn	Day–Night Average Sound Level
Leq	Equivalent Sound Pressure Level
LEV	Low Emission Vehicle
LOS	Level of Service
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MG	Million Gallons
mg/L	Milligrams/Liter
MLD	Most Likely Descendant
MM	Mitigation Measure
MMT	Million Metric Tons
$MMTCO_2e$	Million Metric Tons of Carbon Dioxide Equivalent
MND	Mitigated Negative Declaration
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalent
mph	Miles Per Hour
MTPY	Million Tons per Year
MRZ	Mineral Resource Zone
MSA	Metropolitan Statistical Area
MSHA	(Federal) Mine Safety and Health Administration
msl	Mean Sea Level
MT	Metric Tons

MUTCD	Manual of Uniform Traffic Control Devices
MW	Megawatt
MWh	Megawatt Hour
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
NAEL	No Adverse Effect Level
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCDC	National Climatic Data Center
NCP	National Contingency Plan
NEHRP	National Earthquake Hazards Reduction Program
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHTSA	(U.S. Department of Transportation) National Highway Traffic and Safety Administration
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_3	Nitrate
NOx	Nitrogen Oxides
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NPPA	(California) Native Plant Protection Agency
NR	Natural Resource
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NWS	National Weather Service
O_3	Ozone
OEHHA	(California) Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHW	Ordinary High Water
OPR	(California) Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	Lead
PE	Petroleum Extraction
PFC	Perfluorocarbon

Pga	Peak Ground Acceleration
PG&E	Pacific Gas and Electric Company
PHEV	Plug-In Hybrid Electric Vehicles
PHI	Points of Historical Interest
PLNR	(Kern County) Planning and Natural Resources Department
PM	Particulate Matter
PM_{10}	Particulate Matter <10 Microns in Aerodynamic Diameter
$PM_{2.5}$	Particulate Matter <2.5 Microns in Aerodynamic Diameter
ppb	Parts Per Billion
ppm	Parts Per Million
PPV	Peak Particle Velocity
PRC	(California) Public Resources Code
Project	Johe Ranch Mining Project
Project Proponent	Diatom, LLC
PVC	Polyvinyl Chloride
Qoa	Older Alluvium
R18W	Range 18 West
RCRA	Resource Conservation and Recovery Act of 1976
REL	Reference Exposure Level
RH	Relative Humidity
RHNA	Regional Housing Needs Assessment
RMS	Root-Mean-Squared
ROG	Reactive Organic Gases
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SA	Spectral Accelerations
SAA	Streambed Alteration Agreement
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SC	Scenic Corridor
SCEDC	Southern California Earthquake Data Center
SCS	Sustainable Communities Strategy
SDC	Seismic Design Category
SF_6	Sulfur Hexafluoride
SGMA	Sustainable Groundwater management Act of 2014
SHPO	State Historic Preservation Officer
SHRC	State Historic Resources Commission
SIL	Significant Impact Level
SIP	State Implementation Plan
SJKF	San Joaquin Kit Fox
SJVAB	San Joaquin Valley Air Basin

SJVAPCD	San Joaquin Valley Air Pollution Control District
SLAMS	State and Local air Monitoring Station
SMARA	Surface Mining and Reclamation Act of 1975
SMBMI	San Manuel Band of Mission Indians
SMGB	State Mining and Geology Board
SO_2	Sulfur Dioxide
SO_4	Sulfate
SO_X	Sulfur Oxides
SoCalGas	Southern California Gas Company
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SRA	State Responsibility Area
SSC	(California) Species of Special Concern
SSJVIC	Southern San Joaquin Valley Archaeological Information Center
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TAZ	Traffic Analysis Zone
TDS	Total Dissolved Solids
TES	Threatened, Endangered, or otherwise Sensitive
THPO	Tribal Historic Preservation Office
TIS	Traffic Impact Study
Tm	Monterey Formation
TMDL	Total Maximum Daily Load
tpy	Tons Per Year
USC	United States Code
UBC	Uniform Building Code
URF	Unit Risk Factors
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UV-B	Ultraviolet Rays
UWMP	Urban Water Management Plan
V/C	Volume to Capacity Ratio
VDE	Visible Dust Emissions
VDT	Video Display Terminal
VOC	Volatile Organic Compounds
VMT	Vehicle Miles Traveled

VPH	Vehicles per Hour
VRP	Visibility-Reducing Particles
W	Watts
WEAP	Worker Environmental Awareness Program
Wh	Watt Hours
WKWD	West Kern Water District
WRCC	Western Regional Climate Center
WSA	Water Supply Assessment
ZEV	Zero Emission Vehicle
ZOI	Zone of Influence