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CRC CalCapture CCS Project

California Energy Commission Petition for Post-Certification Amendment

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Revision Schedule

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Table of Contents

Revision Schedule ..... **ii**
Disclaimer ..... **ii**
Acronyms / Abbreviations ..... **viii**
1 Executive Summary **1**
1.1 Project Overview 1
1.2 Petition Information Requirements 2

2 Introduction **4**
2.1 Project Objectives 4
2.2 Project Location 8
2.2.1 Environmental Setting 11
2.2.2 Surrounding Land Uses 11
2.2.3 Public Services 11
2.2.4 Existing Oilfield Facilities and Operations 11
2.2.5 Elk Hills Power Plant 14
2.2.6 CTV I Background Information 14
2.3 Permitting Requirements 17
2.3.1 Federal Agencies 19
2.3.2 State Agencies 20
2.3.3 Local Agencies 22
2.3.4 Existing Permits for CTV I 22
2.3.5 Agencies Contacted 23
2.4 Project Schedule 23
2.5 Persons Who Prepared the Petition for Post-Certification Amendment Application 24

3 Project Description **25**
3.1 Project Overview 25
3.2 Proposed Project Components 26
3.2.1 Flue Gas Cooling 27
3.2.2 CO_2 Absorption 28
3.2.3 Solvent Regeneration 28
3.2.4 Solvent Maintenance 28
3.2.5 Chemical Storage and Supply 28
3.2.6 CO_2 Compression 29
3.2.7 Utility Support Systems 29
3.2.8 Catalyst and Chemicals 30
3.2.9 Steam Supply 33
3.2.10 Utilities 33
3.2.11 Domestic Water and Septic Systems 34
3.2.12 Water Use 34
3.2.13 Emergency Management 35
3.3 Construction Procedures 35
3.3.1 Proposed Grading and Site Development 35
3.3.2 Temporary Office and Parking Areas 36
3.3.3 Onsite Borrow Sites 36
3.3.4 Road Construction 37
3.3.5 Processing Facilities Construction 37
3.3.6 CO_2 Delivery Pipeline Construction 38
3.3.7 Field Systems Construction 40

3.3.8 Electrical Service Construction 40
3.3.9 Construction Personnel and Traffic 42
3.3.10 Construction Deliveries 43
3.3.11 Construction Timing 43
3.3.12 Equipment 43
3.3.13 Water Demands 44
3.4 Operation and Maintenance 44
3.4.1 Monitoring Systems 44
3.4.2 Operation Personnel 45
3.4.3 Maintenance 46
3.4.4 Facility Safety Protocols/Emergency Response 46
3.4.5 Site Security 47
3.4.6 Materials, Waste Handling, and Storage 47
3.5 Decommissioning 48
3.5.1 Facility and Pipeline Abandonment Process 49
3.6 Cumulative Projects 49

4 Environmental Analysis 53
4.1 Air Quality/Greenhouse Gas Emissions 54
4.1.1 Environmental Setting 55
4.1.2 Impact Analysis 58
4.1.3 Cumulative Impacts 63
4.1.4 Mitigation Measures 63
4.1.5 Level of Significance After Mitigation 66
4.1.6 Laws, Ordinances, Regulations, and Standards 66
4.1.7 References 88
4.2 Biological Resources 93
4.2.1 Environmental Setting 94
4.2.2 Impact Analysis 99
4.2.3 Cumulative Impacts 103
4.2.4 Mitigation Measures 104
4.2.5 Level of Significance After Mitigation 113
4.2.6 Laws, Ordinances, Regulations, and Standards 114
4.2.7 References 124
4.3 Cultural Resources 126
4.3.1 Environmental Setting 126
4.3.2 Impact Analysis 128
4.3.3 Cumulative Impacts 129
4.3.4 Mitigation Measures 130
4.3.5 Level of Significance After Mitigation 131
4.3.6 Laws, Ordinances, Regulations, and Standards 131
4.3.7 References 141
4.4 Energy 142
4.4.1 Environmental Setting 142
4.4.2 Impact Analysis 142
4.4.3 Cumulative Impacts 145
4.4.4 Mitigation Measures 146
4.4.5 Level of Significance After Mitigation 146
4.4.6 Laws, Ordinances, Regulations, and Standards 147
4.4.7 References 156
4.5 Geological Hazards and Resources 159
4.5.1 Environmental Setting 159



4.5.2 Impact Analysis 160
4.5.3 Cumulative Impacts 163
4.5.4 Mitigation Measures 164
4.5.5 Level of Significance After Mitigation 164
4.5.6 Laws, Ordinances, Regulations, and Standards 165
4.5.7 References 168
4.6 Hazards and Hazardous Materials Handling 169
4.6.1 Environmental Setting 169
4.6.2 Impact Analysis 172
4.6.3 Cumulative Impacts 179
4.6.4 Mitigation Measures 180
4.6.5 Level of Significance After Mitigation 184
4.6.6 Laws, Ordinances, Regulations, and Standards 184
4.6.7 References 195
4.7 Land Use 196
4.7.1 Environmental Setting 196
4.7.2 Impact Analysis 201
4.7.3 Cumulative Impacts 203
4.7.4 Level of Significance 204
4.7.5 Laws, Ordinances, Regulations, and Standards 204
4.7.6 References 229
4.8 Noise 230
4.8.1 Environmental Setting 230
4.8.2 Impact Analysis 231
4.8.3 Cumulative Impacts 234
4.8.4 Mitigation Measures 235
4.8.5 Level of Significance 235
4.8.6 Laws, Ordinances, Regulations, and Standards 235
4.8.7 References 237
4.9 Paleontological Resources 239
4.9.1 Environmental Setting 239
4.9.2 Impact Analysis 240
4.9.3 Cumulative Impacts 242
4.9.4 Mitigation Measures 242
4.9.5 Level of Significance After Mitigation 243
4.9.6 Laws, Ordinances, Regulations, and Standards 244
4.9.7 References 245
4.10 Public Health 246
4.10.1 Environmental Setting 247
4.10.2 Impact Analysis 249
4.10.3 Cumulative Impacts 251
4.10.4 Level of Significance After Mitigation 251
4.10.5 Laws, Ordinances, Regulations, and Standards 252
4.10.6 References 259
4.11 Socioeconomic – Environmental Justice 260
4.11.1 Environmental Setting 261
4.11.2 Impact Analysis 264
4.11.3 Cumulative Impacts 266
4.11.4 Mitigation Measures 267
4.11.5 Level of Significance After Mitigation 267
4.11.6 Laws, Ordinances, Regulations, and Standards 267
4.11.7 References 270



4.12 Soils 271
4.12.1 Environmental Setting 271
4.12.2 Impact Analysis 274
4.12.3 Cumulative Impacts 277
4.12.4 Mitigation Measures 277
4.12.5 Level of Significance After Mitigation 277
4.12.6 Laws, Ordinances, Regulations, and Standards 277
4.12.7 References 281
4.13 Traffic and Transportation 282
4.13.1 Environmental Setting 282
4.13.2 Impact Analysis 283
4.13.3 Cumulative Impacts 286
4.13.4 Mitigation Measures 287
4.13.5 Level of Significance After Mitigation 288
4.13.6 Laws, Ordinances, Regulations, and Standards 288
4.13.7 References 294
4.14 Visual Resources 295
4.14.1 Environmental Setting 296
4.14.2 Impact Analysis 298
4.14.3 Cumulative Impacts 301
4.14.4 Mitigation Measures 301
4.14.5 Level of Significance After Mitigation 302
4.14.6 Laws, Ordinances, Regulations, and Standards 302
4.14.7 References 305
4.15 Waste Management 306
4.15.1 Environmental Setting 306
4.15.2 Impact Analysis 307
4.15.3 Cumulative Impacts 309
4.15.4 Level of Significance 309
4.15.5 Laws, Ordinances, Regulations, and Standards 309
4.15.6 References 315
4.16 Water Resources 316
4.16.1 Environmental Setting 317
4.16.2 Impact Analysis 318
4.16.3 Cumulative Impacts 322
4.16.4 Mitigation Measures 323
4.16.5 Level of Significance After Mitigation 326
4.16.6 Laws, Ordinances, Regulations, and Standards 326
4.16.7 References 353
4.17 Worker Health and Safety 354
4.17.1 Setting 354
4.17.2 Health and Safety Program 355
4.17.3 Laws, Ordinances, Regulations, and Standards 366
4.17.4 References 375

5 Alternatives 376
5.1 Summary of Project Impacts Relevant to Evaluation of Alternatives 376
5.1.1 Aesthetics 377
5.1.2 Air Quality 377
5.1.3 Biological Resources 377
5.1.4 Cultural Resources 378
5.1.5 Energy Resources 378

5.1.6 Geologic Hazards and Resources 378
5.1.7 Greenhouse Gas Emissions 379
5.1.8 Hazardous Materials Handling 379
5.1.9 Noise 379
5.1.10 Paleontological Resources 379
5.1.11 Soils 380
5.1.12 Traffic and Transportation 380
5.1.13 Water Resources 380
5.2 Project Objectives 381
5.3 Alternatives Considered and Rejected 381
5.3.1 Replacement of Elk Hills Power Plant with Renewable Energy 381
5.3.2 Off-site Alternative 382
5.3.3 Nature-Based Solutions 382
5.3.4 Direct Air Capture 382
5.3.5 Alternative Technologies 384
5.4 Alternatives to the Project 386
5.4.1 “No Project” Alternative 387
5.4.2 Reduced Project 390
5.5 Comparative Impacts of Project to Alternatives 393
5.6 Environmentally Superior Alternative 394

6 Compliance with Existing Conditions of Certification 395

List of Tables

Table 1 Project Parcel Data 8
Table 2 Potentially Required Permits and Approvals 17
Table 3 Petition for Post-Certification Amendment Application Preparers 24
Table 4 Expected Chemicals Consumption 32
Table 5 Site Disturbance Area 36
Table 6 Construction Phase Trip Generation 42
Table 7 Operation Personnel Estimates 45
Table 8 Operational Phase Trip Generation 46
Table 9 Cumulative Projects List 51
Table 10 CEQA Cross-Reference Table 53
Table 11 Appendix B Information Requirements for an AFC – Air Quality 54
Table 12 San Joaquin Valley Air Basin Attainment Status 56
Table 13 Project Construction Criteria Pollutant Emissions 60
Table 14 Project Operational Criteria Pollutant Emissions 60
Table 15 Construction Greenhouse Gas Emissions 61
Table 16 Operational Greenhouse Gas Emissions 62
Table 17 LORs for Air Quality 66
Table 18 Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan 78
Table 19 Appendix B Information Requirements for an AFC – Biological Resources 93
Table 20 Special-Status Plant Species with Moderate to High Potential to Occur 97
Table 21 Special-Status Wildlife Species with Moderate to High Potential to Occur 98
Table 22 Estimated Permanent and Temporary Impacts 100
Table 23 Disturbance Buffers for Sensitive Resources 105
Table 24 Setback Distances for Burrowing Owl Nest Sites by Level of Proposed Project Impacts 109
Table 25 LORs for Biological Resources 114
Table 26 Appendix B Information Requirements for an AFC – Cultural Resources 126



Table 27 LORs for Cultural Resources....132
Table 28 Construction On-Road Vehicle Fuel Consumption....143
Table 29 Operational On-Road Vehicle Fuel Consumption....144
Table 30 LORs for Energy Utilization....147
Table 31 Appendix B Information Requirements for an AFC – Geological Hazards and Resources....159
Table 32 LORs for Geological Hazards and Resources....165
Table 33 Appendix B Information Requirements for an AFC – Hazards and Hazardous Materials Handling and Wildfire 169
Table 34 Characteristics of Planned Hazardous Materials....177
Table 35 LORs for Hazards and Hazardous Materials....185
Table 36 Appendix B Information Requirements for an AFC – Land Use....196
Table 37 Parcels and Existing Zoning....197
Table 38 LORs for Land Use....204
Table 39 Project Policy Consistency with Local Planning Documents....207
Table 40 Appendix B Information Requirements for an AFC – Noise....230
Table 41 Measured Ambient Noise Levels....231
Table 42 Estimated Construction Noise Levels at Nearest Sensitive Receptor....232
Table 43 LORs for Noise....235
Table 44 Appendix B Information Requirements for an AFC – Paleontological Resources....239
Table 45 LORs for Paleontological Resources....244
Table 46 Appendix B Information Requirements for an AFC - Public Health....246
Table 47 LORs for Public Health....252
Table 48 Appendix B Information Requirements for an AFC – Socioeconomics....260
Table 49 Demographic Information of Project Site....262
Table 50 Skilled Workers by Occupation in Kern County....262
Table 51 CalEnviroScreen 4.0 Scores for Disadvantaged Communities....263
Table 52 CalEnviroScreen Indictor Percentiles for Pollution Burden for Disadvantaged Communities....263
Table 53 CalEnviroScreen Scores for Indicator Percentiles for Population Characteristics for Disadvantaged Communities....263
Table 54 LORs for Socioeconomics and Environmental Justice....267
Table 55 Appendix B Information Requirements for an AFC – Soils....271
Table 56 NRCS Soil Map Unit Descriptions (Surficial Soils)....272
Table 57 Erosive Potential for Soils Mapped on the Project Site....276
Table 58 LORs for Soils....277
Table 59 Appendix B Information Requirements for an AFC – Traffic and Transportation....282
Table 60 LORs for Traffic and Transportation....288
Table 61 Roadway Level of Service Description....292
Table 62 Roadway Level of Service for Uninterrupted Flow Highways....294
Table 63 Appendix B Information Requirements for an AFC – Visual Resources....295
Table 64 Visual Impact for Key Observation Points....298
Table 65 LORs for Visual Resources....302
Table 66 Appendix B Information Requirements for an AFC – Waste Management....306
Table 67 LORs for Waste Management....309
Table 68. Appendix B Information Requirements for an AFC – Water Resources....316
Table 69. LORs for Water Resources....327
Table 70. Appendix B Information Requirements for an AFC - Worker Safety....354
Table 71. Construction Hazard Analysis....355
Table 72 Operations Hazard Analysis....359
Table 73 LORs for Worker Safety....366
Table 74 Summary Comparison of Impacts of Project Alternatives....393

Table 75 Existing Conditions of Certification and Proposed Measures 395

List of Figures

Figure 1. Regional Vicinity 5
Figure 2. Site Plan 6
Figure 3. Project Parcel Data 9
Figure . Existing Zoning and Land Use Designations 12
Figure 5. Sensitive Receptors and Public Services 13
Figure 6. CTV I Storage Reservoir 16
Figure 7. Wildfire 171
Figure 8. Military Flight Corridor 199

List of Appendices

Appendix A Contact Information and Parcel Information
Appendix B Engineering Information
Appendix C Site Photographs
Appendix D Soil Management Plan
Appendix E Air Quality – Greenhouse Gases Technical Study
Appendix F Aquatic Resource Delineation Report
Appendix G Biological Resources Technical Report
Appendix H Cultural Resources Survey
Appendix J Energy Utilization Study
Appendix K Geohazards Assessment
Appendix L Hydrology Study
Appendix M Noise Study
Appendix N Paleontological Resources Assessment
Appendix O Phase 1 Environmental Site Assessment
Appendix P Quantitative Risk Assessment
Appendix Q Environmental Justice and Socioeconomics
Appendix R Transportation Impact Analysis
Appendix S Visual Impact Assessment
Appendix T Water Supply Assessment

Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
2020 RACT Demonstration	2020 RACT Demonstration for the 2015 8-Hour Ozone Standard Demonstration
AADT	Annual Average daily traffic
AB	Assembly Bill
ACSS	Aluminum Conductor Steel Supported
af	Acre-feet
AFC	Application for Certification
afy	Acre-feet per year
AMNH	American Museum of Natural History
APN	Assessor's Parcel Number
ASME	American Society of Mechanical Engineers
ATCM	Airborne Toxic Control Measures
AQMP	Air Quality Management Plan
BAAQMD	Bay Area Air Quality Management District
BAU	Business-As-Usual
bbl	barrels of oil
BMP	Best management practices
BRMIMP	Biological Resources Mitigation Implementation and Monitoring Plan
BRTR	Biological Resources Technical Report
BSA	Biological Study Area
ºC	Degrees Celsius
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
CalARP	California Accidental Release Program
CalEnviroScreen	California Communities Environmental Health Screening Tool
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalGEM	California Geologic Energy Management Division
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBB	Crotch's bumblebee (*Bombus crotchii*)
CCAA	California Clean Air Act
CCAP	Climate Change Action Plan
CCS	Carbon Capture and Sequestration
CCU	Carbon Capture Unit
CCR	California Code of Regulations
CCTV	closed circuit television
CDFW	California Department of Fish and Wildlife
CDR	Carbon Dioxide Removal
CEC	California Energy Commission



Acronym / Abbreviation	Full Name
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGC	California Government Code
CGS	California Geological Survey
CH_4	methane
CHSC	California Health and Safety Code
CISN	California Seismic Network
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	Carbon monoxide
COG	Council of Governments
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COC	Conditions of Certification
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CRC	California Resources Corporation
CRHR	California Register of Historical Resources
CRMMP	Cultural Resources Monitoring and Mitigation Plan
CRPR	California Rare Plant Rank
CSO	Construction Safety Orders
CSS	California Species of Special Concern
CTG	Combustion turbine generator
CTV	Carbon TerraVault Holdings, LLC
CTV I	Carbon TerraVault I
CUP	Conditional Use Permit
CUPA	Certified Union Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
CWR	Cool Water Return
CWS	Cool Water Supply
DAC	Direct Air Capture
dB	Decibel
DCC	Direct contact cooler
DOC	California Department of Conservation
DOD	United States Department of Defense
DOE	Department of Energy
DOSH	Department of Safety and Health
DPM	Diesel Particulate Matter
DPR 523	Department of Parks and Recreation 523
DTSC	Department of Toxic Substances Control
EFG+	Econamine FG Plus^{SM}

Acronym / Abbreviation	Full Name
EHOF	Elk Hills Oilfield
EHPP	Elk Hills Power Plant
EI	Expansion Index
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Environmental Site Assessment
ºF	Fahrenheit
FAA	Federal Aviation Administration
FCAA	Federal Clean Air Act
FEED	Front-End Engineering Design
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
GHG	Greenhouse gas
GISO	General Industry Safety Orders
gpd	Gallons per day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GT	Gas turbine
HAPs	Hazardous Air Pollutants
HCP	Habitat Conservation Plan
HDD	Horizontal directional drilling
HMBP	Hazardous Material Business Plans
HMP	Multi-Jurisdiction Hazard Mitigation Plan
HP	High pressure
HRSG	Heat recovery steam generators
HSG	Hydrologic Soil Group
HSE	Heath, Safety, and Environment
HWCL	Hazardous Waste Control Law
I-5	Interstate 5
ILI	in-line inspection
IP	Intermediate pressure
IPaC	USFWS Information for Planning and Consultation
ITC	Investment Tax Credits
ITP	Incidental Take Permit
JAEDI	Justice Access Equity Diversity Inclusion Framework
KCFD	Kern County Fire Department
KGA	Kern Groundwater Authority

Acronym / Abbreviation	Full Name
KCGP	Kern County General Plan
KOP	Key observation point
kV	kilovolt
L90	Background noise levels
LACM	Natural History Museum of Los Angeles County
LCFS	Low Carbon Fuel Standard
Ldn	Day-night noise level
Leq	Hourly average noise levels
LEV	Low-Emission Vehicle
LFDP	Linear facility development plan
Lmax	Hourly maximum noise levels
LORS	Laws, Ordinances, Regulations, and Standards
LOS	Level of service
LP	Low pressure
LSAA	Lake and Streambed Alteration Agreement
LUC	Land Use Covenant
M	Magnitude
Ma	Million years ago
MBTA	Migratory Bird Treaty Act
MCC	motor control center
MEA	monoethanolamine
MM	mitigation measure
MMBtu/hr	Million British thermal units per hour
MMTPY	Million metric tons per year
MT	Metric tons
$MTCO_2e$/year	metric tons of carbon dioxide equivalent per year
MTPD	Metric tons per day
MW	Megawatt
MWe	Megawatt-equivalent
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NF_3	nitrogen trifluoride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
ng/g	Nanogram/gram
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NMNH	National Museum of Natural History
NO_x	oxides of nitrogen
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration

Acronym / Abbreviation	Full Name
NOI	Notice of Intent
NONA	Notice of Non-Applicability
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NPPA	California's Native Plant Protection Act
NRHP	National Register of Historic Places
NTSA	National Trails System Act
NWS	National Weather Service
N_2O	nitrous oxide
OEHHA	Office of Environmental Health Hazard Assessment
ONAC	Office of Noise Abatement and Control
OPGW	Optical Ground Wire
OPR	Governor's Office of Planning and Research
OSFM	Office of the State Fire Marshal
OSHA	Occupational Safety and Health Administration
O_3	ozone
PERP	Portable Equipment Registration Program
PFAS	Polyfluoroalkyl substances
PG&E	Pacific Gas & Electric Company
PHMSA	Pipeline and Hazardous Materials Safety Administration
$PM_{2.5}$	Particulate matter 2.5 microns in diameter
PM_{10}	Particulate matter 10 microns in diameter
PMMP	Paleontological Monitoring and Mitigation Plan
ppm	Parts per million
PPE	Personal Protective Equipment
PRC	California Public Resources Code
Project	CalCapture CCS Project
psig	pounds per square inch gauge
PSD	Potential for Significant Deterioration
PTA	Petition to Amend
QRA	Quantitative Risk Assessment
RACT	Reasonably Available Control Technology
RCRA	Resource Conservation and Recovery Act
RFS	Renewable fuel standards
RHA	Rivers and Harbors Act
RMP	Risk Management Plan
RO	Reverse osmosis
ROG	reactive organic gases
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan and Sustainable Communities Strategy
RWQCB	Central Valley Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition

Acronym / Abbreviation	Full Name
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable communities strategy
SDS	Safety Data Sheets
SDWA	Safe Drinking Water Act
SEI	Soils Engineering, Inc.
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMP	Soil Management Plan
SMS	Solvent maintenance system
SOx	oxides of sulfur
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasures
SPPE	Small Power Plant Exemptions
SR	State Route
SRA	State Responsibility Area
SSC	California Species of Special Concern
SSJVIC	Southern San Joaquin Valley Information Center
SSR-EIR	Second Supplemental Revised EIR
ST	Steam turbine
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic air contaminants
TEG	Triethylene glycol
TLL	Temblor legless lizard (*Anniella alexanderae*)
TMDL	Total Maximum Daily Loads
TRL	Technology Readiness Level
TWA	Time-weighted average
UCMP	University of California Museum of Paleontology
UIC	Underground Injection Control
USACE	United States Army Corps of Engineers
USC	United States Code
USDW	Underground Source of Drinking Water
U.S. EPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USDOT	U.S. Department of Transportation
USGS	U.S. Geological Survey
Valley Fever	Coccidioides spores
VIA	Visual Impact Analysis
VMT	Vehicle miles traveled
VOCs	Volatile Organic Compounds
WEAP	Worker Environmental Awareness Program

Acronym / Abbreviation	Full Name
WDR	Waste Discharge Requirements
WKWD	West Kern Water District
WMU	Waste Management Unit
WOTUS	Waters of the United States
WSAC	Wet surface air coolers
wt%	weight percent
XLPE	cross-linked polyethylene
ZEV	Zero emission vehicle

1 Executive Summary

1.1 Project Overview

The Elk Hills Power Plant (EHPP) is a nominal 550-megawatt-equivalent (MWe) combined-cycle, natural gas-fired, cogeneration power generating plant operated by California Resources Corporation (CRC). The plant is powered by two General Electric 7FA technology combustion turbine generators (CTGs). Exhaust gas from the CTGs is directed to two supplementary fired heat recovery steam generators (HRSG) for the generation of high-pressure, intermediate pressure, and low-pressure steam that drives the steam turbine generator. Supplementary firing (duct burner firing) capability is provided in each HRSG to generate additional steam for peak power production. The EHPP facility utilizes Selective Catalytic Reduction systems for the control of oxides of nitrogen (NO_x) emissions and oxidation catalysts for the control of carbon monoxide (CO) and volatile organic compound emissions. A mechanical draft cooling tower provides heat rejection for the steam cycle.

EHPP delivers electricity to an adjacent 230-kilovolt (kV) switchyard, which then is transmitted via a generation tie line to the interconnection point at the Pacific Gas & Electric Company's (PG&E) Midway Substation. A 9.8-mile water supply pipeline extends from the plant site east to the West Kern Water District (WKWD) facilities near Tupman. In addition, a 4.4-mile wastewater disposal pipeline extends from the plant heading south generally paralleling Elk Hills Road, terminating at Underground Injection Control (UIC) Class I injection wells.

The California Energy Commission (CEC) approved the Application for Certification (AFC) for the EHPP in December 2000 and the EHPP began commercial operation on July 24, 2003. On August 16, 2011, the CEC approved a Post-Certification Amendment (PTA) (TN61726) to allow the EHPP to deliver cogenerated thermal energy to support natural gas processing facility in the adjacent Elk Hills Oilfield (EHOF) gas processing facilities. Several additional minor PTAs have been approved over the course of the EHPP's operational life.

Pursuant to Title 20 California Code of Regulations (CCR) Section 1769(a)(1), Carbon TerraVault Holdings, LLC (CTV), a carbon management subsidiary of CRC, is filing this Petition to Amend to allow for the construction and operation of a carbon capture unit to capture and store carbon dioxide (CO_2) emissions from the EHPP, and transport the CO_2 through a proposed approximately 2,200-foot pipeline (collectively known as the CalCapture Carbon Capture and Sequestration (CCS) Project). The CalCapture CCS Project would connect to a pipeline header approved by Kern County in 2024 as part of the Carbon TerraVault I (CTV I) project (State Clearinghouse No. 2022030180) for underground injection via the previously approved CTV I project U.S. Environmental Protection Agency (U.S. EPA) UIC Class VI injection wells approved by Kern County (State Clearinghouse No. 2022030180), and the EPA in 2024. Because the CO_2 captured for the CalCapture project will be injected into the CTV I permitted storage complex using existing approved injection wells, these facilities are not re-evaluated in this document but the relevant permits and approvals are summarized in Section 1.2.1.



The injection and storage aspects of the previously approved CTV I project are not a part of the CalCapture CCS Project addressed within this application. Where appropriate, CRC proposes to utilize mitigation measures (MMs) developed for the CTV I project as the basis of the proposed amended conditions of certification for the proposed CalCapture Project.

The proposed amendment would comply with all laws, ordinances, regulations, and standards (LORS) and environmental impacts identified in this Petition to Amend can be mitigated to less than significant levels. The proposed revisions to the facility's Conditions of Certification (COC) will not result in increased permitted maximum hourly, daily, quarterly, or annual emissions and will have no significant impacts on property owners, the public, or other parties.

1.2 Petition Information Requirements

This Petition contains the information required under the CEC's Siting Regulations for post-certification project modifications as required by *Title 20, CCR Division 2, Chapter 5, § 1769, Post Certification Petition for Changes in Project Design, Operation or Performance and Amendments to the Commission Decision, (a) Change in Project Design, Operation, or Performance Requirements.* Refer to the responses provided below, which are supported by the following sections of this Petition.

(A) A complete description of the proposed change, including new language for any conditions of certification that will be affected;

Refer to Sections 1 and 2 for an introduction of the proposed Project and detailed Project Description. Refer to Section 5 for a discussion of the Proposed Changes to the facility's current COC.

(B) A discussion of the necessity for the proposed change and an explanation of why the change should be permitted;

The changes are required to allow for the construction and operation of the CalCapture CCS Project, which at full operation is anticipated to capture and sequester approximately 4,400 metric tons of CO_2 per day (MTPD)(1.6 million metric tons of CO_2 per year [MMTPY]). The CalCapture CCS Project plays a critical role in advancing CTV's efforts to optimize facility operations at the EHPP and should be approved because it aligns with and supports California's goal of carbon neutrality by 2045 (Governor's Executive Order B-55-18) by reducing industrial CO_2 emissions from the EHPP.

(C) A description of any new information or change in circumstances that necessitated the change;

The proposed Project would contribute to the State of California's goal to achieve carbon neutrality by 2045 by integrating carbon capture into existing operations in Kern County. Additionally, the proposed Project would assist with the goals set out by Senate Bill (SB) 100 (De Leon, 2018), the 100 Percent Clean Energy Act of 2018, which requires decarbonization of the state's electricity supply by 2045.

(D) An analysis of the effects that the proposed change to the project may have on the environment and proposed measures to mitigate any significant environmental effects;

Please refer to Section 3 – Environmental Analysis for an analysis of the impacts associated with the proposed Project. Under each topic are presented discussions of the environmental setting, significance criteria, impact assessment, cumulative impact analysis, proposed MMs, and residual impacts. The environmental impacts identified in this Petition to Amend can be mitigated to less than significant levels.

(E) An analysis of how the proposed change would affect the project's compliance with applicable laws, ordinances, regulations, and standards;

An analysis of how the proposed change would affect the project's compliance with applicable LORS is presented by environmental topic within Chapter 3. The proposed amendment would comply with all laws, ordinances, regulations, and standards LORS.

(F) A discussion of how the proposed change would affect the public;

The proposed Project would benefit the public through the reduction of anthropogenic CO_2 emissions that the State of California has determined are linked to climate change and associated environmental degradation. The proposed amendment would comply with all laws, ordinances, regulations, and standards LORS and environmental impacts identified in this Petition to Amend can be mitigated to less than significant levels.

(G) A list of current assessor's parcel numbers and owners' names and addresses for all parcels within 500 feet of any affected project linears and 1000 feet of the project site;

Refer to Appendix A for a list of owner's names and addresses for the Project site parcels and parcels within 1000 feet. No new linear facilities are proposed as part of the CalCapture CCS Project.

(H) A discussion of the potential effect of the proposed change on nearby property owners, residents, and the public; and

Refer to Sections 3.1 (Air Quality/Greenhouse Gas Emissions), 3.5 (Geologic Hazards and Resources), 3.6 (Hazards and Hazardous Materials Handling), 3.7 (Land Use), 3.8 (Noise), 3.10 (Public Health), 3.11 (Socioeconomics/Environmental Justice), 3.13 (Traffic and Transportation), 3.14 (Visual Resources), 3.15 (Waste Management), 3.16 (Water Resources), and 3.17 (Worker Health and Safety) for detailed information and specific discussions related to potential impacts to the public. The environmental impacts associated with the proposed Project can be mitigated to less than significant levels.

(I) A discussion of any exemptions from the California Environmental Quality Act, commencing with section 21000 of the Public Resources Code, that the project owner believes may apply to approval of the proposed change.

No exemptions from the California Environmental Quality Act (CEQA) apply.

Refer to the following chapters for a complete description of the proposed Project and accompanying environmental assessment.

2 Introduction

Carbon TerraVault Holdings, LLC (CTV), a carbon management subsidiary of California Resources Corporation (CRC), proposes to construct and operate the CalCapture Carbon Capture and Sequestration (CCS) Project (Project) located within the EHOF, located in Kern County California. The proposed CCS Project would capture CO_2 from CRC's existing EHPP and transport the CO_2 through a proposed approximately 2,200-foot pipeline to connect to the previously approved and constructed CTV I pipeline header, located at the 35R manifold pad south of Skyline Road, for injection at the approved CTV I UIC Class VI injection wells. The proposed CCS Project would be located entirely within the CRC-controlled areas of the EHOF (Figure 1 – Regional Vicinity Map and Figure 2 – Site Plan).

It is anticipated that the proposed Project at full operation would capture and sequester approximately 4,400 metric tons of CO_2 per day (MTPD) (1.6 million metric tons of CO_2 per year [MMTPY]) and contribute to California's goal of carbon neutrality by 2045 (Governor's Executive Order [EO] B-55-18) by reducing industrial CO_2 emissions from the EHPP.

2.1 Project Objectives

CRC's Project Objectives are as follows:

- Construct and operate facilities and infrastructure to capture, transport, inject, and permanently sequester 95 percent of CO_2 produced from the EHPP within the EHOF in a safe, secure, and economically feasible manner;
- Reduce the greenhouse emissions intensity of CRC's existing EHPP facility by capturing CO_2 from an existing stationary source;
- Generate environmental, social, and economic benefits for Kern County and the State of California by implementing low carbon technologies and developing CCS infrastructure in the region;
- Minimize new disturbance by siting facilities within existing developed areas; and
- Contribute to California's goal to achieve carbon neutrality by 2045 by integrating carbon capture into existing operations in Kern County.





Project Area
Township and Range
Section

0 2 4 Miles
(At original document size of 8.5x11)
1:253,440

N

Stantec

Project Location	Prepared by MMD on 2025-06-26
	TR by CT 2025-06-26
Kern County, CA	IR by ES on 2025-06-26
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

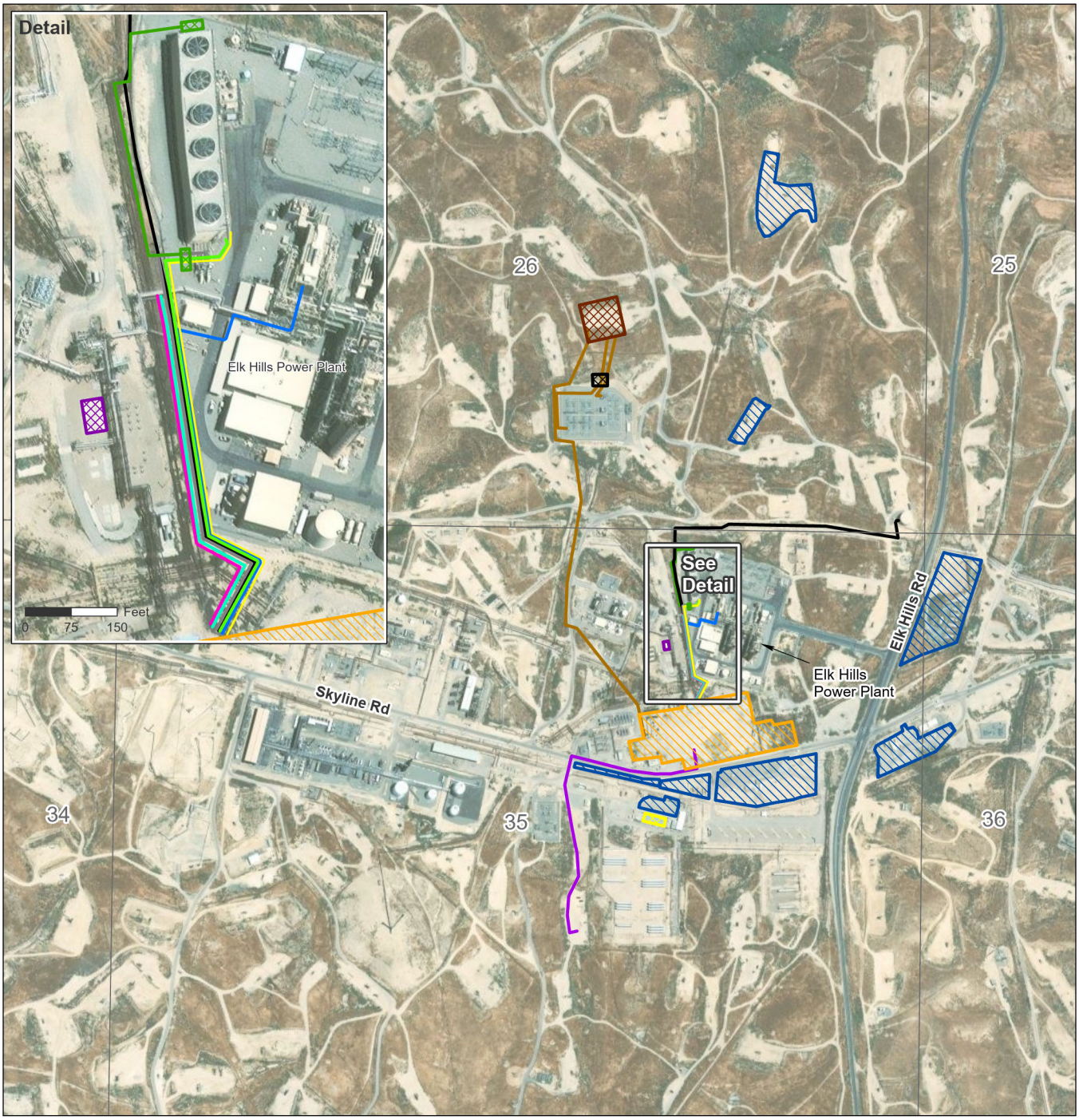
Figure No.
1

Title
Regional Vicinity

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, USGS, 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

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Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, USGS, 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

- Capture Facility
- Temporary Parking, Office, and Staging Areas
- Proposed Sub Location (250 x 250)
- Substation Extension Proposal
- New BPSTG & Transformer
- Warehouse
- Cooling Water Sump

Township, Range, Section*

- Section

*Entire map extent within Township 30S Range 23E.

- Electrical Lines
- CO2 Line
- CWR Line
- CWS Line
- Condensate Line
- HP Steam Line
- LP Steam Line
- Raw Water Line
- RO Permeate Stream Pipeline
- CWS Line Alternative

0 500 1,000 Feet
(At original document size of 8.5x11)
1:12,000

N

Stantec

Project Location	Prepared by MMD on 2025-07-31
	TR by CT 2025-07-31
Kern County, CA	IR by ES on 2025-07-31
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
2a

Title
Site Plan

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Temporary Parking, Office, and Staging Areas

Township, Range, Section*

Section

*Entire map extent within Township 31S Range 24E.

0 800 1,600 Feet

(At original document size of 8.5x11)
1:19,200

N

Stantec

Project Location	Prepared by MMD on 2025-07-31
	TR by CT 2025-07-31
Kern County, CA	IR by ES on 2025-07-31
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
2b

Title
Site Plan

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, USGS, 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

V:\1858\Active\185806775_CRC_CalCapture\03_data\gis_cad\gis\proj\PD\PD_Figures_20250731.aprx Revised: 2025-07-31 By: mdeseo

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2.2 Project Location

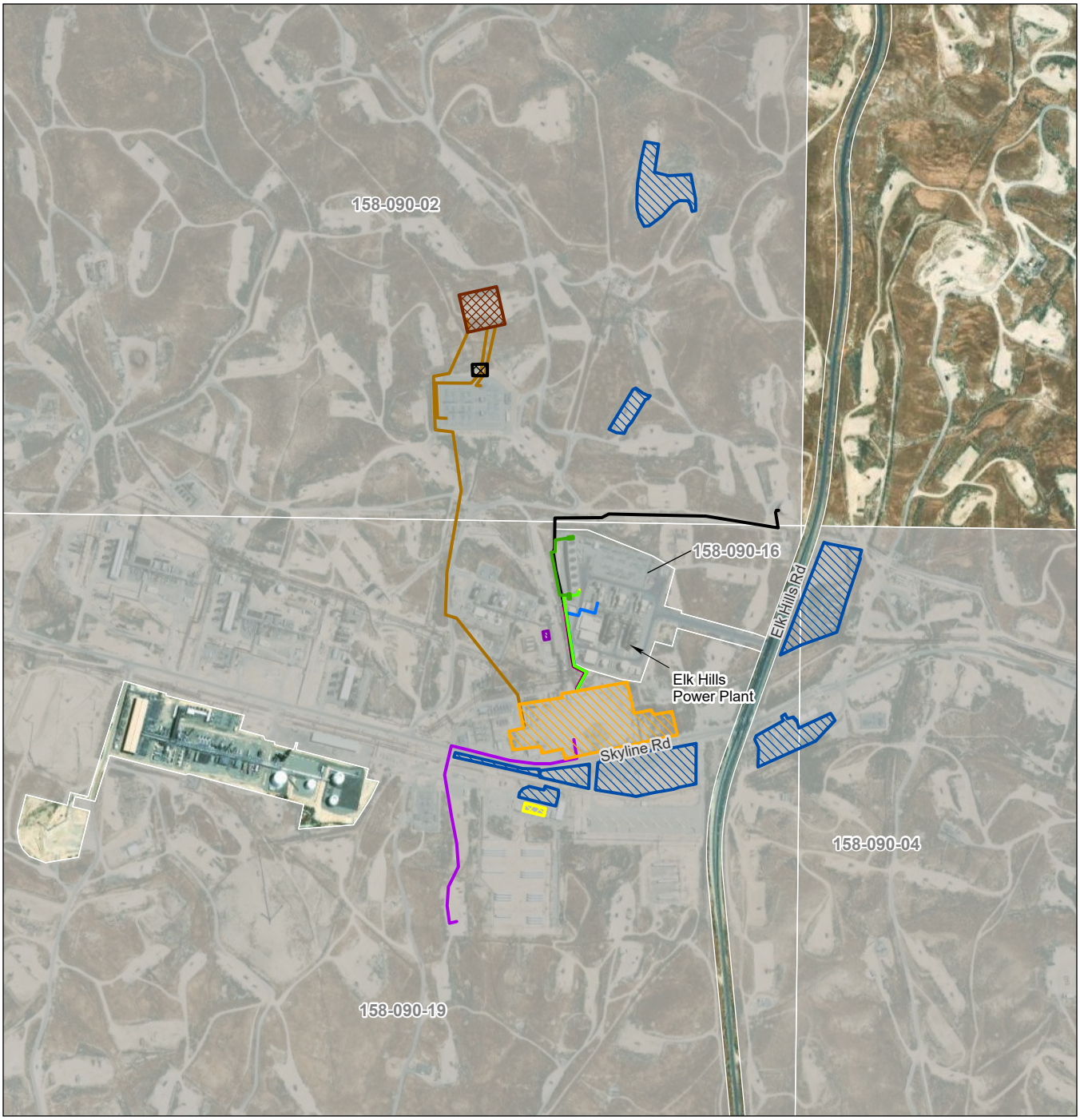
The proposed Project is located within EHOF, entirely within the unincorporated area of southwestern Kern County, approximately 6.8 miles west of the unincorporated community of Tupman, 8.8 miles east of the unincorporated community McKittrick, and 9.4 miles north of the City of Taft. The entirety of the EHOF covers an area of approximately 73 square miles (46,960 acres). CRC is the primary oilfield operator and the only CCS operator within the EHOF. The Project site is comprised of portions of six CRC-owned parcels (Table 1 – Project Parcel Data and Figure 3 – Project Parcel Data), the totality of the parcels comprise 3,208.25 acres. However, as explained below, the vast majority of these parcels would not be modified by the proposed Project. The Project site is contained within portions of the following Sections of EHOF: Sections 26, 34, and 35 of Township 30 South Range 23 East, and Sections 10 and 11 of Township 31 South Range 24 East, Mount Diablo Base and Meridian, County of Kern, State of California.

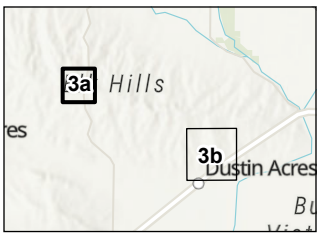
Table 1 Project Parcel Data

APN	Current Zoning	Current General Plan Designation	Section/ Township/ Range	Acreage
158-090-19	A – Exclusive Agriculture	Mineral and Petroleum	Section 35/ Township 30S/ Range 23E	590.61
158-090-16	A – Exclusive Agriculture	Mineral and Petroleum	Section 35/ Township 30S/ Range 23E	14.78
158-090-02	A – Exclusive Agriculture	Mineral and Petroleum	Section 26/ Township 30S/ Range 23E	640
158-090-04	A – Exclusive Agriculture	Mineral and Petroleum	Section 34/ Township 30S/ Range 23E	682.86
298-070-05	A – Exclusive Agriculture	Mineral and Petroleum	Section 11/ Township 31S/ Range 24E	640
298-070-06	A – Exclusive Agriculture	Mineral and Petroleum	Section 10/ Township 31S/ Range 24E	640
			TOTAL	3,208.25

Notes:
APN – Assessor's Parcel Number
* This is the total acreage associated with the parcels of where the Project would occur and not the Project footprint acreage.

The Carbon Capture Unit (CCU) would be located on approximately 7.64 acres within the developed portion of EHOF. The surface extent of the CTV I CO_2 storage reservoir, also within the EHOF, totals 9,130.16 acres and is predominately developed with oil and gas production and accessory facilities and infrastructure. The Project site is not designated by the California Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Additionally, no parcels subject to Williamson Act Contracts are located within the Project Site. No portions of the Project are located within Federal Emergency Management Agency (FEMA)-designated flood hazard areas.





Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, Regrid Parcels, 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

- Project Parcels
- Capture Facility
- Temporary Parking, Office, and Staging Areas
- Proposed Sub Location (250 x 250)
- Substation Extension Proposal
- New BPSTG & Transformer
- Warehouse
- Cooling Water Sump
- Electrical Lines
- CO2 Line
- CWR Line
- CWS Line
- Condensate Line
- HP Steam Line
- LP Steam Line
- Raw Water Line
- RO Permeate Stream Pipeline
- CWS Line Alternative

0 500 1,000 Feet
(At original document size of 8.5x11)
1:12,000

N

Stantec

Project Location
Kern County, CA

Prepared by MMD on 9/18/2025
TR by CT 9/18/2025
IR by ES on 9/18/2025

Client/Project
185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
3a

Title
Project Parcel Data

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Temporary Parking, Office, and Staging Areas

0 800 1,600 Feet

(At original document size of 8.5x11)
1:19,200

N

Stantec

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, Regrid Parcels, 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

Project Location	Prepared by MMD on 9/18/2025
	TR by CT 9/18/2025
Kern County, CA	IR by ES on 9/18/2025
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
3b

Title
Project Parcel Data

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The Project site is not located within a Kern County-designated mineral recovery zone (excluding oil and gas); however, EHOF is designated by the Kern County General Plan for Mineral and Petroleum exploration and extraction. The Project site is currently zoned for agricultural uses (A - Exclusive Agriculture). Oil and gas operations are compatible uses within the A Zone. Refer to Figure 4 – Existing Zoning and Land Use Designations. Refer to Appendix A for representative site photographs.

2.2.1 Environmental Setting

EHOF is located southwest of the City of Bakersfield and north of the City of Taft. EHOF also lies within the San Joaquin Valley Air Basin (SJVAB). The bowl-like air basin is defined by the Sierra Nevada and foothill ranges to the east and west, respectively, the San Joaquin County line to the north, and the Tehachapi and Sierra Nevada mountains to the south.

2.2.2 Surrounding Land Uses

Existing land use in the vicinity of the Project site is exclusively oil and gas exploration and production (Figure 4 – Existing Zoning and Land Use Designations) with initial CCS operations under the previously approved CTV I project starting in 2025. The sensitive receptors closest to the Project site include the unincorporated residential communities of Tupman to the east, Dustin Acres and Valley Acres to the southeast and McKittrick and Derby Acres to the west. The nearest school is Elk Hills Elementary School located approximately 6.7 miles east within the community of Tupman. The nearest public recreational facility is Valley Acres Park, located approximately 6.1 miles southeast within the community of Valley Acres. The nearest public airports are the Elk Hills-Buttonwillow Airport located 5 miles north of the Project site, and the Taft-Kern County Airport located approximately 9.6 miles south of the Project site within the City of Taft. Refer to Figure 5 – Sensitive Receptors and Public Services.

2.2.3 Public Services

The Project would be served by the Kern County Sheriff's Department for law enforcement and public safety services, with the closest station being the Kern County Sheriff's Station, located 8.5 miles south of the Project site at 315 N. Lincoln Street in the City of Taft. Fire protection and emergency medical services would be provided by the Kern County Fire Department (KCFD), with the closest station being KCFD Station 23, located approximately 8.0 miles southwest of the Project site at 100 Broadway in the community of Fellows.

2.2.4 Existing Oilfield Facilities and Operations

The proposed Project is located entirely within EHOF, which has been used for more than 100 years for oil and gas production. The federal government established the EHOF in 1912 for national defense purposes as part of the Naval Petroleum Reserve. Elk Hills was designated as Naval Petroleum Reserve-1 and was largely maintained in reserve shut-in status until 1976. As a result of oil shortages in the early 1970's, Congress passed the Naval Petroleum Reserve Production Act in 1976, directing the U.S. Department of





- Capture Facility
- Temporary Parking, Office, and Staging Areas
- Proposed Sub Location (250 x 250)
- Substation Extension Proposal
- New BPSTG & Transformer
- Warehouse
- Cooling Water Sump
- Electrical Lines
- CO2 Line
- CWR Line
- CWS Line
- Condensate Line
- HP Steam Line
- LP Steam Line
- Raw Water Line
- RO Permeate Stream Pipeline
- CWS Line Alternative

Kern County Zoning
- A-1: Limited Agriculture
- A: Exclusive Agriculture
- NR(40): Natural Resource 40 Acres

Kern County General Plan Land Use
- Extensive Agriculture (Min. 20 Acre Parcel Size)
- Intensive Agriculture (Min. 20 Acre Parcel Size)
- Mineral and Petroleum (Min. 5 Acre Parcel Size)
- Minimum 5 Gross Acres/Unit
- Specific Plan Required
- State or Federal Land

0 2,000 4,000 Feet
(At original document size of 11x17)
1:36,000

N

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2025, Kern County General Plan, 2024.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org
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Stantec

Project Location
Kern County, CA

Prepared by MMD on 9/18/2025
TR by CT 9/18/2025
IR by ES on 9/18/2025

Client/Project
185806775

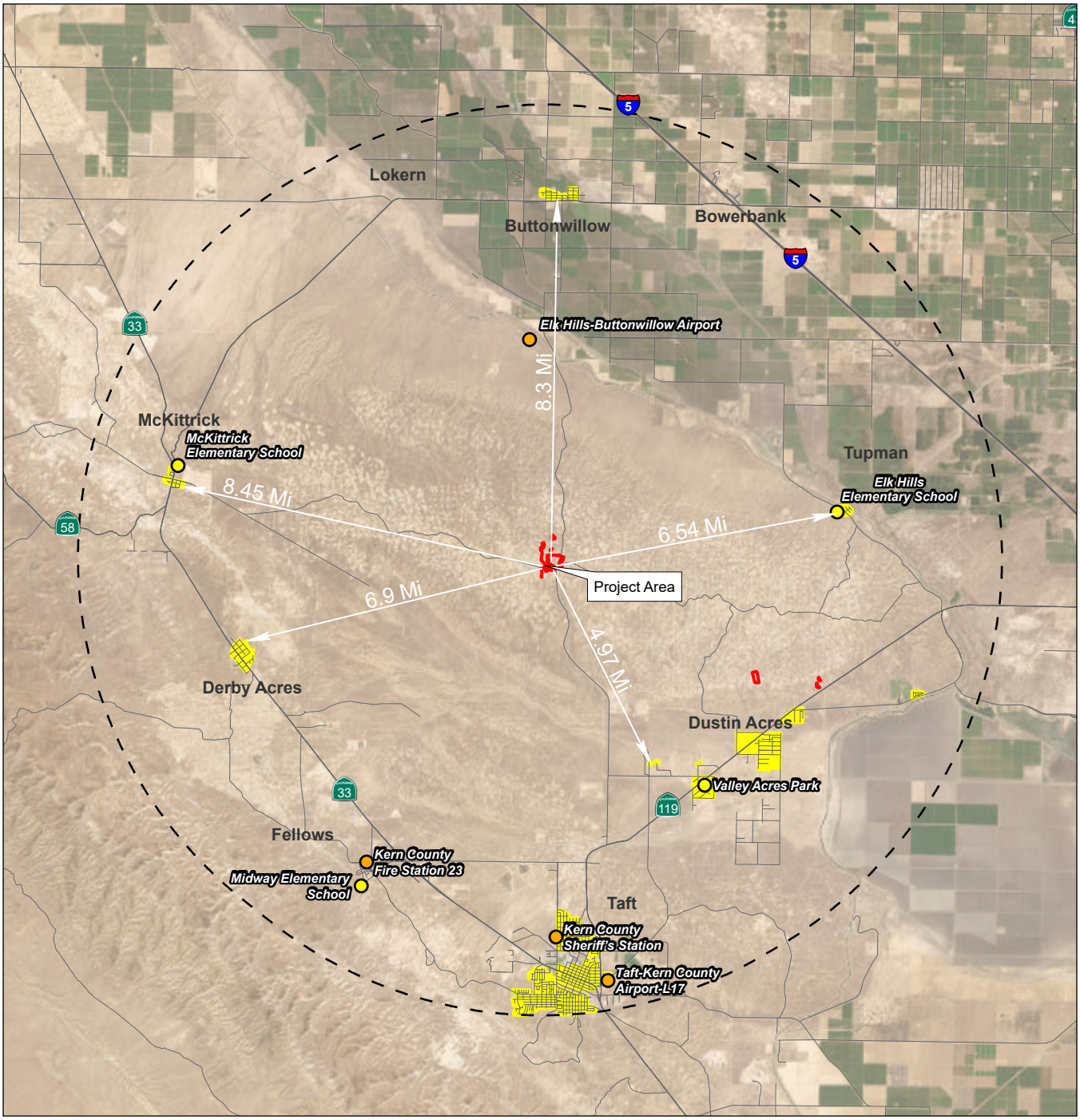
California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
4

Title
Existing Zoning and Land Use Designations

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- Project Area
- 10-mile Buffer of Project Area
- Public Services
- Sensitive Receptors
- Sensitive Receptors (Residential Areas)

0 1.75 3.5 Miles

(At original document size of 8.5x11)
1:221,760

N

Stantec

Project Location	Prepared by MMD on 9/18/2025
	TR by CT 9/18/2025
Kern County, CA	IR by ES on 9/18/2025
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
5

Title
Sensitive Receptors and Public Services

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

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Energy to operate Elk Hills at a maximum efficient rate, which increased production within the EHOF. Ongoing oil and gas operations within the EHOF are managed by CRC.

2.2.5 Elk Hills Power Plant

The EHPP is a nominal 550-MW natural gas-fired, combined-cycle, cogeneration power plant. The project was certified by the CEC on December 6, 2000, and began commercial operation on July 24, 2003 (CEC, 2025).

2.2.6 CTV I Background Information

On December 31, 2024, the U.S. EPA issued four UIC Class VI well permits to CTV, a carbon management subsidiary of CRC.

The specific U.S. EPA permits issued for the four wells are as follows:

- R9UIC-CA6-FY22 1.1 for well 373-35R
- R9UIC-CA6-FY22 1.2 for well 345C-36R
- R9UIC-CA6-FY22 1.3 for well 353XC-35R
- R9UIC-CA6-FY22 1.4 for well 363C-27R

These four wells would be utilized to inject the CO_2 captured from the proposed Project into the Monterey Formation 26R storage reservoir located approximately 6,000 feet below the ground surface (see Figure 6). The CTV I project area is located within the EHOF, which is a suitable area for long-term CO_2 storage and sequestration. The CTV I project was designed to implement sustainable CCS in support of California's initiative to combat climate change by reducing CO_2 levels in the atmosphere.

In addition to the Class VI Permit, CTV obtained a land use permit from the Kern County Planning and Natural Resources Department (Kern County) in 2024. Specifically, the CTV I project was approved by the Kern County Board of Supervisors on October 21, 2024, based on a final Environmental Impact Report (EIR, State Clearinghouse #2022030180) prepared by Kern County and certified by it on the same date. A Notice of Determination was filed with the Kern County Clerk on October 22, 2024. The CTV I project is subject to the terms, conditions and restrictions set forth in the Conditional Use Permits (CUPs) issued by Kern County and identified as CUP No. 13, Map 118; CUP No. 14, Map 118; CUP No. 5, Map 119; CUP No. 3, Map 120; CUP No. 2, Map 138; and CUP No. 6, Map 119 (collectively, "the CUP"). Implementation of the CUP authorizes the construction and operation of underground CO_2 facility pipelines to support the CTV I CCS facility and related infrastructure (e.g., injection/monitoring wells, CO_2 manifold piping and metering facilities) within the 9,104-acre project site, located within the EHOF.

Four monitoring wells permitted by the California Geologic Energy Management Division (CalGEM), as part of the CUP issued by Kern County for the CTV I project would be used for CO_2 monitoring. In addition, six CTV I permitted wells would be used to monitor for seismic activity. The seismic monitoring wells will be used to detect seismic events at or above magnitude (M) 1.0 in real time as required by the California Air

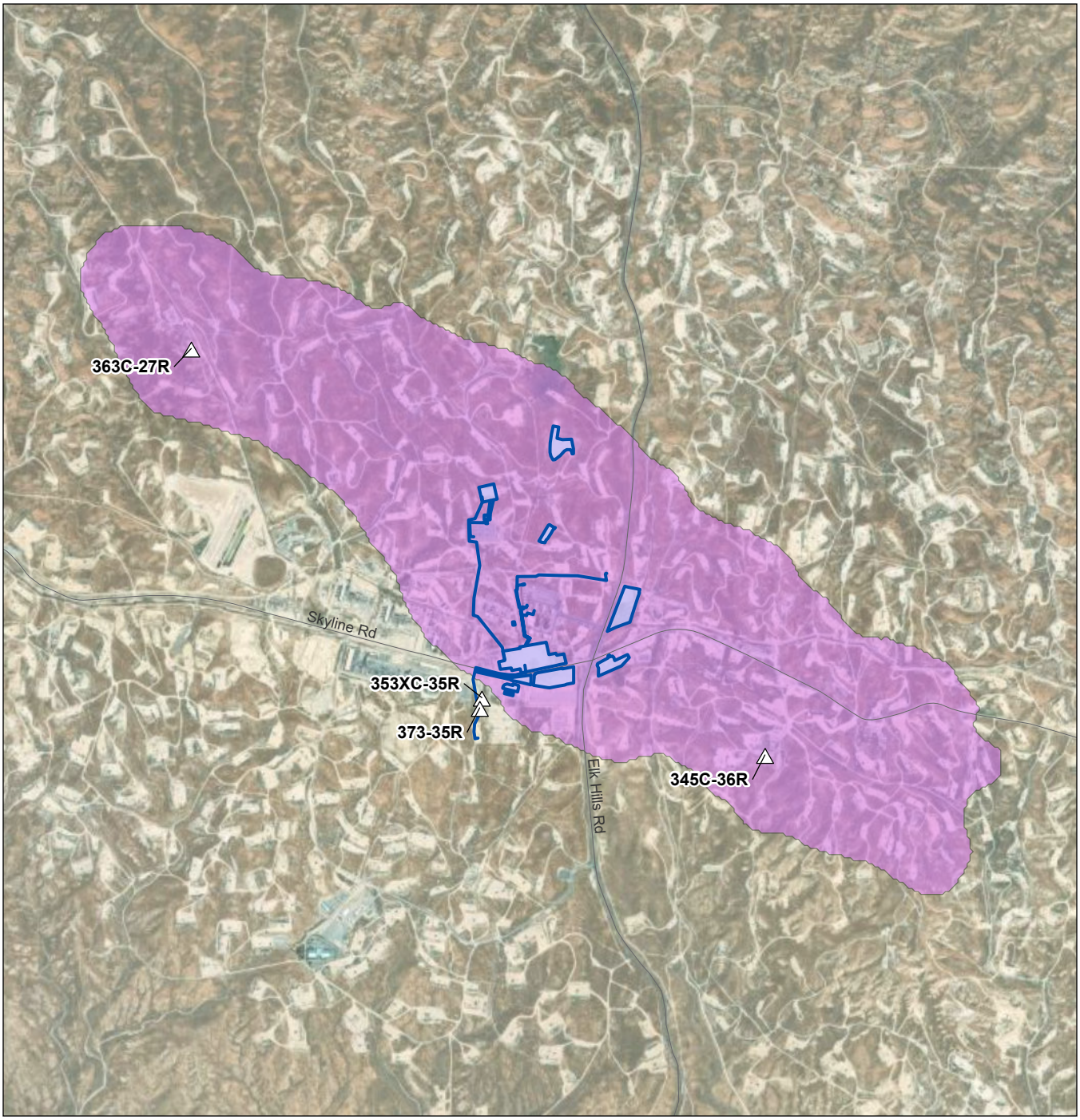


Resources Board (CARB) CCS Protocol under the Low Carbon Fuel Standard (LCFS) (C.4.3.2.3). Additionally, the California Integrated Seismic Network will be monitored continuously for indication of a 2.7 M or greater earthquake or greater occurring within a 1-mile radius of injection operations from commencement of injection activity to its completion.

Monitoring activities would extend beyond the injection phase of the Project pursuant to Code of Federal Regulation (CFR) Title 40 Section 146.93 until site closure is granted. Monitoring requirements during post-injection are similar to those during injection, with activities such as sampling occurring quarterly and monitoring well integrity testing at frequency per U.S. EPA requirement.

As noted above, the facilities approved as part of the CTV I project, including but not limited to the manifold, pad, injection wells, monitoring wells and related transmission lines, pipelines and other related facilities that have already been approved by applicable agencies with jurisdiction over those facilities, including the U.S. EPA, CalGEM and Kern County, are not included as part of the proposed Project. Accordingly, such facilities are not analyzed in this application.







CalCapture Project Area - No Change

CTV I CO_2 Storage Reservoir

Class VI Injection Wells

0 1,250 2,500 Feet

(At original document size of 8.5x11)
1:30,000

N

Stantec

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2025.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

Project Location	Prepared by MMD on 10/6/2025
	TR by CT 10/6/2025
Kern County, CA	IR by ES on 10/6/2025
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
6

Title
Carbon TerraVault I CO_2 Storage Reservoir

U:\185811858067750\03_data\gis_cad\gis\pro\PD\PD_Figures_20250731.aprx Revised: 2025-10-06 By: mdeseo

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

2.3 Permitting Requirements

This section discusses the regulatory agencies that would or may have jurisdiction over the Project and the agency permits that may be required by the Project. Presented below is a description of each regulatory agency's anticipated or potential role in review and permitting of the Project (Table 2 – Potentially Required Permits and Approvals).

Table 2 Potentially Required Permits and Approvals

Agency	Permit/Approval	Regulated Activity	Authority
Federal Agencies			
U.S. Environmental Protection Agency, Region IX	UIC Class VI Permit Modification	Changes to CO_2 source for CTV I injection wells	Safe Drinking Water Act
	New or modification to existing Risk Management Plan	Changes type/storage of regulated hazardous substance	Clean Air Act Section 112(r)
	New or modification to existing Spill Prevention Control and Countermeasure Plan	Changes to type/storage of oil products	Oil Pollution Act
	New or modification to existing Section 316(a)/316(b) permit	Changes in colling water intake and thermal discharge changes or variances	Clean Water Act
Federal Aviation Administration (FAA)	Notification of Proposed Construction or Alteration	Construction of structures within proximity to airports or taller than 200-feet	Title 14 CFR Part 77
Department of Defense (DOD)	Military Aviation and Installation Assurance Siting Clearinghouse Review	Construction of structures that penetrate military airspace	Title 10 USC Section 183a
U.S. Fish and Wildlife Service (USFWS)	Federal Endangered Species Act, Section 7 consultation, or Section 10 Incidental Take Permit (if required)	Potential impacts to federally listed species and species proposed for listing.	16 USC 1513 50 CFR Section 17
State of California Agencies			
California Energy Commission (CEC)	Post Certification Amendment	Modification of permitted power plant	PRC 25532 20 CCR Section 1769
California Air Resources Control Board (CARB)	Low Carbon Fuel Standard (LCFS) CCS Protocol –Project Certification	Qualification for LCFS Carbon Credits	17 CCR Sections 95480-95503
	Portable engine permits	Use of portable and stationary engines	Clean Air Act

Agency	Permit/Approval	Regulated Activity	Authority
San Joaquin Valley Air Pollution Control District (SJVAPCD)	Authority to Construct/Permit to Operate/Title V	Air emissions from stationary equipment	Clean Air Act
	Potential for Significant Deterioration (PSD) Program (if required)		
	Dust Control Plan	Ground disturbance from construction activities	Rule 8021
		CEQA Responsible Agency	CEQA
California Department of Fish and Wildlife (CDFW)	Consultation under the California Endangered Species Act/Section 2081 Incidental Take Permit (if required)	Potential adverse effects to State listed threatened, endangered, or candidate species.	California Fish and Game Code
		CEQA Responsible Agency	CEQA
Regional Water Quality Control Board, Central Valley Region (RWQCB)	Storm Water Permit	Stormwater discharges that may affect surface and ground water quality.	Clean Water Act
	Waste Discharge Requirements Permit (if required)	Discharges into Waters of the State	Porter-Cologne Water Quality Act
		CEQA Responsible Agency	CEQA
California Department of Transportation (Caltrans)	Transport of Oversized Loads (if required)	Equipment crossing of state highway or oversized loads	Caltrans Project Development Procedures Manual/State Highways Code
California Toxic Substances Control	New or Modified Industrial and Hazardous Waste Permit	Hazardous waste generation	Title 22 CCR
Local Agencies			
Kern County Fire Department	Approval of Fire Safety Plan	Storage/use of flammable materials	Fire Code
Kern County Environmental Health Services Department	Hazardous Materials Business Plan	Use/storage of hazardous materials	California Health and Safety Code
Kern County Building Department	Construction Permits	Facility and structure construction	Kern County Code

Definitions:
USC = United States Code
PRC = Public Resources Code
CFR = Code of Federal Regulations
CCR = California Code of Regulations
CEQA = California Environmental Quality Act
CHSC = California Health and Safety Code

2.3.1 Federal Agencies

U.S. Environmental Protection Agency. The U.S. EPA is the federal agency responsible for implementing the UIC Class VI well program in the State of California. The Project would require a modification of the Class VI UIC permits for the CTV I wells to allow injection of the CO_2 captured at the CalCapture Project.

Adding a new CO_2 source to an existing Class VI Permit requires written approval from the EPA Director. The addition of a new source will be evaluated by the EPA to determine if the additional source is approvable, and if so, whether its addition requires a major or a minor permit modification. The following information is required to be submitted to the EPA:

- The analytical parameters of the proposed additional CO_2 stream from the proposed source as described in the Testing and Monitoring Plan of the CTV I Class VI Permit;
- A description of the industry in which the proposed additional CO_2 will be produced from;
- The name and address of the proposed additional CO_2 source;
- An assessment of the compatibility of the CO_2 stream with subsurface fluids and minerals; and
- An assurance that the construction materials of the injection wells and other wells that may encounter the injected plume are still compatible (e.g., will not corrode over time dure to the chemical interactions).
- Further, the public shall be notified within 30 days when a proposed additional CO_2 source is submitted to the EPA for review, and the public shall be notified 30 days before the injection of an EPA-approved additional CO_2 stream is injected.

The U.S. EPA has indicated that the Class VI permit revision will be a “Minor Modification,” as required by CRC’s UIC Class VI permit for CTV I (UIC Permit No. R9UIC-CA6-FY22-1.1).

The following U.S. EPA required plans would also need to be updated:

- Risk Management Plan for the storage and use of regulated hazardous substances,
- Spill Prevention Control and Countermeasure Plan for changes or type of oil storage on-site, and
- Clean Water Act (CWA) Section 316(a)/316(b) permit for changes to cooling water disposal methods.

Federal Aviation Administration. The Federal Aviation Administration (FAA) regulates construction of structures that are located within a designated proximity to airports or would be greater than 200 feet tall. CRC would be required to prepare and submit a Part 77 notice, commonly known as a Form 7460-1 – Notice of Proposed Construction or Alteration, to the FAA. The Part 77 submittal officially notifies the FAA of planned construction and operational activities and requests a determination as to whether the proposed activities would affect avigation near the airport. The proposed absorber column may be required to be



illuminated for aircraft safety, in accordance with the FAA's Obstruction Marking and Lighting standards (FAA, 2020).

Heights of the proposed structures include the following:

- Direct Contact Cooler (DCC) at 93.0 feet in height,
- Absorber at 271.0 feet in height,
- Stripper at 131.0 feet in height, and
- CO_2 Vent Stack at 100.0 feet in height.

U.S. Department of Defense. The construction of the proposed Project would include structures greater than 200 feet in height and would penetrate military operational airspace. As required by the DOD and Kern County Land Use Ordinance Section 19.08.160, CRC will consult with the DOD utilizing the DOD's Military Aviation and Installation Assurance Siting Clearinghouse submittal process to determine whether the proposed structures would interfere with military airspace operations.

U.S. Fish and Wildlife Service. Federal agency actions that may affect a listed plant or wildlife species are required to consult with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act (FESA) to ensure the action "is not likely to jeopardize the continued existence" of the species or "result in the destruction or adverse modification" of critical habitat. The Section 7 consultation process may result in the adoption of an Incidental Take Statement. Actions that do not involve a federal agency action are subject to Section 10 of FESA, which may require a federal Incidental Take Permit (ITP) and Habitat Conservation Plan (HCP).

2.3.2 State Agencies

California Energy Commission. The CEC has the exclusive authority to certify all thermal power plants 50-MW and larger and related facilities proposed for construction in California. The AFC process is a certified regulatory program under the CEQA. As a certified regulatory program, the CEC does not prepare EIRs in an AFC proceeding, but instead prepares environmental assessment documents that are functionally equivalent to EIRs. A certificate issued by the CEC is in lieu of any permit, certificate, or similar document otherwise required by any state, local or regional agency, or federal agency to the extent permitted by federal law, and supersedes any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law. The CEC also requires reviews and approvals of modifications to facilities under their jurisdiction and process Post-Certification Amendment applications to review and approve facility modifications (CEC, 2025).

California Air Resources Board. CARB is the state agency responsible for implementing greenhouse gas (GHG) emissions reduction regulations pursuant to the state's Global Warming Solutions Act of 2006 (also known as Assembly Bill (AB) 32. Under the AB 32 Scoping Plan, CARB identified the LCFS as one of the nine discrete early action measures to reduce California's GHG emissions. LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon



and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits. Low carbon fuels below the CARB-established benchmark can generate credits which can be traded on the California carbon credit market. In 2018, CARB issued the LCFS CCS Protocol, which established a process for application and issued two types of CCS project approvals, known as the Sequestration Site Certification and CCS Project Certification. Approved CCS projects can claim carbon credits under the LCFS program if they follow the verification and accounting requirements of the CCS protocol. Portable engine permits for portable engines used at the Project site are also issued by CARB.

San Joaquin Valley Air Pollution Control District. San Joaquin Valley Air Pollution Control District (SJVAPCD) would review the Project for compliance with applicable federal, state, and local air quality control criteria. Detailed documentation of the potential Project emissions is required to process Project permits. Such emissions calculations need to be prepared based on established SJVAPCD Rules and other criteria and include detailed process descriptions and equipment specifications for all phases of the Project. The Project would be required to obtain an Authority to Construct and a Permit to Operate from the SJVAPCD for operation of certain stationary equipment that emits or controls emissions of regulated Criteria Pollutants, such as changes to the EHPP and other stationary equipment with the potential to emit criteria pollutants. Additionally, the SJVAPCD would require preparation and implementation of a Dust Control Plan to control fugitive dust during project construction activities.

California Department of Fish and Wildlife. The California Department of Fish and Wildlife (CDFW) administers a number of regulatory programs designed to protect fish and wildlife resources. Principle among these is the California Endangered Species Act (CESA) of 1984 (Fish and Game Code Section 2050), which regulates the listing and take of state-listed threatened and endangered species. Under Section 2081 of the CESA the CDFW may authorize the take of a State-endangered, State-threatened, or candidate species through an ITP. However, plant or animal species that are “fully protected” under state law cannot be taken and no ITPs may be issued for them.

Central Valley Regional Water Quality Control Board. The Central Valley Regional Water Quality Control Board’s (RWQCB) primary responsibility is to protect the quality of the surface and groundwater within the region for beneficial uses. The duty is carried out by formulating and adopting water quality plans for specific ground or surface water bodies, by prescribing and enforcing requirements on domestic and industrial waste discharges, and by requiring cleanup of water contamination and pollution. Discharges of wastewater associated with the Project would require a Waste Discharge Requirements (WDR) permit issued by the RWQCB.

The Project would be required to comply with the State Water Resource Control Board’s General Permit for Storm Water Discharges Associated with Construction and Land Disturbing Activities (Order No. 2022-0057-DWQ) for construction-related storm water discharges from the Project site.

California Department of Transportation. The California Department of Transportation (Caltrans) is the State agency responsible for managing more than 50,000 miles of California's highway and freeway lanes. Pursuant to CEQA statutes and guidelines, Caltrans is required to review federal, state, and local planning and proposed development activity that has the potential to affect State transportation facilities or resources under Caltrans’ jurisdiction. Caltrans’ role is to recommend conditions of project approval that mitigate those



impacts or reduce them to a level of less than significance. This typically involves the review of development proposals in which Caltrans is either a responsible (permitting) or commenting agency. An oversized load permit from Caltrans may be required if the Project would require delivery of large equipment or machinery to the Project site.

Department of Toxic Substances Control. The California Department of Toxic Substances Control (DTSC) is the state agency responsible for the promulgation and enforcement of the state's hazardous waste regulations. The proposed Project may result in the need for modification of the EHPP's existing hazardous waste permits to reflect changes in hazardous waste types and quantities generated and temporarily stored on-site until transported off-site for treatment and/or disposal.

2.3.3 Local Agencies

Kern County. The CEC would review and approve the Project under their pre-emptory jurisdiction under Title 20, California Code of Regulations, Division 2, Chapter 5. Kern County Planning and Natural Resources Department would be a Responsible Agency for the Project, as the CEC would be the Lead Agency. Craig Murphy, Community Development Director for Kern County informed CRC that a Conditional Use Permit will not be required by the County. Once the CEC review process is complete, Kern County Public Works Department, Building Inspection Division, would review construction plans and issue construction related ministerial permits (building, grading, electrical). Other key County agencies for the Project include the KCFD, Kern County Environmental Health Services Division, and the Kern County Public Works Department, including the Building Inspection Division and the Transportation Division.

2.3.4 Existing Permits for CTV I

The following permits have been issued for the CTV I project:

- U.S. EPA: UIC Class VI Permit (UIC Permit No. R9UIC-CA6-FY22-1.1)
- Kern County Conditional Use Permits and Zone Changes:
    - Zone Change Case No. 5, Map No. 119
    - Zone Change Case No. 4, Map No. 120
    - Conditional Use Permit No. 13, Map No. 118
    - Conditional Use Permit No. 14, Map No. 118
    - Conditional Use Permit No. 5, Map No. 119
    - Conditional Use Permit No. 6, Map No. 119
    - Conditional Use Permit No. 3, Map No. 120
    - Conditional Use Permit No. 2, Map No. 138
- Kern County Building Permits:
    - K202409482 Foundation for TEG Dehydrator Area
    - K202502469 Compressor retrofit for CTV

- K202503586 Tank Foundations and Pumps
- K202503685 CGP1 and LTS 2 Tall Supports
- K202503669 HP and LP Amine Unit Vent Stacks Structure and Foundation (Spec Service)
- K202503026 Grading Package (Both Pads)
- K202502867 Vent Stacks Structure and Foundation
- K202408140 Foundation for V-502 & UF-117
- K202408507 Foundation for ES-550 & UF-528 UF-534
- K202409079 Foundation for Amine Reclaim Equipment and Reclaimer pre-Filter UF-487

2.3.5 Agencies Contacted

CEC technical staff regularly coordinate with agencies such as regional waterboards, air districts, DTSC, CDFW, and USFWS for preparation of CEC staff analyses for PTAs, Small Power Plant Exemptions (SPPEs), AFCs, and Opt-in applications. The following agencies have been contacted by CRC during the preparation of this PTA application (in addition to the CEC):

U.S. Environmental Protection Agency, Region IX

Contact: David Albright, Manager - Groundwater Protection Section
Phone: (415) 972-3971
E-mail: albright.david@epa.gov

U.S. Department of Defense – Military Aviation and Installation Assurance Siting Clearinghouse

Contact: Dan Townes
E-mail: osd.pentagon.ousd-a-s.mbx.asd-eie-rp-sc@mail.mil

Kern County Planning and Natural Resources Department

Contact: Craig Murphy, Director
Telephone: (661) 862-8739
E-mail: MurphyC@kerncounty.com

West Kern Water District

Contact: Greg Hammett, General Manager
Telephone: (661) 763-3151
E-mail: ghammett@wkwd.org

2.4 Project Schedule

Construction of the proposed Project is anticipated to require approximately 2.5 years to complete after required regulatory approvals are obtained. Refer to the Project Schedule included in Appendix B.

2.5 Persons Who Prepared the Petition for Post-Certification Amendment Application

The following table identifies the staff who prepared the Petition for Post-Certification Amendment Application.

Table 3 Petition for Post-Certification Amendment Application Preparers

Staff	Title	Section
Eric Snelling	Senior Principal Environmental Planner	• Project Manager • Quality Control/Quality Assurance (QA/QC) • Alternatives
Crystahl Taylor	Principal Environmental Planner	• Deputy Project Manager • QA/QC • Introduction • Project Description
Lisel Ballmer	Environmental Planner	• Air Quality/Greenhouse Gas • Energy • Hazardous Materials Handling • Public Health • Socioeconomics/Environmental Justice • Waste Management • Compliance with Past Conditions of Certification
Lauren Fah	Environmental Planner	• Biological Resources • Geologic Hazards and Resources • Noise • Soils • Visual Resources • Worker Health and Safety
Camille Vega	Environmental Planner	• Cultural Resources • Paleontological Resources • Traffic and Transportation • Water Resources

3 Project Description

3.1 Project Overview

The proposed Project would capture CO_2 generated as a by-product by CRC's 550-MWe EHPP, located in the EHOF near Tupman, Kern County, California. The EHPP was commissioned in 2003 and is powered by two General Electric 7FA gas turbines (GTs), with two HRSGs providing steam to a General Electric D11 steam turbine (ST). The CCU, not including pipelines or temporary staging and parking areas, would be located immediately south of the EHPP in a 7.64-acre existing disturbed area.

Implementation of the Project will require approval of a Petition for Modification Application from the CEC, who has the exclusive authority for licensing thermal power plants of 50 MW or larger, as well as related transmission lines, fuel supply lines, and other facilities.

The CCU would utilize Fluor's Econamine FG Plus^{SM} (EFG+) process to capture and concentrate the CO_2. The EFG+ process is designed to capture 95 percent of the CO_2 from the total flue gas feed to the unit, based on Fluor's testing of the solvent and process, including operation of demonstration and commercial capture plants, and design application to the EHPP. The EFG+ CCU can be divided into seven primary subsystems or sections: Flue Gas Cooling, CO_2 Absorption, Solvent Regeneration, Solvent Maintenance, Chemical Storage and Supply, CO_2 Compression, and Utility Support Systems. The treated flue gas is vented to the atmosphere directly from the EFG+ CCU plant absorber. The concentrated CO_2 would then be compressed, dehydrated, and stripped of oxygen prior to conveyance to the permitted manifold pad, permitted as part of the approved CTV I project (State Clearinghouse No. 2022030180), which will direct the CO_2 to the U.S. EPA approved Class VI UIC wells to be injected into a depleted oil and gas reservoir located on the CRC property and approved as part of the CTV I project. The previously approved CTV I manifold pad, injection wells, depleted oil and gas reservoir and related facilities further discussed in Section 1.2 below are not part of the CalCapture CCS Project analyzed in this report.

A new, approximately 0.5-mile, 8- to 10-inch pipeline, installed primarily below ground utilizing either trenching or horizontal directional drilling (HDD) techniques, would transport the CO_2 from the CCU to the tie-in with the CTV I permitted 35R manifold facility (pad). It is anticipated that the proposed Project would capture approximately 4,400 MMTP of CO_2 (1.6 MMTPY of CO_2). The proposed Project is estimated to be in operation for up to 26 years.[1]

[1]The life of the project is dependent on the sources permitted for injection into the CTV I approved storage reservoir, the ability of the project year by year to obtain CO_2 and inject at the maximum 2,210,000 million tons per year, and the total estimated storage capacity of up to 48 million tons of CO_2.

Water use during operation of the CalCapture CCU would be minimized by the inclusion of a hybrid cooling system (Wet Surface Air Coolers [WSAC], air coolers, secondary glycol cooling, and water cooling). Additionally, the CCU would be equipped with a water treatment system, consisting of a reverse osmosis (RO) Unit that is designed to recover and reuse water from the Cooling Tower blowdown. The recovered water is utilized as make-up to the CO_2 absorption system and the Wash Water WSAC Basin. The wastewater stream (less than 10 gallons per minute) would be collected at the CalCapture CCU and transferred by a new surface pipeline to the EHPP for disposal via an existing UIC Class I injection well.

The proposed Project includes a single connection to the CRC Power System and would include a connection of a new 115-kV transmission line to a new CRC electrical substation. The proposed Project would require a new transmission tie line to connect the Project switching station to the existing CRC substation. Electrical power would be supplied to the CalCapture Substation with a new dedicated electrical transformer. The new 115-kV transmission tie line is expected to be built using pre-engineered steel poles with anchor bolt foundation designs.

During construction, temporary offices and existing parking areas would be used by construction personnel. Temporary office and parking areas have been designated on previously disturbed areas to the south and northeast of the Project site. Two additional areas are located approximately 5.5 miles southeast of the Project site. There are no permanent new buildings proposed for the Project, and no grading would occur within the temporary office and parking areas. Total temporary staging and parking area would be approximately 30.74 acres.

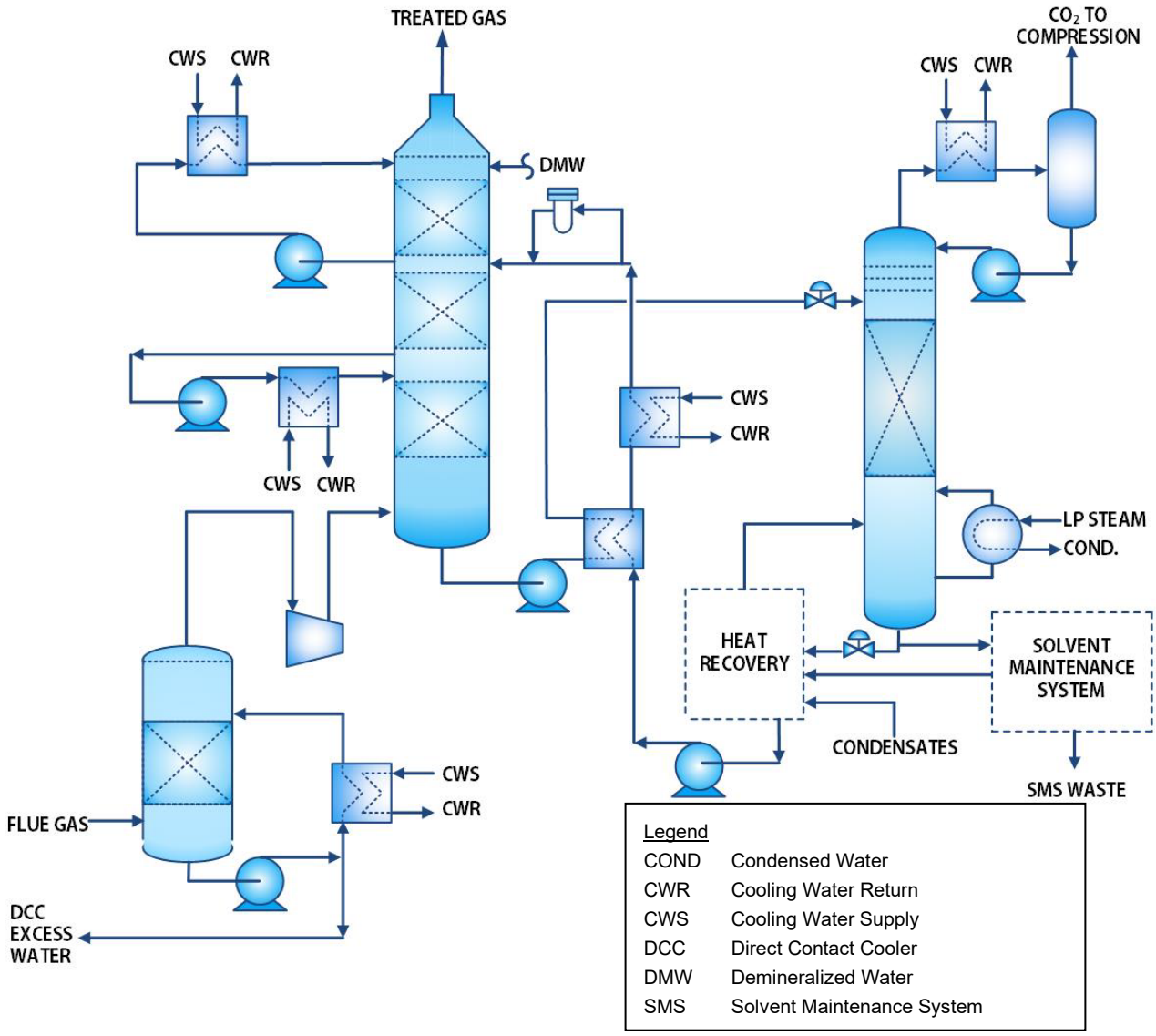
The following is a description of each part of the CCU designed for the CRC CalCapture Project.

3.2 Proposed Project Components

The unit is designed to recover approximately 4,400 MTPD of CO_2 from the flue gas streams produced by the two existing General Electric CTGs. The Project includes two new tie-ins to the existing CTG HRSG stacks and ends with compressed CO_2 production. The CCU can be divided into seven primary subsystems or sections:

1. Flue Gas Cooling
2. CO_2 Absorption
3. Solvent Regeneration
4. Solvent Maintenance
5. Chemical Storage and Supply
6. CO_2 Compression
7. Utility Support Systems

Below is a depiction of the Process Flow Diagram proposed for the Project. Copies of the Plot Plan, detailed Process Flow Diagram sheets, elevations, three-dimensional renderings, Construction and Contracting Strategy document, and Process Equipment List will be submitted separately to the CEC as Confidential Business Information.



3.2.1 Flue Gas Cooling

Flue Gas Inlet Ducting System consists of a ducting network designed to transfer flue gas from each of the two atmospheric source stacks into a common duct, with the common duct then routed to the Flue Gas Cooling system. The combined flue gas is routed to the DCC column where the flue gas is contacted against a circulating water stream that serves to sub-cool the flue gas. By cooling the flue gas, water vapor is condensed out, resulting in a reduced mass and volumetric flue gas flow to be treated in the CO_2

absorption system. This condensed water is removed from the Flue Gas Cooling system as a means to maintain the system water balance. Since the condensed water is relatively clean, it is used to supplement a significant portion of the overall make-up water to the CCU cooling water systems.

3.2.2 CO_2 Absorption

Cooled flue gas from the Flue Gas Cooling system is routed to the Blower. Flue gas from the Blower is then routed to the Absorber. Within the Absorber, the flue gas flow up the column is counter-current to EFG+ solvent that flows down the column while chemically absorbing CO_2 from the flue gas. From the absorption section, the CO_2-lean flue gas continues to flow up the Absorber column into a wash section. In the wash section of the Absorber, the flue gas is contacted against a circulating water stream that serves to cool and scrub the flue gas. Treated flue gas leaving the Absorber wash system is then vented directly from the top of the Absorber.

3.2.3 Solvent Regeneration

Rich solvent entering the Solvent Regeneration system is heated and then fed to the top of the Stripper. Solvent flows down the Stripper counter-current to stripping steam which provides the energy for breaking the bond between the EFG+ solvent and the CO_2, thereby liberating the CO_2 from the solvent. CO_2 and steam travel upward in the column to the wash section of the Stripper. In the wash section, condensed water contacts the gas over trays. The reflux water partially cools the gas and scrubs entrained solvent and much of the vapor phase solvent out of the overhead gas.

Lean solvent from the bottom of the Stripper is pumped through the Solvent Cross Exchanger, where it is cooled and then routed back to the Absorber. A slipstream of the cooled lean solvent is diverted to a filter that serves to remove any particulates from the circulating solvent stream. The filtered slipstream is returned to the cooled lean solvent stream feeding the Absorber.

3.2.4 Solvent Maintenance

The Solvent Maintenance System (SMS) is a proprietary equipment system for maintaining a high solvent quality. It is designed to remove heat stable salts and other soluble contaminants degradation products from the circulating solvent loop. The SMS concentrates these undesirable products into a single concentrated waste stream and routes the waste stream to the Spent Solvent Tank.

3.2.5 Chemical Storage and Supply

Make-up solvent is stored in the Solvent Storage Tank and is added to the bottom of the Absorber as needed. The amount of solvent make-up per day depends on the plant operating conditions and is determined by regular monitoring of the solvent concentration.

Nitrogen provided via cylinders is required to blanket the Solvent Storage Tank in order to protect the solvent against oxidative degradation. Hydrogen provided via tube trailers is required for supply to the



catalytic oxidizer, which converts trace amounts of oxygen in the captured CO_2 to water before the final CO_2 dehydration step.

All drains in the solvent system are routed to the Solvent Recovery Tank through a closed drain system. The recovered solvent is ultimately pumped back to the Absorber. The Solvent Recovery Filter is TEG provided to filter particulates out of the solvent before being sent to the Absorber.

Make-up triethylene glycol (TEG) is stored in the TEG Storage Tank and is added to the CO_2 Dehydration Package as needed. Two chemical injection packages, one for maintaining the WSAC circulating water, and one for the RO system, serve to store and does water treatment chemicals to those systems.

3.2.6 CO_2 Compression

Following CO_2 recovery, the captured CO_2 is compressed to 2,100 pounds per square inch gauge (psig) and purified to meet the desired product specifications. Following the final compression stage, the compressed CO_2 is cooled and conveyed by a 0.5-mile long CO_2 pipeline to the 35R manifold. At this point, the CO_2 stream would be injected into the designated storage reservoir via the previously approved CTV I injection wells.

3.2.7 Utility Support Systems

Utilities required by the CCU include: cooling water, steam, water treatment, instrument air, plant air, secondary aqueous glycol cooling, nitrogen, raw water, and potable water. Each is briefly described below.

3.2.7.1 Cooling Water System

A portion of the CCU's cooling demand is met with cooling water supplied from the existing EHPP cooling towers. Cooling water will be supplied from the existing cooling tower to CCU heat exchangers and returned to the cooling tower. A new cooling water sump and pumps will be installed at the existing cooling tower, dedicated to the CCU cooling water supply.

WSACs will also be installed at the CCU. The WSAC's circulate their own cooling water, independent of the EHPP cooling water system. A Chemical Injection Package, including equipment to store and dose chemicals, is provided to maintain the quality of the WSAC circulating water. The RO system is used to recover some of the WSAC blowdown water for reuse as makeup water. Another portion of the WSAC make-up water is supplied by the excess DCC quench water. The balance of WSAC make-up water is provided from raw water supply.

3.2.7.2 Water Treatment System

The CCU would be equipped with a water treatment system, consisting of a RO Unit that is designed to recover at least 65 percent of the Cooling Tower blowdown. The recovered water is utilized as make-up to the CO_2 Absorption system, and the Wash Water WSAC Basin. The remaining reject water (RO permeate

stream) is collected in the Reject Water Sump and would be transported to the EHPP via a four-inch pipe to be disposed via an existing UIC Class I deep injection well.

3.2.7.3 Plant and Instrument Air System

Instrument and plant air requirements for the CCU are met by a dedicated Plant and Instrument Air Package. The Plant and Instrument Air Package consists of 2 x 100 percent air compressors with intercoolers and knockout pots, wet air receiver, a dual-bed desiccant dryer, dry air receiver, and associated filters.

3.2.7.4 Secondary Aqueous Glycol Cooling System (Glycol System)

The CCU is designed with an aqueous glycol secondary cooling loop to reduce the facility's water use. Cooled aqueous glycol solution from the Glycol Solution Expansion Tank is pumped by the Glycol Solution Pump through the various CO_2 compression intercoolers, where the solution absorbs the compression heat from each of the CO_2 Product Compressor stage discharge streams. The heated glycol solution is then routed through the Glycol Cooler where the solution is cooled against air before being returned to the Glycol Expansion Tank.

3.2.7.5 Electrical Power

Electrical power is supplied to the CCU from a new 115-kV transmission line that would run from an existing CRC substation to the new CCU substation. The CCU substation provides power that would be stepped down to 13.8 kV / 4160 V / 480 V for major plant loads that would be fed from a Main and an Auxiliary Power Center. CCU process equipment users would consume a nominal 35 MW of electrical power at full operating load. This includes all process equipment users within the CCU, CO_2 compression / dehydration, and utility support equipment.

3.2.8 Catalyst and Chemicals

The following information provides the overall catalyst and chemical consumption summary for the proposed CCU designed for the Project. The CCU requires the following catalyst and chemicals:

- EFG+ Solvent
- Hydrogen
- Catalyst
- Ethylene Glycol
- TEG
- Cooling Water Chemicals
- RO System Chemicals



3.2.8.1 Catalyst and Chemicals Summary

The EFG+ solvent is an aqueous amine solution blend. Initial fill requirements indicated in Table 4 include the quantity required during the commissioning phase. Annual consumption values represent portions of the solvent needed to replace expended amounts.

A circulating closed loop system of aqueous ethylene glycol (40 percent by volume) is utilized as a cooling medium for the CO_2 Product Compressor intercoolers and the compressor lube oil cooler. Since it is a closed loop system and ethylene glycol has a low vapor pressure, there would only be minor losses from the system as a result of leaks or losses to the drain system.

The CO_2 Dehydration Package consists of circulating TEG solution that is used to absorb water vapor from the CO_2 product such that the product CO_2 meets the Project's specification. A small amount of TEG is lost with the CO_2 product, thereby requiring periodic make-up.

The WSAC Chemical Injection Package would store and dose a variety of chemicals as a means to maintain the quality of the WSAC circulating water streams.

Exact chemical types and dosage quantities would be determined by the selected water treatment vendor in the detailed engineering phase. Based on preliminary analysis of the make-up water and circulating water requirements, the following chemicals are foreseen:

- Sulfuric acid
- Corrosion inhibitor
- Scale inhibitor
- Silica Dispersant
- Sodium Hypochlorite
- Biocide

The RO Unit will also require treatment chemicals. RO Unit chemicals foreseen to be required include:

- Sodium Hypochlorite (12%)
- Sulfuric Acid
- Control Elution Buffer Reagents
- Sodium Hydroxide (20%)
- Citric Acid
- Sodium Bisulfite
- Non-Oxidizing Biocide
- Scale Inhibitor



Table 4 Expected Chemicals Consumption

EFG+ Plant Chemicals	Initial Charge	Annual Consumption, (Note 1)
EFG+ Solvent (100 weight percent [wt%] basis)	837 tons (Note 2)	800 tons
Hydrogen (100 vol%)	(Note 8)	0.77 million standard cubic feet
Catalyst	141 standard cubic feet	(Note 3)
Ethylene Glycol (100 wt% basis)	15,900 gallons	(Note 4)
TEG (100 wt% basis)	3,200 gallons (Note 5)	2,930 gallons (Note 6)
WSAC Water Treatment Chemicals	TBD (Note 7)	TBD (Note 7)
RO System Treatment Chemicals	TBD (Note 7)	TBD (Note 7)

Notes:
1) Annual consumptions are based on 350 days of EFG+ plant operations per year.
2) Initial solvent charge includes working inventory (711 tons), Solvent Storage Tank (CCU1-T-501) inventory (82 tons), and solvent required for degreasing during commissioning (44 tons).
3) Estimated catalyst life is 5+ years.
4) Annual consumption of ethylene glycol is based on losses due to leaks and drains. As such, the annual consumption is dependent on plant operation and maintenance.
5) Initial TEG requirement based on 2,200 gallons for skid inventory plus 1,000 gallons for TEG make-up storage tank.
6) TEG annual consumption is a preliminary estimate. To be confirmed by selected vendor in the detailed engineering phase.
7) Cooling Water and RO System treatment specific chemicals and consumptions to be determined by selected Cooling Water System Chemical Injection Package vendor.
8) Hydrogen would be stored in rented jumbo trailers with an assumed capacity of 120,000 standard cubic feet

Source: CRC CO_2 Capture from Elk Hills Power Plant Project Catalyst & Chemicals Summary, Document No EH-35R-CCU-RPT-225-00003 (July 2025)

3.2.8.2 RO Unit Waste Water

A RO unit is included in the design to meet the need for water minimization. The RO unit is designed to recover 65-70 percent of the total blowdown water, with the balance of 30-35 percent reject water being routed to the EHPP for deep well injection. In addition to the continuous reject water production, intermediate backwashing and cleaning of the Ultrafilters is required, with the total average of 10 gallons per minute of all these streams routed to the EHPP for deep well injection disposal.

3.2.8.3 Solvent Maintenance System Effluent

The EFG+ solvent can react with an acid stronger than CO_2 to form a heat stable salt that cannot be regenerated in the Stripper. The SMS effluent is comprised of heat stable salts, non-volatile solvent degradation products, unrecovered solvent, and a small amount of water.

The SMS effluent would be stored in the Spent Solvent Tank which is sized to hold 30 days of continuous SMS operation effluent with the SMS operating at design capacity. The waste would be removed and disposed off-site at a licensed facility via a third party waste disposal contractor. For purposes of analysis,



the Clean Harbors Wilmington, California, facility has been selected as the designated transfer facility to receive waste amine solvent. The ultimate destination for disposal or recycling of the waste amine solvent may vary depending on the selection of appropriately licensed facilities available at the time of shipment.

3.2.9 Steam Supply

To supply the required thermal energy to the CCU, the proposed Project includes steam supply from the existing steam turbine low pressure (LP) inlet/intermediate pressure (IP)-LP crossover via addition of a new controlled extraction. Supply of steam from the LP inlet/IP-LP crossover will require modification to the existing steam turbine to accommodate the new controlled extraction. This equipment will support operation of the CCU via new steam extraction but will also maintain the capability for the steam turbine to operate with the extraction closed when the CCU is not in operation. In case the steam extraction cannot meet the full required thermal energy to the CCU, a supplemental natural gas fired boiler at the CCU, with up to 160 million British thermal units per hour (MMBtu/hr) fuel input, has been considered in the project impacts. Flue gas from the boiler would be ducted to the CCU for CO_2 capture.

As an option to steam extraction from the existing EHPP steam turbine, CRC is also including a non-condensing back pressure steam turbine in the proposed Project.

The steam supply tie-in will be located at the common steam header from EHPP, after combining flow from both HRSGs. The back pressure steam turbine will be designed to exhaust at 55 psig and the steam exhausting from the back pressure turbines will be superheated, with the amount of superheat varying depending on the steam supply location and the operating load. Cooling (also known as desuperheating) of the steam to meet specific CCU requirements will be accomplished within the CCU.

The back pressure steam turbine would electrically interconnect with the existing electrical infrastructure at EHOF. A new step-up transfer would be used to step up from the back pressure turbine generator voltage to the existing substation. The new backpressure turbine could be located within a developed area between EHPP and the adjacent cogeneration facility.

The steam supply piping would follow similar pathway/corridor as the current main steam extraction/supply from EHPP to the adjacent cogeneration facility. Steam exhausting from the new backpressure turbine would be routed to the tie-in location at the CCU.

3.2.10 Utilities

The following utility lines would be constructed as part of the Project. Refer to Figure 2 for the location of all proposed utility lines. All utility lines will be constructed above ground, with exception of the CO_2 pipeline, which will be constructed below ground. The aboveground pipelines will follow existing pipe routes. The pipelines will be placed on the ground or on low supports and secured in-place with rebar or soil. Aboveground pipelines would be buried at existing road crossings.

- Electrical – 4,420 feet

  - 3,075 feet for main 115-kV transmission line from CalCapture to new proposed substation
  - 902 feet for 115 kV-transmission line from new proposed substation to existing 26R substation
  - 443 feet 115 kV-transmission line from new proposed substation to existing 26R substation TH03 unit.
- Raw Water Supply (Flexible Pipe) – 2,788 feet (4-inch)
- Cool Water Supply (CWS) and Cool Water Return (CWR) from/to cooling towers at EHPP (14-inch)
  - CWS – 745 feet
  - CWR – 812 feet
- Steam & Condensate
  - HP Steam Line (Tie-in to existing line located at pipe rack west of EHPP) – 603 feet (3-inch)
  - LP Steam Line (from EHPP Steam Turbine) – 862 feet (42-inch)
  - Condensate Line (Tie-In to Existing line located at pipe rack west of EHPP) – 607 feet (8-inch)
- CO_2 Pipeline (8- to 10-inch)
  - Connected from the CCU to the 35R injection piping manifold – 2,196 feet
- RO Permeate Stream Pipeline (4-inch)
  - Connected to EHPP – 794 feet

3.2.11 Domestic Water and Septic Systems

Domestic water and septic systems are available at on-site existing buildings. No new domestic water or septic systems would be constructed as part of the Project.

3.2.12 Water Use

At the proposed CCU, water would be utilized in the amine solvent absorption process. On average, the CCU would require up to approximately 325,405 gallons per day (gpd) (7,748 barrels [bbl] per day). Operational water supply would consist of disinfected groundwater purchased from the WKWD and delivered to the Project area by the California Resources Elk Hills public water system and treated by reverse osmosis by CRC prior to use at the CCU and other Project facilities. This preliminary estimate is based on seasonal high temperatures and the actual annual daily average water use is expected to be lower.



Fresh water provided by WKWD totaling an additional 625 gpd would be used for utility purposes including, but not limited to emergency eye-wash stations, firefighting equipment, equipment cleaning, dust control, grading, and compaction.

3.2.13 Emergency Management

The Project would be governed by the CTV I Emergency and Remedial Response Plan that describes actions that the Owner/operator CRC would take to address movement of the injection fluid or formation fluid in a manner that may endanger an Underground Source of Drinking Water (USDW) during the construction, operation, or postinjection site care periods associated with the CTV I project. If the Owner/operator obtains evidence that the injected CO_2 stream and/or associated pressure front may cause an endangerment to a USDW, the Owner/operator must perform the following actions:

1. Initiate shutdown plan for the injection well.
2. Take all steps reasonably necessary to identify and characterize any release.
3. Notify the UIC Program Director of the emergency event within 24 hours.
4. Implement applicable portions of the approved Emergency and Remedial Response Plan.

The CTV I injection wells will be configured with real-time injection rate, injection pressure, and annular pressure monitoring and alarms. The Operating Procedures plan details the maximum injection rate and pressure thresholds for alarms and shut-off devices. The injection wells could operate for 50 years, which exceeds the life of the Project.

A surface shut-off valve would be installed on the injection wellhead and configured with automation and communication to the EHOF central control facility. The valve would be utilized by the central control facility operator remotely to respond to an emergency or upset condition by shutting in the CTV I injection wells. The valve would be configured to automatically shut-in the wells if tubing or annular alarm thresholds are exceeded.

3.3 Construction Procedures

This section describes the construction of the Project components discussed in Section 2.2. The Project would be implemented in one construction phase. Construction for the CCU would occur over an approximate 2.5-year time period, expected to start early 2027 after the applicable permits are issued.

3.3.1 Proposed Grading and Site Development

Areas to be graded during construction consist of the CCU. The proposed CCU would be situated on an existing area that was previously used for the CRC Lean Oil Absorption Plant (now reclaimed and maintained for future use). Other areas, such as the main parking area, the laydown and staging areas that are not paved would require dust control, but no grading would be performed. The proposed grading



volumes are estimated to be 33,000 cubic yards of cut and 13,000 cubic yards of fill. There will be net export volume of 20,000 cubic yards would be transported to an existing borrow area within the EHOF for temporary stockpiling and use elsewhere within the EHOF (26,000 cubic yards stockpiled, assuming 30% bulking factor) (refer to Table 5).

Overall, the Project would maximize the use of existing roads, well pads, and cleared areas wherever possible, including reducing proposed Project footprints to fit within existing sites. The Project would require grading of the area for the proposed CCU, which is a previously disturbed area.

Table 5 Site Disturbance Area

CCU Component	Temporary Disturbance Area (acres)	Permanent Disturbance Area (acres)	Grading Volume (cut and fill, cubic yards)
CO_2 Capture Facility Site[1]	7.64	7.64	33,000
CO_2 Pipeline[1]	5.1	0	1,500
Electrical System	1.7	0.1	NA
Temporary Parking, Office, and Staging Areas[1]	30.74	0	0
Borrow Sites[1]	3.28	0	13,000

Notes:
NA – Not applicable
[1] Located underground or within developed/disturbed area.

3.3.2 Temporary Office and Parking Areas

During construction, temporary offices and parking areas would be used by construction personnel. Temporary office and parking areas have been designated in previously disturbed areas to the south and northeast of the Project site. Two additional areas within the EHOF are located approximately 5.5 miles southeast of the Project site. All project areas will be within the EHOF fence line that can only be accessed through controlled access gates (guard stations or badge access). There are no permanent new buildings proposed for the Project, and no grading would occur within the temporary office and parking areas. Total temporary disturbance area would be approximately 30.74 acres currently in use for ongoing oil and gas operations or other CCS operations.

3.3.3 Onsite Borrow Sites

12,700 cubic yards of fill would be sourced from two onsite borrow sites located north of the EHPP within existing, pre-disturbed well pads. Excavation of the existing well pads will lower the existing grade by approximately two to three feet to provide the required fill needed for the Project. Total temporary disturbance area would be approximately 3.28 acres.

3.3.4 Road Construction

Within the previously disturbed CalCapture footprint, a new perimeter road approximately 1,550 feet in length would be constructed around the CCU for general access as well as emergency access for 1st responders. Grading required for the new road construction is 1,490 cubic yards. Imported material would include 12-inch thick aggregate per CRC requirements. This material would be sourced from the two onsite borrow sites noted above.

3.3.5 Processing Facilities Construction

Grading for the CCU would occur early in construction. The following outlines construction procedures associated with grading and installation of the processing facilities in consecutive order:

- **Staging.** Material and equipment would be gathered on-site within designated staging areas;
- **Inspection.** Material and equipment would be inspected for quality assurance. Construction equipment would be verified to meet applicable environmental regulations. Equipment operators and field workers would be verified to possess the proper qualifications;
- **Civil.** Soil would be graded to prepare the site for facility construction. Concrete equipment foundations, pipe supports, pads, and containment would be poured;
- **Equipment.** Major vessels and equipment would be set on foundations;
- **Structural.** Pipe supports and equipment support structures would be installed;
- **Plant Piping.** Piping, valves, and instrumentation would be installed between equipment and vessels. Welds would be radiographed and connections strength tested;
- **Electrical.** Electrical panels, conduit, and power wiring would be installed and tested;
- **Instrumentation.** Instrumentation signal wiring and tubing would be installed within the CalCapture facility and associated new facilities. Terminations would be made at the instrumentation and connections would be tested;
- **Corrosion Control.** Piping and non-galvanized structural steel would either be insulated or primed and painted. Buried steel piping would be coated or wrapped with protective coatings. Cathodic protection would be used in certain areas to protect buried steel piping from external corrosion. Insulating kits would be used to protect buried steel piping from external corrosion. Insulating kits would be used to isolate above-ground from buried piping;
- **Start-Up Preparation.** All valves and instrumentation would be put in normal operating positions/modes for start-up. All safety devices would be checked for proper operation;
- **Personnel Training.** Operators, mechanics, and instrument technicians would be trained to operate and maintain the proposed facilities;



- **Start-Up.** Plant would be started and tested for proper operation. Any problems or issues would be resolved. Any required agency witnessing would be scheduled prior to start-up; and
- **Operation.** Normal operation would commence.

3.3.6 CO_2 Delivery Pipeline Construction

The sequence of construction activities for the CO_2 pipeline component of the Project is presented below. Construction of the CO_2 delivery pipeline is scheduled to take approximately two months.

- **Mobilization and Staging.** Prior to construction, the contractor would mobilize the site and utilize designated staging areas for materials and equipment storage. Construction equipment would be staged along the route and would progress with the pipe installation.
- **Surveying, Staking and Flagging.** The centerline would be marked at line-of-site intervals, at points of intersection (including offset stakes marking the edges of the right-of-way, and at all known underground facilities. In addition, any environmentally sensitive areas (i.e., biological, cultural, and/or hydrological resources) would be clearly marked.
- **Clearing and Grading.** The majority of the temporary construction easement occurs along previously disturbed pipeline corridors. Where necessary, existing vegetation would be cleared and the ground within the construction right-of-way would be graded and smoothed to provide safe and efficient operation of construction equipment. Excess spoils generated during construction would be re-used within the EHOF.
- **Hauling and Stringing.** The pipe would be hauled by truck to one of the staging areas where it would be offloaded by cranes and loaded onto stringing trucks to be delivered to the construction right-of-way.
- **Pipe Supports.** Construction and installation of the CO_2 pipeline would be primarily belowground at depth of approximately four to five feet deep. Where aboveground construction is needed, pipe supports would be constructed at regular intervals along the pipeline, as needed. A truck-mounted drill would likely be used to drill a 24 to 36-inch hole approximately six feet deep. The pre-fabricated steel, or alternate, pipe support would be set into the hole and the hole would then be backfilled with concrete.
- **Trenching.** The typical trench would be approximately five feet deep and between two and five feet wide. Excavated soils may be preserved and used as backfill materials at the site of origin. Spoil piles would be placed along the trench. Materials deemed unsuitable for backfill would be disposed of off-site.
- **Horizontal Directional Drilling.** HDD is a highly specialized boring technique that would likely be used to install the pipeline beneath the CCU. HDD is trenchless method of pipeline installation using a surface-launched drilling rig that installs the piping via a pre-drilled, arc-like bore hole. HDD is often used when trenching or excavating is not practical. The HDD process



would utilize an entry pit and exit pit. In general, the work area required on the entry site would be approximately 50 feet by 200 feet, while the exit site would require a work area of approximately 50 feet by 100 feet. In addition, an approximate 10-foot by 1,650-foot temporary work area on the exit side of the drill would be required to string and weld the pullback pipe.

- **Pipe Welding and Coating.** Once the trench is excavated, any bends that are required (i.e., to avoid substructures or changes in the alignment) can be determined, measured, and completed for installation. New pipeline segments would be inspected to locate and repair any faults or voids in the pipeline coating prior to being lowered into the trench. In areas where the pipe is joined within the ditch, “bell holes” would be dug at each pipe joint to facilitate access for welding and joint coating application. These welds would typically be made in the ditch, with the pipe at its final elevation and alignment. Welding and coating would apply to all areas throughout the Project.

- **Weld Inspection.** Welds would be radiographically inspected in accordance with state and federal welding requirements. When welds are radiographically inspected, radiographs would be recorded and interpreted for acceptability in accordance with American Petroleum Institute 1104. All rejected welds would be repaired or replaced as necessary and re-radiographed. The inspection reports would be kept for the life of the pipeline.

- **Aboveground Equipment Installation.** The majority of aboveground equipment would be pre-fabricated off-site or at a staging area and then transported to the respective locations for final assembly and tie-in to the pipeline facilities.

- **Line Lowering, Backfill and Compaction.** For conventional open trench segments, the welded pipe segments or individual pipe lengths would be lifted and lowered into the trench by side boom tractors. The native material excavated from the pipeline trench would either be reused as backfill or would be hauled and disposed off-site to an approved landfill facility. Required backfill material would be compacted with compaction rollers and/or hydraulic tampers and undergo compaction testing to ensure that all trench locations are compacted in accordance with standard engineering practices and permit requirements. All trenches would either be fenced, backfilled, or covered with steel plates at the end of each workday.

- **Hydrostatic Testing.** The pipeline would undergo hydrostatic testing prior to operation by pumping water into the test sections, pressurized to design-test pressure, and maintained at that pressure for at least the minimum required duration. Water to be used for hydrotest would be obtained from the existing water supply system and treated accordingly to prevent/minimize corrosion. Discharged water would be stored in temporary tanks and held for testing. The portable tanks would be strategically positioned at the capture site location and/or along pipeline routing as appropriate to minimize interruption to on-going operations and/or construction activities. After results of the samples are analyzed, the water would be managed using existing facilities. The Storm Water Protection and Prevention Plan prepared by CRC would also include Best Management Practices in case the hydrotest is not successful initially. The design, construction, testing, and operation of the CO_2 pipeline system will be in



accordance with Federal, State, and County regulations as well as CRC project specifications, ASME B31.4 and the U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration Title 49 CFR, Part 195: Transportation of Hazardous Liquid by Pipeline.

- **Pigging.** Pipeline pigs are devices that are inserted into and travel throughout the length of a pipeline driven by a product flow to perform functions, such as cleaning or dewatering and provide information on the condition of the line, as well as the extent and location of any problems. After the pipeline has been hydrostatically tested and dewatered, the contractor would run several utility pigs of various types to remove as much water as possible and any remaining small debris from within the pipeline.
- **Cleanup and Restoration.** All construction material and debris would be removed and disposed of at appropriate landfills or recycled. Clean up and restoration would be ongoing throughout the Project and when an active site is completed, the area would be restored to surface grade.
- **Lifespan.** Once constructed, the expected lifespan of the CO_2 pipeline is 50 years, and may be re-purposed after the life of the CCS project.

3.3.7 Field Systems Construction

The proposed Project would include the installation of water pipelines, steam lines, and communication lines. Steam, water, and wastewater pipelines would be located aboveground along existing pipeline corridors on raised pipe supports to minimize external corrosion. The sequence of general construction procedures associated with the installation of these pipelines would be similar to the CO_2 pipeline construction described above and would follow the process listed below:

- Mobilization and Staging;
- Surveying (including biological pre-activity surveying), Staking and Flagging;
- Clearing and Grading;
- Hauling and Stringing;
- Pipe Placement, Welding, Inspection, and Coating; and
- Pipeline Installation and Testing.

3.3.8 Electrical Service Construction

CRC would construct, operate, and maintain approximately 4,420 feet of new 115-kV transmission lines to the CRC-owned substation and new proposed electrical substation located at the Project site. The estimated disturbance of the 115-kV transmission line and substation would be 1.7 acres of temporary



disturbance. The Project would result in 0.11 acres of permanent disturbance for power poles and 0.55 acres for the substation. To support the major construction efforts, electrical connections are anticipated to be in place prior to significant field activities.

3.3.8.1 Access and Staging Areas for Electrical Transmission Interconnection

Primary access to the power line interconnection sites would be via existing access roads. Construction of the power line interconnection would be completed by the contractor. The tubular steel poles and pre-engineered steel poles would require approximately twenty to thirty feet of embedment. Construction would involve temporary ground disturbance around each new power pole location (approximately a 20-foot radius). All new poles thereto would be located within existing oil field production areas or along a dirt road. Pole work areas would likely be located approximately every 400 feet for 115-kV transmission lines. Where final design allows, power pole work areas would overlap. Final design would determine final power pole locations. Temporary staging and lay down areas may also be needed for the construction of the interconnection facilities but would use existing disturbed/developed areas identified as part of this project.

3.3.8.2 Construction Methodology for Electrical Transmission Interconnection

Substation. One new substation, approximately 1.5 acres in size, would be constructed near the proposed CCU or the proposed substation may be sited to fit within the confines of the existing previously disturbed well pad footprint. The Project would include construction of a new 115-kV switching station to allow the interconnections of new electrical load.

Substation Extension. The Project would include construction of three new underground 115-kV getaways to connect the proposed new 115-kV switching station.

Power Line Construction. New transmission structures (i.e., tubular steel poles and pre-engineered steel poles), duct banks and vaults would be installed. New Optical Ground Wire (OPGW) would be installed overhead at the top of the overhead structures. New Aluminum Conductor Steel Supported (ACSS) would be installed along the lengths of the overhead portion to achieve a minimum ampacity of 2000 amperes. New high voltage cross-linked polyethylene (XLPE) power cable would be installed along the lengths of the underground portion to achieve a minimum ampacity of 2000 amperes. The new 115-kV transmission lines would be supported by up to approximately 15 tubular steel poles and pre-engineered steel poles. Pole installation would consist of the following basic steps:

Excavate pole location and pour concrete base;

- Deliver new pole at pole site;
- Set pole;
- Install bottom section by line truck, crane;
- Install top section by line truck or crane; and



- Install switches where necessary. There may be several SCADA-operable or other switches at the point of interconnection and elsewhere.

Once poles are erected, conductor would be strung from conductor pull and tension sites at the end of the power line interconnection alignment. The distance between pull and tension sites is approximately 300 to 600 feet. Each conductor would be pulled into place at a pre-calculated sag and then tension-clamped to the end of each insulator. The sheaves and vibration dampers and accessories would be removed once installation is complete. Transmission power line construction and substation improvements are anticipated to take approximately eight to twelve months.

3.3.9 Construction Personnel and Traffic

Personnel requirements vary throughout the course of any given year and across the life of the Project. The peak number of construction employees for the Project would be approximately 500 workers, including indirect personnel. The majority of the construction employees would travel from the Bakersfield area, approximately 34 miles away.

During peak Project construction, the Project is anticipated to generate approximately 1,012 average daily vehicle trips per day. Of these, 12 are construction equipment, bulk material and waste deliveries, and 1,000 are employee vehicle trips (500 trips inbound during AM peak hour and 500 trips outbound during PM peak hour). Parking for personnel would be on CRC property, using designated areas such as staging areas. Non-local personnel would travel to and from the Project site via a single round trip from a single point of origin.

As shown in Table 6 below, the construction of the proposed Project would generate approximately 1,000 daily commuter trips and 12 construction vehicle trips, with 125 trips during the PM peak hour and 125 trips during the AM peak hour of a typical weekday.

Table 6 Construction Phase Trip Generation

Traffic Type	Variable	ADT
Worker Vehicles	500 (per day)	1,000
Construction Vehicles	18 (per day)	12
Total	518	1,012

Notes:
ADT – Average Daily Traffic

Trip generation calculations were based on the following peak construction period assumptions.

- There would be approximately 500 construction personnel that would be on-site daily.
- It was assumed, conservatively that 100 percent of the personnel vehicles would arrive and depart the work site each day during peak construction activity.
- Although it is possible that workers would participate in carpools or vanpools to reduce their reliance on single occupancy vehicles and reduce their commute costs, conservative estimates were prepared assuming that all trips would be in single occupancy vehicles.

3.3.10 Construction Deliveries

Deliveries of mechanical and electrical equipment, as well as prefabricated piping would be required; however, points of origin would not be determined until orders are awarded. There is a probability that some of these may come from out of state. Concrete deliveries, as well as concrete pump trucks would come from local batch plants and near the Project site. The number of trips would depend on concrete quantities, which would be determined during future design phases of the project.

3.3.11 Construction Timing

Construction of the proposed Project is anticipated to require approximately 2.5 years to complete. The construction week would be Monday through Friday with 10-hour days. Initial activities are expected to start early 2027 and would include the following tasks: mobilization, surface facility construction, pipeline construction, and field systems construction. Pipeline construction is projected to require two months to complete. The CCU construction would require 2.5 years to complete, running concurrent with pipeline construction.

Mobilization would commence in month 1 of the construction schedule and would be complete with site establishment, at the end of month 3. At the start of mobilization, the mass excavation of the site would already be in place. Piling installation for foundations would begin early in the site mobilization phase and would require approximately 25 workdays to complete (based on 954 piles, 4 pile rigs). Installation of the foundations would commence after piling reached 50 percent complete and would require 3 months to complete. Backfill would be placed as the completed foundations are stripped. As the backfill is completed to rough grade, the mechanical equipment and structural steel can be set on the foundations and above ground piping would begin. The balance of utilities, including water systems, is not expected to be required until the month preceding mechanical operations.

3.3.12 Equipment

The equipment anticipated for construction include pile drivers, graders, bulldozers, hydrovacs, wheel loaders, backhoes, compactors, road rollers, dump trucks, concrete trucks, road transfer cranes, self-propelled motor transport machinery, flatbed trucks, nitrogen tankers, water tankers, forklifts, bucket trucks, installation and equipment trucks, and trucks for transporting pipeline and piping.



3.3.13 Water Demands

Approximately 1,509,000 gallons of water would be required throughout Project construction for civil grading, dust control via water tankers, and water needs for pipeline construction. The breakdown for water use is as follows: Civil grading would require 12,000 gpd for 30 days at anticipated peak of Project construction execution. Dust control from construction of the CCU would require 400 gpd for five days a week for 104 weeks. Dust control for pipeline construction and fire watch would require 10,500 gpd for five days a week for 12 weeks totaling 630,000 gallons of water.

3.4 Operation and Maintenance

All facilities and equipment would be operated, maintained, and inspected in accordance with the applicable regulatory requirements. Records documenting compliance with these requirements would be maintained on site and would be periodically reviewed by CRC personnel to ensure compliance. In addition, safety and compliance inspections and audits of the facilities are performed on a regular basis by U.S. EPA or other regulatory personnel.

Work hours for the Project are expected to be 10-hour days and five days per week. The average number of hours of use for equipment would be 9 hours per day.

3.4.1 Monitoring Systems

The following safety measures would be implemented on the CO_2 pipeline from CalCapture to the CTV I 35R manifold pad.

Above Ground Leak Detection. The following systems would be utilized to monitor the proposed CCU facility for leaks: Ultrasonic Point Detectors, closed circuit television (CCTV) video camera detection, CCTV infrared cameras or alternative CO_2 monitor technology.

Supervisory Control and Data Acquisition (SCADA). The SCADA system includes software and hardware elements to allow operation and monitoring of the CCU and pipeline, including mass balance (Coriolis flow meters), and rate of change of temperatures, pressures, and flows.

Pipeline Integrity. The CO_2 pipeline would be monitored through a combination of gas composition analyzers, corrosion monitoring, regular in-line inspection (ILI), and responses to ILI findings. The pipeline wall thickness would be based on a project-specific Fracture Control Plan. Cathodic protection would be implemented for the buried pipeline. Additionally, the pipeline system would be rated for low temperatures, ANSI 1500-rated pipe flanges, and a pipeline material specification that meets applicable regulatory requirements.

CTV I Injection Wells. Operational monitoring of the injection wells would be governed by the Testing and Monitoring Plan approved by U.S. EPA for the CTV I project. As proposed, the well monitoring system would consist of sensors for measuring temperature and pressure on the tubing and for monitoring pressure on the tubing-casing annulus. Data from the sensors would be collected and stored in a SCADA system.



Monitored parameters would have high and low alarms that would be activated when a measured parameter is outside its accepted normal operating range. When a critical parameter is surpassed, such as pressure alarms, the well would be shut in by a fail-safe actuated master valve. Operating personnel would then be notified that an alarm was activated. The cause for the alarm would be investigated to determine what actions are necessary to ensure that the well is safe. If a well is determined to lack mechanical integrity, the U.S. EPA would be notified of the alarm, and the well would be shut within 24 hours. After any needed repairs or maintenance are conducted, and mechanical integrity has been demonstrated to the satisfaction of the U.S. EPA, the well would then be returned to service.

3.4.2 Operation Personnel

The CCU requires one control room operator and one field operator per shift. Assuming a four shift schedule, a total of 4 control room operators and 4 field operators would be required for a 24-hour period (refer to Table 7). It is possible that the control room operators be shared with the power plant. Two laboratory technicians are required for the CCU. Several maintenance personnel are required for the CCU, which can possibly be shared with the power plant.

Table 7 Operation Personnel Estimates

Staff Position	Positions Required
Control Room Operator	4
Field Operator	4
Laboratory Technician	2
Maintenance Supervisor (Note 1)	1
Electrical Technician (Note1)	1
Mechanical Technician (Note 1)	2
Instrumentation Technician (Note 1)	2

Notes:
1) Maintenance Supervisor and Technicians can be shared with power plant.

It is expected that up to 16 permanent personnel would be required to monitor operations and conduct maintenance. The CCU would operate 24 hours per day and seven days per week. Trip generation for the operation and maintenance of the CCU were based on the following assumptions:

- One full-time staff employee would enter and exit the facility during the peak hour of adjacent street traffic in both the AM and PM hours.
- Five maintenance/repair employees would enter and exit the site during the peak hour of adjacent street traffic in both the AM and PM hours.

Each employee would make one inbound trip, and one outbound trip daily. As shown in Table 8, the operation and maintenance phase of the CCU would generate approximately 32 daily trips, with 10 trips during the AM peak hour and 10 trips during the PM peak hour of a typical weekday. Maintenance or repair work would occur periodically and would generally be one trip in the peak hour.



Table 8 Operational Phase Trip Generation

Traffic Type	Variable	ADT	AM Peak Hour Trips		PM Peak Hour Trips	
			In Trips	Out Trips	In Trips	Out Trips
Worker Vehicles	16 per day	32	10	1	1	10
Material and chemical deliveries and waste shipments	7 per month	0.2	0	0	0	0

Notes:
ADT – Average Daily Traffic

ADT assumes the average trip rate of 2.5 trips per employee assumes that employee work during the day shift is two trips (one trip in and one trip out). In addition, some employees may travel an extra trip in between (e.g., lunch, errand), and there may be occasional deliveries to the site. Material and chemical deliveries and waste shipments are projected to be approximately seven per month.

3.4.3 Maintenance

Annual maintenance would be conducted at the CCU to ensure proper operation of the facility. The turnaround schedule of the CCU would be set to coincide with the ongoing power plant maintenance schedule (once per year on average). Additional support personnel beyond the normal maintenance staff would be required during this time for activities such as scaffolding, specialized equipment maintenance, and mechanical, instrumentation, and electrical staff augmentation. Up to 25 additional support personnel would be required during each annual turnaround. Existing developed material storage and staging areas will be utilized for maintenance-related equipment and material storage.

3.4.4 Facility Safety Protocols/Emergency Response

The following plans would be developed for the new operations as required by Federal, State, and County regulatory requirements:

- Emergency and Remedial Response Plan per 40 CFR 146.94(a) (U.S. EPA);
- Hazardous Materials Business Plan per California Health and Safety Code, Division 20, Chapter 6.95, Article 1, Sections 25550-25519 (Kern County Environmental Health Services);
- Fire Safety Plan per California Fire Code (2022 Edition) (KCFD); and
- Worker Safety Plan per Title 8, CCR (Department of Safety and Health [DOSH])

The primary hazards in the new process facilities would be the amine-based solvent and CO_2. The proposed Project includes the following safety equipment:



- New firewater pipeline loop routed around and along the new perimeter roadway, with water supply coming from the EHPP supply;
- Fire water hydrants located on all four sides of the CCU spaced approximately 330 feet apart.
- An addressable fire alarm panel installed in the motor control center (MCC) electrical building;
- Fire extinguishers installed around the new unit, inside the MCC transformer yard, and inside the MCC;
- Install safety showers and eyewash stations located around the Project work site perimeter; and
- Gas detection for CO_2 concentrations with audible alarm and visual strobe unit.

3.4.5 Site Security

The main entrances to the Project site are located on the private Skyline Road from Elk Hills Road. These entrances have no trespassing signs, are gated, and fully monitored and the field is patrolled by security for access control, including the perimeter of the EHOF. Field gates are monitored by CCTV and main gates to the EHOF are staffed. The Project site is heavily surveilled and occupied by personnel. The Project site holds operations 24 hours per day and would always have facility personnel occupying and monitoring the Project site. The EHPP is monitored by the control room operators via CCTV and Smartbadge activity. Additional cameras would be added for operations and the CCU would be permanently fenced after construction is completed.

3.4.6 Materials, Waste Handling, and Storage

CO_2 capture and injection operations would utilize hazardous and non-hazardous chemicals. These chemicals include oil products such as gasoline, diesel fuel; plant chemicals such as corrosion and scale inhibitors, flocculants; field chemicals such as corrosion and scale inhibitors; paints, epoxies, and grouts; lab chemicals; operator, mechanic and welder supplies; caustic import for use at CO_2 capture and water treatment facilities; and others. Operations would generate multiple waste streams, each of which would be managed in accordance with applicable federal, state, and local laws, regulations, and ordinances. All materials utilized in the Project would be handled in accordance with industrial hygiene and safety practices and other CRC policies; no incompatibilities are known or expected at this time. Approximately one shipment would be conducted each month to deliver materials and remove waste materials from the CCU.

3.4.6.1 Hazardous Materials

The Project will be required to comply with applicable federal, state, and local regulations, including the Comprehensive Environmental Response and Liability Act, the Resource Conservation and Recovery Act (RCRA), CWA, Clean Air Act, Superfund Amendments and Reauthorizing Act Title III and the Occupational Safety and Health Act.



Bleach, sulfuric acid, corrosion inhibitors, and amine are chemicals that would be used during Project operations and have been used in the industrial, chemical, and other industries with proper storage facilities. These chemicals include amine, caustic, anti-foam agents, and methanol. New amine solvent would be delivered to the CCU by one delivery truck every month.

Each of these chemicals are classified as hazardous under the criteria of the Federal Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 29 CFR 1910.1200. Many of these chemicals are harmful if swallowed and could cause skin and eye damage. Refer to Table 4 for the chemicals to be utilized at the CCU.

3.4.6.2 Waste Material

As the waste generator, CRC would determine the toxicity and physical properties of the waste streams generated to determine the proper waste classification and disposal methods in compliance with applicable regulations i.e., California Health and Safety Code (CHSC) and the CCR. CRC has an Environmental Risk Management Process that covers all the required aspects of waste classification, tracking, and disposal. CRC would add all waste material to the required California Environmental Reporting System database along with the required maps and Consolidated Contingency and Emergency Response Plans.

The CO_2 capture process would generate waste amine. The spent EFG+ solvent would be accumulated at an estimated flow rate of 12 gallons per hour and would be stored within the SMS effluent tank. Approximately 205 bbl of spent amine solvent would be accumulated each month. The spent solvent would be stored up to 30 days and then removed by a vacuum truck and sent to a third-party hazardous waste treatment center. One such licensed transfer facility is Clean Harbors, located in Wilmington, California. The Wilmington facility is permitted to receive organic liquids, which are temporarily stored at the facility before being re-packaged and shipped to the ultimate disposal or recycling facility. The ultimate disposal facility would likely change over time based on market conditions. EFG+ solvent waste material would be disposed of in accordance with applicable law requirements at a fully regulated and permitted facility. CRC and site personnel would follow recommended measures described in EFG+ solvent Safety Data Sheet Accidental Release Measures. All hazardous waste would be placed in appropriate designated containers and removed from the Project site.

3.5 Decommissioning

If CRC decides to no longer use the EHOF properties as a carbon sequestering facility, CRC would then either divest the Project or decommission the Project site facilities and wells in accordance with appliable law. Permits for the removal of surface facilities would be obtained from CEC and Kern County. In lieu of removal, surface facilities may potentially be re-purposed for other site uses in accordance with applicable law. Any surface facility removal activities would be limited to removal or demolition of existing equipment and performed in accordance with applicable law.



3.5.1 Facility and Pipeline Abandonment Process

Surface and subsurface abandonment activities would begin after all applicable permits and notifications are completed. Typically, decommissioning tasks would include the following:

- Shut-down and bleed down of facilities and pipelines;
- Removal of residual fluids from tanks, pipelines, and vessels;
- Isolation and removal of utility systems (water, electrical service);
- Demolition and removal of intra-facility pipelines, tanks, vessels, and other equipment;
- Demolition and removal of concrete foundations and slabs; and
- Re-grading and re-seeding of facility and infrastructure areas.

3.6 Cumulative Projects

CEQA requires an evaluation of a project's cumulative effects. Cumulative impacts are the Project's impacts combined with the impacts of other related past, present and reasonably foreseeable future projects. A preliminary list of projects that are located near the Project site are listed below in Table 9. Kern County may add or subtract to the following list depending on other projects that are currently proposed, undergoing application processing, or have been recently approved. An EIR only briefly needs to indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. If the answer is yes, then the analysis proceeds to the second step, which is to determine whether the proposed project's incremental effects are cumulatively considerable. CEQA Guidelines Section 15065(a)(3) defines "cumulatively considerable" to mean that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. In accordance with CEQA Guidelines Section 15130(a)(3), a project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. In addition, the lead agency is required to identify facts and analyses supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

CEQA Guidelines Section 15130(b) further provides that the discussion of cumulative impacts reflect "the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great of detail as is provided for the effects attributable to the project alone." Rather, the discussion is to "be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute."

CEQA Guidelines Section 15130(b) states that complying with one of the following two protocols is necessary to provide an adequate discussion of significant cumulative impacts:

(A) A list of past, present, and probable future projects producing related or cumulative impacts including, if necessary, those projects outside the control of the agency; or

(B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

Cumulative study areas are defined based on an analysis of the geographical scope relevant to each particular environmental issue. Therefore, the cumulative study area for each individual environmental impact issue may vary. For example, a cumulative schools impact may only affect the schools serving the project site, while a cumulative air quality impact may affect the entire Air Basin. The specific boundaries and the projected growth within those boundaries for the cumulative study area of each environmental issue are identified in the applicable environmental issue section in Section 3, Environmental Impact Analysis, of this report.

A list of proposed development projects in the area of the Project that could affect conditions in the Project area was prepared based on information obtained primarily from the County of Kern. A total of 14 potential related development projects have been identified for inclusion in the cumulative impact analysis for this EIR. These related projects are in varying stages of the approval/entitlement/development process and consist of oil and gas and other carbon capture and storage projects.

The related projects are listed in Table 9. It is noted that some of the related projects may not be built out by 2027 (i.e., the Project buildout year), may never be built, or may be approved and built at reduced densities. To provide a conservative forecast, the future baseline forecast assumes that Related Project Nos. 1 through 14 are fully built out by 2027, unless otherwise noted.

Table 9 Cumulative Projects List

Name	Project Location	Distance/ Direction	Project Type	Approximate Size (acres)	Status
Salt Creek Carbon Capture and Storage	West Lokern Road and Lost Hills Road	14.3 mi. Northwest	CCS	4,000	Application incomplete
CarbonFrontier Capture and Storage	Lerdo Hwy and SR 33	15.5 mi. Northwest	CCS	12,362	EIR on hold
Eastridge Carbon Capture and Storage Project	China Grade Loop and Round Mountain Road	30.9 mi. Northeast	CCS	7,343	CUP Application on hold
Pond Road Biomass Carbon Removal and Storage Project	SR 99 and Pond Road	32.8 mi. North-Northeast	CCS	118	Application incomplete
Revision to Oil and Gas Zoning Ordinance under Kern County Planning and Natural Resources Department	San Joaquin Valley Floor portion of Kern County	Varies	Revisions to Title 19 of the Kern County Zoning Ordinance	Multiple	Second Supplemental Recirculated EIR in process State Clearinghouse # 2013081079
Crimson Resource Management Oil and Gas CUP	West of I-5, North SR 46, and East of Holloway Road	27.4 mi. North-Northwest	CUP Oil and Gas Extraction	800	Application incomplete
Aera Energy Oil and Gas CUP	Seventh Standard Road and SR 33	16.3 mi. Northwest	CUP Oil and Gas Extraction	650	EIR in process
CRC Oil and Gas CUP – Buena Vista	SR 119 and Midway Road	8 mi. South	CUP Oil and Gas Extraction	23,167	Application in review
CRC Oil and Gas CUP – Elk Hills	Skyline Road and SR 119	Adjacent	CUP Oil and Gas Extraction	54,196	Application in review
CRC Oil and Gas CUP – Kern Front	SR 65 to the West, Southwest by James Road, and on the East by Granit Road	28 mi. Northwest	CUP Oil and Gas Extraction	4,168	Application in review
Holmes Western Oil and Gas CUP	Southeast of Maricopa and Taft	11.1 mi. South	CUP Oil and Gas Extraction	1,108	Application Incomplete

Name	Project Location	Distance/ Direction	Project Type	Approximate Size (acres)	Status
CTV I Clean Energy Park	Unknown (Elk Hills)	Adjacent	Multiple Projects	Unknown	Not submitted - media PR
Lost Hills Solar to Hydrogen Project (Chevron New Energies)	South of Highway 46	25.5 mi. Northwest	Green Hydrogen Project	9	EIR in Process
Carbon TerraVault I (CRC)	West of Elk Hills Road and North of Skyline Road	Adjacent	CCS	9,104	Approved State Clearinghouse # 2022030180

Key:
CCS = Carbon Capture and Sequestration
CUP = Conditional Use Permit
EIR = Environmental Impact Report
I-5 = Interstate 5
PR = press release
SR = State Route

4 Environmental Analysis

The following section provides a description of environmental topics, an analysis of potential environmental impacts, proposed MMs, and a summary of applicable LORS. As the proposed Project approvals will require CEC approval and approval by other state and local agencies required to comply with CEQA, Table 10 provides a cross-reference matrix as to where specific CEQA topics are discussed.

Table 10 CEQA Cross-Reference Table

CEQA Topic	Relevant Sections
Aesthetics	4.14 Visual Resources
Agriculture and Forestry Resources	4.7 Land Use
Air Quality	4.1 Air Quality and Greenhouse Gas Emissions
Biological Resources	4.2 Biological Resources
Cultural Resources	4.3 Cultural Resources
Energy	4.4 Energy
Geology and Soils	4.5 Geologic Hazards and Resources 4.9 Paleontological Resources 4.12 Soils
Greenhouse Gas Emission	4.1 Air Quality and Greenhouse Gas Emissions
Hazards and Hazardous Materials	4.6 Hazardous Materials Handling 4.7 Land Use (Airspace) 4.10 Public Health 4.15 Waste Management 4.17 Worker Health and Safety
Hydrology and Water Quality	4.16 Water Resources
Land Use and Planning	4.7 Land Use
Mineral Resources	4.5 Geological Hazards and Resources
Noise	4.8 Noise
Population and Housing	4.11 Socioeconomics
Public Services	4.11 Socioeconomics
Recreation	4.11 Socioeconomics
Transportation	4.13 Transportation
Tribal Cultural Resources	4.3 Cultural Resources
Utilities and Service Systems	4.7 Land Use 4.16 Water Resources
Wildfire	4.6 Hazardous Materials Handling

4.1 Air Quality/Greenhouse Gas Emissions

The information and analysis presented in this section has been derived from the Air Quality and Greenhouse Gas Technical Study prepared for the Project and included as Appendix F (Stantec 2025a). To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Table 11 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 11 Appendix B Information Requirements for an AFC – Air Quality

Summary of Requirement	Section
Air Quality	
Information required by the local air pollution control district to complete a Determination of Compliance	Copies of SJVAPCD application will be forwarded to CEC.
Heating value and chemical characteristics of proposed fuels; stack height and diameter; exhaust velocity and temperature; heat rate; expected capacity factor	Copies of SJVAPCD application will be forwarded to CEC.
Control technologies proposed to limit criteria pollutant emissions	Section 3.2, Section 3.4.1
Cooling system description; estimated cooling tower drift rate; water flow rate; maximum concentrations of total dissolved solids	Section 3.2.1
Emission rates of criteria pollutants and greenhouse gases (CO_2, CH_4, N_2O, SF_6) from all sources including stack, cooling towers, fuel handling, delivery/storage systems, and secondary on-site sources	Section 4.1.2.2
(i) Typical operational, start-up, and shutdown modes; frequency, duration, and emission rates for each mode (ii) Initial commissioning phase details including equipment tests, emissions, and monitoring techniques	Copies of SJVAPCD application will be forwarded to CEC.
Ambient concentrations of criteria pollutants over the past three years from the three nearest certified monitoring stations; analysis of data representativeness or justification for data substitution	Copies of SJVAPCD application will be forwarded to CEC.
One year of meteorological data from the nearest FAA Class 1 station or project site (i) If site-collected, demonstration of compliance with EPA guidance document EPA-450/4-87-013	Section 4.1.1.1

Summary of Requirement	Section
(ii) Data to include wind tables, wind roses, temperature, humidity, stability, mixing heights, upper air data, and representativeness analysis	
Evaluation of direct and cumulative air quality impacts (i) Screening or detailed modeling of construction impacts including fugitive dust and combustion emissions (NO_x, SO_2, CO, PM_{10}, $PM_{2.5}$) (ii) Screening or detailed modeling of operational impacts during normal, shutdown, and startup modes; include maximum emissions and meteorological assumptions (iii) Protocol for cumulative impact modeling with other permitted but non-operational sources within six miles; assessment of potential violations of ambient standards (iv) Air dispersion modeling of commissioning phase emissions and their impact on ambient standards	Section 4.1.2.2, Section 4.1.3
Emission offset strategy (i) Quantity of offsets needed by pollutant type, including greenhouse gases if applicable (ii) Potential offset sources, including location and quantity	Section 6: Compliance with Existing Conditions of Certification
Mitigation measures for criteria pollutant impacts that exceed ambient standards but are not subject to offset requirements under the district's new source review rule	Section 4.1.4

4.1.1 Environmental Setting

The Project site is located within the SJVAB and within the jurisdiction of SJVAPCD. Air pollution in the SJVAB can be attributed to both anthropogenic (i.e., human-related) and non-anthropogenic (i.e., natural) activities that can produce emissions. Air pollution from significant anthropogenic activities in the SJVAB include a variety of industrial-based sources and on- and off- road mobile sources (SJVAPCD 2015).

4.1.1.1 Climate, Topography, Wind, and Meteorology

The SJVAB has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone [O_3]), and the SJVAB averages over 260 sunny days per year. (SJVAPCD 2015). Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the SJVAB form natural horizontal barriers to the dispersion of air contaminants. Strong temperature inversions occur throughout the SJVAB in the summer, fall, and winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and NO_x, which results in the formation of O_3 (SJVAPCD 2015). Because of the prevailing daytime winds and time-delayed nature of O_3, concentrations are highest in the southern portion of the SJVAB.

4.1.1.2 Kern County Climate Data

In 2024, Kern County's total precipitation (rainfall and snow) was 10.34 inches with an average temperature of 63.75 degrees Fahrenheit (ºF) and an average wind speed of 5.35 miles per hour.

4.1.1.3 Criteria Air Pollutants

Criteria air pollutants include O_3, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2) (including oxides of sulfur [SO_x]), particulate matter (measured both in units of smaller than 2.5 microns in diameter [$PM_{2.5}$] and in units of particulate matter smaller than 10 microns in diameter [PM_{10}]), and lead.

4.1.1.3.1 Attainment Status

The current attainment designations for the SJVAB are shown in Table 12. The SJVAB is designated as non-attainment for federal and state O_3 and $PM_{2.5}$ and state PM_{10}.

Table 12 San Joaquin Valley Air Basin Attainment Status

Pollutant	Designation/Classification of Federal Standards	Designation/Classification of State Standards
Ozone – One hour	No Federal Standard	Non-attainment/Severe
Ozone – Eight hour	Non-attainment/Extreme	Non-attainment
PM_{10}	Attainment	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	No Designation/Classification
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	No Designation/Classification
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2025

4.1.1.4 Toxic Air Contaminants

Toxic air contaminants (TACs), as defined by U.S. EPA and CARB, are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air but, due to their high toxicity, they may pose a

threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered “criteria pollutants” under either the Federal Clean Air Act (FCAA) or the California Clean Air Act (CCAA) and are not subject to National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS). The following TACs of concern may be associated with the Project:

- Diesel Particulate Matter (DPM)
- Asbestos

4.1.1.5 Diesel Particulate Matter

DPM is typically composed of carbon particles (also called “soot” or “black carbon”) and numerous organic compounds, including over 40 known cancer-causing organic substances. DPM is estimated to increase Statewide cancer risk by 520 cancer occurrences per million residents exposed over an estimated 70-year lifetime. Non-cancer health effects associated with exposure to DPM include premature death, exacerbated chronic heart and lung disease, including asthma, and decreased lung function in children. Short-term exposure to diesel exhaust can also 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 (CARB 2025c).

4.1.1.6 Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals with useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. 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 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings constructed prior to 1977 when it was banned for use in buildings. Exposure to naturally occurring asbestos can occur during soil disturbing activities in areas with deposits present (U.S. EPA 2024g).

4.1.1.7 Sensitive Receptors

Existing land use in the vicinity of the Project site is exclusively oil and gas exploration and production. The sensitive receptors closest to the Project site include the residential communities of Tupman to the east, Dustin Acres and Valley Acres to the southeast and McKittrick and Derby Acres to the west. Residential



receptors are not located within five miles of the construction area. The nearest school is Elk Hills Elementary School located approximately 6.7 miles east within the community of Tupman.

4.1.1.8 Valley Fever

Valley Fever is an infection caused by a fungus that lives in the soil. About 10,000 cases in the United States are reported each year, mostly from Arizona and California. Valley fever can be misdiagnosed because its symptoms are like those of other illnesses. The fungus that causes Valley fever, Coccidioides, grows naturally and is found in the southwestern United States, parts of Mexico and Central America, and parts of South America. The fungus grows naturally and is endemic in many areas within the SJVAB. People can get this infection by breathing in fungal spores from the air, especially when the wind blows the soil with the fungal spores into the air or the dirt is moved by human activity. About 40 percent of the people who come into contact with the fungal spores would develop symptoms that may require medical treatment, and the symptoms would not go away on their own. Some people may develop a more severe infection, especially those with compromised immune systems (Centers for Disease Control 2020).

4.1.1.9 Greenhouse Gases

Among the prominent GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride (NF_3), sulfur hexafluoride (SF_6), and black carbon. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels such as coal, diesel, and biomass (CARB 2025d).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Based on a 100-year time horizon, CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHGs with high GWP include NF_3, SF_6, perfluorocarbons, and black carbon.

In 2022, GHG emissions within California totaled 371.1 MMT of CO_2 equivalent (CO_2e). Emissions associated with industrial uses are the second largest contributor after transportation, totaling roughly 23 percent. Industrial emissions are driven by fuel combustion from sources that include refineries, oil and gas extraction, cement plants, and the portion of cogeneration emissions attribution to thermal energy output. Electricity generation (in state and imports) totaled roughly 16 percent. Emissions from the electricity generation sector have declined over the years due to the increase in renewable generation that continues to replace fossil power (CARB 2024b).

4.1.2 Impact Analysis

4.1.2.1 Significance Criteria

In accordance with the CEQA Guidelines Appendix G Environmental Checklist,, the following questions are to be analyzed and evaluated to determine whether air quality and GHG impacts are significant.

Air Quality. Would the proposed project:

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 non-attainment under an applicable federal or state ambient air quality standard?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Greenhouse Gas Emissions. Would the Project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

4.1.2.2 Air Quality

Less than significant with mitigation. The Project would fall below SJVAPCD thresholds and would be consistent with SJVAPCD rules and regulations as well as the Kern County General Plan, thus, the Project would be consistent with the applicable air plans. The Project lies within SJVAB, which is under the jurisdiction of SJVAPCD. As noted previously, SJVAB is designated as nonattainment for O_3, PM_{10}, and $PM_{2.5}$. Accordingly, SJVAPCD has prepared air quality plans, including the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards and the 2022 Ozone Plan, to achieve attainment of the applicable O_3 and PM standards According to the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts, individual projects that are below regional thresholds for criteria pollutants would not conflict with applicable air quality plans (SJVAPCD 2015). The Project is also consistent with the growth projections within the Kern County Council of Government's Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) and, as a result, the Project would not conflict with or obstruct implementation of the applicable air quality plan.

Project activities would result in emissions from construction and on-road vehicular traffic from the construction and operations of the CCU. The Project would be required to comply with all relevant provisions of SJVAPCD rules. The Project would be required to comply with the policies and measures of the Kern County General Plan, which has specific air quality policies and goals to be achieved through compliance with SJVAPCD rules and regulations. With the implementation of MM AIR-1 through MM-AIR-6 (compliance with SJVAPCD rules and regulations), the impact would be less than significant.

Project emissions for construction, operation, and decommissioning are expected to fall below SJVAPCD thresholds (see Tables 13 and 14). Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard, and the impact would be less than significant.



Table 13 Project Construction Criteria Pollutant Emissions

Year	Emissions (tons/year)					
	ROG	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
2027	0.69	2.09	12.3	<0.005	5.46	1.01
2028	0.52	1.46	10.8	<0.005	3.36	0.78
SJVAPCD Thresholds of Significance	**10**	**10**	**100**	**27**	**15**	**15**
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: Stantec 2025a

Table 14 Project Operational Criteria Pollutant Emissions

Source	Emissions (tons/year)					
	ROG	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Mobile	0.03	0.09	0.51	<0.005	0.18	0.05
Area	0.63	0.00	0.00	0.00	0.00	0.00
	3.85	*4.27*	*13.3*	*7.01*	*5.33*	*5.33*
Total	*4.52*	*4.37*	*13.7*	*7.01*	*5.50*	*5.37*
SJVAPCD Thresholds of Significance	**10**	**10**	**100**	**27**	**15**	**15**
Exceeds Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

Note: Energy emissions represent the net increase in emissions associated with the combustion of natural gas at the EHPP required to meet the energy demand from the Project. The additional energy may be produced from the additional steam generator, however emissions associated with the production of that energy would be similar. See Appendix B of the Air Quality Impact Assessment report.
Sources: Appendix B of Stantec 2025a

The Project would not expose sensitive receptors to criteria pollutant hotspots, such as generated fugitive dust (PM_{10}), naturally occurring asbestos, construction-generated DPM, operational related TACs, or operational CO hotspots, during construction and operation. Receptors are not located within five miles of the Project site. The sensitive receptors closest to the Project site include the residential communities of Tupman to the east, Dustin Acres and Valley Acres to the southeast and McKittrick and Derby Acres to the west. All projects within the jurisdiction of the SJVAPCD are required to implement Regulation VIII to reduce fugitive PM_{10} emissions. These measures require the Project to limit visible dust to 20 percent opacity. Additionally, based on the size of the site, the Project would be required to submit a Dust Control Plan to the SJVAPCD prior to the start of any construction activities. Implementation of Regulation VIII and a Dust Control Plan would minimize construction- and decommissioning-related fugitive dust emissions. A review of the map with areas more likely to have rock formations containing asbestos in California indicates that there is no asbestos in the immediate Project site (United States Geological Survey [USGS] 2011). Therefore, construction and decommissioning of the Project would not expose workers or other receptors to asbestos. The nearest sensitive receptors are well outside of the buffer areas for all land uses and, therefore, the health impacts from DPM due to Project construction posed to a sensitive receptor would be



less than significant. The primary source of TACs during long-term operations would be associated with DPM emissions from heavy-duty diesel truck use. However, the DPM generated from the Project would be minimal given the limited number of trips, and as discussed above, there are no sensitive receptors located within five miles of the Project site.

Sensitive receptors are not located within five miles of the Project site. Construction activities associated with the Project could result in short-term odorous emissions from diesel exhaust associated with diesel-fueled equipment. However, these emissions would be intermittent. Project construction would also be required to comply with all applicable SJVAPCD rules and regulations, particularly associated with permitting of air pollutant sources and nuisance. SJVAPCD has established screening distances to qualitatively assess a project's potential to adversely impact receptors during facility operation. According to SJVAPCD, if there are sensitive receptors within these screening distances for these facility types, a detailed analysis should be prepared.

Since a carbon capture facility is not identified as an odor source by SJVAPCD and sensitive receptors are not located within 4.97 miles of the Project site, the Project exceeds the screening distance for odorous facility types. As such, a more detailed analysis is not required to evaluate odor potential during Project operation. Compliance with the aforementioned regulations would help to minimize emissions, including emissions leading to odors.

4.1.2.3 Greenhouse Gas Emissions

Less than significant with mitigation. The Project's GHG emissions were quantified using CalEEMod. Construction GHGs would be emitted by the off-road construction equipment and vehicle travel by workers and material deliveries to the Project site. The estimated construction GHG emissions are shown in Table 15. In accordance with industry standards, construction emissions are amortized over the assumed 26-year Project lifetime.

Table 15 Construction Greenhouse Gas Emissions

Construction Year	Emissions ($MTCO_2e$)
2027	3,286
2028	3,090
Total	6,376
Amortized Construction Emissions[1]	245.23

1 Project operational duration assumed to be 26 years
Source: Stantec 2025a

Operational activities of the Project would generate GHG emissions primarily from energy generation sources. However, the Project is anticipated to capture and inject approximately 1,600,000 $MTCO_2e$ per year. Operational GHG emissions are shown in Table 16. As shown below, the Project would result in a net reduction of GHG emissions.

Table 16 Operational Greenhouse Gas Emissions

Source	Emissions ($MTCO_2e$ per year)
Amortized Construction Emissions	245.23
Amortized Decommissioning Emissions	245.23
Mobile	188.98
Area	-
Water	60.85
Waste	58.92
Refrigeration	6.55
Stationary	74,616
Compressor Startup and Shutdown and piping Maintenance Venting[1]	270
Subtotal	*75,692*
CO_2 Capture and Injection	-1,600,000.00
Total[2]	-1,524,308

Note:
[1] This is to capture a potential venting scenario that may occur during Project operation. The 270 MT CO_2e/yr were provided by the Applicant and account for the CO_2 compressor start up, the discharge of CO_2 compressor piping vent during maintenance, and CO_2 compressor blowoff and emergency venting.
[2] Totals may not appear to sum due to rounding. Energy emissions represent the net increase in emissions associated with the combustion of natural gas at the EHPP required to meet the energy demand from the Project. See Appendix B of the Air Quality Impact Assessment.
Sources: Appendix B of Stantec 2025a

As shown above, the Project would result in a net reduction of GHG emissions of approximately 1.5 MMTPY of CO_2e. However, the total annual reduction may not reach this level in the event of an unanticipated leak or plant outage. The potential for leaks would be reduced through implementation of MM GHG-1 and GHG-2. Regardless, project significance is based on consistency with GHG reduction plans. As shown in Impact GHG-2, the Project would be consistent with CARB's 2022 Scoping Plan and the Kern County General Plan; therefore, impacts are less than significant with implementation of MMs GHG-1 and GHG-2.

The Project would not conflict with an applicable plan adopted for the purpose of reducing GHG emissions and the impact would be less than significant. The Project would be subject to complying with SB 32 and AB 1279. The CARB's 2022 Scoping Plan sets a framework for California to meet the reduction targets of SB 32 and AB 1279 (CARB 2022). By being consistent with SJVAPCD and CARB rules and regulations as well as state laws, the Project would be consistent with the Kern County General Plan. For example, CARB has set a number of vehicle and fuel emissions standards that would reduce GHG emissions. Vehicles accessing the Project site would comply with CARB vehicle and fleet standards in effect at the time. Therefore, the Project would not conflict with an applicable plan adopted for the purpose of reducing GHG emissions, and the impact would be less than significant with mitigation.



4.1.3 Cumulative Impacts

Less than significant. Air quality is a largely cumulative impact for the San Joaquin Valley Air Basin. The nonattainment status of regional pollutants is a result of past and present development within the area. Future attainment of air pollutants is a function of the successful implementation of SJVAPCD's attainment plans. As discussed above, SJVAB is in non-attainment for federal and state O_3 and $PM_{2.5}$ and state PM_{10}. As discussed in Impacts, SJVAPCD developed thresholds of significance for air pollutants at levels for which the Project's individual emissions would be cumulatively considerable. If the Project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. As shown in Table 13 and Table 14, the Project would not exceed SJVAPCD construction or operational emissions and would not result in a cumulative impact.

Less than significant. GHG emissions are inherently cumulative. As discussed in Impacts, the Project's total construction emissions would be 6,158 metric tons (MT) of CO_2e. During operation, the Project would emit approximately 787 MTPY of CO_2e. However, the CCS would capture approximately 1.6 MMTPY of CO_2e, resulting in a net reduction of 1,5899,213 MT of CO_2e per year. The total annual reduction may not reach this level in the event of an unanticipated leak or equipment failure; however, the Project would be required to implement MM GHG-1 and MM GHG-2 to reduce impacts from potential leaks. Additionally, as discussed under Impact GHG-2, the Project would be consistent with CARB's 2022 Scoping Plan and the Kern County General Plan. Therefore, the GHG cumulative impacts are considered less than significant.

4.1.4 Mitigation Measures

The following mitigation measures (MMs) are proposed for the Project to reduce air quality and GHG impacts to less than significant.

MM AIR-1: Fugitive Dust Control. The owner/operator shall comply with SJVAPCD Regulation VIII, Fugitive PM_{10} Prohibitions. Specific dust control measures are detailed in Rules 8021, Construction, Demolition Excavation, Extraction, and Other Earthmoving Activities; Rule 8041, Carryout and Trackout; and Rule 8061, Paved and Unpaved Roads.

MM AIR-2: Dust Control Plan. The owner/operator shall develop and implement a Fugitive Dust Control Plan in compliance with SJVAPCD fugitive dust suppression regulations. The Fugitive Dust 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 onsite 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 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. Construction 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 that exceed the SJVAPCD 20% opacity standard.
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, except on agricultural fields where speeds are limited to 15 mph.
5. All hauling materials should be moist while being loaded into dump trucks.
6. All haul trucks hauling soil, sand, and other loose materials on public roads shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
7. Soil loads should be kept below 6 inches or the freeboard of the truck.
8. Drop heights when loaders dump soil into trucks shall not exceed 5 feet above the truck.
9. Gate seals should 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 San Joaquin Valley Air Pollution Control District Rules and Regulations.
13. Disturbed areas shall not exceed those shown on the Site Plan.
14. Disturbed areas should be re-vegetated as soon as possible after disturbance if area is no longer needed for oil and gas activities.

MM AIR-3: Worker Environmental Awareness Program. The following measures shall be implemented to address Valley Fever and pandemics:

1. The Project shall utilize the existing CRC Worker Environmental Awareness Program (WEAP) information on how to recognize the symptoms of Valley Fever and to promptly report suspected symptoms of work-related Valley Fever to a supervisor. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health



(NIOSH)-approved respirators shall be provided to onsite personal, upon request as part of the Worker Environmental Awareness Training Program.

2. Owner/operators shall implement all orders related to the COVID-19 pandemic or any other pandemic mandated by Kern County Public Health at construction sites and related to worker safety.

MM AIR-4: Off-Road Construction Equipment. All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 3 California Emission Standards for Off-road Compression-Ignition Engines as specified in CCR, Title 13, Section 2423(b)(1) unless that such engine is not available for a particular item of equipment. In the event a Tier 3 engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide nitrogen oxide and PM emissions that are equivalent to Tier 3 engines. Additionally, all off-road equipment shall comply with the following:

1. All equipment shall be turned off when not in use. Engine idling of all equipment shall be limited to five minutes, except under exemptions specified in CCR Title 13 Section 2449(d)(2)(A), unless required for use during heat illness prevention.
2. All equipment engines shall be maintained in good operating condition and in proper tune per manufacturers' specifications.

MM AIR-5: Haul Trucks. To further reduce emissions of NO_x from on-road heavy-duty diesel haul vehicles: 2007 engines or pre-2007 engines shall comply with CARB retrofit requirements set forth in CCR Title 13 Section 2025.

1. All on-road construction vehicles, except those meeting the 2007/ CARB-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.
2. All on-road construction vehicles shall be properly tuned and maintained in accordance with the manufacturers' specifications.

MM AIR-6: District Permitting. Consistent with the requirements of the SJVAPCD Regulation II, Permits, the owner/operator shall obtain an Authority to Construct permit and a Permit to Operate for any facility or equipment requiring a permit from the SJVAPCD, such as stationary sources required to obtain permits pursuant to SJVAPCD Rule 2010. All emissions increases from permitted equipment shall comply with SJVAPCD Rule 2201.

MM GHG-1: CO_2 Monitoring Plan. Prior to any injection of CO_2, the owner/operator shall submit an updated CO_2 monitoring plan (previously approved for CTV I) to U.S. EPA that complies with all requirements of the U.S. EPA UIC permit issued for the project to demonstrate the retention of CO_2 in the injection/hydrocarbon reservoir zone. A copy of the updated approved plan from the U.S. EPA shall be provided to CEC and the Kern County Planning and Natural Resources Department.

MM GHG-2: CO_2 Quarterly Injection Report. The owner/operator shall submit to CEC and the Kern County Planning and Natural Resources Department a quarterly report on the amount of CO_2 injected into



the CCS project, and the source of the CO_2. The reports shall be filed no later than the following dates of each year:

1. First quarter – March 31
2. Second Quarter – June 30
3. Third Quarter – September 30
4. Fourth Quarter – December 18 (early deadline)

4.1.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.1.6 Laws, Ordinances, Regulations, and Standards

Air quality at the proposed Project is governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 17.

Table 17 LORs for Air Quality

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Clean Air Act	NAAQS (40 CFR Part 50) PSD (40 CFR Part 52.21) Operating Permits (40 CFR Part 70), Regulatory Attainment Designations	U.S. EPA, SJVAPCD	Project will undergo review for compliance with NAAQS and PSD requirements.
National Standards for Hazardous Air Pollutants	40 CFR Part 61	U.S. EPA, SJVAPCD	Project will undergo review for compliance with NESHAP requirements.
Non Road Diesel Rule	40 CFR Parts 9, 69, 80, 86, 89, 94, 1039, 1048, 1051, 1065, and 1068) Requires newer engines for off-road diesel equipment, diesel trucks.	U.S. EPA, SJVAPCD	Refer to Section 4.1.2.
Corporate Average Fuel Economy Standards (CAFÉ)	49 USC Sections 32901 et seq.). Applicable to project-related light-duty vehicles and trucks.	U.S. EPA, CARB	Refer to Section 4.1.2
Energy Independence and Security Act	Public Law 110-140 (2007) Requires increased fuel economy standards for vehicles, development of CCS.	U.S. EPA	Section 4.1.2, project will advance a CCS project consistent with the Act.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
State			
California Clean Air Act	CAAQS, Regulatory Attainment Designations, Clean Air Plans for APCDs	CARB, SJVAPCD	Addressed in Section 4.1.2
Assembly Bills 1807 & 2588	Regulation of toxic air contaminants	CARB, SJVAPCD	Addressed in Section 4.1.2
Low Emission Vehicle Program	Low emissions vehicle standards for fleets	CARB	Project will not include fleet vehicles.
Assembly Bill 1493	Fuel economy standards for light-duty vehicles and trucks.	CARB	Project will not include fleet vehicles.
Senate Bill 1078	Renewable Electricity Standards	CARB	Project does not include renewable energy generation.
Senate Bill 1368	Emission Performance Standards - GHG emissions standards for electricity generation	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Assembly Bill 32/Senate Bill 32	Requires that GHGs emitted in California be reduced by 40% by 2030.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Climate Change Scoping Plan	Reduction of GHG emissions in accordance with AB 32.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Senate Bill 375 – The Sustainable Communities and Climate Protection Act of 2008	Reduce GHG emissions associated with transportation sector.	CARB	Traffic Impact Analysis Report includes Vehicle Miles Traveled analysis in accordance with SB 375.
Executive Order S-3-05 – Global Warming Impacts	Sets GHG emission reduction targets.	CARB	Project will reduce GHG emissions associated with existing natural gas-

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			fired power plant.
Executive Order S-01-07 – Low Carbon Fuel Standard (LCFS)	Reduce carbon intensity of fuels sold in California	CARB	Project may qualify for LCFS credits under CARB's adopted LCFS CCS Protocol.
Executive Order S-13-08 – Climate Adaptation Strategy	Statewide strategy for the reduction of GHG emissions.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Senate Bill 350 – Clean Energy and Pollution Reduction Act of 2015	Requirements for reducing GHG emissions from electricity grid.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Executive Order B-30-15	Establishes interim statewide GHG reduction targets.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Executive Order B-48-18	Sets goals for zero-emission vehicles and electric vehicle charging stations.	CARB	Project would not include dedicated fleet vehicles.
Executive Order N-79-20	Sets goals for zero-emissions vehicles sales.	CARB	Project would not include dedicated fleet vehicles.
Assembly Bill 398 – Cap and Trade Program	Requires cap and trade program to reduce GHG emissions.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Assembly Bill 617	Community air monitoring and emissions reductions program.	CARB	Project would comply with existing air emissions limits set for EHPP.
Senate Bill 100 – California Renewables Portfolio Standard Program	Sets renewable electrical production and zero-carbon resource targets	CARB	Project will reduce GHG emissions associated with existing natural gas-

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			fired power plant.
Assembly Bill 1279 - The California Climate Crisis	Requires further reduction of GHG emissions by 2045.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Assembly Bill 1757	Sets low-carbon electricity production goals.	CARB, CEC	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Senate Bill 905 – Carbon Capture, Removal, Utilization, and Storage Program	Requires CARB to adopt regulations for unified permitting of CCS projects.	CARB	The proposed CCS Project would comply with SB 905 requirements.
On-Road Heavy Duty Vehicle Program	Adopts emissions standards for heavy-duty vehicles.	CARB	Project-related heavy-duty vehicles would comply with this requirement.
California Green Building Standards Code	Adopts strict building code requirement for increased energy efficiency.	California Building Standards Council	The proposed project does not include new buildings. Project will comply with energy efficiency and water efficiency requirements.
Local			
San Joaquin Valley Air Pollution Control District Regulations (Rule 2010, 2201, 2280, 3135, 40024101, 4102, 4601, 8011-8081)	Requires conformance with Federal Clean Air Act and California Clean Air Act through permitting of new or modified sources.	SJVAPCD	The proposed project would require a Permit to Construct/Permit to Operate from the SJVAPCD.
SJVAPCD Climate Change Action Plan	Addresses requirements for GHG emissions reductions. Provide guidance on addressing GHG emissions in CEQA documents.	SJVAPCD	Refer to Section 4.1.2.3.
SJVAPCD Air Quality Plans	Includes plans with requirements for addressing NAAQS and CAAQS.	SJVAPCD	Refer to Section 4.1.2.2.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Kern county Guidelines for Preparing Air Quality Assessment for Use in EIRs	CEQA documents addressing Air Quality impacts.	Kern County Planning and Natural Resources Dept.	Air Quality Impact Assessment report was prepared in conformance with County document.
Land Use, Conservation, and Open Space Element *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.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Air quality and GHG impacts are evaluated in Sections 4.1, *Air Quality*. Consistent with this policy, the proposed Project would implement MM AIR-1 through AIR-6, which would reduce impacts to air quality to the extent feasible. Air quality mitigation measures include diesel emission reduction measures during construction, fugitive dust control measures, and Valley Fever exposure minimization measures.
Policy 19	In considering discretionary projects for which an EIR must be prepared pursuant to CEQA, the appropriate decisions making body, as part of its deliberations, will ensure that: All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and 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	Kern County Planning and Natural Resources Dept.	CONSISTENT. See 1.10.2, Air Quality, Policy 18, above. The CEC will prepare a CEQA-equivalent environmental document to address air quality impacts of the Project.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required 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 SJVAPCD and the Kern County Air Pollution Control District on ministerial permits.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. As discussed therein, implementation of MM 4.3-2 would further reduce fugitive dust emissions during construction and operation, in compliance with the adopted rules and regulations of the San Joaquin Valley 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 SJVAPCD and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.	Kern County Planning and Natural Resources Dept.	CONSISTENT. See 1.10.2, Air Quality, Policy 20, above air quality impacts are evaluated in Section 4.1, *Air Quality*. As discussed in that section, implementation of MMs AIR-1 and AIR-2 would further reduce PM10 and PM2.5 emissions during construction and operation.
Air Quality Implementation Measures Implementation Measure F	All discretional permits shall be referred to the appropriate air district for review and comment.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. Consistent with this measure, the necessary discretionary permits would be referred to the San Joaquin Valley Air Pollution Control District

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			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: Minimizing idling time. Electrical overnight plug-ins.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. Consistent with this measure, implementation of MM AIR-4 and MM AIR-5 would require diesel exhaust reduction strategies.
Implementation Measure H	Discretionary projects may use one or more of the following to reduce air quality effects: Pave dirt roads within the development. Pave outside storage areas. Use of alternative fuel fleet vehicles or hybrid vehicles. User of emission control devices on diesel equipment. Other strategies that may be recommended by the local Air Pollution Control District.		CONSISTENT. See 1.10.2, Air Quality, Policies 18 through 21, above. This EIR serves to comply with this policy.
Implementation Measure J.	The County should include PM_{10} control measures as conditions of approval for subdivision maps, site plans, and grading permits.	Kern County Planning and Natural Resources Dept.	

4.1.6.1 Federal LORS

4.1.6.1.1 Federal Clean Air Act

At the federal level, U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

The FCAA required U.S. EPA to establish NAAQS and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

The United State Supreme Court ruled in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007), that CO_2 and GHGs are pollutants under the FCAA. U.S. EPA is responsible for regulating GHGs if it determines that they pose an endangerment to public health or welfare. In December 2009, U.S. EPA issued an endangerment finding for GHGs under the FCAA. Currently, U.S. EPA implements public-private partnerships and voluntary programs to reduce GHG emissions, focusing on energy efficiency and the implementation of energy-reducing technologies.

4.1.6.1.2 National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, U.S. EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAPs). These are technology-based source-specific regulations that limit allowable emissions of Hazardous Air Pollutants (HAPs). Among these sources include asbestos-containing building materials. NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of asbestos-containing building materials associated with the demolition and renovation of structures.

4.1.6.1.3 Non-Road Diesel Rule

U.S. EPA has established a series of increasingly strict emissions standards for new off-road diesel equipment, on-road diesel trucks, and locomotives. New construction equipment used for the Project, including heavy-duty trucks and off-road construction equipment, would be required to comply with the emissions standards.

4.1.6.1.4 Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 mandated that the National Highway Traffic Safety Administration (NHTSA) establish and implement a regulatory program for motor vehicle fuel economy, known as the Corporate Average Fuel Economy (CAFE) program, to reduce national energy consumption. The CAFE program establishes average fuel economy standards for passenger cars and light trucks (*see* 49 USC Sections 32901 et seq.). In June 2024, NHTSA finalized CAFE standards for model years 2027 to 2031. The standards will bring the average light-duty vehicle fuel economy to approximately 50.4 miles per gallon by model year 2031. In addition, heavy-duty pickup truck and van fuel efficiency will increase to an average of approximately 35 miles per gallon by model year 2035. NHTSA projects that the foregoing



standards will avoid the consumption of almost 70 billion gallons of gasoline through 2050, preventing more than 710 MMT of CO_2 emissions by 2050 (NHTSA 2024).

4.1.6.1.5 Energy Independence and Security Act

The Energy Independence and Security Act (EISA) aimed to increase United States energy security, increased CAFE standards for motor vehicles, and included provisions related to energy efficiency, such as renewable fuel standards (RFS), appliance and lighting efficiency standards; and building energy efficiency standards. The EISA required increasing levels of renewable fuels to replace petroleum. U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the United States contains a minimum volume of renewable fuel.

The RFS programs regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005. The RFS program established the first renewable fuel volume mandate in the United States. As required under the EISA, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. The RFS program was expanded in several ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2, and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required by U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

4.1.6.2 State LORS

4.1.6.2.1 California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment



pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

4.1.6.2.2 Regulatory Attainment Designations

Under the CCAA, CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An “attainment” designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An “unclassified” designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

U.S. EPA designates areas for O_3, CO, and NO_2 as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For SO_2, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” However, CARB terminology of attainment, nonattainment, and unclassified is more frequently used. U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated “unclassified.”

4.1.6.2.3 Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC.

Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

4.1.6.2.4 Low-Emission Vehicle Program

CARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the state’s passenger vehicle fleet continues to grow and more sport



utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan (SIP). In 2012, CARB adopted the LEV III amendments to California's LEV regulations. These amendments include more stringent emission standards for criteria pollutants and GHGs for new passenger vehicles.

4.1.6.2.5 Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations and fuel efficiency standards that reduce GHGs emitted by passenger vehicles and light duty trucks. The fuel efficiency standards were phased in during the 2009 through 2016 model years.

The second phase of the implementation for AB 1493 was incorporated into Amendments to the LEV III or the Advanced Clean Cars program. The Advanced Clean Cars program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The rules helped promote a reduction in pollutants from gasoline and diesel-powered cars and helped deliver increasing numbers of zero-emission technologies, such as full battery EVs, newly emerging plug-in hybrid EVs, and hydrogen fuel cell cars. The regulations also encouraged adequate fueling infrastructure.

4.1.6.2.6 Senate Bill 1078: Renewable Electricity Standards

SB 1078 (September 12, 2002) required California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, the governor signed EO S-14-08, which established the Renewable Portfolio Standard (RPS) target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. EO S-21-09 directed CARB to adopt a regulation by July 31, 2010, requiring California's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010, by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

4.1.6.2.7 Senate Bill 1368: Emission Performance Standards

Enacted in 2006, SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant.

Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The CPUC adopted the regulations required by



SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds of CO_2 per megawatt-hour.

4.1.6.2.8 Assembly Bill 32 and Senate Bill 32

AB 32, the California Global Warming Solutions Act of 2006, requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. GHGs, as defined under AB 32, include CO_2, CH_4, NO_x, hydrofluorocarbons, perfluorocarbons, and SF_6. Since AB 32 was enacted, a seventh chemical, NF_3, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> *Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.*

CARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (CARB 2007). Therefore, to meet the state's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. To set a framework for the state to meet this target, CARB was tasked with creating a Scoping Plan (as described below). California announced in July 2018 that the state emitted 427 $MMTCO_2e$ in 2016 and achieved AB 32 goals (CARB 2018).

SB 32 was signed into law on September 8, 2016. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions authorized by this division, the State [air resources] board shall ensure that Statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit no later than December 31, 2030."

4.1.6.2.9 Climate Change Scoping Plan

The Scoping Plan is a blueprint for how the State plans to meet the required GHG reductions under AB 32, SB 32, and AB 1279. CARB is required under AB 32 to update the Scoping Plan at least once every 5 years. The most recent Scoping Plan is the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) that was adopted in December 2022 and serves as the third update to the initial plan adopted in 2008 (2008 Scoping Plan). The 2008 Scoping Plan addressed how the State can achieve the AB 32 reduction targets by 2020. An updated plan was adopted in 2014 (2013 Scoping Plan) to assess progress towards the 2020 reduction goal and address short-lived climate pollutants. The 2017 Scoping Plan also addressed progress towards the 2020 reduction goal and created a pathway for the State to meet the 2030 reduction goal set under SB 32.



Finally, the 2022 Scoping Plan assesses progress toward achieving the SB 32 2030 target and laying out a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022). The 2022 Scoping Plan also includes a discussion about the use of natural and working land use sectors for sequestration, carbon storage, and potential emission sources during wildfires. The estimated GHG emission reductions from the 2022 Scoping Plan are provided in Table 18.

Table 18 Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan

Emissions Scenario	GHG Emissions (MMT CO_2e)
2019	
2019 State GHG Emissions	404
2030	
2030 Business-As-Usual (BAU) Forecast	312
2030 GHG Emissions without Carbon Removal and Capture	233
2030 GHG Emissions with Carbon Removal and Capture	226
2030 Emissions Target Set by SB 32 (1990 levels by 2030)	260
Reduction below BAU necessary to Schieve 1990 levels by 2030	52
2045	
2045 BAU Forecast	266
2045 GHG Emissions with Carbon Removal and Capture	72
2045 GHG Emissions with Carbon Removal and Capture	-3

Source: CARB 2022

The 2022 Scoping Plan accounts for existing and recent direction in EOs and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the 2022 Scoping Plan. These EOs and State Statutes include AB 1279, SB 100, SB 905, and EO N-79-20. Ultimately, achieving the targets set by SB 32 and AB 1279 will require continued commitment to and successful implementation of existing policies and programs as well as new policy tools and technical solutions to further reduce GHG emissions.

4.1.6.2.10 Senate Bill 375: The Sustainable Communities and Climate Protection Act of 2008

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits more than 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able

to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

CARB has prepared a Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets in 2018 which set updated GHG reduction targets for metropolitan planning organizations for 2020 and 2035 (CARB 2025e).

4.1.6.2.11 Executive Order S-3-05: Global Warming Impacts

EO S-3-05 was signed on June 1, 2005. The EO sets the following GHG emission reduction targets: (1) by 2010, California shall reduce GHG emissions to 2000 levels; (2) by 2020, California shall reduce GHG emissions to 1990 levels; and (3) by 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

4.1.6.2.12 Executive Order S-01-07: Low Carbon Fuel Standard

EO S-01-07 was signed on January 18, 2007. The EO mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the EO established a LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in an implementation plan for the State Alternative Fuels Plan adopted by CEC on December 24, 2007, and was submitted to CARB for consideration as an "early action" item under AB 32. CARB adopted the LCFS on April 23, 2009.

The LCFS was subject to legal challenge in 2011. Ultimately, CARB was required to bring a new LCFS regulation for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS and new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law approved the regulation on November 16, 2015. The regulation was last amended in 2019 and approved on May 27, 2020. The 2019 Amendments provide clarification related to the Clean Fuel Reward program costs, credit transactions, fuels transactions and compliance reporting (CARB 2020). 2024 Amendments were approved in November 2024 and established new targets to reduce the carbon intensity of transportation fuel by 30 percent by 2030 and 90 percent by 2045. In addition, the 2024 Amendments increase support for zero emission vehicle (ZEV) infrastructure (CARB 2024c).

4.1.6.2.13 Executive Order S-13-08: Climate Adaptation Strategy

EO S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to



the requirements in this EO, the 2009 California Climate Adaptation Strategy was adopted, which is the "… first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

4.1.6.2.14 Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

SB 350 (October 7, 2015) reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies toward a regional electricity grid, and improved infrastructure for electric vehicle charging stations.

4.1.6.2.15 Executive Order B-30-15

EO B-30-15 was signed on April 29, 2015. The EO established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030. Additionally, the EO ordered all state agencies with jurisdiction over GHG sources to implement measures to achieve these GHG emissions reductions and it directed CARB to update the Scoping Plan to meet the 2030 goal.

4.1.6.2.16 Executive Order B-48-18

In January 2018, Governor Brown signed EO B-48-18 requiring all state entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This order also requires all state entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure.

4.1.6.2.17 Executive Order N-79-20

In September 2020, Governor Newsom signed EO N-79-20, which sets the following goals for the state: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the state shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the state shall be zero-emission by 2035, where feasible.

4.1.6.2.18 Assembly Bill 398: Cap-and-Trade Program

CARB administers the state's cap-and-trade program, which covers GHG sources that emit more than 25,000 MT of CO_2e per year, such as refineries, power plants, and industrial facilities. The Cap-and-Trade Program was initially adopted pursuant to AB 32 with the goal of reducing GHG emissions by creating a cap for GHG emissions from the aforementioned sources. Entities covered under Cap-and-Trade are allocated GHG allowances and can purchase or sell allowances at auction. The Program began in 2013 and the cap for GHG emissions will decline over time resulting in an aggregate decline in statewide emissions. This



market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions.

AB 398 was assigned into law in 2017 and extends the Cap-and-Trade program through December 31, 2030. AB 398 also updated protocols and the allocation of proceeds to reduce GHG emissions.

4.1.6.2.19 Assembly Bill 617

In response to AB 617 (C. Garcia, Chapter 136, Statutes of 2017), CARB established the Community Air Protection Program. The Community Air Protection Program includes community air monitoring and community emissions reduction program's focus is to reduce exposure in communities most impacted by air pollution. The Legislature has appropriated funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the state.

4.1.6.2.20 Senate Bill 100: California Renewables Portfolio Standard Program

SB 100 (September 10, 2018) revised the RPS goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

4.1.6.2.21 Assembly Bill 1279: The California Climate Crisis

AB 1279 was signed into law in 2022 and establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045 and maintain net negative GHG emissions thereafter. AB 1279 requires that by 2045 the statewide anthropogenic GHG emissions are reduced by at least 85 percent below 1990 levels. The bill also requires CARB to ensure that an updated Scoping Plan identifies and recommends measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal and carbon capture, utilization, and storage technologies to complement AB 1279's emissions reduction requirements.



4.1.6.2.22 Assembly Bill 1757: California Global Warming Solutions Act of 2006: climate goal: natural and working lands

AB 1757 (September 16, 2022) directs the California Natural Resources Agency (CNRA), CARB, California Environmental Protection Agency (CalEPA), California Department of Food and Agriculture, and an expert advisory committee to set targets for natural carbon sequestration and nature-based climate solutions for 2030, 2038, and 2045 by January 1, 2024, which must be integrated into CARB's Scoping Plan.

4.1.6.2.23 Senate Bill 905: Carbon Capture, Removal, Utilization, and Storage Program

SB 905 (September 16, 2022) directs CARB to create a carbon, capture, utilization, and storage program on or before January 1, 2025, that adopts regulations creating a unified State permitting application for the approval of CCS and CO_2 removal (CDR) projects.

4.1.6.2.24 On-Road Heavy-Duty Vehicle Program

CARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, CCR contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. CARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others.

In addition, the CARB Truck and Bus regulation was established to meet federal attainment standards. This regulation requires heavy-duty diesel vehicles that operate in California to reduce TAC emissions from their exhaust. Therefore, as of January 1, 2023, nearly all trucks and buses are required to have 2010 or newer model year engines to reduce PM and NO_x emissions. To help ensure that the benefits of this regulation are achieved, only vehicles compliant with this regulation are registered by the California Department of Motor Vehicles.

4.1.6.2.25 California Green Building Standards Code

The California Green Building Standards Code (CALGreen), CCR Part 11, Title 24, includes standards for energy efficiency, water efficiency, material conservation, and environmental quality in new residential and nonresidential structures. CALGreen was created in 2008 under SB 1473 to support California's GHG reduction goals under AB 32. CALGreen is updated on a triennial basis with minor revisions every 18 months.



4.1.6.3 Local LORS

4.1.6.3.1 San Joaquin Valley Air Pollution Control District

SJVAPCD is the agency primarily responsible for helping ensure that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the Project is located. Responsibilities of SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

4.1.6.3.1.1 Climate Change Action Plan

SJVAPCD adopted its Climate Change Action Plan (CCAP) in 2008. The CCAP directed SJVAPCD to develop guidance to assist CEQA agencies, Project proponents, permit applicants, and interested parties in assessing and reducing the impacts of Project GHG emissions.

In 2009, SJVAPCD adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA (SJVAPCD 2009). The document outlined SJVAPCD's methodology for assessing an individual project's GHG significance under CEQA.

4.1.6.3.1.2 Current Air Quality Plans

SJVAPCD is responsible for formulating and implementing the Air Quality Management Plans (AQMPs) for SJVAB. The main purpose of an AQMP is to bring the area into compliance with federal and state air quality standards. SJVAPCD does not have one single AQMP for criteria pollutants; rather, the SJVAPCD addresses each criteria pollutant with its own plan. SJVAPCD has the following AQMPs:

- **2024 Plan for the 2012 Annual $PM_{2.5}$ Standard.** SJVAPCD adopted the 2024 Plan for the 2012 Annual $PM_{2.5}$ Standard on June 20, 2024. The Plan creates emission reduction commitments that will allow the San Joaquin Valley to meet NAAQS $PM_{2.5}$ attainment for the 2012 standard of 12 $\mu g/m^3$ by 2030. The Plan includes implementation of SJVAPCD and CARB regulations as well as incentive-based commitments for stationary, area, and mobile sources in order to reduce $PM_{2.5}$ emissions by 10.8 tons per day and NO_x by 148.7 tons per day between 2017 and 2030 (SJVAPCD 2024).
- **2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards.** SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. CARB adopted the 2018 Plan on January 24, 2019, and portions were approved by U.S. EPA on June 30, 2020. The plan addresses the federal 1997 annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ and 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$; the 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$; and the 2012 annual $PM_{2.5}$ standard of 12 ug/m^3. The 2018 Plan builds upon previous $PM_{2.5}$ Attainment Plans but identifies new actions to further reduce emissions. The attainment deadline for the 1997 $PM_{2.5}$ Standard is December 31,



2015, the 2006 $PM_{2.5}$ Standard is December 31, 2024 (with a 5-year extension request), and the 2012 $PM_{2.5}$ Standard is December 31, 2025 (SJVAPCD 2018).

- **2022 8-Hour Ozone Plan.** In December 2022, SJVAPCD approved the 2022 Plan for the 2015 8-Hour Ozone Standard (2022 Ozone Plan). The 2022 Ozone Plan develops a strategy to attain the federal 2015 NAAQS of 70 parts per billion as quickly as possible, and no later than the 2037 attainment deadline (SJVAPCD 2022).

- **2016 8-Hour Ozone Plan.** In June 2016, the SJVAPCD Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard (2016 Ozone Plan). The comprehensive strategy in this plan is intended to reduce NO_x emissions by over 60 percent between 2012 and 2031. This would require another 207.7 tons per day in NO_x reductions from stationary and mobile sources throughout the San Joaquin Valley. The SJVAB faces significant and unique challenges in reducing O_3. Specifically, the geography and meteorology exacerbate the formation and retention of air pollution, and the SJVAB has one of the fastest population growth rates in the state. The 2016 Ozone Plan accounts for these challenges and builds upon the SJVAPCD's approved 1-hour O_3 and PM strategies to meet NAAQS. The 2016 Ozone Plan is expected to bring the SJVAB into federal attainment of U.S. EPA's 2008 8-hour O_3 standard as expeditiously as practicable, but no later than December 31, 2031 (SJVAPCD 2016).

- **2020 Reasonably Available Control Technology (RACT) Demonstration.** Pursuant to Sections 182(b) and (f) of the FCAA, areas classified as moderate or higher for O_3 nonattainment are required to implement RACT requirements for sources that are subject to U.S. EPA Control Techniques for major sources of Volatile Organic Compounds (VOCs) and NO_x. RACT requirements ensure that significant sources of emissions in nonattainment areas are controlled to a reasonable extent. SJVAPCD prepared the 2020 RACT Demonstration for the 2015 8-Hour Ozone Standard Demonstration (2020 RACT Demonstration) to build upon previous RACT reports and to provide a comprehensive evaluation of all NO_x and VOC SJVAPCD rules to ensure that each rule meets or exceeds RACT requirements. The document fulfills FCAA requirements and demonstrates that all federal RACT requirements continue to be satisfied in the Valley (SJVAPCD 2020).

- **2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard.** In June 2023, SJVAPCD adopted the 2023 Maintenance Plan. The SJVAB has been in attainment for the revoked 1-hour O_3 NAAQS since 2014, and the 2023 Maintenance Plan includes a demonstration that would ensure that the area remains in attainment through 2036 (SJVAPCD 2023).

- **2013 Revoked 1-Hour Ozone Plan.** SJVAPCD developed the 2013 Ozone Plan for U.S. EPA's revoked 1-hour O_3 standard. SJVAPCD had previously prepared a 1-hour Ozone Plan in 2004 that was approved by U.S. EPA. However, in 2010, U.S. EPA withdrew this approval as a result of litigation. SJVAPCD's 2013 Plan for the Revoked 1-Hour Ozone Standard was approved by the Governing Board in September 2013 (SJVAPCD 2013).



- **2007 PM_{10} Maintenance Plan.** In October 2006, U.S. EPA determined that the SJVAB attained PM_{10} standards, based on ambient monitoring data from the years 2003 through 2005. To constitute redesignation to attainment, SJVAPCD prepared the 2007 PM_{10} Maintenance Plan. The 2007 PM_{10} Maintenance Plan addresses both the 24-hour and the rescinded annual PM_{10} standards (SJVAPCD 2007).

4.1.6.3.1.3 Rules and Regulations

SJVAPCD rules and regulations that may apply to the Project include, but are not limited to, the following:

- **Rule 2010–Permits Required.** The purpose of this rule is to require any person constructing, altering, replacing, or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting, or falsifying any Permit to Operate.
- **Rule 2201–New and Modified Stationary Source Review Rule.** The purpose of this rule is to provide for the following:
- The review of new and modified Stationary Sources of air pollution and to provide 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; and
- No net increase in emissions above specified thresholds from new and modified Stationary Sources of all non-attainment pollutants and their precursors.
- **Rule 2280—Portable Equipment Registration**. Portable equipment used at project sites for less than six consecutive months must be registered with the SJVAPCD. The SJVAPCD will issue the registrations 30 days after receipt of the application.
- **Rule 3135—Dust Control Plan Fee.** This rule sets fees to cover SJVAPCD review of Dust Control Plans and inspections.
- **Rule 4002–National Emission Standards for Hazardous Air Pollutants.** This rule incorporates the National Emission Standards for HAPs from Part 61, Chapter I, Subchapter C, Title 40 CFR and the National Emission Standards for HAPs for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, CFR.
- **Rule 4101—Visible Emissions.** This rule prohibits the emissions of visible air contaminants into the atmosphere.
- **Rule 4102–Nuisance.** The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.



- **Rule 4601–Architectural Coatings.** The purpose of this rule is to limit VOC emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.
- **Rule 8011—General Requirements.** Fugitive Dust Emission Sources. Fugitive dust regulations are applicable to outdoor fugitive dust sources. Operations, including construction operations, must control fugitive dust emissions in accordance with SJVAPCD Regulation VIII. According to Rule 8011, the SJVAPCD requires the implementation of control measures for fugitive dust emission sources. For projects in which construction-related activities would disturb equal to or greater than one acre of surface area, the SJVAPCD recommends that demonstration of receipt of an SJVAPCD-approved Dust Control Plan or Construction Notification Form, before issuance of the first grading permit, be made a condition of approval.
- **Regulation VIII–Fugitive PM_{10} Prohibitions.** Rules 8011-8081 are designed to reduce PM_{10} emissions (e.g., dust or dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

4.1.6.3.2 Kern County Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports

In 2006, Kern County released their Guidelines for Preparing an Air Quality Assessment for Use in EIRs. The purpose of this guidance is to assist with the preparation of technical air quality assessments prepared by Kern County. The guidelines are to ensure uniform analyses of air quality effects within the County (Kern County 2006).

4.1.6.3.3 Kern County General Plan

SJVAPCD adopted its CCAP in 2008. The CCAP directed SJVAPCD to develop guidance to assist CEQA lead agencies, Project proponents, permit applicants, and interested parties in assessing and reducing the impacts of Project GHG emissions.

In 2009, SJVAPCD adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Project under CEQA (SJVAPCD 2009). The document outlined SJVAPCD's methodology for assessing an individual project's GHG significance under CEQA.

While the General Plan does not include policies that directly address GHG emissions, the policies related to air quality would have co-benefits related to GHGs (Kern County 2009). The Kern County General Plan presents a vision for the County's future, looking ahead to 2040. State law required that counties and cities adopt and periodically update a General Plan to guide land use development. The purpose of the General Plan is to encourage economic development; work with local, state, and federal agencies to plan the long-term future of Kern County; ensure the protection of environmental resources; and maintain compliance



with the provisions of State Planning and Zoning Laws. The General Plan includes the following policies related to air quality that are applicable to the Project (Kern County 2009):

Land Use, Conservation, and Open Space Element

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 EIR must be prepared pursuant to CEQA, the appropriate decisions making body, as part of its deliberations, will ensure that:
    - All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
    - 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 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 SJVAPCD 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 SJVAPCD 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 SJVAPCD.
- **Policy 24:** Kern County shall consult with transit providers to determine project effects and ensure that impacts are mitigated.

Air Quality Implementation Measures

- **Implementation Measure F.** All discretional permits shall be referred to the appropriate air district for review and comment.
- I**mplementation Measure G.** Discretionary development projects involving the use of tractor trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
    - Minimizing idling time.



    - Electrical overnight plug-ins.

- **Implementation Measure H.** Discretionary projects may use one or more of the following to reduce air quality effects:
    - Pave dirt roads within the development.
    - Pave outside storage areas.
    - Use of alternative fuel fleet vehicles or hybrid vehicles.
    - User of emission control devices on diesel equipment.
    - Other strategies that may be recommended by the local Air Pollution Control District.
- **Implementation Measure J.** The County should include PM_{10} control measures as conditions of approval for subdivision maps, site plans, and grading permits.

4.1.7 References

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4.2 Biological Resources

The information and analysis presented in this section has been derived from the Biological Resources Technical Report (BRTR) and Aquatic Resources Delineation Report prepared for the Project and included as Appendix G and F (Stantec 2025b and 2025c). Table 19 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 19 Appendix B Information Requirements for an AFC – Biological Resources

Summary of Requirement	Section
Biological Resources	
Regional overview of terrestrial and aquatic biological resources within 10 miles of the project, with emphasis on sensitive resources List of USGS topographic quadrangles used for CNDDB search and citation with access date Map at 1:6,000 scale (confidential) and 1:350,000 scale (public) showing sensitive biological resource locations, project facilities, and any Habitat Conservation Plan boundaries Sensitive biological resources include: (i) Species listed under state or federal Endangered Species Acts (ii) Species considered under CEQA Guidelines § 15380 (iii) State Fully Protected species (iv) Species covered by the Migratory Bird Treaty Act (v) Species/habitats identified by agencies or in local plans needing protection (vi) Locally significant species rare or uncommon in the region (vii) Rare plants under the California Native Plant Protection Act (viii) Native wildlife corridors or nursery sites	Section 4.2.1.1, Section 4.2.1.2
List of species and habitats observed or with potential to occur within 1 mile of the project site and 1,000 feet from linear facility corridors (i) Detailed maps at 1:6,000 scale or aerial photos at 1" = 500' (confidential) and 1:350,000 scale (public) showing biological resources and survey areas (ii) Aerial map of isopleth graphic showing modeled nitrogen deposition rates within a 6-mile radius, identifying sensitive habitat acreage (iii) Aerial photo showing jurisdictional features (e.g., wetlands, state waters) within 250 feet of disturbance areas, for permitting purposes (iv) GIS data files (shape/geodatabase) for all mapped biological resources	Section 4.2 and Appendix G - Biological Resources Technical Report
Discussion of biological resources at the project site and related facilities (e.g., laydown areas, pipelines, transmission lines, roads) (i) List of sensitive species and habitats with potential to occur, including status (state, federal, CNPS, global/state rank)	Section 4.2.1.5 and Appendix G - Biological Resources Technical Report, Nitrogen deposition modeling not performed as Project

Summary of Requirement	Section
(ii) Nitrogen deposition modeling results, including citations, deposition rates (kg N/ha/yr), and affected habitats/species	does not change the EHPP operational conditions.
Description and results of field studies and specialized surveys used to establish biological baseline (i) Current biological surveys conducted using appropriate protocols during relevant seasons, with agency consultation (ii) Wetland delineation forms and results if jurisdictional wetlands may be impacted, including biologist qualifications and acreage of affected features	Section 4.2.1.2 and Appendix G - Biological Resources Technical Report
Discussion of direct, indirect, and cumulative impacts to biological resources from all project phases, including air emission impacts (e.g., nitrogen deposition)	Section 4.2.2 and Appendix G - Biological Resources Technical Report
Discussion of feasible mitigation measures and their effectiveness (i) Measures to avoid or reduce adverse impacts (ii) Off-site habitat mitigation, including management and agency coordination (iii) Educational programs to raise employee awareness during construction and operation	Section 4.2.4 and Appendix G - Biological Resources Technical Report
Compliance and monitoring programs to ensure effectiveness of mitigation and avoidance measures	Section 4.2.4 and Appendix G - Biological Resources Technical Report
Copies of preliminary correspondence with resource agencies regarding potential permit requirements (e.g., USFWS, NMFS, USACE, CDFW, RWQCB)	Appendix G - Biological Resources Technical Report

4.2.1 Environmental Setting

4.2.1.1 Existing Conditions

The Project site is situated within the EHOF, located within the Elk Hills, a low mountain range with a maximum elevation of 1,546 feet, in western Kern County. The Buena Vista Valley separates the Elk Hills range from the Buena Vista hills to the south. Much of the EHOF has been developed for oil and gas production and is maintained devoid of vegetation. However, fragments of saltbush scrub and non-native grassland habitat persist among the existing infrastructure. The Project site is surrounded by gently sloping hills that have been heavily disturbed by ongoing oil and gas activities. Topography in the general area is characterized by open, gently undulating plains, from which isolated low hills periodically rise. Elevations within the Project site range from approximately 1,280 to 1,382 feet above mean sea level. Surrounding land use consists of an active oilfield with existing wells, well pads, oilfield roads, surface pipelines, and overhead power and communication lines. Adjacent to the EHOF to the west is the McKittrick Oilfield, to the south is the Buena Vista Hills Oilfield, and southwest of the Buena Vista Oilfield is the Midway-Sunset Oilfield, the largest in California and third largest in the United States. Agricultural fields are located to the north, east, and southeast of the Elk Hills within the San Joaquin Valley.

The regional climate of the Project site is typically characterized by long, hot, dry summers and rainy, mild winters, with precipitation evenly distributed through fall, winter, and spring. Winters are generally moderate



with occasional frost, and summer evaporation rates are typically very high. The Project site is located predominantly within the Middle Kern - Upper Tehachapi-Grapevine (Hydrologic Unit Code 18030003) watershed, which drains an approximately 712,960 acre, 1,114-square mile area in the southern portion of the San Joaquin Valley. Soil types present on the Project site include predominantly fine-grained soils of the Elkhills and Kimberlina Series.

4.2.1.2 Biological Surveys

Reconnaissance-level Plant and Wildlife Surveys

Reconnaissance-level wildlife and plant surveys including a habitat assessment were conducted by Stantec biologists on February 19, 20, and 27, 2025. Additional laydown areas were surveyed on May 8, 2025 and June 10, 2025. The surveys encompassed the Project site and a 500-foot buffer (referred to as Biological Study Area [BSA]) (Stantec 2025a). These surveys aimed to identify habitat types, evaluate their suitability for supporting special-status species, document any special-status species or sensitive biological resources, and inventory observed plant and wildlife species.

Focused Rare Plant Surveys

Focused rare plant surveys were conducted during the early, mid, and late blooming seasons and included the Project site and 50-foot buffer. Early-season surveys were conducted on February 19, 20, and 27, 2025, mid-season surveys on March 17 and 18, 2025, and late-season surveys on May 7 and 8, 2025. These surveys were timed to allow for the best possible opportunity to observe rare plants during suitable phenological periods. The surveys followed the CDFW “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (CDFW 2018) and USFWS “Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants” (USFWS 2000). Early and mid-season focused rare plant surveys were not conducted on three proposed staging sites and laydown areas located west of Highway 119, and no rare plant surveys were conducted at two laydown areas immediately northeast of the facility. Lack of complete rare plant survey coverage resulted from late Project description and component revisions. Additional rare plant surveys should be conducted in 2026.

Temblor Legless Lizard Survey

A habitat assessment for Temblor legless lizard (*Anniella alexanderae*; TLL) was conducted by Stantec sub-consultant, Dr. Ted Papenfuss, on February 28, 2025 (Papenfuss 2025; Stantec 2025a).

Crotch Bumblebee Survey

A total of three focused surveys for Crotch’s bumblebee (*Bombus crotchii*; CBB) were conducted by biologist Donna Noce on May 7-9, May 19-21, and June 17-19, 2025 (Noce 2025; Stantec 2025a).

Aquatic Resources Delineation

A jurisdictional delineation, including a desktop review of mapped aquatic resources and field surveys, was completed by Stantec biologists. Field assessments and delineation were conducted on February 11, 19, and 20, 2025; May 8, 2025; and June 24, 2025. The aquatic resources field surveys included the Project site and a 50-foot buffer (Aquatic Study Area) (Stantec 2025b). The delineation was performed in accordance with the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (United States Army Corps of Engineers [USACE] 2008) and the Implementation Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (State Water Resources Control Board [SWRCB] 2021).

4.2.1.3 Vegetation Communities and Land Cover

During the reconnaissance-level surveys, biologists documented two vegetation communities, as defined by defined by Sawyer et al. (2009) in the Manual of California Vegetation, 2nd Edition, and one land cover type within 500 feet of the Project site (Sawyer et al. 2009). The vegetation communities identified within the BSA included Allscale (*Atriplex polycarpa*) Scrub, covering approximately 235.58 acres, and Non-native Annual Grassland, covering approximately 1.31 acres. Additionally, 229.21 acres of the Disturbed/Developed land cover type was mapped within the BSA. The extent and condition of vegetation communities within the BSA varied depending on the level of existing development and ongoing mineral extraction activities.

Allscale Scrub is characterized by an open to continuous canopy of shrubs with a variable herbaceous layer that includes seasonal annuals and non-native grasses. Within the BSA this alliance primarily consisted of allscale saltbush (*Atriplex polycarpa*) with an understory composed mainly of *Bromus* spp. and other non-native grasses. Non-native Annual Grasslands consist primarily of non-native grasses from the Mediterranean region such as red brome (*Bromus madritensis* ssp. *rubens*), non-native barley (*Hordeum* sp.) and Mediterranean grass (*Schismus barbatus*). Within the BSA, this community was often interspersed with the Allscale Scrub community.

The Disturbed/Developed land cover type was used to map portions of the BSA that are developed or disturbed, primarily due to existing roadways and oil and gas infrastructure associated with mineral extraction. Vegetation in these areas, where present, was generally sparse and consisted of ruderal and non-native species along the margins and within the disturbed area.

4.2.1.4 Special-Status Plants

Database queries were conducted using the CDFW California Natural Diversity Database, the USFWS Information for Planning and Consultation (IPaC) tool, the California Native Plant Society (CNPS) Inventory, and the Consortium of California Herbaria to identify special-status plant species (including federally listed, state listed, and/or California Rare Plant Rank [CRPR] 1–4 species) known to occur in the region surrounding the Project site (CDFW 2025; CNPS 2025; USFWS 2025a). These queries identified 17 special-status plant species with the potential to occur within the BSA (see Table 8 of the BRTR). Of these,



seven species were determined to have a moderate to high potential to occur onsite based on recent documented occurrences (within the last 10 years) and/or the presence of suitable environmental conditions, such as appropriate habitat and soil types (Table 20).

Table 20 Special-Status Plant Species with Moderate to High Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur
Atriplex cordulata var. *cordulata*	Heartscale	1B.1	Moderate
Atriplex coronata var. *vallicola*	Lost Hills crownscale	1B.2	High
Delphinium recurvatum	recurved larkspur	1B.2	Moderate
Eremalche parryi ssp. *kernensis*	Kern mallow	FE; 1B.2	High
Eriastrum hooveri	Hoover's eriastrum	4.2	Moderate
Eschscholzia lemmonii ssp. *kernensis*	Tejon poppy	1B.1	High
Stylocline citroleum	oil neststraw	1B.1	High

Federal Rankings
FE=Federally Endangered

California Rare Plant Rank
1B=Plants rare, threatened, or endangered in California and elsewhere.
4=Plants of limited distribution – a watch list

No special-status plant species were observed during biological surveys. Plant species observed during the surveys included a mix of native and non-native species typical of disturbed habitats within the San Joaquin Valley. A complete inventory of plant species documented during the surveys is provided in Table 5 of the BRTR (Stantec 2025c).

4.2.1.5 Special-Status Wildlife

Database queries of the CDFW California Natural Diversity Database and the USFWS IPaC were conducted to identify special-status wildlife (defined as species listed as threatened or endangered under the FESA or CESA, candidates for listing, California Species of Special Concern, or other taxa recognized by the USFWS, CDFW, or local agencies as rare or sensitive) that are known to occur in the region surrounding the Project site (CDFW 2025; USFWS 2025a). The database queries identified 30 special status wildlife species with the potential to occur (see Table 9 of the BRTR). Of these, 15 species were determined to have a moderate to high potential of occurring on site (Table 21). The presence of suitable habitat and proximity to known occurrence records were the primary criteria used to determine which special-status wildlife species were considered to have a moderate to high potential to occur.



Table 21 Special-Status Wildlife Species with Moderate to High Potential to Occur

Scientific Name	Common Name	Status	Potential to Occur
Reptiles			
Arizona elegans occidentalis	California glossy snake	SSC	Moderate
Gambelia sila	blunt-nosed leopard lizard	SE; FP; FE	Moderate
Masticophis flagellum ruddocki	San Joaquin coachwhip	SSC	Moderate
Birds			
Athene cunicularia	burrowing owl	SSC	High (nesting/transient)
Buteo swainsoni	Swainson's hawk	ST	Moderate (transient)
Charadrius montanus	mountain plover	SSC	Moderate (nesting/transient)
Falco mexicanus	prairie falcon	WL	Moderate (transient)
Lanius ludovicianus	loggerhead shrike	SSC	Moderate (nesting); Present (foraging/transient)
Toxostoma lecontei	Le Conte's thrasher	SSC	Moderate (nesting/transient)
Mammals			
Ammospermophilus nelsoni	San Joaquin antelope squirrel	ST	Present
Dipodomys ingens	giant kangaroo rat	SE; FE	Low to Moderate
Dipodomys nitratoides brevinasus	short-nosed kangaroo rat	SSC	Low to Moderate
Onychomys torridus tularensis	Tulare grasshopper mouse	SSC	Low to Moderate
Taxidea taxus	American badger	SSC	Moderate
Vulpes macrotis mutica	San Joaquin kit fox	ST; FE	High

Federal Rankings
FE=Federally Endangered
State Rankings:
FP = Fully Protected
SE= State Endangered

State Rankings (cont.):
ST = State Threatened
WL = CDFW Watch List
SCE = State Candidate for Listing as Endangered
SSC = Species of Special Concern

Special-status wildlife observed during the reconnaissance-level surveys included one San Joaquin antelope squirrel (*Ammospermophilus nelsoni*) and three loggerhead shrike (*Lanius ludovicianus*). Additionally, 47 potential San Joaquin kit fox (*Vulpes macrotis mutica*) dens and two dens displaying sign consistent with use by American badger (*Taxidea taxus*) were documented. Low-density small mammal burrows were observed within the BSA, some of which exhibited sign of kangaroo rat (*Dipodomys* spp.) activity. However, burrow size and characteristics were not consistent with use by giant kangaroo rat (*Dipodomys ingens*). A complete inventory of wildlife species documented during the surveys is provided in Table 6 of the BRTR (Stantec 2025c).

Suitable habitat for TLL was not identified within the Project site during the site assessment conducted by Dr. Ted Papenfuss. While suitable or marginally suitable habitat for TLL may be present in adjacent buffer areas, these areas are not anticipated to be directly affected by the Project (Papenfuss 2025).

No CBB were observed during the focused surveys (Noce 2025).

4.2.1.6 Critical Habitat

There is no USFWS designated critical habitat within the BSA (USFWS 2025b). The nearest critical habitat to the Project site is for Buena Vista Lake ornate shrew (*Sorex ornatus relictus*), located approximately 6.5 miles northeast.

4.2.1.7 Wildlife Corridors and Special Linkages

The CDFW maintains GIS data for "Missing Linkages in California's Landscapes," "South Coast Missing Linkages," and "Essential Connectivity Areas" (i.e., wildlife corridors) derived from the California Essential Habitat Connectivity Project, which is the best available information on important areas needed for maintaining connectivity between large blocks of land for wildlife corridor purposes (CDFW 2001, 2008, 2010). Essential Connectivity Areas are intended to be a broad scale representation of areas that provide essential connectivity. The northwestern portion of the BSA falls within an Essential Connectivity Area. Wildlife likely use both the natural and developed portions of the BSA on a regular basis during normal foraging, migration, nesting, and denning activities.

4.2.1.8 Wetlands and Waters

The jurisdictional delineation identified two aquatic features within the Aquatic Study Area, both classified as ephemeral streams (Stantec 2025b). Although these streams are located within the Aquatic Study Area, neither overlaps with the Project site. No wetlands hydrology indicators or wetlands vegetation were observed during the surveys.

The ephemeral streams are not considered jurisdictional under the USACE because they do not connect to Waters of the United States (WOTUS). However, both streams may be considered potentially jurisdictional under the RWQCB and CDFW as Waters of the State, due to the presence of a defined bed and banks and evidence of intermittent flow. Full avoidance of these potentially jurisdictional features is anticipated during Project construction, as they are confined to the buffered area of the Aquatic Study Area and do not occur within the Project site (Stantec 2025b).

4.2.2 Impact Analysis

4.2.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether biological resources impacts are significant. Would the proposed project:

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 state or 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?

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?

4.2.2.2 Impacts to Habitat (Question A)

The majority of the Project site consists of lands previously developed for oil and gas production and maintained devoid of vegetation. However, small fragments of habitat persist among the existing oil and gas infrastructure. The Project is estimated to result in temporary impacts to approximately 2.455 acres of Allscale Scrub (Table 20). Temporarily impacted areas would be revegetated/restored. Permanent impacts would be limited to approximately 1.358 acres of Allscale Scrub and 0.008 acre of Non-native Annual Grassland (Table 22).

Table 22 Estimated Permanent and Temporary Impacts

Vegetation Community/Land Cover Type	Acreage of Permanent Project Impacts	Acreage of Temporary Project Impacts
Disturbed/Developed	8.219	39.607
Allscale Shrubland	1.358	2.455
Red Brome or Mediterranean Grass Grasslands	0.008	0.000
Total	**9.584**	**42.062**

Notes:

1. 12ft Buffer (24ft width) calculated for Temporary Impacts.

2. Permanent Pipeline Impacts of sleepers assumed to reside in Disturbed/Developed areas only.

3. Assumed 15 poles (not mapped). Perm Impact of 0.007212 acre (10ft radius) and Temp Impact of 0.180303 acre (50ft radius). All impacts of pole locations are assumed to reside in Disturbed/Developed areas only.

4.2.2.3 Impacts to Special-Status Plants (Question A)

Less than significant with mitigation. The CCU and infrastructure are proposed within existing developed areas within and adjacent to the EHPP. Access to the Project site would be via existing roads and staging areas would be in areas which are already disturbed. Minor habitat disturbance is anticipated for expansion of developed areas to accommodate new facilities, infrastructure, and a new emergency access road. Focused rare plant surveys conducted for the Project did not identify any special-status plant species. Given this, the potential for impacts to special-status plants is expected to be low. Construction activities involving temporary overland travel through potentially suitable habitat, such as pipeline and power line installation, would be most likely to adversely impact special-status plants species. As access to Project components would largely utilize existing roadways, these impacts would be temporary and limited but may include direct clearing of vegetation. Direct impacts could include crushing of plants by equipment, vehicles, or foot traffic, as well as injury or mortality resulting from grading activities using heavy machinery. Indirect impacts may include temporary increases in airborne dust that could settle on vegetation or localized soil compaction from equipment use, both of which could temporarily degrade the overall quality of the local vegetation communities and rare plants within the Project site.

Both direct and indirect effects are expected to be temporary and would cease upon completion of construction. Given the limited extent of suitable habitat within the Project site and the predominantly temporary nature of potential disturbances, the Project is not expected to substantially reduce the overall availability of habitat for special-status plant species. Implementation of the following mitigation measures presented below will further reduce the likelihood of impacts to special-status species to a less than significant level: BIO-GEN-1, BIO-GEN-2, BIO-GEN-3, BIO-GEN-4, BIO-GEN-5, BIO-GEN-6, BIO-GEN-7, BIO-GEN-8, BIO-RP-1, and BIO-RP-2.

4.2.2.4 Impacts to Special-Status Wildlife (Question A)

Less than significant with mitigation. The CCU and infrastructure are proposed within existing developed areas within and adjacent to the EHPP. Minor habitat disturbance is anticipated for expansion of developed areas to accommodate new facilities, infrastructure, and a new emergency access road. Temporary overland travel required for pipeline and powerline installation may result in minor construction traffic through suitable habitat (overgrown access roads or previously cleared pipeline right-of-way). These effects would be temporary and limited to direct impacts associated with vehicle tires, etc. Ground disturbing activities would be limited to the construction timeframe, and thus temporary in nature. Access to the various Project components would occur within existing roadways, the majority of which are only accessible through gates monitored by CRC personnel. Because most of the areas where Project construction would occur are already impacted and developed with oil and gas extraction infrastructure, the potential for impacts on special-status species, including from loss of burrows and other suitable habitat, is expected to be low.

The use of heavy equipment during construction has the potential to directly impact wildlife species through injury or mortality or crushing of fossorial species and/or collapse of their burrows. If clearing and grubbing activities occur during the nesting season, there is a risk of disturbing or destroying nests, eggs, or young of



ground and shrub nesting bird species. Wildlife moving through work areas or across access roads may be at risk from foot traffic or vehicles if movement is not impeded. Excavated areas pose fall hazards, with the potential for wildlife to become trapped, potentially resulting in harm or mortality.

Construction activities also have the potential to impact special-status wildlife species indirectly. Increased human presence, noise, and ground vibrations could displace wildlife from otherwise suitable habitat, disrupting normal behaviors such as foraging, dispersal/migration, or nesting. Displacement may also lead to increased exposure to predators or heightened competition for resources if individuals are forced into adjacent or lower-quality habitats. Additionally, heavy equipment working in the Project site may disrupt or compact soils in localized areas associated with powerline installations and make some habitat less suitable for digging burrows by mammals for a period of time. A temporary increase in airborne dust could temporarily reduce quality of the local vegetation communities that serve as habitat for special-status wildlife species. These indirect effects may reduce habitat quality in the vicinity of construction areas until vegetation recovers, and burrow systems are re-established.

Both direct and indirect effects are expected to be temporary and would cease upon completion of construction. Given the limited extent of suitable habitat within the Project site and the predominantly temporary nature of anticipated disturbances, the Project is not expected to substantially reduce the overall availability of habitat for special-status wildlife species. In areas impacted by the temporary indirect effects, implementation of the following mitigation measures presented below may reduce the likelihood of impacts to special-status species to less than significant levels: BIO-GEN-1, BIO-GEN-2, BIO-GEN-3, BIO-GEN-4, BIO-GEN-5, BIO-GEN-6, BIO-GEN-7, BIO-GEN-8, BIO-CBB-1, BIO-CBB-2, BIO-BUOW-1, BIO-BUOW-2, BIO-BUOW-3, BIO-NB-1, BIO-NB-2, BIO-NB-3, BIO-NB-4, BIO-BNLL-1, BNLL-2, BIO-BNLL-3, BIO-OR-1, BIO-OR-2, BIO-TLL-1, BIO-TLL-2, BIO-BAT-1, BIO-GKR-1, BIO-GKR-2, BIO-GKR-3, BIO-SM-1, BIO-SJAS-1, BIO-SJAS-2, BIO-SJAS-3, BIO-SJKR-1, BIO-SJKR-2, BIO-SJKR-3, BIO-SJKF-4, BIO-SJKF-5, and BIO-AB-1.

4.2.2.5 Impacts to Wildlife Corridors (Question D)

Less than significant. The Project site does not fall within any South Coast Missing Linkages, but sections of the Project site fall within an Essential Connectivity Area. Due to the size and extent of existing disturbance within the Project site, it is unlikely that Project implementation will significantly impact wildlife movement through the area. Existing infrastructure is already present within the Project site. Linear Project features are expected to follow existing linear features and should not substantially increase barriers to wildlife movement. Permanent facility and infrastructure construction will take place on previously disturbed habitat and is also not likely to result in additional barriers to movement as a result of Project activities. Impacts to wildlife corridors would be less than significant.

4.2.2.6 Impacts to Wetlands and Waters (Questions B and C)

Less than significant. No state or federally protected wetlands are present within the Project site. Full avoidance of jurisdictional water features during Project construction is anticipated. Therefore, there would be no impacts to jurisdictional aquatic features or riparian habitat. However, if complete avoidance is not possible, regulatory permits would likely need to be obtained. Due to the apparent absence of resources



that meet the definition of WOTUS, it is not expected that a CWA Section 404 Permit or a Section 401 Water Quality Certification would be required for the Project. If unavoidable impacts to state jurisdictional aquatic resources occur, the Project would require coverage under a general WDR permit from the RWQCB and a Lake and Streambed Alteration Agreement (LSAA) from the CDFW.

The proposed Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Additionally, there is a Habitat Conservation Plan for the EHOF. The proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.2.3 Cumulative Impacts

Less than significant with mitigation. The scope of cumulative impacts for biological resources includes the San Joaquin Valley Floor and surrounding foothill areas of Kern County. Due to the Project's location within an existing oil and gas field, the impacts of the Project together with the impacts of past, present, and reasonably foreseeable future oil and gas and CO_2 storage development including wells and abandonment activity to implement CCS projects constitute cumulative impacts. A number of other projects have been developed or are planned for the Elk Hills or adjacent properties. Therefore, potential impacts of this Project contribute to the cumulative impact of increased development in the Elk Hills and southwestern San Joaquin Valley. Additional projects located within the EHOF, particularly within 1 mile of the Project area, include CTV I CCS. Other projects located within approximately 10 miles of the Project area include CTV Clean Energy Park Projects, Direct Air Capture with CCS, Kern County Oil and Gas Ordinance Second Supplemental Revised EIR (SSR-EIR) and CRC's Oil and Gas CUPs for Elk Hills, Buena Vista Hills, Kern Front, which will most likely be superseded by the return of the KC SSR-EIR for oil and gas activities. Further, projects located within the southwestern San Joaquin Valley, and within approximately 30 miles of the Project area, include Salt Creek CCS, Lost Hills Solar to Hydrogen Project, Crimson Resource Management Oil and Gas CUP, Carbon Frontier CCS, Eastridge CCS, Aera Energy South Belridge Oil and Gas CUP and Gas Extraction, and Pond Road Biomass CCS.

Potential cumulative effects must be considered in context of the intensive oilfield operations that have been ongoing in the region for decades. The BSA consists mostly of existing disturbed oil and gas infrastructure interspersed with impacted Allscale Scrub shrubland, and Red Brome or Mediterranean Grass grasslands within roughly the southern half of the Project site, with more natural stands of Allscale Scrub and grasslands within roughly the northern half of the BSA. Although the size of the Project footprint is relatively large, the estimated permanent and temporary impacts are relatively minor, with much of the Project occurring within areas previously disturbed or subject to high intensity oil extraction activities. Potential impacts to special-status species would be mitigated with a suite of comprehensive measures. As a result, no substantial cumulative effects are anticipated.



4.2.4 Mitigation Measures

The following MMs are proposed for the Project to reduce biological resources impacts to less than significant.

MM BIO-GEN-1: Qualified Biologist: The Owner/operator shall use a qualified biologist for all work on reports submitted for any application for Project permits. The qualified biologist must have a Bachelor of Science Degree or Bachelor of Arts Degree in biology or related environmental science, have demonstrated familiarity with the natural history, habitat affinities and identification of Covered Species of the San Joaquin Valley and have conducted work in California for at least one (1) year of field level reconnaissance survey work in the San Joaquin Valley. The resume of the biologist preparing any report submitted for permits shall be included in the report. Lack of these specific qualifications will result in immediate rejection of the report without further review.

MM BIO-GEN-2: Focused/Protocol Surveys: Based on the information gathered from the biological reconnaissance survey and any informal consultation with USFWS and CDFW, any required focused/protocol surveys shall be conducted by a qualified biologist consistent with protocol study timelines to determine the presence/absence of sensitive species protected by state and federal Endangered Species Acts (FESA and CESA) and potential Project impacts to those species. Protocol surveys shall be conducted in accordance with the most current standard protocol of the USFWS and CDFW.

a. The purpose of focused/protocol surveys is to confirm the presence or absence of any species listed as threatened or endangered under the FESA, threatened, endangered, or candidate under the CESA, rare or endangered in the California Native Plant Protection Act, designated as Fully Protected in the California Fish and Game Code (collectively, “Protected Species”), to confirm the presence or absence of any other species considered “sensitive” under CEQA (“Sensitive Species”), and to identify and implement avoidance and minimization measures for such species.

b. The surveys shall be conducted in accordance with all currently applicable presence and absence survey and/or species protocols established by the USFWS and the CDFW (“Species Protocols”).

c. In the absence of any approved protocols, the survey shall extend for a minimum of 250 feet from all areas where any ground disturbance activities would occur, provided that permission to access has been obtained.

MM BIO-GEN-3: Incidental Take Avoidance: No incidental take of any species listed as threatened or endangered under the FESA; threatened, endangered, or candidate under the CESA; rare or endangered under the California Native Plant Protection Act, may occur unless the incidental take is authorized by applicable state and federal wildlife agencies in the form of an ITP or other written authorization consistent with applicable state and federal law. An ITP or other written authorization would require avoidance and minimization measures, establish appropriate compensatory habitat ratios, and require monitoring and reporting.



MM BIO-GEN-4: Pre-disturbance Surveys: Within 30 days before any ground-disturbing activities in special-status species habitat, the qualified biologist shall conduct a pre-disturbance survey to record existing conditions of the site, determine if conditions have changed since the reconnaissance or focused/protocol surveys were conducted, and to determine where sensitive species avoidance buffers will be established.

MM BIO-GEN-5: Biological Monitoring: A biological monitor with the same qualifications as a qualified biologist shall be present during ground-disturbing activities in Project locations that have special-status species habitat or are adjacent to potential special-status species habitat. The monitor will verify that all Avoidance, Minimization, and Mitigation Measures are implemented.

MM BIO-GEN-6: Protected Species Avoidance Buffers: Protective buffers, as shown in Table 23, shall be used, where required in the opinion of the qualified biologist, to avoid any unauthorized incidental take of Protected Species and to minimize any impacts to Sensitive Species by separating the planned disturbance area from any locations where the qualified biologist has detected the presence of Protected Species or Sensitive Species. Protective buffers shall be delineated using brightly colored stakes and/or flagging or similar materials and remain until construction activities are complete, at which time of completion the buffers must be removed. Protective buffers shall be established around active dens and/or burrows of special-status animal species or populations of special-status plant species to avoid unauthorized take of Protected Species as included in Table 23. The protective buffer distance shall be increased if required to avoid unauthorized incidental take of any Protected Species as determined by a qualified biologist. Protective buffer distances that may be implemented to avoid impacts to Protected Species or Sensitive Species must be consistent with the USFWS and/or the CDFW requirements and shall be implemented and overseen by the qualified biologist.

Table 23 Disturbance Buffers for Sensitive Resources

Sensitive Resource	Buffer Zone from Disturbance
Potential San Joaquin kit fox den	50 feet
Known San Joaquin kit fox den	100 feet
Natal San Joaquin kit fox den	500 feet
Atypical San Joaquin kit fox den	50 feet
Rodent and small mammal burrows	50 feet
Listed bird species active nests	500 feet to 0.5 miles dependent on species and sight line
Non-listed bird species active nests	250 feet
Non-listed raptor active nests	500 feet
Burrowing owl burrow (breeding and non-breeding season)	Pursuant to California CDFW guidelines (see Table 21)
San Joaquin coachwhip, all legless lizard species, coast horned lizard, and California glossy snake	30 feet
Blunt-nosed leopard lizard	50 feet
American badger non-maternity den	50 feet
American badger maternity den	200 feet
Crotch's bumble bee and nests	50 feet

Sensitive Resource	Buffer Zone from Disturbance
Special-status plants	50 feet

MM BIO-GEN-7: The existing WEAP for CTV I shall be updated as needed and implemented for all CalCapture personnel that could access the site prior to commencing any disturbance activities. The program shall consist of an on-site or center presentation that will describe the locations and types of sensitive plant, wildlife, and sensitive natural communities (collectively, "Biological Resources") on and near the site, an overview of the laws and regulations governing the protection of Biological Resources, the reasons for protecting the Biological Resources, the specific protection and avoidance measures that are applicable to the site, and the identity and contact information of designated points of contact in addition to the qualified biologist should questions or issues arise, including the qualified biologist. The program shall provide training to recognize, avoid and report to applicable qualified biologists any Biological Resources on the site.

a. The WEAP shall emphasize the need to avoid contact with onsite wildlife and avoid entry into areas where Biological Resources have been identified based on pre-disturbance field surveys and to implement the buffer avoidance or other protection measures established by the USFWS shall be identified CDFW or as required by the Biological Resources MMs. The training shall emphasize the importance of not feeding or domesticating wildlife and the need to avoid any trash, micro trash, or potential food disposal onsite except in animal-proof containers emptied daily to avoid attracting or causing adverse impacts to special status wildlife.

b. All onsite personnel must sign a statement verifying that they have completed the WEAP, and that they understand and agree to implement the biological requirements for the worksite. If signed employee statements are not available, documentation may be provided by WEAP training records. Each Owner/operator shall maintain a list of all persons who have completed the training program and shall provide the list to the CEC or to state and federal wildlife agency representatives upon request.

MM BIO-GEN-8: The following additional measures shall be implemented to avoid and minimize potential significant adverse impacts to Protected and Sensitive Species:

a. All vehicles shall observe a 20-mile-per-hour speed limit in all areas of disturbance and on unpaved roads unless otherwise posted. Off-road traffic outside of designated access routes is prohibited. Speed limit signs shall be posted in visible locations at the point of site entry and at regular intervals on all unpaved access roads.

b. CRC will prohibit the use of erosion control materials potentially harmful to special-status species, such as monofilament netting or similar material.

c. All disturbance activities, except emergency situations or construction that may require continuous operations, shall only occur during daylight hours. Nighttime disturbance activity for construction purposes shall use directed lighting, shielding methods, and comply with applicable lighting MMs.



d. All food-related trash items and all forms of micro trash, such as wrappers, cans, bottles, bottle tops, and food scraps shall be disposed of in closed, animal proof containers and removed daily from the site.

e. Excavations, spoils piles, access roadways, and parking and staging areas shall be subject to dust control as set forth in the dust control MMs.

f. The use of herbicides for vegetation control shall be restricted to those approved by the USFWS and the CDFW. No rodenticides shall be used on any site unless approved by the USFWS, and the CDFW, and shall observe label and other restrictions mandated by the U.S. EPA, California Department of Food and Agriculture, and state and federal laws and regulations.

g. No plants or wildlife shall be collected, taken, or removed from the site or any adjacent locations except as necessary for Project-related vegetation removal or wildlife relocation by a qualified biologist and subject to all applicable permits and authorizations.

h. All open trenches or excavations shall be covered at the end of each workday to prevent wildlife entrapment. If an excavation is too large to cover, escape ramps shall be installed at an incline ratio of no greater than 2:1. All trenches and pipes shall be inspected for the presence of wildlife each day prior to the commencement of work.

i. To enable San Joaquin kit foxes and other wildlife to pass through the Project site, any perimeter fencing shall include a 4- to 8-inch opening between the fence mesh and the ground, or the fence shall be raised 4 inches above the ground except for blunt-nosed leopard lizard exclusion fencing. The bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife.

j. All vertical tubes used in Project construction and chain link fencing poles shall be temporarily or permanently capped to avoid the entrapment and death of special-status wildlife and birds. All pipes 1.5 inches 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.

k. All dead or injured special status wildlife shall be left in place and reported to the USFWS and the CDFW within 48 hours of discovery for rescue or salvage. Discovery of state or federal listed species that are injured, or dead shall also be managed consistently with regulatory requirements, including being reported immediately via telephone and within 24 hours in writing, and with a copy to Kern County Planning and Natural Resources.

l. During pre-construction surveys, the Owner/operator shall delineate previously disturbed areas to be used by the Owner/operator to minimize the amount of new disturbance and confirmed by the qualified biologist.

m. All concrete and asphalt surface debris shall be removed from the site for recycling or disposal at an authorized, permitted facility.

n. Tracked vehicles and other construction equipment must be washed or maintained to be weed-free prior to entering and working within areas of new disturbance

o. All painting, cleaning of equipment, or similar activities shall occur in areas where runoff is fully contained for collection and offsite disposal. Painting or cleaning of equipment shall no occur during precipitation events. Wash water may not be discharged from the site and shall be located at least 100 feet from any water body, or sensitive biological resources.

p. All areas that must be avoided as result of the pre-disturbance surveys, and areas where new disturbance will occur, shall be clearly delineated by fencing or staking and flagging and/or rope or cord.

q. No firearms shall be allowed on the Project site; excludes law enforcement or security personnel authorized to carry firearms.

r. No pets shall be allowed on the Project site.

s. No smoking may occur except in designated areas.

t. If ground disturbance is intended to be temporary, perform topsoil segregation during construction activities to preserve the seed bank for restoration efforts. Store the segregated topsoil separate from the subsoil and restore the segregated topsoil to its original location.

MM BIO-RP-1: Prior to ground disturbance plant surveys for Protected Species and Sensitive Species must be completed by a qualified biologist during the appropriate blooming periods for species identification and detection. Plant surveys shall be conducted in accordance with all applicable protocols established by the USFWS and the CDFW for particular plant species ("Plant Survey Protocol") and shall extend 50 feet from areas where any new disturbance would occur unless a greater survey distance is specified in the Plant Survey Protocol. All detected plant populations of Protected Species and Sensitive Species shall be identified in the field during the surveys with temporary flags or other visible materials to avoid and minimize impacts to the plant populations from any disturbance activities.

MM BIO-RP-2: No incidental take or relocation of any plant listed under the FESA, the CESA, or the California Native Plant Protection Act may occur unless the incidental take is authorized by the USFWS and/or the CDFW in a permit or other authorization, or in an approved HCP or Natural Communities Conservation Plan. If focused plant surveys detect the presence of any listed plant, the plant populations shall be buffered from disturbance activities by implementing applicable impact avoidance protocols established by the USFWS and/or the CDFW unless incidental take authority is obtained. Projects covered under incidental take authority shall conduct activities in accordance with the take authorization. The qualified biologist may consult with the CDFW to determine if reduced buffers are appropriate. The qualified biologist shall confirm that all applicable listed plant buffers have been implemented prior to the commencement of any disturbance activity. All compensation for measurable habitat loss shall be as determined through consultation with the wildlife agencies.



MM BIO-CBB-1: Focused surveys for CBB and its requisite habitat features shall be conducted by a qualified biologist during the blooming period immediately prior to Project construction following the methodology outlined in the Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023).

MM BIO-CBB-2: If CBB is detected during biological monitoring or observed at any point, CRC will implement the avoidance buffer provided in Table 23. In the event that complete avoidance of this species is not feasible, **GEN-3** shall be implemented.

MM BIO-BUOW-1: Occupied burrowing owl burrows shall not be disturbed during the species nesting season (February 1 through August 31). The following distances shall be maintained between all disturbance areas and burrowing owl nesting sites (Table 24).

Table 24 Setback Distances for Burrowing Owl Nest Sites by Level of Proposed Project Impacts

	Location	
Nesting sites	Nesting sites	Nesting sites
Time of Year		
April 1 – August 15	August 16 – October 15	October 16 – March 31
Project Impact Level		
Low		
656 feet (200 meters)	*656 feet (200 meters)*	*164 feet (50 meters)*
Medium		
1,640 feet (500 meters)	*656 feet (200 meters)*	*328 feet (100 meters)*
High		
1,640 feet (500 meters)	*1,640 feet (500 meters)*	*1,640 feet (500 meters)*

MM BIO-BUOW-2: If the burrowing owl buffer distances in Table 24 are not feasible during construction, a qualified biologist shall submit a Burrowing Owl Mortality Reduction Plan to CDFW at least 30 days prior to beginning construction activities in buffer areas. Burrow exclusion, burrow excavation, artificial burrow construction, and other relocation activities shall only proceed under a state ITP.

MM BIO-BUOW-3: In the event that complete avoidance of this species is not feasible, **GEN-3** shall be implemented.

MM BIO-NB-1: If feasible, clearing and grubbing shall be scheduled to occur in the fall and winter (between September 16 and January 31), outside of the typical nesting season. If any construction activities are proposed to occur during the typical nesting season (February 1 to September 15), a nesting bird survey in areas of suitable nesting habitat as determined by a qualified biologist shall be conducted no more than 14 days prior to construction to determine presence/absence of nesting birds. A Nesting Bird Survey Report

documenting the results of nesting bird surveys shall be submitted to the involved regulatory agencies for review/approval prior to construction.

MM BIO-NB-2: If an active bird nest is observed during preconstruction surveys or during construction, at a minimum, a 500-foot avoidance buffer surrounding the nest for nesting raptors and a 250-foot avoidance buffer shall be implemented for other nesting bird species. Nest avoidance buffers may be reduced if monitoring determines nesting birds are acclimated to construction disturbance and under the discretion of a qualified biologist.

MM BIO-NB-3: Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act (MBTA), California Fish and Game Code, or any other regulatory laws shall not be moved or disturbed until a qualified biologist has determined that the nest has become inactive or young have fledged and become independent of the nest. Project construction activities may proceed and no further MMs for nesting birds are required if a qualified biologist determinates that the nest has become inactive or young have fledged and become independent of the nest. If active nest(s) are identified, the active nest(s) should be surveyed to establish a behavioral baseline prior to any construction-related activities. For applicable species CRC will implement the conditions within a valid USFWS MBTA Special Purpose – Relocation Permit under 16 U.S.C. 703-712 50 CFR Part 13, 50 CFR21.95.

MM BIO-NB-4: Once construction commences, all nests shall be monitored to detect any behavioral changes as a result of the Project (i.e., nest avoidance or abandonment). If behavioral changes are observed, the work causing that change shall cease until the Owner/operator's qualified biologist consults with the CDFW and the USFWS and the qualified biologist used by the Owner/operator implements any CDFW and USFWS recommended measures. Work would not continue until revised measures were implemented to minimize the potential for take. During such times as the qualified biological monitor is not onsite while construction workers are onsite, a minimum non-disturbance buffer of 250 feet shall be established around active nests and a 500-foot no-disturbance buffer around the nests of raptors until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, and any adult birds are no longer occupying the nest. Deviations from these no disturbance buffers may be implemented if the qualified biologist concludes that work within the buffer area would not cause nest avoidance or abandonment (e.g., when the disturbance area would be concealed from a nest site by topography) provided that notification of this determination of a deviation in the no-disturbance buffer is provided by the qualified biologist no less than 15 days in advance to the CDFW and the USFWS. For applicable species CRC will implement the conditions within a valid USFWS MBTA Special Purpose – Relocation Permit under 16 U.S.C. 703-712 50 CFR Part 13, 50 CFR21.95.

MM BIO-BNLL-1: Project activities will avoid all potential burrows that may be occupied by blunt-nosed leopard lizards. Suitable burrows within and adjacent to potential habitat for the species shall be avoided by a minimum distance of 50-feet in all areas where ground-disturbing Project activities will occur.

MM BIO-BNLL-2: No more than one year prior to ground disturbing activities, focused surveys following current CDFW and USFWS protocols for detection of this species, or other methods approved by both agencies, shall be conducted in all potential blunt-nosed leopard lizard habitat within the work site and a



250-foot buffer area. If no individual blunt-nosed leopard lizards are observed during focused surveys, and surveys are current (e.g., completed in the same calendar year), then Project activities may proceed.

MM BIO-BNLL-3. If blunt-nosed leopard lizards are detected during focused surveys, a blunt-nosed leopard lizard avoidance plan shall be prepared for the Project that will result in avoidance of incidental take of this species unless take is separately authorized under a Natural Communities Conservation Plan and appropriate federal authorization is obtained. At a minimum, the blunt-nosed leopard lizard avoidance plan shall be provided to CEC, CDFW, and USFWS, and shall contain the following elements:

a. A WEAP shall be implemented for all construction personnel before construction begins (see **GEN-7**).

b. During periods that are optimal for blunt-nosed leopard lizard activity (early spring through late fall), a qualified biologist will be present during all ground disturbing activities. The qualified biologist will check the project site(s) and access route(s) daily during the blunt-nosed leopard lizard active season to determine presence or absence of lizards in or near the work areas. Monitoring by a qualified biologist is not required during periods of inactivity (the winter season).

c. All open trenches or excavations shall be covered at the end of each workday or protected with the use of exclusion fencing to prevent wildlife entrapment. If an excavation is too large to cover, escape ramps shall be installed at an incline ratio of no greater than 2:1. All trenches and pipes shall be inspected for the presence of wildlife each day prior to the commencement of work. If blunt-nosed leopard lizards are observed at the work site during construction, Project related construction shall cease within a 250-foot radius and the USFWS, and the CDFW shall be consulted to determine what additional measures would be necessary to prevent take of this species.

d. Offsite locations within the BSA where blunt-nosed leopard lizards have been observed or are likely to occur shall be clearly marked to prevent workers from driving off the road and to prevent inadvertent destruction of burrows. Barriers to prevent entry into buffer zones, such as exclusionary fencing may be installed using appropriate buffer distances per **BNLL-1**. All construction equipment and construction personnel vehicles will be checked prior to moving to ensure no blunt-nosed leopard lizard are under equipment/vehicles.

e. A speed limit of 10 miles per hour shall be posted and observed within 0.25 miles of any reported blunt-nosed leopard lizard observation.

f. All individual blunt-nosed leopard lizards observed above-ground will be avoided. Any individual BNLL that may enter the project site(s) would be allowed to leave unobstructed, and on its own accord. If BNLL is detected during biological monitoring or observed at any point, CRC will implement the avoidance buffer provided in **BNLL-1.** In the event that complete avoidance of this species is not feasible, **GEN-3** shall be implemented.

MM BIO-OR-1: A qualified biologist shall conduct visual preconstruction surveys within the Project footprint in areas of suitable habitat no more than 30 days prior to ground disturbing activities. If any, California



glossy snake, San Joaquin coachwhip, or other special-status reptiles are observed, they will be relocated to suitable habitat outside of the Project footprint by a qualified biologist.

MM BIO-OR-2: At minimum, a 30-foot avoidance buffer shall be maintained surrounding California glossy snake, San Joaquin coachwhip, or other special-status reptile species unless CDFW agrees to a reduced buffer.

MM BIO-TLL-1: In the unlikely event that TLL is observed in the Project footprint during construction, at minimum, a 30-foot avoidance buffer shall be maintained surrounding observed or unearthed TLL unless CDFW agrees to a reduced buffer. If it becomes evident that TLL is at risk of take during construction, CRC may recommend and implement site specific measures to avoid take or notify CDFW for further coordination as required to avoid or mitigate impacts and to determine if a State ITP will be required.

MM BIO-TLL-2: In the event that complete avoidance of this species is not feasible, **GEN-3** shall be implemented.

MM BIO-BAT-1: The qualified biologist surveys shall determine whether active bat maternity roosts are located in or within 250 feet of any disturbance area. All active bat maternity roosts shall be avoided during breeding periods, including postponing disturbance activities. If an active Sensitive or Protected Species bat maternity roost location is proposed to be disturbed, the qualified biologist shall consult with, the USFWS and CDFW to identify any additional minimalization measures which the qualified biologist determines with the wildlife agencies can actually be implemented based on field conditions. All such measures must be implemented for Project activities.

MM BIO-GKR-1: No more than 14 days prior to construction, the USFWS-approved biologist will conduct surveys to identify all potential burrows used by GKR within the disturbance areas and within 50 feet of areas where ground disturbance will occur.

MM BIO-GKR-2: The agency-approved biologist will establish a buffer of at least 50 feet around potential GKR burrows to avoid impacts on burrows. The buffer area will be delineated prior to construction activities and marked with brightly colored markers that will be visible to workers as well as signs, stakes, flags, and/or rope or cord.

MM BIO-GKR-3: In the event that complete avoidance of this species is not feasible, **GEN-2** shall be implemented.

MM BIO-SM-1: During construction, any short-nosed kangaroo rat, Tulare grasshopper mouse, San Joaquin pocket mouse, or other small mammals incidentally unearthed during construction activities or entrapped in work areas shall either be captured and relocated outside of the Project footprint by a qualified biologist, or be allowed to leave the Project site.

MM BIO-SJAS-1: No more than 14 days prior to construction, the CDFW-approved biologist will conduct surveys to identify all potential burrows used by San Joaquin antelope squirrel within the disturbance areas and within 50 feet of areas where ground disturbance will occur.

MM BIO-SJAS-2: The CDFW-approved biologist will establish a buffer of at least 50 feet around potential small mammal burrows to avoid impacts on burrows. The buffer area will be delineated prior to construction activities and marked with brightly colored markers that will be visible to workers as well as signs, stakes, flags, and/or rope or cord.

MM BIO-SJAS-3: In the event that complete avoidance of this species is not feasible, **GEN-3** shall be implemented.

MM BIO-SJKF-1: Any potential San Joaquin kit fox dens (as defined in USFWS 2011) detected during reconnaissance or focused/protocol surveys shall be reevaluated by the qualified biologist for species activity no more than 30 days prior to the commencement of ground disturbance in the required pre-construction survey. Potential and atypical kit fox dens shall be marked, and a 50-foot avoidance buffer shall be delineated using brightly colored stakes and flagging or similar materials to prevent inadvertent damage to the potential den.

MM BIO-SJKF-2: If the qualified biologist determines that an unoccupied potential den cannot be avoided, the den may be hand excavated in accordance with the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011).

MM BIO-SJKF-3: If San Joaquin kit fox activity is detected, the location shall be identified as a "known" kit fox den in accordance with the USFWS species guidelines (USFWS 2011). A minimum 100-foot buffer from any disturbance area shall be maintained for known dens and a minimum 500-foot buffer from any disturbance area shall be maintained for natal dens.

MM BIO-SJKF-4: For activities occurring on land covered under an approved federal and/or state incidental take authorization, the requirements set forth in those documents shall be implemented. Other standard measures to protect San Joaquin kit fox, including capping pipes, covering trenches, adding exit ramps to excavated areas, shall be implemented in accordance with **GEN-8**.

MM BIO-SJKF-5: In the event that complete avoidance of this species is not feasible, **GEN-3** shall be implemented.

MM BIO-AB-1: Occupied American badger dens detected during pre-disturbance surveys shall be flagged and ground-disturbing activities avoided within 50 feet of the den. Maternity dens shall be avoided and a minimum 200-foot buffer from disturbance shall be maintained during pup-rearing season (February 15 through July 1). Maternity dens must be avoided to the maximum extent feasible in the opinion of the qualified biologist. If an active maternity den is proposed to be disturbed, the qualified biologist, shall consult with the CDFW and implement recommended measures.

4.2.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.2.6 Laws, Ordinances, Regulations, and Standards

Biological resources at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 25.

Table 25 LORs for Biological Resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Federal ESA (16 USC 1531 et seq.)	Designates and protects federally threatened and endangered plants and animals and their critical habitat. Applicants for projects that could result in adverse impacts on any federally listed species are required to consult with and mitigate potential impacts in consultation with USFWS.	USFWS	Section 4.2.2.3, Section 4.2.2.4
MBTA (16 USC 703 to 711)	Protects all migratory birds, including nests and eggs.	USFWS	Section 4.2.2.4
Federal Bald and Golden Eagle Protection Act (16 USC 668)	Specifically protects bald and golden eagles from harm or trade in parts of these species.	USFWS	Section 4.2.2.4
Clean Water Act (33 USC 1251-1376; 30 CFR 330.5(a)(20)	Nationwide 404 permit from the USACE and CWA 401 water quality certification from the RWQCB for compliance with CWA.	USACE	Section 4.2.2.6
State			
CESA (Fish and Wildlife Code Section 2050 et seq.).	Species listed under this act cannot be “taken” or harmed, except under specific permit.	CDFW	Section 4.2.2.4

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Fish and Wildlife Code Section 3511	Describes bird species, primarily raptors that are FP. FP birds may not be taken or possessed, except under specific permit requirements.	CDFW	Section 4.2.2.4
Fish and Wildlife Code Section 3503	States that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.	CDFW	Section 4.2.2.4
Fish and Wildlife Code Section 3503.5	Protects all birds of prey and their eggs and nests.	CDFW	Section 4.2.2.4
Fish and Wildlife Code Section 3513	Makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.	CDFW	Section 4.2.2.4
Fish and Wildlife Code Sections 4700, 5050, and 5515	Lists mammal, amphibian, and reptile species that are FP in California.	CDFW	Section 4.2.2.4
Fish and Wildlife Code Sections 1900 et seq.,	The Native Plant Protection Act lists threatened, endangered, and rare plants listed by the State.	CDFW	Section 4.2.2.3
Title 14, CCR, Sections 670.2 and 670.5	Lists plants and animals designated as threatened or endangered in California.	CDFW	Section 4.2.2.4
California Fish and Wildlife Code (Sections 1601 through 1607)	Prohibits alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a permit from CDFW.	CDFW	Section 4.2.2.6



Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
CEQA (Public Resources Code [PRC] Section 15380)	CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.	CDFW	Section 4.2.2
Warren Alquist Act (PRC Section 25000, et seq.)	Warren-Alquist Act is a CEQA-equivalent process implemented by the CEC.	CEC	4.2.2
Local			
Policy 27	Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.	Kern County Planning and Natural Resources Dept.	Section 4.2.2
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.	Kern County Planning and Natural Resources Dept.	Section 4.2.2
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 the management and conservation of habitat lands.	Kern County Planning and Natural Resources Dept.	Section 4.2.2
Policy 30	The County will promote public awareness of endangered species laws to help educate property owners and the development of community of local, State, and federal programs concerning endangered species conservation issues.	Kern County Planning and Natural Resources Dept.	Section 4.2.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Policy 31	Under the provisions of CEQA, the County, as lead agency, will solicit comments from the CDFW and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or EIR) is prepared.	Kern County Planning and Natural Resources Dept.	Section 4.2.2
Implementation Measure Q	Discretionary projects shall consider effects to biological resources as required by the CEQA.	Kern County Planning and Natural Resources Dept.	Section 4.2.2
Implementation Measure R	Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA	Kern County Planning and Natural Resources Dept.	Section 4.2.2
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.	Kern County Planning and Natural Resources Dept.	**Section 4.2.2**

4.2.6.1 Federal LORS

4.2.6.1.1 Federal Endangered Species Act

The FESA includes provisions that protect federally listed threatened and endangered species and their habitats from unlawful take, requiring that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the FESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The FESA regulations define harm as “an act which actually kills or injures fish or wildlife.” Harm is further defined to include significant habitat modification or degradation that kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering” (50 CFR § 17.3). On April 17, 2025, the USFWS and NMFS proposed to rescind the current regulatory definition of “harm” within the context of “take” under the FESA. The proposed rule would not change the statutory definition of “take,” which still includes “harm.” However, by rescinding the existing regulatory definition, the agencies aim to align their interpretation with a narrower reading of the statute based on its plain language. No replacement definition for “harm” has been

proposed. The rescission would apply prospectively and would not affect existing permits. If finalized, the change would limit the scope of actions that qualify as “take” under the FESA.

Activities that may result in “take” of listed species, and have a federal permit or funding nexus, are typically regulated by the USFWS and National Marine Fisheries Service (NMFS) through Section 7(a)(2) of the FESA. Activities that may result in take that do not have a federal permit or funding nexus are regulated through Section 10(a)(1)(B) of the FESA and require a federal ITP and HCP.

Critical habitat is defined in Section 3(5)(A) of the FESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.”

The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the Ninth Circuit juridical opinion, Gifford Pinchot Task Force v. USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 Federal Register [FR] 69034). Candidate species are not afforded any legal protection under FESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

4.2.6.1.2 Migratory Bird Treaty Act

The MBTA of 1918 (16 USC 703-711) makes it unlawful to possess, buy, sell, purchase, barter, or “take” any migratory bird listed in CFR Title 50 Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the USFWS. This act encompasses whole birds, parts of birds, and bird nests and eggs.

4.2.6.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)

The Bald and Golden Eagle Protection Act 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).

The USFWS is the primary federal agency authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required if this Project affects such resources. On November 10, 2009, the USFWS



implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection 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. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle population in the western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

4.2.6.1.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act, as amended in 1964, requires that all federal agencies consult with NMFS, USFWS, and state wildlife agencies (i.e., CDFW) when proposed actions might result in modification of a natural stream or body of water. Federal agencies must consider the potential effects that these projects would have on fish and wildlife development and provide for improvement of these resources. The Fish and Wildlife Coordination Act allows NMFS, USFWS, and CDFW to provide comments to USACE during review of projects under Section 404 of the CWA (concerning the discharge of dredged materials into navigable WOTUS) and Section 10 of the Rivers and Harbors Act (RHA) regarding obstructions in navigable waterways. NMFS comments provided under the Fish and Wildlife Coordination Act are intended to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats. If the proposed Project involves impacts to WOTUS, the USACE would be the lead federal agency and would initiate consultation with the USFWS and CDFW per the requirements of this act.

4.2.6.1.5 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 requires all federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA into other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision-making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans and documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 USC 4321- 4327; 40 CFR 1500-1508). These guidelines establish an overall federal process for the environmental evaluation of projects.

4.2.6.1.6 Clean Water Act Section 404 and Federal Jurisdictional Water

The CWA, introduced in 1972 via amendatory legislation of the Federal Water Pollution Control Act, is the primary federal law in the US regulating water pollution. Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within federal WOTUS and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects



(general permits). Terrestrial WOTUS as defined by the CWA have typically included rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands. Wetlands are defined by the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” The definition of WOTUS has changed over the years, and USACE has adopted several revisions to their regulations in order to more clearly define WOTUS. The protection of federal jurisdictional WOTUS has been particularly contentious and subject to numerous legal decisions since 2001.

4.2.6.2 State LORS

4.2.6.2.1 California Environmental Quality Act

CEQA establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or MMs. CEQA applies to discretionary actions directly undertaken, financed, or permitted by local or State lead agencies when those actions are found to have or are likely to have direct or indirect environmental impacts. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

4.2.6.2.2 California Endangered Species Act

Provisions of the CESA protect state-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”) listed under CESA. Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. The CDFW may authorize take under the CESA via an ITP through California Fish and Game Code Section 2081(b). CDFW also maintains lists for Candidate-Endangered Species and Candidate-Threatened Species. California Candidate Species are afforded the same level of protection as listed species. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed without an approved Natural Communities Conservation Plan.

In addition to Federal and state-listed species, the CDFW also has produced a list of California Species of Special Concern (SSCs) to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. These SSCs may receive special attention during environmental review, but they do not have statutory protection.

4.2.6.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913)

NPPA requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of 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 CDFW to

salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

4.2.6.2.4 California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code requires an entity to notify CDFW before commencing an activity that will:

- Substantially divert or obstruct the natural flow, or 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 where it may pass into any river, stream, or lake.

If any of these activities may substantially alter its bed, channel, or bank, or adversely affect existing fish and wildlife resources, a LSAA is required. A LSAA lists the CDFW conditions of approval relative to a proposed project and serves as an agreement between an applicant and the CDFW for the performance of activities subject to Section 1602. For the purposes of this Report, potential CDFW jurisdiction is interpreted as extending from the streambed/thalweg to the outer edge of adjacent riparian vegetation (for both natural and anthropogenic drainage features) and for this BSA, is roughly equivalent to “Waters of the State” as defined by the RWQCB.

4.2.6.2.5 Section 3503 & 3503.5 of the Fish and Game Code

Birds of prey are protected under the California Fish and Game Code. Sections 3503 and 3503.5 states it is “unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW. Under Sections 3503 and 3503.5 of the California Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame 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 Fish and Game Code Section 3800 are prohibited.

4.2.6.2.6 Porter-Cologne Water Quality Control Act

The SWRCB or the applicable RWQCB regulate the discharge of waste to Waters of the State. All projects proposing to discharge waste that could affect Waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing WDR or a waiver for that project discharge. Both of the terms “discharge of waste” and “Waters of the State” are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other



"discharge." Isolated waters/wetlands within California, which are no longer considered WOTUS as defined by Section 404 of the CWA and limited by the *Sackett* decision, are addressed under the Porter-Cologne Act.

4.2.6.2.7 California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a CRPR. In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

- 0.3 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known.

4.2.6.3 Local LORS

4.2.6.3.1 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 the County during the decision-making process for any project that could impact biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan provides for a variety of land uses for future economic growth while also assuring the conservation of the 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. Applicable Policies and implementation measures from Section 1.10 of the Kern County General Plan are outlined below.

- 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 the 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 of community of local, State, and federal programs concerning endangered species conservation issues.
- Policy 31 - Under the provisions of CEQA, the County, as lead agency, will solicit comments from the CDFW and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or EIR) is prepared.
- Implementation Measure Q - Discretionary projects shall consider effects to biological resources as required by the CEQA.
- Implementation Measure R – Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.
- 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.

4.2.6.3.2 Recovery Plan for Upland Species of the San Joaquin Valley

Recovery plans delineate reasonable actions that are believed to be required to recover and protect listed species. Plans are published by the USFWS, sometimes prepared with the assistance of recovery teams, contractors, State agencies, and others. A recovery plan delineates, justifies, and schedules the research and management actions necessary to support the recovery of a species. Recovery plans do not, of themselves, commit manpower or funds, but are used in setting regional and national funding priorities and providing direction to local, regional, and State planning efforts. The Recovery Plan for Upland Species of the San Joaquin Valley provides individual species accounts for 34 San Joaquin Valley species listed as federally protected or as candidates or species of concern.



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4.3 Cultural Resources

The information and analysis presented in this section has been derived from the Cultural Resources Study prepared for the Project and included as Appendix H (Stantec 2025d). The archaeological study consisted of an archival records search of the Project site and a 0.5-mile radius conducted at the Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield; a review of the Native American Heritage Commission (NAHC) Sacred Lands File; a review of relevant archaeological, ethnographic, historical, and environmental literature relevant to the Project site; and an intensive pedestrian survey of the Project site to identify cultural resources. Table 26 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 26 Appendix B Information Requirements for an AFC – Cultural Resources

Summary of Requirement	Section
Cultural and Tribal Cultural Resources	
Provide a summary of the region's ethnology, prehistory, and history, focused within a 5-mile radius of the project; assess the potential for buried resources.	Section 4.3.1
Conduct a literature search to identify cultural and tribal cultural resources within at least a 1-mile radius of the project and 0.25 miles on either side of linear facilities; include resources recognized by local authorities.	Section 4.3.2
Submit California DPR 523 forms for all identified resources 45 years or older or of exceptional significance, along with relevant maps and technical reports	Confidential Submittal
Perform new surveys if previous survey data is more than 5 years old; surveys must meet professional standards. Pedestrian archaeological surveys must cover project sites and vicinity; historic architecture surveys must cover required distances in both rural and urban areas.	Section 4.3.1.1
Prepare a technical report summarizing findings, survey methods, maps, and qualifications of specialists, to be submitted with provisions for confidentiality where necessary	Appendix H – Cultural Resources Survey Report
Document all communications with the Native American Heritage Commission (NAHC) and Native American groups, including requests for information, responses, and notifications with project descriptions and maps.	Appendix H– Cultural Resources Survey Report
Discuss mitigation measures for known and potential impacts to cultural and tribal cultural resources and propose educational programs for project staff.	Section 4.3.4

4.3.1 Environmental Setting

Prior to modern agricultural practices, the San Joaquin Valley was dominated by networks of interconnecting watercourses, lakes, and sloughs (Sutton 1997). Tulare Lake, part of the larger Tulare Lake Basin, was a vast freshwater lake formed by the consolidation of alluvial fan dams generated by the Kings River to the east and Los Gatos Creek to the west (Atwater et al. 1986; Fenenga 1994). At its maximum,

the lake covered approximately 760 square miles, supporting a diverse biotic community and a large population of various Yokut Tribes (Fenenga 1994; Preston 1981). Buena Vista Lake, the second largest in the Tulare Lake Basin, was fed by the Kern River and connected to Kern and Tulare Lakes via several sloughs.

The region's plant communities were crucial to precontact populations, providing resources such as grassnut root, grass seed, clover, mustard greens, salt grass, and fruits like wild grapes, blackberries, and manzanita berries (Latta 1976; Osborne 1992; Powers 1976). Tule was abundant and used for both food and manufacturing by native groups (Osborne 1992). During the mid-20th century, Buena Vista Lake dried up following the construction of Isabella Dam and the diversion of its tributary rivers for agricultural and municipal water uses. While many of these resources still exist, their distribution and abundance have significantly diminished over the past century.

The San Joaquin Valley once supported diverse animal species, many of which are now locally extinct or have experienced drastic population declines following Euro-American contact. Currently extant mammal species include coyotes, foxes, badgers, California jackrabbits, cottontail rabbits, ground squirrels, wood rats, pocket gophers, and mice (Osborne 1992). A variety of birds and waterfowl, though in reduced numbers, still reside in the valley, including teals, mallards, wood ducks, Canadian geese, American coots, grebes, hawks, and various passerine birds (Cogswell 1977). Fish species historically included Sacramento blackfish, Sacramento sucker, hitch, trout, perch, chub, and salmon, among others (Moyle 1976). Invertebrates, reptiles, and amphibians were abundant, including freshwater mussels, clams, insects, snakes, lizards, frogs, and toads. The region's paleontological record includes fossil remains of mammoth, giant ground sloth, large and small horses, camel, dire wolf, Pleistocene lion, and bison (Fenenga 1991), attesting to the area's rich prehistoric biodiversity.

4.3.1.1 Archaeological Survey Results

The SSJVIC search identified four recorded cultural resources within the Project site, P-15-003175, P-15-010099, CRC-Site-AV1, and CRC-Site-AV2. P-15-003175 was recorded as a historic refuse scatter of 50+ milk cans, meat tins, China dishware fragments, and glass medicine bottles. The location and condition of P-15-003175 was also assessed and updated during a pedestrian survey conducted for the Project, but no cultural resources were able to be re-located. Site P-15-010099 includes a scatter of freshwater mussel, chert debris and tools, and a quartzite bowl or mortar. The location and condition of P-15-010099 was also assessed and updated during a pedestrian survey that identified two new historic-era sites, both consisting of historic refuse scatters associated with the oilfield. CRC-Site-AV1 consists of two depressions, which appear to be looter pits, and approximately 64 artifacts including four bottle base fragments, 25 glass fragments, six ceramics fragments, five metal cans, two metal enamelware pots, eight red brick fragments, five yellow brick fragments, and nine miscellaneous metal fragments. The only temporally diagnostic artifact was an Illinois Glass Co. maker’s mark on an amethyst bottle base fragment. Artifacts were observed scattered throughout the site on the surface, and on top of a deflated spoils pile. CRC-Site-AV2 consists of three brick features and an artifact scatter consisting of four amethyst glass fragments, two aqua glass fragments, two leather shoe fragments, one metal rivet, and brick fragments.

4.3.2 Impact Analysis

4.3.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether cultural resources impacts are significant. Would the proposed project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to CCR Section 15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5?

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

4.3.2.2 Impact Assessment

Less than significant with mitigation. Stantec's cultural resources study for the Project identified four cultural resources within the Project site, consisting of a precontact artifact and shell scatter, and three historic-era refuse scatters. Study findings and recommendations to reduce the Project's potential impact on cultural resources are discussed below.

A proposed surface waterline would intersect the southwest portion of precontact site P-15-010099. This site has not been formally evaluated for listing in the California Register of Historic Resources (CRHR), although for purposes of this Project, P-15-010099 is assumed to be eligible for listing and would; therefore, qualify as a historical resource under CEQA.

Sites P-15-003175, CRC-Site-AV1 and CRC-Site-AV2 consist of historic-era refuse scatters and features. These resources likely represent opportunistic refuse disposal (P-15-003175) or are associated with oil extraction within the EHOF (CRC-Site-AV1 and CRC-Site-AV2).

While the historical development of the oil industry in the Central Valley represents an important historical context, neither CRC-Site-AV1 nor CRC-Site-AV2 are associated with "discovery wells" or other historically significant individuals or entities associated with oil extraction that would warrant CRHR listing under Criteria 1 or 2. These two newly recorded historic-era sites in the PA also do not exhibit distinctive qualities that would qualify them for listing under CRHR Criterion 3, nor do they have the quantity and/or variety of cultural materials necessary to yield information important in history, as specified under CRHR Criterion 4.

No cultural materials were identified at P-15-003175, and as such, the site is not eligible for listing under any CRHR criteria.

Due to an apparent lack of historical significance and eligibility for listing in the CRHR, none of the historic-era resources qualify as historical resources or unique archaeological resources for the purposes of CEQA.



Based on the analysis and results of the Cultural Resources Study, and with implementation of recommendations, the Project will not have a substantial adverse change on a historical resource or unique archaeological resource pursuant to the CEQA (14 CCR Section 15064.5).

4.3.2.2.1 Historical Resources

The portion of P-15-010099 intersected by a proposed waterline has been previously disturbed by construction of a large pad and an oil tank. Despite previous disturbances to P-15-010099; however, the potential to identify intact subsurface cultural materials during Project ground disturbance cannot be ruled out.

For this reason, a qualified archaeologist should supervise the installation of temporary exclusionary fencing at P-15-010099 to preclude Project activities from disturbing areas where surface cultural materials may be present. Additionally, an archaeological and Tribal monitor are recommended for any Project ground disturbance within 100 feet of P-15-010099. Archaeological monitoring should occur within 100 feet of P-15-010099 until the archaeologist determines that there is a low potential for intact subsurface archaeological deposits.

If buried cultural resources (such as chipped or ground stone, historic debris, or building foundations) are encountered during ground-disturbing activities and an archaeological monitor is not on-site, MM CUL-2 should be implemented.

4.3.2.2.2 Archaeological Resources

According to the CEQA Guidelines, “When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource” (CEQA Guidelines Section 15064.5 (c)(1)). Those archaeological sites that do not qualify as historical resources shall be assessed to determine if these qualify as “unique archaeological resources” (California Public Resources Code [PRC] Section 21083.2). Archaeological deposits identified during Project construction should be treated by the lead agency—in consultation with a qualified archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for Archeology—in accordance with recommendations in the Cultural Resources Study.

4.3.2.2.3 Human Remains

There are no known human remains within the Project site. If human remains are encountered during Project construction, MM CUL-3 should be implemented.

4.3.3 Cumulative Impacts

Less than significant with mitigation. A project’s environmental impacts are “cumulatively considerable” if the “incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects” (CEQA Guidelines Section 15065[a][3]).



Although a formal evaluation of precontact site P-15-010099 was not completed as part of this study, the site is assumed to be eligible for listing in the CRHR for purposes of this Project, and as such, it qualifies as a historical resource for purposes of CEQA. However, avoidance using exclusionary fencing, archaeological/Tribal monitoring, and work stoppage in the event of an accidental discovery would ensure preservation in place or implementation of other appropriate measures to mitigate impacts to less than significant. Additionally, should previously unrecorded archaeological historical resources be unearthed during Project construction, these would be treated in accordance with mitigation measures CUL-1 through CUL-3 that reduce potential impacts to less than significant.

With implementation of the proposed Project MMs, along with implementation of County-required mitigation measures on the CTV I project (currently under construction), and other oil and gas development allowed under the Oil and Gas Ordinance, the Project's contribution would not have a cumulatively considerable impact on either historical resources or unique archaeological resources.

4.3.4 Mitigation Measures

The following MMs are proposed for the Project to reduce cultural resources impacts to less than significant.

MM CUL-1: A qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology shall supervise the installation of temporary exclusionary fencing at P-15-010099 to preclude Project activities from disturbing areas where surface cultural materials may be present. Additionally, an archaeological and tribal monitor are recommended for any Project ground disturbance within 50 feet of P-15-010099 to ensure that (1) construction personnel and equipment are not staging at locations where artifacts are present and the temporary exclusionary fencing is maintained; and (2) if archaeological materials are identified during Project excavation, these will be identified and appropriate measures, as summarized below, will be taken to avoid potential impacts to the resource. Archaeological and tribal monitoring should occur within 50 feet of P-15-010099 until the archaeologist determines that there is a low potential for intact subsurface archaeological deposits.

Should an archaeological deposit be encountered during Project subsurface construction within 50 feet of P-15-010099, all ground-disturbing activities within 50 feet should be redirected and the on-site archaeologist should assess the deposit, consult with agencies and the tribal monitor as appropriate, and make recommendations for the treatment of the discovery. If found to be significant by the on-site archaeologist (i.e., eligible for listing in the CRHR), CRC will be responsible for funding and overseeing implementation of the following measures. As required under CEQA, preservation in place is the preferred manner of mitigating impacts to archaeological sites (CEQA Guidelines Section 15126.4(b)(3)). If preservation in place is not feasible, however, other mitigation measures shall be implemented. Such mitigation measures may include, but would not be limited to, recording the archaeological deposit, data recovery and analysis, and public outreach. Upon completion of the selected mitigations, a report documenting methods, findings, and management recommendations should be prepared and submitted to the lead agency for review, and the final report should be submitted to the SSJVIC.

MM CUL-2: In the event archaeological materials are encountered during the course of ground disturbance or construction, the Project operator/contractor shall cease any ground-disturbing activities within 50 feet of the find or as needed to preserve the site. A qualified archaeologist shall evaluate the significance of the resources and recommend treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with the CEC, which may include data recovery or other measures. The lead agency shall consult with Native American representatives in determining treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. If after consultation it is determined that archaeological materials are to be recovered, then they shall be curated at an appropriate curation facility. The qualified archaeologist shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the lead agency and to the SSJVIC.

MM CUL-3: If human remains are uncovered during Project construction, the Owner/operator shall immediately halt all work on the site, 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 CEQA Guidelines. The lead agency shall be notified concurrently. If the coroner determines that the remains are Native American, the Project proponent shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). The NAHC shall designate a MLD for the remains per PRC 5097.98. Per PRC 5097.98, the Owner/operator, in coordination with 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 discussion and conference with the MLD as required by PRC 5097.98 has occurred, 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 (7100 et. seq.) directing identification of the next-of-kin will apply. In the event human remains are uncovered, the surface owner shall be notified immediately.

4.3.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.3.6 Laws, Ordinances, Regulations, and Standards

Cultural resources at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 27.

Table 27 LORs for Cultural Resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Section 106 NHPA	Applies if the project would require a federal permit (such as a Clean Water Act Section 404 permit). The lead federal agency must consider the effect of issuing the permit on significant cultural resources.	California Office of Historic Preservation	Section 5.3.6.1
State			
The Warren-Alquist Act 1974, as amended	Requires cultural, historic, and aesthetic resources be considered in consideration of an AFC. Requires that a portion of any such resources on public land be set aside for public access.	CEC	Section 5.3.6.2
CEQA Guidelines	Project construction may encounter archaeological and/or historical resources.	CEC	Section 5.3.6.2
California PRC Section 5020- 5029.5	Establishes the criterion for the California Register of Historical Resources and creates the California Historic Landmarks Committee and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest; establishes criteria for the protection and preservation of historic resources.	CEC; State Historic Preservation Office; Department of Parks and Recreation	PRC Section 5097.5/5097.9

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
PRC Section 5097.98	Construction may encounter Native American graves; NAHC assigns Most Likely Descendant.	State of California	Section 5.3.6.2
Local			
Section 1.10.3 – Archaeological, Paleontological, Cultural, and Historical Preservation 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.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. The proposed Project includes MM CUL-1 through MM CUL-3 to promote the preservation of cultural and historic resources where necessary.
Implementation Measure K	Coordinate with the California State University, Bakersfield's Archeology Inventory Center.	Kern County Planning and Natural Resources Dept.	CONSISTENT. See 1.10.3, Archaeological, Paleontological, Cultural, and Historical Preservation, Policy 25 and Measure K, above. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*, of this EIR. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA and CEC requirements.
Implementation Measure L	The County shall address archaeological and historical resources for discretionary projects in accordance with the CEQA.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Paleontological resource impacts are evaluated in Section 4.9, *Paleontological Resources*. MM PALEO-1 through PALEO-4, which would reduce potential impacts to known paleontological resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			through hiring a qualified paleontologist shall be retained to monitor ground-disturbing activity, document, and implement measures as needed.
Implementation Measure M	In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Tribal Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. Consistent with this measure, notification regarding the proposed Project was accomplished in accordance with AB52 and the established procedures within CEC's Application for Certification requirements.
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.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. The proposed Project includes MM CUL-1 through MM CUL-3 to promote the preservation of cultural and historic resources where necessary.
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.	Kern County Planning and Natural Resources Dept.	CONSISTENT. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. The proposed Project includes MM CUL-1 through MM CUL-3, which would require consultation with the monitors or Native American monitor(s) and to conduct a Cultural Resources Sensitivity Training for all personnel

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			working on the Project.

4.3.6.1 State LORS

4.3.6.1.1 California Environmental Quality Act

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (14 CCR Section 15002(i)). Under the provisions of CEQA, “A project with an effect 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” (14 CCR Section 15064.5(b)).

According to Appendix G of the CEQA statutes (CCR 2018), a project would have a significant environmental impact in terms of cultural resources if it would do the following:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CCR Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5.
- Disturb any human remains, including those interred outside of dedicated cemeteries.

California PRC 21084.1 defines a “historical resource” as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the CRHR (as defined at PRC Section 5024.1; 14 CCR Section 4850, et seq.);
- Listed in a local register of historical resources (as defined at PRC Section 5020.1(k));
- Identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or
- Determined to be a historical resource by a project's lead agency (14 CCR Section 15064.5(a)).

A historical resource consists of “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…Generally, a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing in the California Register of Historical Resources” (14 CCR Section 15064.5(a)(3)).

CEQA also considers potential impacts to “unique archaeological resources.” The CEQA Guidelines require that lead agencies first determine whether an archaeological site is a historical resource, as defined above and in 14 CCR Section 15064.5(a). Only if the site does not meet those definitions, then the CEQA lead agency must consider whether an archaeological site is a unique archaeological resource, which is defined 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 meets any of the following criteria”:

- Contains information needed to answer important scientific research questions and that 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.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2[g]).

The criteria for a unique archaeological resource under CEQA are similar to the eligibility criteria for inclusion in the CRHR. As a practical matter, a significant archaeological site will, in most circumstances, meet the definition of a historical resource under CEQA.

If an impact on a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (14 CCR Section 15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project would have on the resource. CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to less-than-significant levels (14 CCR Section 15126.4(a)(1)).

4.3.6.1.2 California Register of Historical Resources

PRC Section 5024.1 established the CRHR. The requirements for listing in the CRHR, including the criterion for listing and integrity requirements, are similar to those of the National Register of Historic Places (NRHP). Generally, a resource is considered by the lead agency to be “historically significant” if the resource meets the criteria for listing in the CRHR (14 CCR Section 15064.5(a)(3)). For a cultural resource to qualify for listing in the CRHR, it must be significant under one or more of the following criteria:

1. Associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
2. Associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.



4.3.6.1.3 CEQA Tribal Consultation

AB 52, which became law on January 1, 2015, provides for consultation with California Native American Tribes during the CEQA process and equates significant impacts to "Tribal cultural resources" with significant environmental impacts. PRC Section 21074 states that "Tribal cultural resources" are:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe and are one of the following:

- Included or determined to be eligible for inclusion in the CRHR.
- Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.
- 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.

A "historical resource" (PRC Section 21084.1), a "unique archaeological resource" (PRC Section 21083.2(g)), or a "non-unique archaeological resource" (PRC Section 21083.2 (h)) may also be a Tribal cultural resource if it is included or determined to be eligible for inclusion in the CRHR.

The consultation provisions of the law require that a public agency consult with local Native American Tribes that have requested placement on that agency's notification list for CEQA projects. Within 14 days of determining that a project application is complete or a decision by a public agency to undertake a project, the lead agency must notify Tribes of the opportunity to consult on the project, should a Tribe have previously requested to be on the agency's notification list. California Native American Tribes must be recognized by the NAHC as traditionally and culturally affiliated with the project site and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

If a project is determined to result in a significant impact on an identified Tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration or Mitigated Negative Declaration or certification of an EIR (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

4.3.6.1.4 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 establishes the role and responsibilities of the federal government in historic preservation. Toward this end, the NHPA directs agencies (1) to identify and manage historic properties under their control; (2) to undertake actions that will advance the NHPA's provisions and avoid actions contrary to its purposes; (3) to consult with others while carrying out historic preservation activities; and (4) to consider the effects of their actions on historic properties.



The CRC has indicated that the U.S. EPA would require a minor modification to the existing UIC Class VI injection permit to add the CalCapture CO_2 source to the CTV I CCS facility. However, NHPA Section 106 consultation will not be required to approve the permit modification.

4.3.6.1.4.1 Section 106

Section 106 of the NHPA of 1966, as amended, requires federal agencies to (1) take into account the effects of their undertakings on historic properties and (2) afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on potential effects. The regulations that implement Section 106 and outline the historic preservation review process are at 36 CFR Part 800.

Some degree of review under Section 106 must be conducted for all federal, federally assisted, federally licensed, or federally funded projects. If a project is subject to federal jurisdiction and the project is an undertaking as defined at 36 CFR 800.16(y) with the potential to cause effects on historic properties (36 CFR 800.3(a)), Section 106 of the NHPA must be addressed to take into account the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register (i.e., historic properties).

4.3.6.1.4.2 Section 101: National Register of Historic Places

The NRHP was authorized by Section 101 of the NHPA as the nation's official list of cultural resources worthy of preservation. Properties listed in the NRHP consist of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. Properties listed in or eligible for listing in the NRHP are considered in planning and environmental review, and effects to such properties are primarily addressed under Section 106.

The criteria for determining a resource's eligibility for National Register listing are defined at 36 CFR 60.4 and are as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That 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. That have yielded, or may be likely to yield, information important in prehistory or history.

Under criteria A, B, and C, the NRHP places an emphasis on a resource appearing as it did during its period of significance to convey historical significance; under Criterion D, properties convey significance through the information they contain.

NRHP Bulletin How to Apply the National Register Criteria for Evaluation states that in order for a property to qualify for listing in the NRHP, it must meet at least one of the NRHP criteria by (1) being associated with an important historic context and (2) retaining historic integrity of those features necessary to convey its significance (National Park Service 1997). The historic context of a resource will define the theme(s), geographical limits, and period of significance by which to evaluate a resource's significance (National Park Service 1997:7). Historical integrity is the ability of a resource to convey its significance and consists of seven aspects that are considered when evaluating a cultural resource: location, design, setting, materials, workmanship, feeling, and association (National Park Service 1997:44-45).

Generally, cultural properties must be 50 years of age or older to be eligible for listing in the NRHP. According to the National Park Service (1997:2), "properties that have achieved significance within the past 50 years shall not be considered eligible" unless such properties are "of exceptional importance."

Resources associated with an important historic context, meeting the age guidelines, and possessing integrity will generally be considered eligible for listing in the NRHP

4.3.6.1.5 Treatment of Human Remains

The disposition of burials and cremations–whether intact or disturbed–falls under the general prohibition on disturbing or removing human remains under CHSC Section 7050.5. More specifically, remains suspected to be Native American are treated under Section 15064.5 of the CEQA Guidelines; PRC Section 5097.98 illustrates the process to be followed if remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the county coroner must be notified (CCR Tit. 14 Section 15064.5 and PRC Section 5097.98).

Section 7050.5 of the CHSC states the following regarding the discovery of human remains.

a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to subdivision (l) of Section 5097.94 of the PRC or to any person authorized to implement Section 5097.98 of the PRC.

b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Coroner of the County in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the California Government Code (CGC), that the remains are not subject to the provisions of Section 27491 of the CGC or any other related



provisions of law concerning the investigation of the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or their authorized representative, in the manner provided in Section 5097.98 of the PRC. The coroner shall make his or her determination within two working days from when the person responsible for the excavation, or their authorized representative, notifies the coroner of the discovery or recognition of the human remains.

c) If the coroner determines that the remains are not subject to their authority and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, they shall contact, by telephone within 24 hours, the NAHC (CHSC Section 7050.5).

Of particular importance to cultural resources is subsection (c), requiring the coroner to contact the NAHC within 24 hours if discovered human remains are determined to be Native American in origin. After notification, NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants, if possible, and recommendations for treatment of the remains. The MLD will have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). In addition, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under state law (PRC Section 5097.99).

4.3.6.2 Local Requirements

The County has established General Plan policies and implementation measures for promoting the preservation of cultural and historic architectural resources. Specifically, these policies and implementation measures are described in the General Plan Land Use, Open Space, and Conservation Element and are listed below.

Section 1.10.3 – Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

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:

K. Coordinate with the California State University, Bakersfield's Archeology Inventory Center.

L. The County shall address archaeological and historical resources for discretionary projects in accordance with the CEQA.

M. In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

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.

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.

4.3.7 References

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4.4 Energy

The information and analysis presented in this section has been derived from the Energy Utilization Study prepared for the Project and included as Appendix K (Stantec 2025).

4.4.1 Environmental Setting

4.4.1.1 Electricity and Natural Gas

PG&E provides natural gas and electric service to approximately 16 million people throughout a 70,000-square-mile service area in northern and central California, including Kern County (PG&E 2025). In February 2018, PG&E announced that it had reached California's 2020 renewable energy goal 3 years ahead of schedule (PG&E 2018). In 2022, approximately 38 percent of PG&E's electricity came from eligible renewable resources including solar, wind, geothermal, biomass and small hydroelectric sources. Additionally, approximately 95 percent of PG&E's total electric power mix was from GHG-free sources, which includes nuclear and large hydroelectric sources of energy (CEC 2025).

The CEC tracks electricity and natural gas consumption across the state for residential and non-residential sources. In 2022, Kern County used a total of 14,861 gigawatt-hours of electricity and 1,774 million therms of natural gas. Approximately 81 percent of the electricity usage and 94 percent of the natural gas use in the County was attributed to non-residential consumption (CEC 2016a, CEC 2016b).

4.4.1.2 Petroleum Fuel

According to the U.S. Energy Information Administration, California used approximately 628 million barrels of petroleum in 2022. By sector, 85 percent (533,951 thousand barrels) of the state's petroleum was used by transportation, 11 percent from industrial uses (70,102 thousand barrels), 3 percent from commercial uses (18,126 thousand gallons), and 1 percent from residential uses (5,850 thousand barrels) (U.S. Energy Information Administration 2025).

In 2024, California sold 2.7 billion gallons of diesel fuel and 12.3 billion gallons of gasoline (California Department of Tax and Fee Administration 2025a, 2025b).

4.4.2 Impact Analysis

4.4.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether energy impacts are significant. Would the proposed project:

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?

4.4.2.2 Impact Assessment

Less than significant. Construction, operation, and decommissioning activities associated with the proposed Project would result in the consumption of petroleum-based fuels. However, there are no unusual Project characteristics that would necessitate the use of equipment or vehicles that would be less energy efficient than at comparable construction sites in other parts of the state. The project proponent and contractors have a financial incentive to minimize fuel and energy use in construction. The Project would comply with all rules and regulations pertaining to the reduction of air emissions that would also reduce petroleum fuel use. Table 28 provides an estimate of the total on-road vehicle fuel usage during construction.

Table 28 Construction On-Road Vehicle Fuel Consumption

Trip Type	Average Daily Trips	Average Fuel Economy (miles/gallon)	Total VMT	Total Fuel Consumption (gallons)
Worker Trips	1,000	28.46	17,714,000	622,487
Vendor Trips	12	7.82	343,860	43,976
Haul Trips	*	6.41	53,337	8,318
Total Construction On-Road Trips			***18,111,197***	***674,781***

Notes:

*During Phase 1 Project Construction (Initial Site Preparation, Foundation) the Project would result in an average of 33 hauling truck trips per day for grading fill and export. During Phase 2 Project Construction (Equipment Installation) the Project would result in an average of 2 trucks per day from concrete hauling.

Average daily trips were derived from the Air Quality and Greenhouse Gas Technical Assessment and the Traffic Impact Assessments prepared by Stantec.

Calculations use unrounded numbers; totals may not appear to sum exactly due to rounding.

VMT = vehicle miles traveled

Source: Stantec 2025X

During operation, the Project would require trips for on-site and regular material deliveries. Table 29 provides an estimate of the annual fuel consumed by vehicles traveling to and from the Project site. As shown in the table, annual vehicular fuel consumption is estimated to be 20,577 gallons of motor vehicle fuel.

Table 29 Operational On-Road Vehicle Fuel Consumption

Trip Type	Average Daily Vehicle Trips	Average Fuel Economy (miles/gallon)	Annual VMT	Total Annual Fuel Consumption (gallons)
Passenger Cars	17	34.04	203,484	5,977
Light Trucks and Medium Vehicles	18	25.45	207,352	8,147
Light-Heavy to Heavy-Heavy Diesel Trucks	4	7.95	46,494	5,851
Motorcycles	0.8	42.34	9,371	221
Other	0.2	7.08	2,699	381
Project Total	***40***	**-**	***496,400***	***20,577***

Source: Stantec 2025K.

The Project would comply with CARB's five-minute idling rule and all off-road vehicles would be required to be report vehicle inventories through the Off-Road Diesel Regulation. Moreover, as discussed in the Energy Utilization Study, the diesel and gasoline demands from Project construction would be minimal compared to statewide demand. The analysis in the Energy Utilization Study also conservatively assumed all diesel and petroleum off-road equipment. However, construction may use alternatively fueled or electric construction equipment. The use of this equipment would reduce petroleum fuel demand but there is limited availability as compared to diesel fueled equipment. As such, any off-road energy demand from the alternative fuels or electricity would continue to be minimal. Transportation fuel demand would also be minimal compared to Statewide use. Moreover, the Project's fleet would be required to comply with stricter vehicle standards over time reducing fuel use. For these reasons, construction and decommissioning fuel consumption associated with the proposed Project would result in a less than significant impact.

In addition, the Project would consume energy resources during construction, operations, and decommissioning. The Project would result in less overall electricity provided to the PG&E grid due to the CCS Project's demand of approximately 70-90 MW_e, as well as due to the planned CCS project capacity and desire to produce the lowest carbon intensity power to consumers. However, the EHPP has historically only run at about 475 MW gross generation and will retain the capability of close to full nameplate 550 MW_e gross generation should it be needed Also, PG&E buys and distributes electricity to consumers, therefore in combination with the electricity generated and electricity purchased, the loss in electrical generation to PG&E would be an insignificant fraction. The Project would only operate under power from the EHPP. PG&E backup power would only be required for turnaround loads such as air conditioning in electrical buildings. However, the energy consumption associated with the proposed Project would not be inefficient, wasteful, or unnecessary, and a less-than-significant impact would occur.

During both construction and decommissioning activities, off-road equipment and on-road vehicles would comply with applicable federal, state, and local requirements governing fuel efficiency. For example, off-



road equipment would be subject to the most recent In-Use Off-Road Diesel-Fueled Fleets Regulations adopted by the CARB, which establish engine efficiency requirements, among other requirements (CARB 2023b). Off-road engines are categorized per engine tier, with Tier 0 being the least efficient and Tier 4 Final being the cleanest and most efficient. The most recent amendments to the rule are adding an even cleaner Tier 5 engine requirement. Compliance with the In-Use Off-Road Diesel-Fueled Fleets Regulations would ensure that the Project construction and decommissioning fleets would consist of energy-efficient engines.

With respect to the on-road vehicle fleet operations, the U.S. EPA and NHTSA have adopted Federal Vehicle Standards with which the Project would comply. The on-road construction and decommissioning fleets would incorporate these standards as they purchase newer model trucks and turn over their fleet. As such, these regulations would have an overall beneficial effect on reducing nationwide fuel consumption over time as older trucks are replaced. Compliance with this regulation would further reduce the demand for petroleum fuels. Moreover, heavy-duty trucks would be required to comply with CARB's 5-minute idling limits which would reduce fuel consumption. Although the foregoing regulations were primarily designed to reduce air quality emissions, they would also result in an increase in energy efficiency during construction and decommissioning activities.

California adopted the RPS to increase the amount of renewable energy supplied by utilities within the state. As noted previously, the Project would primarily use electricity generated on-site, but would have a backup connection to the PG&E grid for small turnaround loads. PG&E will continue to be subject to state RPS requirements, and the Project would not preclude achievement of the RPS goals. In addition, any new structures developed as part of the Project would comply with federal, state, and local regulations aimed at reducing energy consumption, including the Building Energy Efficiency Standards (CCR Title 24, Part 6) and the CALGreen Code (CCR Title 24, Part 11). Moreover, the Project directly supports the goals laid out in CARB's 2022 Scoping Plan, including the measures related to CCS. Finally, the Project would be subject to the CARB's CCS Protocol under the LCFS (CARB 2018). The LCFS requirements are designed to decrease the carbon intensity of fuels and increase the range of renewable alternatives; therefore, the Project's compliance with the CARB's CCS Protocol would indirectly support the state plan for renewable energy. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, the impact would be less than significant.

4.4.3 Cumulative Impacts

Less than significant with mitigation. The geographic scope of cumulative energy impacts is PG&E service area for electricity and natural gas and the State of California for petroleum. Other past, present, and reasonably foreseeable future oil and gas development projects, including wells and abandonment activity and other CCS projects, would constitute a cumulative impact.

The main contribution of energy consumption from the Project would be construction equipment usage, haul trips, and employee trips during the construction phase, and employee and delivery trips during Project operation. However, construction energy demand would be finite and temporary, ceasing at the end of construction activities. As discussed in Impact ENG-1, the Project's fuel demand would be minimal



compared to statewide demand. Construction of the Project would be similar in petroleum fuel demand as other projects within the County. The fuel required to power the on-road motor vehicles and off-road equipment during construction of the Project would represent approximately 0.0048 percent of the state's annual diesel and gasoline demand. Even in the event that 100 similar projects are constructed simultaneously, the overall petroleum fuel demand would be less than half a percent of the annual statewide demand. Therefore, the cumulative impact from the Project during construction would be less than significant.

The Project would utilize electricity generated by the EHPP; therefore, that amount of power (70-90MWe) would not be available to the grid and would not be available to other past, present, and reasonably foreseeable future projects. However, PG&E can buy power from other sources, so this amount is an insignificant amount for the total grid usage. Additionally, other future oil and gas development projects would likely require minimal electricity and natural gas, either producing it on the site or using petroleum fuel to power on-site equipment. As stated above, the annual petroleum fuel demand from the Project would be minimal, representing 0.0001 percent of the state's annual diesel and gasoline demand. Other CCS projects would have similar demands and continue to be minimal when combined. Other oil and gas development projects may increase fuel production therefore reducing the cumulative percentage of demand. The Project would implement MM ENG-1 that requires the tracking of the Project's energy efficiency and consumption to ensure proper energy planning across the region. Compliance with the mitigation would require an annual report of electricity consumption for all Project sources permitted to provide CO_2 for injection and storage and an evaluation of any methods to reduce the consumption of any forms of electricity in the capture process. The Project's contribution would not result in a cumulative impact in any wasteful consumption of energy and would comply with all applicable energy reduction plans, the Project would be less than significant with mitigation.

4.4.4 Mitigation Measures

The following MM is proposed as an over-arching requirement for CTV I to reduce energy impacts to less than significant.

MM ENG-1: Electricity Reporting. The operator shall provide an annual report on the total amount of electricity consumed by the carbon capture facilities associated with sources that send CO_2 for injection into the project storage site. The report shall detail the facility, the source of the power, and the annual amount. The report shall include a discussion of modifications that are being considered by each source to reduce electricity use. The report shall be provided to the Kern County Planning and Natural Resources Agency, U.S. EPA UIC Permit Division, CARB, CPUC, CEC, and California Independent System Operators.

4.4.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.4.6 Laws, Ordinances, Regulations, and Standards

Energy utilization at the proposed Project is governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 30.

Table 30 LORs for Energy Utilization

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
National Energy Conservation Policy Act	Serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements.	NHTSA	Project related vehicles would comply with this fuel economy standards.
Energy Independence and Security Act of 2007	Public Law 110-140 (2007) Requires increased fuel economy standards for vehicles, development of CCS.	U.S. EPA	Section 4.1.2, project will advance a CCS project consistent with the Act.
Corporate Average Fuel Economy Standards	49 USC Sections 32901 et seq.). Applicable to project-related light-duty vehicles and trucks.	U.S. EPA, CARB	Refer to Section 4.1.2
Inflation Reduction Act of 2022	Provides funding for clean energy programs. Established 45Q tax credit for CCS.	U.S. EPA, Internal Revenue Service	Proposed project would qualify for 45Q tax credits.
EO 14156 – Declaring a National Energy Emergency	Expedites energy projects with federal permit requirements.	U.S. EPA, DOE, BLM, USFS, USACE	Project would not require federal permitting, other than a UIC Class VI permit modification.
State			
California Energy Commission Power Plant Siting Regulations (Title 20 CCR)	Establishes regulations for the siting and certification of power plants over 50 MW.	CEC	Project would comply with CEC requirements.
California Energy Code	Establishes energy efficiency for buildings.	Kern County	Project would require with energy efficiency requirements.
California Integrated Energy Policy	Requires CEC to publish an energy report every two years.	CEC	Project would comply with reporting requirements under

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			this law.
California Renewables Portfolio Standard	Sets renewable electrical production and zero-carbon resource targets	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Low Carbon Fuel Standard	Reduce carbon intensity of fuels sold in California	CARB	Project may qualify for LCFS credits under CARB's adopted LCFS CCS Protocol.
In-Use Off-Road Diesel-Fueled Fleets Regulation	Requires off-road diesel-fueled equipment to use clean-burning engines.	CARB	Project equipment would comply with this requirement.
2022 Scoping Plan for Achieving Carbon Neutrality	Reduction of GHG emissions in accordance with AB 32.	CARB	Project will reduce GHG emissions associated with existing natural gas-fired power plant.
Assembly Bill 1493 – Pavley Regulations and Fuel Efficiency Standards	Fuel economy standards for light-duty vehicles and trucks.	CARB	Project will not include fleet vehicles.
CARB Heavy-Duty Diesel Vehicle Idling Information	Limits idling of diesel engines.	CARB, CEC	Project will comply with engine idling regulations.
California Geen Building Standards, Par 11, Title 24 CCR	Adopts strict building code requirement for increased energy efficiency.	California Building Standards Council	The proposed project does not include new buildings. Project will comply with energy efficiency and water efficiency requirements.
Local			
Kern County Council of Governments Regional Transportation Plan (RTP)	Presents strategy for regional transportation networks and GHG emissions reductions programs.	Kern County Council of Governments	Project would comply with RTP requirements through compliance with Kern County Planning and Natural Resources Dept. policies.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Section 5.2 – Importance of Energy to Kern County, Policy 1	Kern County should assert and promote its role as the State's leading energy County.	Kern County Planning and Natural Resources Dept.	The proposed Project would support this policy.
Policy 4	The County should actively seek State and federal energy grants and projects to assist in energy planning and development.	Kern County Planning and Natural Resources Dept.	The CalCapture project FEED study was support by a federal grant.
Policy 5.	The County shall work with other agencies to define regulatory responsibility concerning energy-related issues, and shall seek to eliminate, insofar as possible, duplicative regulations.	Kern County Planning and Natural Resources Dept.	The CEC will consult with Kern County as a responsible agency for the review and approval of this Project.
Policy 6	The County should encourage discussion and mutual cooperation of various energy industries within the County to establish mutual understanding of common needs and issues.	Kern County Planning and Natural Resources Dept.	The Project will promote CCS within Kern County which will address GHG emissions from existing natural gas-fired power plants.
Policy 7	The processing of all discretionary energy project proposals shall comply with CEQA Guidelines directing that the environmental effects of a project must be taken into account as part of project consideration.	Kern County Planning and Natural Resources Dept.	The CEC will consult with Kern County as a responsible agency for the review and approval of this Project.
Policy 8	The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.	Kern County Planning and Natural Resources Dept.	The CEC will consult with Kern County as a responsible agency for the review and approval of this Project.
Policy 9	The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.	Kern County Planning and Natural Resources Dept.	The CEC will consult with Kern County as a responsible agency for the review and approval of this Project.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Section 5.3.2 – Kern County's Economic Dependence on the Oil Marketplace, Policy 3	The County shall encourage the conversion of existing petroleum-related facilities to other productive uses when they are no longer needed or productive.	Kern County Planning and Natural Resources Dept.	CONSISTENT. The Project does include the conversion of oil and gas facilities.
Policy 4	The County should encourage the development of renewable energy industries to diversify the energy economy in Kern County.	Kern County Planning and Natural Resources Dept.	The proposed Project does not include a renewable energy component.
Section 5.4.1 – Cogeneration Policy 1	The County shall allow the continued development of cogeneration facilities in primary oil resource areas and industrial areas.	Kern County Planning and Natural Resources Dept.	The proposed Project is associated with an existing power plant which include cogeneration facilities.

4.4.6.1 Federal LORS

4.4.6.1.1 National Energy Conservation Policy Act

The National Energy Conservation Policy Act (42 USC Sections 8201 et seq.) serves as the underlying authority for federal energy management goals and requirements and is the foundation of most federal energy requirements. The National Energy Conservation Policy Act also established fuel economy standards for on-road motor vehicles in the United States. NHTSA is responsible for establishing additional vehicle standards and for revising existing standards. NHTSA and the U.S. EPA are taking coordinated steps to enable the production of clean energy vehicles with improved fuel efficiency. NHTSA sets the CAFE levels, which are rapidly increasing over the next several years to improve energy security and reduce fuel consumption.

4.4.6.1.2 Energy Independence and Security Act of 2007

EISA aimed to increase United States energy security, increased CAFE standards for motor vehicles, and included provisions related to energy efficiency, such as RFS, appliance and lighting efficiency standards; and building energy efficiency standards. The EISA required increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the United States contains a minimum volume of renewable fuel.

The RFS programs regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005. The RFS program established the first renewable fuel volume mandate in the United States. As required under the EISA, the original RFS



program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. The RFS program was expanded in several ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2, and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required by the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

4.4.6.1.3 Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 mandated that NHTSA establish and implement a regulatory program for motor vehicle fuel economy, known as the CAFE program, to reduce national energy consumption. The CAFE program establishes average fuel economy standards for passenger cars and light-duty trucks (*see* 49 USC Sections 32901 et seq.). The EISA, discussed above, amended the CAFE program requirements by providing the USDOT additional rulemaking authority and responsibilities. In June 2024, NHTSA finalized CAFE standards for model years 2027 to 2031. The standards will bring the average light-duty vehicle fuel economy to approximately 50.4 miles per gallon by model year 2031. In addition, heavy-duty pickup truck and van fuel efficiency will increase to an average of approximately 35 miles per gallon by model year 2035. NHTSA projects that the foregoing standards will avoid the consumption of almost 70 billion gallons of gasoline through 2050, preventing more than 710 million MT of CO_2 emissions by 2050 (NHTSA 2024).

4.4.6.1.4 Inflation Reduction Act of 2022

The Inflation Reduction Act of 2022 is considered the most ambitious climate law in United States history, and is intended to reduce GHG emissions, help build a clean economy, reduce energy costs for Americans, and advance environmental justice. With funding from the IRA, the U.S. EPA has launched a network of clean energy financing and provided grant funding for climate pollution reduction programs (USEPA 2023). The Inflation Reduction Act increases the 45Q tax credit to $85 per ton for geologic sequestration of CO_2 from industrial sources. The Inflation Reduction Act project funding has been paused under EO as signed in January 2025 entitled Unleashing American Energy.



4.4.6.1.5 Declaring a National Energy Emergency

In January 2025, EO 14156 was issued declaring a national energy emergency. The EO is intended to address the identified emergency and reduce energy prices by expediting energy and infrastructure projects and facilitating the production of domestic energy resources, which include, but are not limited to, crude oil, natural gas, petroleum products, coal, biofuels, hydropower, and minerals.

4.4.6.2 State LORS

4.4.6.2.1 California Public Utilities Commission

The CPUC is a state agency created by a constitutional amendment to regulate privately-owned utilities providing telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation services and in-state moving companies. The CPUC is responsible for ensuring that California utility customers have safe, reliable utility services at reasonable rates, while protecting utility customers from fraud. The CPUC regulates the planning and approval for the physical construction of electric generation, transmission, or distribution facilities, and local distribution pipelines of natural gas. CPUC permitting is not required for the proposed Project.

4.4.6.2.2 California Energy Commission

The Warren-Alquist Energy Resources Conservation and Development Act (Warren-Alquist Act of 1974; PRC Sections 25000 et seq.) created the CEC, California's primary energy and planning agency. The CEC is charged with forecasting future energy needs, promoting energy efficiency and conservation through setting standards, supporting energy-related research, developing renewable energy resources, advancing alternative and renewable transportation fuels and technologies, certifying certain thermal power plants, and planning for and directing state response to energy emergencies. Additionally, the Warren-Alquist Act of 1974 acknowledges the need for renewable energy resources and encourages the CEC to explore renewable energy options that would be in line with environmental and public safety goals.

4.4.6.2.3 California Energy Code

New buildings in California must comply with the California Energy Code (Title 24, Part 6; California's Energy Efficiency Standards). These efficiency standards apply to new construction of both residential and nonresidential buildings (e.g., maintenance buildings and pump station buildings associated with the Project), and address energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit processes, and local jurisdictions may adopt and enforce energy standards for new buildings provided that these standards meet or exceed those provided in Title 24.

4.4.6.2.4 California Integrated Energy Policy

SB 1389 requires the CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use



these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety." (PRC Section 25301[a]). The CEC adopts an Integrated Energy Policy Report every 2 years and an update every other year. The most recent version is the 2023 Integrated Energy Policy Report (CEC 2023).

4.4.6.2.5 California Renewables Portfolio Standard

RPS was initially established in 2002 by SB 1078, with the initial requirement that 20 percent of electricity retail sales be served by renewable resources by 2017. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The program was accelerated in 2015 with SB 350, which mandated a 50 percent RPS by 2030. In 2018, SB 100 was signed into law, which again increases the RPS to 60 percent by 2030 and requires all the state's electricity to come from carbon-free resources by 2045 (CPUC 2025).

CPUC implements and administers RPS compliance rules for California’s retail sellers of electricity, which include large and small investor-owned utilities, publicly owned utilities, electric service providers, and community choice aggregators. The CEC is responsible for the certification of electrical generation facilities as eligible renewable energy resources and adopting regulations for the enforcement of RPS procurement requirements of public owned utilities.

4.4.6.2.6 Low Carbon Fuel Standard

In 2007, Governor’s EO S-01-07 established the LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. CARB adopted the LCFS on April 23, 2009.

The LCFS was subject to legal challenge in 2011. Ultimately, CARB was required to bring a new LCFS regulation for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS and new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The LCFS has been subsequently amended to strengthen the carbon intensive fuel reduction targets beyond 2020 and to expand fuel types and activities eligible to participate in LCFS, among other changes (CARB 2025a).

One of the specific regulations added in 2018 is the CCS Protocol under the LCFS (CARB 2018). The CCS Protocol establishes methodology for quantifying geological CO_2 sequestration, and permanence requirements related to site characteristics, plume extent evaluation, testing and monitoring, well operation, post-injection site care, and more.

4.4.6.2.7 In-Use Off-Road Diesel-Fueled Fleets Regulation

In 2007, CARB approved the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) (13 CCR Section 2449 et seq.). The goal of the Off-Road Regulation is to reduce PM and NO_x emissions from



existing off-road heavy-duty diesel vehicles in California. This is achieved by imposing idling limits on vehicles; establishing reporting requirements through the CARB “DOORS” program; restricting the addition of older vehicles into fleets; requiring the phase-out of old and inefficient equipment; requiring the procurement and use of renewable diesel; and others (CARB 2025b).

In November 2022, CARB approved amendments to the Off-Road Regulation that became effective October 1, 2023. The 2022 amendments were one of several measures identified for action by CARB as part of the 2022 State Strategy for the State Implementation Plan. These amendments would achieve additional NO_x and PM reductions and enhance the enforceability of the Off-Road Regulation.

4.4.6.2.8 2022 Scoping Plan for Achieving Carbon Neutrality

The 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) was approved by the CARB in December 2022 and assesses progress toward achieving the state’s GHG reduction goals and establishes a path to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for advancing transportation technology, clean energy deployment, maintenance and preservation of natural and working lands, and others, and is designed to meet the state’s long-term climate objectives. Specifically, the 2022 Scoping Plan identifies carbon negative technologies, including nature-based and mechanical carbon sequestration projects, as an essential component in achieving state-wide carbon neutrality (CARB 2022).

4.4.6.2.9 Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations and fuel efficiency standards that reduce GHGs emitted by passenger vehicles and light duty trucks. The fuel efficiency standards were phased in during the 2009 through 2016 model years.

The second phase of the implementation for AB 1493 was incorporated into Amendments to the LEV III or the Advanced Clean Cars program. The Advanced Clean Cars program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The rules helped promote a reduction in pollutants from gasoline and diesel-powered cars and helped deliver increasing numbers of zero-emission technologies, such as full battery electric vehicles, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations also encouraged adequate fueling infrastructure.

4.4.6.2.10 CARB Heavy-Duty Diesel Vehicle Idling Information

CARB has set an airborne toxic control measure (Title 13 CCR Section 2485) which requires that drivers of diesel-fueled commercial motor vehicles with gross vehicle weight ratings greater than 10,000 pounds, including buses and heavy-duty trucks, not idle the vehicle’s primary engine longer than five minutes in any single location.

4.4.6.2.11 California Green Building Standards, Part 11, Title 24

CALGreen is a green building standards code created in an effort for California meet the GHG reduction goals of AB 32 and SB 32. CALGreen codes have been established for residential and non-residential structures aimed at increasing water and electricity efficiency while promoting electric vehicles and carbon reductions.

4.4.6.3 Local LORS

4.4.6.3.1 Kern Council of Governments Regional Transportation Plan

The California Association of Councils of Governments is a 49 member agency made up of Metropolitan Planning Organizations that serves to plan regional transportation growth across the State. The Kern County Council of Governments (COG) is the Metropolitan Planning Organizations representative of the Project site. Each COG is responsible for preparing a Regional Transportation Plan (RTP) every four years. The RTP is a long-term (20 year) general plan for the region's transportation network that includes projects for all types of travel (road, aviation, and freight). The latest RTP is published by Kern County COG was in 2022. The goals of the 2022 RTP include the following:

- **Mobility.** Improve the mobility of people and freight;
- **Accessibility.** Improve accessibility to major employment and other regional activity centers;
- **Reliability.** Improve the reliability and safety of the transportation system;
- **Efficiency.** Increase the efficiency of the existing and future transportation system;
- **Livability.** Promote livable communities;
- **Sustainability.** Minimize effects on the environment; and
- **Equity.** Ensure an equitable distribution of the benefits among various demographic and user groups.

4.4.6.3.2 Kern County General Plan

The Kern County General Plan presents a vision for the County's future, looking ahead to 2040. State law required that counties and cities adopt and periodically update a General Plan to guide land use development. The purpose of the General Plan is to encourage economic development; work with federal, state, and local agencies to plan the long-term future of Kern County; ensure the protection of environmental resources; and maintain compliance with the provisions of State Planning and Zoning Laws.

The General Plan includes the following policies related to energy resources that may be applicable to the Project (Kern County 2009):

- **Section 5.2 – Importance of Energy to Kern County**

- **Policy 1.** Kern County should assert and promote its role as the State's leading energy County.
- **Policy 4.** The County should actively seek State and federal energy grants and projects to assist in energy planning and development.
- **Policy 5.** The County shall work with other agencies to define regulatory responsibility concerning energy-related issues, and shall seek to eliminate, insofar as possible, duplicative regulations.
- **Policy 6.** The County should encourage discussion and mutual cooperation of various energy industries within the County to establish mutual understanding of common needs and issues.
- **Policy 7.** The processing of all discretionary energy project proposals shall comply with CEQA Guidelines directing that the environmental effects of a project must be taken into account as part of project consideration.
- **Policy 8.** The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.
- **Policy 9.** The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.

- **Section 5.3.2 – Kern County's Economic Dependence on the Oil Marketplace**
  - **Policy 3.** The County shall encourage the conversion of existing petroleum-related facilities to other productive uses when they are no longer needed or productive.
  - **Policy 4.** The County should encourage the development of renewable energy industries to diversify the energy economy in Kern County.
- **Section 5.4.1 – Cogeneration**
  - **Policy 1.** The County shall allow the continued development of cogeneration facilities in primary oil resource areas and industrial areas.

4.4.7 References

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4.5 Geological Hazards and Resources

This section provides an evaluation of the CalCapture CCS Project in terms of potential exposure to geological hazards and potential to affect geologic resources of commercial, recreational, or scientific value. A geohazards assessment for the proposed Project was conducted by evaluating relevant publicly available information and data provided by CRC. The information and analysis presented in this section has been derived from the Geohazards Assessment prepared for the Project and included as Appendix K (Stantec 2025f). Table 31 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 31 Appendix B Information Requirements for an AFC – Geological Hazards and Resources

Summary of Requirement	Section
Geological Hazards and Resources	
A summary of the geology, seismicity, and geologic resources of the project site and related facilities, including linear facilities.	Section 4.5.1
A map at a scale of 1:24,000 and description of all recognized stratigraphic units, geologic structures, and geomorphic features within two (2) miles of the project site and along proposed facilities	Appendix K - Geohazards Assessment
A map and description of geologic resources of recreational, commercial, or scientific value which may be affected by the project	Section 4.5.2

4.5.1 Environmental Setting

The Project site is underlain by Quaternary Pliocene-Pleistocene non-marine sedimentary rocks, including sandstone, shale, and gravel deposits within the EHOF (SEI, 2020). The EHOF is an anticline composed of uplifted, stratified alluvial soils, with the Tulare Formation at the surface, underlain by the San Joaquin, Etchegoin, and Monterey formations. The upper units of the Tulare formation are mostly unsaturated; however, the lower units are sometimes saturated with water and oil (SEI, 2020). The Project site is located within the San Joaquin Valley Basin. A 1987 groundwater assessment by the Mark Group at 27R, about 1 mile northwest of the Project site, found no groundwater to a depth of 420 feet. Similarly, a 1,000-foot boring in 1991 at 27R encountered no water. Soil borings at the Project site found no groundwater to 100 feet, indicating no shallow groundwater (SEI, 2020). Recent field explorations in 2023 and 2024 also found no groundwater. However, depth to an unconfined aquifer according to Department of Water Resources was 165 feet in spring 2023 (SEI, 2025). There are no records of any water supply wells at the Project site and no groundwater used as drinking water.

Soils mapped on the Project site are primarily alluvial and include Elkhills sandy loam, with 9 to 50 percent slopes, eroded, Elkhills-Torriorthents stratified complex, with 9 to 15 percent slopes, Kimberlina sandy loam, with 5 to 9 percent slopes, and Kimberlina-Urban land complex, with 0 to 5 percent slopes. These soils are not considered hydric soils (Natural Resources Conservation Science [NRCS] 2025).

The Project site is not located within an Alquist-Priolo Fault Zone (CGS 2024). There are no mapped faults located within the Project site; the nearest Quaternary active fault mapped by USGS is an unnamed undifferentiated Quaternary fault located approximately 2.6 miles to the east. Another unnamed undifferentiated Quaternary fault is located approximately 3.9 miles northwest, and additional named and unnamed Quaternary active faults have been mapped within a 35-mile radius of the Project site. The Project site is located within an area that has not been evaluated by the California Geological Survey (CGS) for liquefaction or landslide hazards (CGS 2024).

Historic earthquakes at the Project site include a 1.1 M earthquake recorded in 2015 (USGS 2025b). The largest recorded earthquake within the EHOF was 7.7 M that occurred in 1952. A majority of Kern County earthquakes are less than 5.0 M on the Richter scale (SEI 2020). Information published by the USGS indicates there is a 2% chance in the next 50 years that the Project site will experience peak ground acceleration between 40%g and 80%g, where %g is the percent acceleration due to gravity determined in accordance with the U.S. Seismic Hazard Maps web site (USGS 2014).

4.5.2 Impact Analysis

The following sections present the potential effects from the construction and operation of the CalCapture CCS Project on geologic resources and risks to life and property from geologic hazards.

4.5.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether geological hazards and resources impacts are significant.

Geology and Soils. Would the project:

a) Directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving the following:

    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault?

    b. Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

    c. Strong seismic ground shaking?

    d. Seismic-related ground failure, including liquefaction?

    e. Landslides?

b) Addressed in Section 4.12 – Soils.

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 offsite landslide, subsidence, liquefaction, or collapse?

d) Addressed in Section 4.12 – Soils.

e) Addressed in Section 4.12 – Soils.

f) Addressed in Section 4.9 – Paleontological Resources.

Mineral Resources. Would the Project: 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?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local plan, specific plan, or other land use plan?

4.5.2.2 Impact Assessment

Fault Rupture (Ground Rupture) Hazards

Less than significant with mitigation. The Project site is not located within an Alquist-Priolo Fault Zone (CGS 2024). While the Project site does not contain USGS mapped faults, there are mapped faults within a 35-mile radius with the nearest located approximately 2.6 miles to the east. Geotechnical investigations by Soils Engineering, Inc. (SEI) using EQFault (version 3.0) estimate the maximum site acceleration at 0.2517g, resulting from an 8.0 M earthquake on the San Andreas Fault approximately 14.8 miles away. The occurrence of low magnitude seismic events on the existing active faults in the vicinity of the Project site suggests that the near-surface stresses are being accommodated on these existing geologic structures. As a result, surface rupture at the Project site is unlikely to occur. Refer to mitigation measures GEO-1 through GEO-4 below.

Seismic Shaking Hazards

Less than significant with mitigation. Based on the proximity to active faults and magnitude of documented earthquakes within the region, strong ground shaking may occur at the Project site; however, ground failure is highly unlikely. Mitigation of strong ground shaking, when needed, is typically provided by designing structures in accordance with the latest edition of the California Building Code. Refer to mitigation measures GEO-1 through GEO-4 below.

Liquefaction, Lateral Spreading, and Settlement

Less than significant with mitigation. Based on the near surface soil conditions, anticipated subsurface soil conditions, depth to groundwater, and proximity to seismically active faults, the potential for liquefaction induced settlement is low. A design level geotechnical investigation will quantify the anticipated seismically induced settlement and provide recommendations for mitigation, as necessary. Refer to mitigation measures GEO-1 through GEO-4 below.



The Project site is located at least one-half to one mile from a free face (abrupt changes in surface topography) and has a low liquefaction potential. Given the relatively flat topography of the Project site, soil conditions, depth to groundwater, depth to bedrock, and the low potential for liquefaction in the area, the potential for lateral spreading is considered low.

The Geologic Hazard Study for the CO_2 Capture Project from Elk Hills Power Plant prepared by SEI (located at the Project site) estimated the amount of dynamic settlement that would occur at the Project site during a major earthquake is approximately 0.33 inches to 0.55 inches based on the lithology encountered as well as the blow counts recorded using soil sampling and the data analysis of the soil borings using the program LiquefyPro. The estimated amount of differential settlement was 0.185 inches to 0.281 inches (SEI 2020). Refer to mitigation measures GEO-1 through GEO-4 below.

Subsidence

Less than significant with mitigation. The USGS maps areas of recorded historical and current subsidence across California. In addition, the City of Bakersfield Safety Element Maps subsidence in nearby areas including the Project. The proposed Project is located in an area where no historic land subsidence has occurred and is located outside the area of hydrocompaction (SEI 2020). While unconsolidated alluvial soils are present over portions of the Project site, these soils are largely unsaturated and are not used as a source of groundwater. Additionally, the proposed Project does not involve removal of oil and gas production or groundwater pumping, eliminating the possibility for subsidence caused by the Project. Refer to mitigation measures GEO-1 through GEO-4 below.

Collapse or Expansion of Soils

Less than significant with mitigation. Sinkholes and karst topography (limestone formations susceptible to formation of underground caverns) are known to exist in California (USGS 2018). Existing landforms at the Project site are not consistent with landforms that could develop into sinkholes or other geologic hazards but should be addressed in the design-level geotechnical investigation when site specific conditions are understood.

Soil borings collected at the Project site in 2020 showed low to moderately expansive surface soils. Multiple consolidation tests were conducted on the top 6-inches of samples. The results indicated that there was a low to moderate consolidation potential, ranging from -0.1 to -2.9 percent (SEI 2020). Additionally, five soil borings advanced at the Project site in November 2023 were laboratory tested to determine Expansion Index (EI). Per the ASTM International D4829 standard for EI of Soils, soils are considered to be expansive when the EI result is greater than 20. The soil bearings had EI values of 5, 11, and 10, which indicates a very low expansion potential (SEI 2023). Refer to mitigation measures GEO-1 through GEO-4 below.

Slopes Stability and Erosion

Less than significant with mitigation. The Project site was previously graded for an oil and gas production facility and is relatively flat, located in an area with minimal slope to the west. No historical landslides or creep has been observed in the area where the Project site is located (SEI 2025). Permanent slopes steeper than 5:1 (horizontal to vertical) or higher than 5 feet are not anticipated to be constructed or



built upon for the Project. However, the stability of slopes, if any, should be verified when design-level grading information becomes available.

The predominantly fine-grained soils underlying the Project site are potentially susceptible to erosion or the loss of topsoil due to surface water flows and wind-driven movement. The on-site soils have a low to medium runoff potential (the potential for water to runoff into drainage channels vs. infiltrate directly into the soil) and the soils within the staging/laydown area have a runoff potential ranging from low to very high. The erosion potential of on-site soils, as indicated by their K-Factor, ranged from 0.17 to 0.43, which indicate low to moderate potentials for erosion. Mitigation of soil erosion may include selective grading, establishment of anchoring vegetation, design of runoff control features such as drainage ditches, and construction of erosion control features such as pavements and surface mats. These mitigation options will be addressed in the design-level evaluations for the Project. Refer to mitigation measures GEO-1 through GEO-4 below.

Mineral Resources

Less than significant. Project activities could result in the temporary or permanent loss of availability of mineral resources if project development those resources could not be extracted, or if activities prevented access to mineral resources. As described above, the project site is located on lands designated as MRZ-3, where known or inferred mineral occurrences of undetermined mineral resource significance are present (CGS 2009). No mines were determined to be active within the project area. Oil and gas in the Elk Hills oilfield reservoir is considered a mineral resource of value to the state and as identified in the Kern County General Plan. The CTV I Project, previously approved by Kern County, dedicated a CO_2 storage reservoir that would preclude further oil and gas production within that zone. The CalCapture project would not result in additional loss of oil and gas resource production; therefore, the proposed Project would result in a less than significant impact to mineral resources.

4.5.3 Cumulative Impacts

Less than significant with mitigation. Development of the proposed Project in addition to projected future development in the area will alter the landforms in the region and expose additional workers to geologic hazards of the region. Site-specific geologic and construction issues will be addressed and potential impacts mitigated through implementation of recommendations contained within site-specific geotechnical investigations as the projects move through the permitting processes. The proposed Project is not located close enough to other project sites in the area to cumulatively impact geology and soils. Furthermore, any geological and soil impacts are localized in the specific project areas and therefore, will not create significant cumulative impacts. Mitigation measures presented below in Section 5 would reduce Project-specific impacts to less than significant levels. Additionally, the CTV I project, currently under construction, would also comply with County requirements to address potential geologic and soils impacts. Mitigation measures imposed on the CTV I project by Kern County will reduce potential geologic and soil impacts from that Project to less than significant levels. Finally, Kern County has prepared an EIR evaluating the potential impacts (including contributions to cumulative impacts) of oil and gas development in connection with previously proposed amendments to the Kern County Zoning Ordinance: Final Environmental Impact



Report - Revisions to the Kern County Zoning Ordinance - 2015(C) Focused on Oil and Gas Local Permitting, certified on November 9, 2015, supplemented by a Supplemental EIR certified on December 11, 2018; an SREIR certified on March 8, 2021; and an Addendum adopted on August 23, 2022. The Oil and Gas EIR is referenced herein as a source of information regarding cumulative impacts from oil and gas development (Kern County 2024). The consideration of geologic and soil impacts and MMs of each proposed project in the area will result in cumulative impacts that are less than significant.

4.5.4 Mitigation Measures

The following MMs are proposed for the Project to reduce geological hazard impacts to less than significant.

MM GEO-1: The Owner/operator shall operate in compliance with the existing CTV I seismic activity monitoring plan that includes, but is not limited to, connection to the Statewide seismic monitoring program of California Seismic Network (CISN). All requirements for seismic monitoring adopted by the CARB – "Carbon Capture, Removal, Utilization and Storage Program" shall be implemented.

MM GEO-2: Operators shall not site facilities on slopes greater than 30 percent.

MM GEO-3: The Owner/operator shall prepare a final site-specific design-level geotechnical report that complies with all applicable federal, state, and local code requirements and is prepared by a qualified geotechnical engineer and certified engineering geologist, prior to commencement of any construction of the project. The geotechnical report will determine and identify the expansive potential of the underlying soil at the project site and be used in determining final siting of project components to ensure that project components are not located on unstable or potentially unstable geologic units or soils. The geotechnical report shall be reviewed and approved by CEC and Kern County Public Works for compliance with all applicable state and local code requirements.

MM GEO-4: The Owner/operators shall avoid building infrastructure on expansive soil, unless the Owner/operator determines that CCS injection facilities are infeasible from a different location, and site-specific Professional Engineering certification is submitted concluding that the new equipment will not cause substantial risks to life or property. The site-specific professional engineering certification must be submitted and reviewed by CEC and the Kern County Public Works Department and a memo provided that agrees that construction and operation of new equipment will not cause substantial risks to life or property as determined through established engineering standards. All recommendations required by the approved engineering certification from Kern County Public Works shall be implemented.

4.5.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.5.6 Laws, Ordinances, Regulations, and Standards

Geological hazards and resources at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 32.

Table 32 LORs for Geological Hazards and Resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
State			
California Building Code, 2022	Acceptable design criteria for structures with respect to seismic design and load-bearing capacity	California Building Standards Commission, State of California	Section 4.5.2
Alquist-Priolo Earthquake Fault Zone Act (Title 14, Division 2, Chapter 8, Subchapter 1, Article 3, CCR)	Identifies areas subject to surface rupture from active faults	California Building Standards Commission, State of California	Section 4.5.2
The Seismic Hazards Mapping Act (Title 14, Division 2, Chapter 8, Subchapter 1, Article 10, CCR)	Identifies secondary seismic hazards (liquefaction and seismically induced landslides)	California Building Standards Commission, State of California	Section 4.5.2
Local			
Kern County General Plan Chapter 1. Land Use, Open Space, and Conservation Element: Policy 1 (Siting), Policy 6 (avoiding steep slopes), and Policy 7 (slope stability, wastewater drainage, and sweater treatment) Chapter 4. Safety Element: Policy 1 (Mitigation for liquefaction potential), Policy 3 (Reduce potential for exposure of	Policies for regulation of land development with relation to geologic hazards.	Kern County Public Works, Building Inspection Division	Section 4.5.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
development to hazards of landslide, land subsidence, liquefaction, and erosion).			
Kern County Municipal Code	Standards for grading and water quality, including permit requirements	Kern County Public Works, Building Inspection Division	Section 4.5.2

4.5.6.1 Federal LORS

4.5.6.1.1 Federal Clean Water Act

The CWA (33 USC Section 1251 et seq.) was enacted to restore and maintain the chemical, physical, and biological integrity of the WOTUS. The CWA requires states to regulate both point source and certain nonpoint source discharges to surface waters. These discharges, which include stormwater runoff from construction activities, are regulated under the National Pollutant Discharge Elimination System (NPDES) permit program, pursuant to CWA Section 402. Projects that would disturb one acre or more of soil are required to obtain NPDES coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB No. 2022-0057-DWQ). This General Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which must include best management practices (BMPs) designed to minimize pollutant discharge and protect water quality in stormwater runoff.

4.5.6.2 State LORS

4.5.6.2.1 Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was enacted to reduce the risk of surface fault rupture to buildings intended for human occupancy. Under this Act, CGS maps known active faults and establishes Earthquake Fault Zones along their traces. Faults are categorized as active, potentially active, and inactive based on their most recent activity. Historic- and Holocene-age faults are considered active, Late Quaternary- and Quaternary-age faults are considered potentially active, and pre-Quaternary-age faults are considered inactive. To be subject to setback requirements, a fault must be demonstrated, through site-specific geologic studies, to be “sufficiently active” and “well defined”. Projects involving the construction of buildings for human occupancy, such as an operations and maintenance building, must comply with the Act's requirements if located within an Earthquake Fault Zone, and appropriate setbacks (generally 50 feet) must be established based on geologic investigations.

4.5.6.2.2 Seismic Hazards Mapping Act

The California Seismic Hazards Act of 1990 was enacted to reduce threats to public health and safety by identifying and mitigating seismic hazards beyond surface fault rupture, including those associated with strong ground shaking, liquefaction, seismically induced landslides, other ground failures, or other hazards caused by earthquakes. Pursuant to PRC, Chapter 7.8, Division 2, CGS delineates Seismic Hazard Zones through the Seismic Hazards Zonation Program, identifying areas where these hazards are known or suspected to occur. For projects located within a designated Seismic Hazard Zone, a site-specific geotechnical investigation must be conducted prior to permitting for most urban development projects. If hazards are found, appropriate engineering design and mitigation must be incorporated into the project.

4.5.6.2.3 California Building Code

The California Building Code (2022) contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. In accordance with Chapter 18 (Soils and Foundations), geotechnical investigations must be conducted as specified in Section 1803.2 and reported in accordance with Section 1803.6. Where required by the building official, or when the investigation includes in situ testing, laboratory testing, or engineering analysis, the geotechnical investigation must be performed by a registered design professional.

4.5.6.3 Local LORS

4.5.6.3.1 Kern County General Plan

The Project site is located within the unincorporated area of Kern County, The Kern County General Plan includes goals, objectives, polices, and implementation measures applicable to geology and soils as related to the Project as summarized below:

Chapter 1. Land Use, Open Space, and Conservation Element: Policy 1 (Siting), Policy 6 (avoiding steep slopes), and Policy 7 (slope stability, wastewater drainage, and sweater treatment)

Chapter 4. Safety Element: Policy 1 (Mitigation for liquefaction potential), Policy 3 (Reduce potential for exposure of development to hazards of landslide, land subsidence, liquefaction, and erosion).

4.5.6.3.2 Kern County Code of Regulations – Title 17

All construction in the 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 California Building Code, 2019 Edition, with some modifications and amendments. The entire county is in Seismic Zone 4, a designation previously used in the Uniform Building Code 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 of 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 requirements of the Kern County Grading Code would be applied during project implementation. All required grading permit(s) would be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to geology and soils include Section 17.28.140 (Erosion Control) and Section 17.28.170 (Grading Inspection).

4.5.7 References

CGS. 2024. Earthquake Zones of Required Investigation. Accessed February 2025. Retrieved from: https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/

NRCS. 2025. Web Soil Survey. Accessed April 2025. Available at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

SEI. 2020. Geologic Hazards Study for the CO_2 Capture Project From Elk Hills Power Plant.

———. 2023. Geotechnical Investigation Report for the Elk Hills GEHA & Truck Unloading Station 4026 Skyline Road Tupman, Kern County, CA.

———. 2025. Geotechnical Investigation Report for the Terra Vault 1 Carbon Capture Project 4026 Skyline Road Tupman, Kern County, CA.

Stantec. 2025f. CalCapture CCS Project, Geohazards Assessment. October 2025.

USGS. 2025. Search Earthquake Catalog. Accessed February 2025. Retrieved from: https://earthquake.usgs.gov/earthquakes/search/.

———. 2014. Seismic Hazard Map of California. Accessed February 2025. Retrieved from: https://www.usgs.gov/media/images/2014-seismic-hazard-map-california

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4.6 Hazards and Hazardous Materials Handling

This section addresses the use and storage of hazards and hazardous materials during construction and operations of the proposed Project. The information and analysis presented in this section has been partially derived from the Phase I Environmental Site Assessment (ESA) report for the Project site (included as Appendix P) and Chapter 2 - Project Description. Table 33 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 33 Appendix B Information Requirements for an AFC – Hazards and Hazardous Materials Handling and Wildfire

Summary of Requirement	Section
Hazards and Hazardous Materials Handling	
List of hazardous or acutely hazardous materials used or stored on-site, as defined in Title 22 CCR § 66261.20 et seq., and discussion of their toxicity	Section 3.4.5.1, Section 4.6.1.1
Map (scale 1:24,000) showing schools, hospitals, day-care centers, and long-term health care facilities within the area potentially affected by a hazardous material release	Figure 5
Storage and handling system for each hazardous material used or stored at the site	Section 3.4.5.1
Protocol for modeling potential consequences of accidental releases, including model(s) used, input assumptions, and meteorological conditions; results may be submitted post-application	Section 4.6.2
Determination of whether a risk management plan is required and likely requirements to be included	Section 2.3, Section 3.4.6, Section 6 (Haz-3)
Measures proposed to reduce the risk of hazardous material release	Section 3.4.5.1, Section 4.6.4
Fire and explosion risks associated with the project	Section 4.17.2.1
Wildfire	
A map showing State Responsibility Areas (SRA).	Section 4.6.1
A map showing state Fire Hazard Severity Zones	Section 4.6.1
If the project would be in the vicinity of an SRA or a Very High Fire Hazard Severity Zone, effect on emergency response or evacuation plans; pollutant containment; infrastructure with wildfire risk; and downslope resources at risk	Section 4.6.2.2

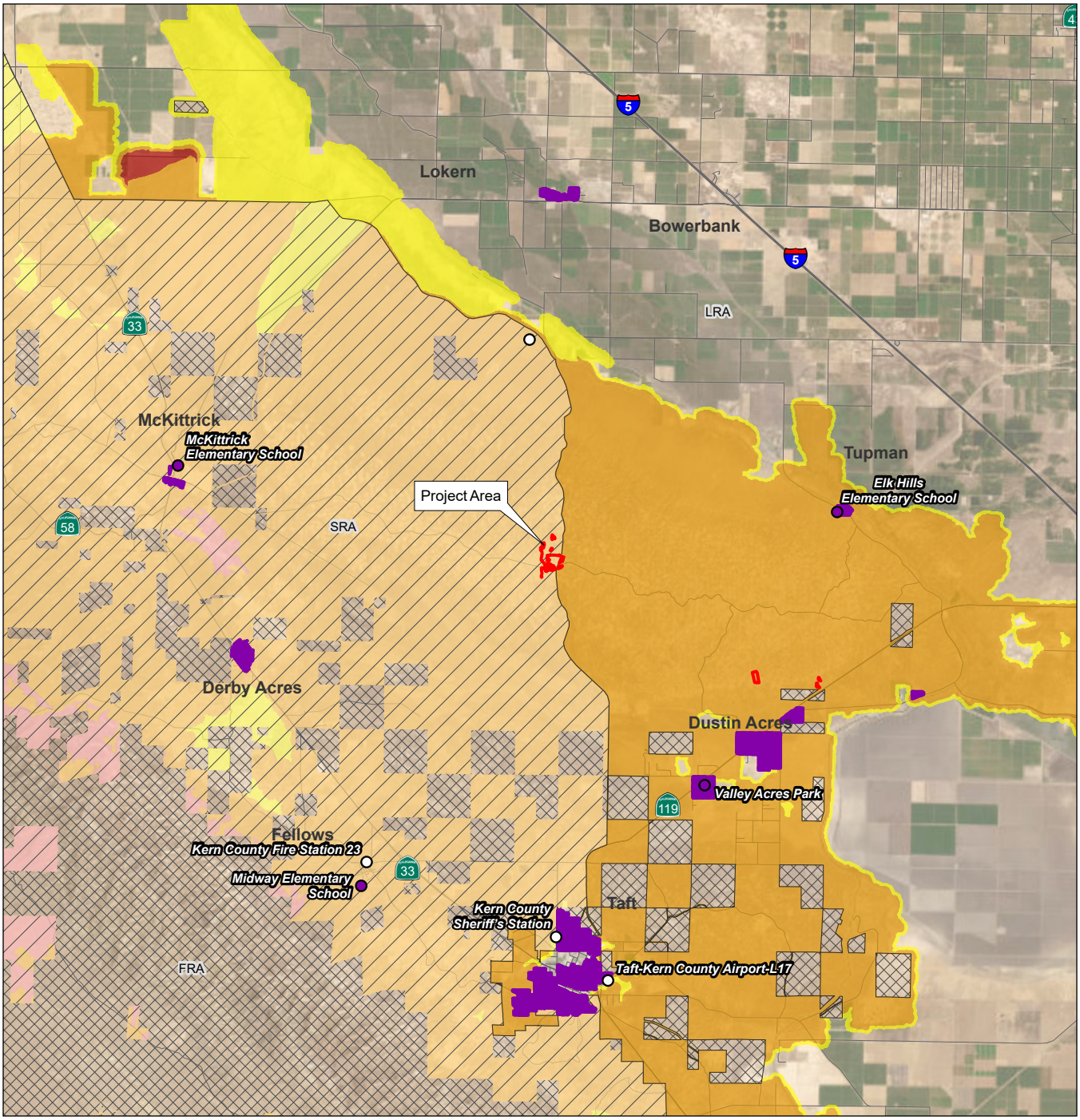
4.6.1 Environmental Setting

The Project is located within an unincorporated region of Kern County, outside the limits of Tupman and the City of Taft. As discussed in Chapter 3.7, Land Use, the Project's immediate vicinity is the EHOF, with

Mineral and Petroleum land uses. There are no sensitive receptors or residences within 4.97 miles of the Project nor within the EHOF.

The area in which the Project site is located is currently developed to support power generation operations in addition to oil and gas extraction and processing. The EHOF has both unpaved and paved roads, hazardous and nonhazardous materials conveyance pipelines, aboveground storage tanks, the EHPP, parking lots, and various maintenance and operations facilities. Adjoining properties, as well as the nearby surrounding area are developed in a similar fashion to support oil and gas production and processing.

Figure 7 – Wildfire illustrates the Project is also within a State Responsibility Area (SRA) and a High Fire Hazard Severity Zone (California Department of Forestry and Fire Protection [CAL FIRE] 2024). Although the Project is in an SRA, KCFD covers SRA responsibility within Kern County under a contract with CAL FIRE. Under this agreement, KCFD is responsible for providing initial attack response to fires on SRA within Kern County and CAL FIRE provides funding for prevention and suppression of wildland fire on the SRA (CAL FIRE 2025). The nearest KCFD stations are Station 23 (8 miles southwest of EHPP) and Station 24 (8.8 miles west of EHPP). According to the Kern County General Plan Safety Element, the EHPP and EHOF are within a Hazardous Fire Area and the Kern County Multi-Jurisdiction Hazard Mitigation Plan (HMP) identified the EHOF and EHPP within Moderate Wildfire Vulnerability and Exposure (Kern County 2009, KCFD 2021).





- Project Area
- Public Services
- Sensitive Receptors
- Sensitive Receptors (Residential Areas)
- Local Responsibility Area (LRA)
- State Responsibility Area (SRA)
- Federal Responsibility Area (FRA)

2025 Recommended Fire Hazard Severity Zones (LRA)

- Very High
- High
- Moderate

Fire Hazard Severity Zones (SRA)

- Very High
- High
- Moderate

0 1.75 3.5 Miles

(At original document size of 8.5x11)
1:221,760

N

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, 2025; CALFIRE SRA 2024; CALFIRE LRA 2025
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

Stantec

Project Location	Prepared by MMD on 9/18/2025
	TR by CT 9/18/2025
Kern County, CA	IR by ES on 9/18/2025
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
7

Title
Wildfire

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Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

4.6.1.1 Existing Hazards and Hazardous Materials Use

CRC follows proper use and storage of hazardous materials, which minimizes the potential for accidental release. The EHPP currently stores, uses, and disposes of hazardous materials, including aqueous ammonia, sulfuric acid, lead batteries, and transformer oil. CRC has used and currently uses the additional hazardous chemicals in other plants and facilities: caustic, anti-foam agents, and methanol. The EHPP utilizes the application of herbicides (particularly the use of pre-emergent herbicides), which may currently or historically contain RCRA-hazardous chemicals, to clear vegetation from areas of operations.

CRC implements the California Fire Code (Articles 79 and 80) requirements for safe storage and handling of hazardous materials and utilizes engineering controls to reduce the potential for release of hazardous materials and mixing of incompatible materials. CRC also adheres to U.S. EPA, Caltrans, DTSC, California Highway Patrol, and California State Fire Marshal regulations to manage and prevent potential impacts caused by transporting hazardous materials.

4.6.2 Impact Analysis

4.6.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether hazards and hazardous materials handling impacts are significant.

Hazards and Hazardous Materials. Would the proposed project:

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 one-quarter 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 CCR 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, would the project result in a safety hazard or excessive noise for people residing in or working in the project area? Refer to Section 4.8.

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?

Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of 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?

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?

4.6.2.2 Impact Assessment

Less than significant with mitigation. General construction and decommissioning will require the transport, use, storage, and disposal of hazardous materials such as sealants, adhesives, spent welding materials, chemical cleaners, hydraulic fluid, fuel, batteries, and electrical fuses. Should regulated substances be used during construction of the Project, CRC will store and handle substances in compliance with all applicable regulations.

Regulated substances used during Project operations will also be minimized, stored, and handled per regulations. Most of the hazardous substances that will be stored and used for the Project are required for CO_2 capture and cooling treatment. Hazardous materials' characteristics, use, storage locations are described in Table 34, as informed by their respective Safety Data Sheets and the Project Description in Chapter 2. Flammability of hazardous materials onsite during operation are also described in Table 34. All hazardous material storage areas will be equipped with a fire extinguishing system and ventilation for enclosed substances per the requirement of Article 80 of the California Fire Code. As required by existing regulation (Emergency Planning and Community Right to Know Act), the Project will prepare and submit a Hazardous Materials Business Plan, and submit annual updates, to the Kern County Environmental Health Department.

Regulations governing the transportation of hazardous material via truck and pipelines are comprehensive and serve to prevent or mitigate releases of hazardous materials in many situations. Nevertheless, potential releases have the potential to contaminate the environment or expose the public to hazardous materials and, therefore, the impacts could be significant. The use, handling, and storage of hazardous materials is also regulated. Despite the implementation of federal and state regulations (such as under RCRA and California Hazardous Waste Laws), releases or spills have the potential to occur with implementation of the project. Since these potential releases could contaminate the environment or expose the public to



hazardous materials, the impacts could be significant. With implementation of MM HM-2, MM HM-3, and MM HM-8 through -12, project construction and operation would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and impacts would be less than significant.

Project construction would occur in accordance with all applicable local standards set forth by the County, as well as State and federal health and safety requirements that are intended to minimize hazardous materials risk to the public. Compliance with existing regulations regarding the management, transport, and disposal of hazardous materials and MM HM-1, MM HM-4, and MM HM-7 would be implemented to avoid the potential for accidental spills, leaks, and/or improper disposal of hazardous materials during construction and operation of the project. Thus, the impacts would be less than significant.

The nearest school is Elk Hills Elementary School located approximately 6.7 miles east within the community of Tupman. California State law requires that new schools not be located near an aboveground water or fuel storage tank or within 1,500 feet (0.28 miles) of the easement of an aboveground or underground pipeline that can pose a safety hazard as determined by a risk analysis study. Therefore, new schools would not be sited near CCS operations or pipelines and impacts would be less than significant.

Government Code Section 65962.5 requires CalEPA to compile a hazardous materials release sites called the Cortese List. This list is housed in a database called Envirostor. The Project will be located on a site which is included on EnviroStor's list of hazardous materials sites. CRC's 27R Waste Management Unit (WMU) Complex is identified as a Hazardous Waste Facility with an active Post Closure Permit (CA4170024414). The 27R WMU Complex is west of the Project and has been closed since March of 1992 and has undergone post-closure vadose zone monitoring of soil and water since 1998 (CRC 2019).

Any activities involving ground disturbance could occur on or in the vicinity of documented hazardous materials sites that are listed pursuant to CGC Section §65962.5. Were this to occur, workers, the public, and the environment could be subjected to potential hazards from disturbed contaminated soils on the site, which would be a significant impact. Additionally, unearthing of pre-existing contaminated soil at an identified hazardous waste site, causing pre existing contamination in one groundwater aquifer to enter another, or disturbing formerly contaminated areas that have been capped has the potential to expose the public or the environment to contamination and therefore impacts could be a significant impact. However, implementation of MM HM-5 and MM HM-6 would properly manage affected soils/wastes that are encountered during ground disturbing activities. With these two MMs and given the EnviorStor site(s) are managed in accordance with applicable federal, state, and local management and reduction statutes and regulations, it would not create a significant hazard to the public or environment and impacts would be less than significant.

The nearest site-specific emergency evacuation plan in the County is the Lake Isabella Dam Failure Evacuation Plan and the Project is not within the modeled inundation area. Emergency response and evacuation planning is also incorporated into the 2021 Kern County HMP and Safety Element of the General Plan, per Section 65302 of the CGC, which requires the County to identify evacuation routes and their capacity, safety, and viability under a range of emergency situations. Other local emergency and



evacuation plans include the Kern County Strategic Plan 2021-2026, the 2022 Kern County Community Wildfire Protection Plan (CWPP), and the 2022 Kern County Emergency Operations Plan.

The Kern County HMP identified the power plants (which includes the EHPP) as critical infrastructure but did not describe any site- or infrastructure-specific emergency response strategies (KCFD 2021). The Project would not introduce any hazards (such as the wildland urban interface) described in the Kern County General Plan Safety Element and the Kern County CWPP. In addition, the EHOF/EHPP is outside the Area of Focus within the Kern County CWPP (KCFD 2022). The Kern County Emergency Operations Plan also does not feature any site- or infrastructure-specific response strategies (Kern County 2022).

The Project would generate construction trips, including the movement of oversize equipment, and the potential for roadway lane closures. These factors could temporarily increase the daily traffic volumes on surrounding local roadways, intersections, and roads most likely used for evacuation (Elk Hills Road and Skyline Drive). It is anticipated that emergency access would be maintained at all times, and appropriate detours would be provided, as necessary. As described in Section 2.4.4, Facility Safety Protocols/ Emergency Response, an emergency and remedial response plan and a fire safety plan would be developed for Project operations. Thus, the construction and operation of the Project would not negatively influence any emergency response or evacuation plan effectiveness and the impact would be less than significant.

Operation of mechanical equipment and/or the use of fuel or other flammable substances, would occur on and around the Project during construction and operation, thereby increasing the potential for igniting a brush fire and triggering a wildland fire. To minimize risk to people and structures during construction and operation, combustible vegetation would be limited in height or removed primarily through a combination of dirt or gravel firebreaks, grazing, and mowing. Pursuant to CRC's Safety Manual, all personnel onsite would have completed fire awareness training prior to starting work (CRC 2019). CRC employees may be trained in fire watch responsibilities or to involve themselves in firefighting activities during the incipient (beginning stages) of a wildfire. Fire Watch personnel shall have no other duties while acting as a fire watch, be trained in fire watch, gas monitoring, and emergency notification procedures, and have responsibilities such as:

- Monitor atmospheric conditions and alert personnel if conditions change.
- Watch for fires and provide immediate protection to personnel.
- Assure the area is safe from ignition for a minimum period of 30 minutes following the completion of the work.

The risk of wildfire during construction or operations presents a potentially significant impact. The Project would require implementation of MM HM-1, which requires a WEAP which includes additional fire prevention and response training for workers using specific equipment and tools. With implementation of this MM, impacts to people and structures from wildfire would be less than significant.

As described in Section 2.4.4, Facility Safety Protocols/Emergency Response, the Project includes gas detection for CO_2 concentrations (a pollutant) with an audible alarm and visual strobe unit. CRC also actively partners with KCFD to prepare for wildfire response (including pollutant containment) in EHOF and at the EHPP. Potential Project pollutants would be contained onsite either by CRC employees extinguishing



the fire during its inception or by KCFD personnel during initial attack. In the event of a fire, CRC employees, visitors and contractors would not involve themselves in firefighting activities beyond the incipient stage of a wildfire. Therefore, the risk of pollutant exposure from a wildfire or the uncontrolled spread of a wildfire is less than significant.

None of the new infrastructure designed to reduce the risk of fire would exacerbate the risk of wildfire. The new firewater pipeline, which would receive its water from the existing EHPP emergency water supply, would assist in fire response. The Project would also install a new perimeter road for general and emergency access for KCFD. Therefore, the risk of wildfire from infrastructure would be less than significant.

The nearest structures downslope or downstream of the EHPP are CRC infrastructure (such as oil wells and utility poles) and CTV I facilities, which is 0.94 miles southwest of the EHPP. The nearest people would be personnel working at the CTV I facilities, but the nearest sensitive receptors downslope or downstream of the EHPP are residential homes approximately 4.97 miles southeast, within the community of Taft. Therefore, the impact to people and structures downslope of the Project is less than significant.



Table 34 Characteristics of Planned Hazardous Materials

Hazardous Material Name	Chemical Name	CAS Number	Use	Storage Location	Type of Storage	State	Physical Description	Hazards	Flammability (Note 3)
EFG+ Solvent (100 wt% basis)	Not available	N/A	CO_2 capture absorbent	On site, well-ventilated, cool, and locked	Continuously onsite	Liquid	Colorless, slight ammonia odor	Acute toxicity, skin corrosion, serious eye damage	Category 4, combustible liquid
Hydrogen (100 vol%)	Hydrogen	1333-74-0	CO_2 capture system	On site, well ventilated	Continuously onsite (Note 2)	Gas	Colorless, odorless, burns with invisible flame	Contact with rapidly expanding gas may cause burns or frostbite, may displace oxygen and cause rapid suffocation	Category 1, extremely flammable, contains gas under pressure, may explode if heated, may form explosive mixtures with air
CATOX Catalyst	Mixture of aluminum oxide and platinum	1344-28-1	CO_2 capture system	On site	Continuously onsite	Solid	Grey solid, odorless	Inhalation hazard, eye irritant	Not flammable
Ethylene Glycol (100 wt% basis)	Ethylene glycol	107-21-1	Cooling medium	On site, tightly-closed, well-ventilated, cool, and locked	Continuously onsite	Liquid	Colorless, odorless	Acute oral toxicity, central nervous system specific target organ toxicity for single exposure, kidney and liver specific target organs toxicity repeated exposure	Not flammable
WSAC Water Treatment Chemicals	N/A	N/A	WSAC Water Treatment Chemicals (Note 1)	On site	Continuously onsite	Liquid	TBD	TBD	TBD
3D Trasar 3DT487	Phosphoric Acid	7664-38-2	WSAC Water Treatment Chemicals (Note 1)	On site	Continuously onsite	Liquid	Yellow, odorless	Corrosive to metals	Not flammable
RO System	N/A	N/A	RO System	On site	Continuously onsite	Liquid	TBD	TBD	TBD



Hazardous Material Name	Chemical Name	CAS Number	Use	Storage Location	Type of Storage	State	Physical Description	Hazards	Flammability (Note 3)
Treatment Chemicals			Treatment Chemicals (Note 1)						
PermaClean PC-11	Polyethylene Glycol	25322-68-3	RO System Treatment Chemicals (Note 1)	On site	Continuously onsite	Liquid	Colorless, mild disinfectant odor	Causes serious eye damage, may cause an allergic skin reaction, causes skin irritation, toxic if swallowed or if inhaled	Not flammable

Notes:
1) WSAC Water and RO System treatment specific chemicals and consumptions to be determined by selected chemical injection package vendors. Chemical listed are estimated.
2) Hydrogen would be stored in rented jumbo trailers with an assumed capacity of 120,000 standard cubic feet
3) Following Federal OSHA Hazard Communication Standard 29 CFR 1910.1200

Source: CRC CO_2 Capture from Elk Hills Power Plant Project Catalyst & Chemicals Summary, Document No EH-35R-CCU-RPT-225-00003 (September 2020)

4.6.3 Cumulative Impacts

Less than significant. With regard to the creation of a hazard through the routine transport, use, or disposal of hazardous materials, a potentially significant impact could result if a spill or leak were to occur during project construction or operation activities; however, compliance with state and county regulations and the mitigation measures outlined above would ensure that impacts would remain less than significant. This impact does not have the potential to combine with contamination from spills from other projects within 0.5 miles of the site to result in a cumulative impact due to the site- specific nature of soil contamination and the mitigation measures that would ensure proper cleanup and disposal of contaminated soil. Cumulative contamination of groundwater is discussed in Section 4.16, Water Resources. Therefore, impacts of the project would not be expected to make a cumulatively considerable contribution, in combination with impacts from past, present, or reasonably foreseeable projects, to result in a cumulative impact.

With regard to creation of a hazard through upset or accident conditions involving a hazardous material release, the potential exists for construction and operation activities, through the implementation of the project, to result in the release of hazardous materials in the soil resulting in exposure of personnel and other sensitive receptors to contaminant levels that could result in short-term and/or long-term health effects. Additionally, CO_2 leakage from pipelines could pose a hazard to personnel, public, and the environment; however, conformance with existing state and county regulations, project safety design features, and implementation of the mitigation measures identified below would render this impact less than significant (pending the results of a Quantitative Risk Assessment currently in preparation). This impact does not have the potential to combine with impacts of other projects because of the localized nature of the impacts, and because appropriate safety, cleanup, and disposal methods would be implemented to reduce the impact to a level that would not combine with impact of other projects. Therefore, impacts of the project would not have the potential to make a cumulatively considerable contribution in combination with impacts from past, present, or reasonably foreseeable projects to result in a cumulative impact.

With regard to creation of a hazard to the public or the environment as a result of being located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code § 65962.5, although listed sites are located in the project area, implementation of MMs would ensure that CRC not only has a method to address unanticipated or project-related contamination, but they have also proactively evaluated whether there is a potential hazardous waste site where they would be operating and have made measure to avoid disturbing it. Therefore, impacts of the project would not have the potential to combine with impacts from past, present, or reasonably foreseeable projects to result in a cumulative impact.

With regard to interference with an adopted emergency response plan or emergency evacuation plan, it would be unlikely that project-related activities would interfere with an adopted emergency response plan or emergency evacuation plan. The project's less-than significant impact has the potential to combine with other current and future projects that would generate high volumes of traffic on area roadways by creating a cumulative traffic burden on regional roadways; however, given the overall rural nature of the project area, and implementation of MMs outlined below, the potential for a considerable contribution to a cumulative impact to emergency response is unlikely to occur, and would therefore be less than significant.



With regard to exposing people or structures to a wildland fire hazard, construction, operation, and maintenance would increase the likelihood of wildfire ignition; however, implementation of the MMs outlined below would substantially reduce the possibility of a project-related ignition, rendering this impact less than significant. Mitigation would reduce this impact to a level that would not combine with other projects. Therefore, impacts of the project would not have the potential to make a cumulatively considerable contribution, in combination with impacts from past, present, or reasonably foreseeable projects, to result in a cumulative impact.

4.6.4 Mitigation Measures

The following MMs are proposed for the Project to reduce hazards and hazardous materials impacts to less than significant.

MM HM-1: The Owner/operator shall revise and submit the comprehensive WEAP prepared for CTV I to the CEC and Kern County. The program shall include all training requirements identified in Owner/operator Best Management Practices and MMs and include training for all field personnel (including Owner/operator employees, agents and contractors). The WEAP shall include protocols and training for responding to and handling of hazardous materials and hazardous waste management, fire prevention, and emergency preparedness, release reporting, and response requirements.

MM HM-2: The Owner/operator shall arrange for transportation, storage, and disposal of all hazardous materials in compliance with the Hazardous Materials Transportation Act. Drivers transporting hazardous materials or wastes should follow the measures recommended by the Federal Motor Carrier Safety Administration for avoiding roll-over accidents which include the following standards for cargo tank trucks:

a) Avoid sudden movements that may lead to roll-overs.

b) Maintain control of the load in turns and on straight roadways.

c) Identify in advance of transport high risk areas on designated roads.

d) Follow driver mandates for being alert and attentive behind the wheel.

e) Control speed and maintain proper "speed cushions” described by the Federal Motor Carrier Safety Administration.

MM HM-3: The Owner/operator shall implement the following practices based on practices and standards established by the United States Department of Labor OSHA safety standards and as amended or modified by the State of California Department of Industrial Relations, Division of Occupational Safety and Health (DOSH – Cal/OSHA) and the KCFD.

a) Construction activities shall be conducted to allow for easy clean-up of spills. Construction crews shall have the appropriate number of tools, supplies, and absorbent and barrier materials to contain and recover spilled materials.



b) Fuels and lubricants shall be stored only at designated staging areas. Fuel and lubricant tanks shall have secondary spill containment (e.g., curbs). Compliance with laws and regulations is required, including compliance with hazardous materials and hazardous waste storage laws, as applicable.

c) Storage of fuel and lubricants in the staging area shall be at least 100 feet away from the edge of water bodies. Refueling and lubrication of equipment shall be restricted to upland areas at least 100 feet away from stream channels and wetlands.

d) Any fuel truck shall carry an oil spill response kit and spill response equipment at all times.

e) Owner/operator shall be required to perform all routine equipment maintenance at the well pad or other suitable locations (i.e., maintenance yards), and promptly collect and lawfully dispose of wastes in compliance with existing regulatory requirements.

f) Berms and/or dikes (secondary containment) shall be constructed around the permanent above-ground bulk tanks and the foundations shall be installed with a passive leak detection system, so that potential spill materials shall be contained and collected in specified areas isolated from any water bodies. Tanks shall not be placed in areas subject to periodic flooding or washout. Compliance with laws and regulations is required, including compliance with hazardous materials and hazardous waste storage laws as applicable, including for secondary containment, such as CalGEM regulation (Title 14, CCR § 1773.1), which requires secondary containment in "an engineered impoundment such as a catch basin, which can include natural topographic features, that is designed to capture fluid released from a production facility."

g) The appropriate amount and supply of sorbent and barrier materials shall be maintained on construction sites consistent with the type and level of construction activities. Sorbent and barrier materials shall also be utilized to contain runoff from contaminated areas consistent with Cal/OSHA regulations.

h) Shovels and drums shall be stored at each well pad or be readily available. If small quantities of soil become contaminated, hand tools shall be used to collect the soil and the material shall be stored in storage drums. Large quantities of contaminated soil may be bio-remediated on-site or at a designated remediation facility, subject to government approval, or collected utilizing heavy equipment, and stored in drums or other suitable containers prior to disposal. Should contamination occur adjacent to staging areas as a result of runoff, shovels and/or heavy equipment shall be utilized to collect the contaminated material. Contaminated soil shall be disposed of in accordance with state and federal regulations.

i) Above-ground tanks, valves and other equipment shall be visually inspected monthly and when the tank is refilled. Inspection records shall be maintained. Owner/operators shall periodically check tanks for leaks or spills.

j) Drain valves on all tanks shall be locked to prevent accidental or unauthorized discharges from the tank.



k) Equipment maintenance shall be conducted in staging areas or other suitable locations (i.e., maintenance shops or yards).

l) The Owner/operator shall maintain equipment in operating condition to reduce the likelihood of fuel or oil line breaks and leakage. Any vehicles with chronic or continuous leaks shall be removed from the site and repaired before being returned to operation.

MM HM-4: All CCS related CO_2 facility pipelines shall require construction permit site plan review by CEC and the Kern County Planning and Natural Resources Department. With the exception of necessary connections directly to the capture or injection facility, all portions of the CO_2 pipeline shall be undergrounded within a defined corridor.

The site plan shall include the full location of the facility pipeline, width of easement for the pipeline, location and spacing of automatic shut off values, location of infra-red cameras for monitoring, construction and coatings used for the pipeline and all other requirements of Federal and State regulations. Specific safety fencing shall be provided for pipeline protection. The site plan package shall concurrently be submitted to CEC and the Kern County Planning and Natural Resources Department for review and approval.

MM HM-5 The Owner/operator shall notify the Kern County Public Health Services Environmental Health Division, Certified Union Program Agency (CUPA), surface landowner, and sensitive receptors located within 300 feet, of any hazardous materials/waste release, other than CO_2, immediately upon discovery, and to other applicable agencies as required by other laws. The Owner/operator shall immediately contain the leak (e.g., by isolating or shutting down the leaking equipment), clean up contaminated media (e.g., soils), and repair the leak prior to recommencing operations. The Owner/operator shall report the status and progress of the leak repair and remediation work to the County and the CUPA on monthly intervals or predetermined intervals until the repair has been completed. Contaminated media shall be analyzed according to 22 CCR § 66261.21 66261.24 for determination of hazardous waste disposal subject to the Hazardous Waste Determination procedures provided in 22 CCR § 66262.11.

MM HM-6: Prior to initiation of ground disturbing activities, the Owner/operator shall complete Phase II ESA activities within areas of ground disturbance. Develop a Soil Management Plan for implementation during Project construction activities to properly manage affected soils/wastes that are encountered during ground disturbing activities.

MM HM-7: If, during grading or excavation work, the Owner/operator observes evidence of contamination or if soil contamination is suspected, work near the excavation site shall be terminated, the work area cordoned off and required health and safety procedures implemented for the location by the contractor's Health and Safety Officer. Samples shall be collected by a trained and qualified individual. Analytical data from suspected contaminated material shall be reviewed by the contractor's Health and Safety Officer. If the sample testing determines that contamination is not present, work may proceed at the site; however, if contamination is detected above regulatory limits, the Kern County Public Health Services Department shall be notified. All actions related to encountering unanticipated hazardous materials at the site shall be documented and submitted to the Kern County Public Health Services Department for legal direction from the regulatory agency.



MM HM-8: The Owner/operator shall implement measures to prevent the release or accidental spillage of solid waste, garbage, construction debris, sanitary waste, industrial waste, naturally occurring radioactive materials, oil and other petroleum products, and other wastes into water bodies or water sources, including all applicable practices listed below. Other standards may also be utilized, provided that a professional engineer, certified industrial hygienist or certified safety professional certifies to the County that such standards are as or more protective of human health and the environment, as compared to the standards in the referenced U.S. EPA manual. The following are practices and standards that shall be implemented.

a) Classify the various wastes for disposal in accordance with applicable U.S. EPA and California laws and regulations.

b) Size horizontal direction drilling reserve pits to avoid overflows.

c) Review safety data sheets of materials used and use the less toxic material for the operation.

d) Perform routine equipment inspections and maintenance to prevent leaks or emissions.

e) Reclaim oily debris and tank bottoms when such reclamation complies with hazardous waste laws and recycling laws.

f) Store only the volume of materials at facilities necessary for permitted work.

g) Construct berms around materials and waste storage areas that meet engineering standards to contain spills.

h) Perform routine inspections of materials and waste storage areas to locate damaged or leaking containers.

i) Train personnel in all waste management practices required by the MMs, all legal standards and the permits issued by Kern County and all regulatory agencies.

MM HM-9: The following specific measures should be implemented at a minimum when conducting CCS development activities, as applicable:

a) Impervious secondary containment, such as containment dikes, containment walls, and drip pans shall be constructed and maintained around all qualifying petroleum facilities, including tank batteries and separation, and treating areas consistent with the U.S. EPA's Spill Prevention, Control, and Countermeasures (SPCC) regulation (40 CFR 112). The containment structure must have sufficient volume to contain, at a minimum, the content of the largest storage tank containing liquid hydrocarbons within the facility/battery and engineered freeboard to contain precipitation. Drip pans shall be routinely checked and cleaned of petroleum or chemical discharges and designed to prevent access by wildlife and livestock, as determined by the qualified biologist.

b) Chemical containers shall not be stored on bare ground and shall be maintained in good condition and shall be placed within secondary containment in case of a spill or high velocity puncture.



c) Containment dikes are not to be constructed with topsoil or coarse, insufficiently impervious spoil material that is insufficiently impervious to meet requirements. Containment is strongly suggested for produced water tanks. Chemicals shall be placed within secondary containment and stored so that the containers are not in contact with soil or standing water and product and hazard labels are not exposed to weathering.

MM HM-10: Prior to commencement of any construction or grading, the Owner/operator is required to provide written evidence of all of the following requirements:

a) Compliance with all applicable conditions of the approved PTA.

b) Compliance with all applicable requirements of the adopted CEC Conditions of Approval.

MM HM-11: Prior to commencement of operation to inject CO_2, the Owner/operator is required to provide written evidence of all of the following requirements:

a) Written confirmation from the U.S. EPA (Region 9) UIC program authorizing commencement of injection, either for testing or commencement of full injection operation shall be provided to CEC and Kern County.

b) Compliance with all applicable conditions of the approved PTA.

c) Compliance with all applicable requirements of the adopted CEC Conditions of Approval.

MM HM-12: No confidential information or sources may be used in the operation of this facility. All information provided to the Federal government or State of California regarding construction or operation of the facility or incidents at the facility shall be reported to the CEC. In the case of emergencies or releases, the information shall be communicated immediately upon discovery to the Kern County Fire Marshall and Public Health with reports to the CEC within 24 hours after.

4.6.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.6.6 Laws, Ordinances, Regulations, and Standards

Hazards and hazardous materials at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 35.

Table 35 LORs for Hazards and Hazardous Materials

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Section 302 EPCRA (Public Law 99-499, 42 USC 11022) Hazardous Chemical Reporting: Community Right-To-Know (40 USC 11002)	Requires one-time notification if environmental hazardous substances are stored in excess of threshold planning quantities	Kern County Environmental Health Dept.	A Hazardous Materials Business Plan (HMBP) will be prepared for submittal to the Kern County Environmental Health Department, Hazardous Materials Program. Section 4.6.2.2.
Section 304, EPCRA (Public Law 99 – 499, 42 USC 11002) Emergency Planning Notification	Requires notification when there is a release of hazardous material in excess of its Reportable Quantity.	Kern County Environmental Health Dept.	The HMBP prepared will include notification and reporting procedures (Section 4.6.2.2)
Section 311, EPCRA (Public Law 99-499, 41 USC 11-21) Hazardous Chemical Reporting: Community Right-To-Know (40 CFR 370)	Requires that SDSs for all hazardous materials or a list of all hazardous materials be submitted to the State Emergency Response Commission, Local Emergency Planning Committee (LEPC), and Kern County Environmental Health Dept.	Kern County Environmental Health Dept.	The HMBP prepared will include a list of hazardous materials for submission (Section 4.6.2.2)
Section 313 EPCRA (Public Law 99 – 499, 42 USC 11023) Toxic Chemical Release Reporting: Community- To-Know (40 CFR 372)	Requires annual reporting of releases of hazardous materials	Kern County Environmental Health Dept.	The HMBP prepared will describe reporting procedures (Section 4.6.2.2)
Section 112, CAA Amendments (Public Law 101 – 549, 42 USC 7412) Chemical Accident Prevention Provisions (40 CFR 68)	Requires facilities that store a regulated hazardous material at quantity greater than the threshold quantities to develop a Risk Management Plan	Kern County Environmental Health Dept.	An RMP will not be required for this project (Section 4.6.2.2**)**
Section 311, CWA (Public Law 92 – 500, 33 USC 1251 et seq.) Oil Pollution Prevention (40 CFR 112)	Requires the preparation of a SPCC plan if 660 gallons oil/petroleum products are stored in a single container or collectively the site	Kern County Environmental Health Dept.	The proposed Project will prepare a SPCC plan. (4.6.2.2)

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	stores 1,320 gallons or more.		
State			
Health and Safety Code, Section 25500 et seq. (HMBP)	Requires preparation of a Hazardous Materials Business Plan if hazardous materials are handled or stored in excess of threshold quantities	Kern County Environmental Health Dept.	A HMBP will be prepared for submittal to the Kern County Environmental Health Department, Hazardous Materials Program (4.6.2.2)
Health and Safety Code, Section 25531 through 25543.4 (CalARP)	Requires registration with local CUPA or lead agency and preparation of RMP if regulated substances are handled or stored in excess of threshold quantities.	Kern County Environmental Health Dept.	An RMP will not be required for this project (Section 4.6.2.2)
Occupational Safety and Health Act (19 CFR 1910.119)	For chemicals listed above thresholds listed in Appendix A, requires a process safety management (PSM) plan for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire or explosion hazards.	Kern County Environmental Health Dept.	PSM plan will not be required for the proposed Project as the project would not use or store listed chemicals above their applicable threshold quantities.
Health and Safety Code, Section 25270 through 25270.13 (Aboveground Petroleum Storage Act)	Requires the preparation of a SPCC plan if 660 gallons oil/petroleum products are stored in a single container	RWQCB	The proposed Project will prepare a SPCC Plan. (4.6.2.2)
Senate Bill 614	Requires the Office of the State Fire Marshal to adopt regulations for CO_2 pipelines.	Office of the State Fire Marshal	Regulations have not been developed at this time. The proposed Project would comply with future pipeline requirements as they are promulgated.
2022 California Fire Code	Presents fire prevention and control measures for residential, commercial and industrial settings.	Office of the State Fire Marshal	Addressed in Section 4.10.2.
California Building Code,	Details the materials,	Office of the State Fire	Addressed in Section

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Chapter 7A	systems, and assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area.	Marshal	4.10.2.
Public Resources Code 4291–4299	Requires that brush, flammable vegetation, or combustible growth within 100 feet of buildings be maintained	Kern County Fire Dept.	Section 4.10.2.
Local			
Kern County General Plan Policies, Safety Hazardous Materials Policy 1	The proposed siting or expansion of hazardous waste facilities will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	Kern County Planning and Natural Resources Dept., Kern County Environmental Health Dept.	The Project would comply with the Kern County Hazardous Waste Management Plan.
Safety Hazardous Materials Policy 2	Innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.	Kern County Planning and Natural Resources Dept., Kern County Environmental Health Dept.	The Project would generate waste amine. The spent solvent would be stored within the SMS effluent tank and then removed by a vacuum truck and sent to a third-party hazardous waste treatment center. Solvent waste material would be disposed of in accordance with applicable law requirements at a fully regulated and permitted facility. CRC and site personnel would follow recommended measures described in EFG+ solvent Safety Data Sheet (SDS) Accidental Release Measures. All hazardous waste would be placed in appropriate designated containers and removed from the Project site.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
2.5 Other Modes 2.5.4 Transportation Of Hazardous Materials Goal 1	Reduce risk to public health from transportation of hazardous materials.	Kern County Planning and Natural Resources Dept., Kern County Environmental Health Dept.	CONSISTENT. Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes are discussed in Section 4.6, *Hazards and Hazardous Materials*.
Policy 1	The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	Kern County Planning and Natural Resources Dept., Kern County Environmental Health Dept.	CONSISTENT. See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.
Policy 2	Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.	Kern County Planning and Natural Resources Dept., Kern County Environmental Health Dept.	CONSISTENT. See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.
County of Kern, Hazardous Materials Response Plan	Outlines hazard assessment, emergency management, hazardous materials response personnel, public warning information, and evacuation/sheltering measures.	Kern County, Office of Emergency Services	Section 4.6.2.2.
Kern County General Policies And Implementation Measure, Which Apply To More Than One Safety Constraint, Implementation Measure F	The adopted multi-jurisdictional Kern County, California Multi- Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals,	Kern County Fire Dept.	CONSISTENT. As discussed in Section 4.6, *Hazards and Hazardous Materials*, the Kern Multi-Jurisdictional Hazard Mitigation Plan has characterized the agricultural floor of the San Juaquin Valley as an area of very high fire severity risk. Although the Project

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.		site is not located within a high fire hazard severity zone, construction and operational activities could increase the potential for wildland fires. Therefore, wildfire impacts would be potentially significant and require implementation of measures requiring the Project proponent to comply with Kern County Fire Codes and limit use of fire sensitive electrical equipment.
Policy 3	The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers	Kern County Fire Dept.	CONSISTENT. The Project would not interfere or prohibit the County's ability to meet this policy. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access. All onsite employees would be trained on fire safety and how to respond to onsite fires, should they occur. See Section 4.6, *Hazards and Hazardous Materials*.
Policy 4	Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.	Kern County Fire Dept.	CONSISTENT. Consistent with this policy, Section 4.13, *Traffic and Transportation*, includes the existing requirement for preparation of a Construction Traffic Control Plan, encroachments or other necessary permits by Caltrans and/or the Kern County Roads Dept. The Project proponent. would also develop and implement a fire safety plan for use during

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			construction and operation.
Policy 6	All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.	Kern County Fire Dept.	CONSISTENT. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access. The Project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department.
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 Dept.	CONSISTENT. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access.
Hazardous Materials, Implementation Measure A	Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent on-site hazards from affecting surrounding communities in the event of inundation.	Kern County Fire Dept.	CONSISTENT. See 4.6, Wildland and Urban Fire, Policy 6, above.

4.6.6.1 Federal LORS

4.6.6.1.1 Resource Conservation and Recovery Act

The RCRA is a combination of federal solid waste statutes and amendments to establish a national solid waste management program. Hazardous waste is regulated under Subtitle C of RCRA, which sets criteria (permitting requirements, enforcement, and cleanup) for hazardous waste generators, transporters, and treatment, storage and disposal facilities. RCRA Subtitle C also can authorize states to implement key provisions of hazardous waste requirements in lieu of the federal government.

4.6.6.1.2 Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) amends the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and governs hazardous substances. The applicable part of SARA for the Project is Title III, otherwise known as the Emergency Planning and Community Right-to Know Act, which requires states to establish a process for developing local chemical emergency preparedness programs and to receive and disseminate information on hazardous substances present at facilities in local communities. The law provides primarily for planning, reporting, and notification concerning hazardous substances.

4.6.6.1.3 Clean Water Act

Under the CWA, the SPCC rule aims to prevent or contain actual or potential discharges of oil into navigable waters or adjoining shorelines. According to federal regulations (40 CFR 112), facilities are required to develop a written SPCC Plan if they store oil and its release could threaten nearby waterways. The SPCC rule applies to facilities that meet any of the following criteria:

- A single aboveground oil storage tank aboveground storage tanks with a capacity greater than 660 gallons,
- A total combined aboveground oil storage capacity (including aboveground storage tanks, oil-filled equipment, and drums) exceeding 1,320 gallons, or
- Underground oil storage capacity exceeding 42,000 gallons.

Local implementation of the SPCC rule falls under the jurisdiction of the CUPA, which in this case is the Kern County Public Health Department

4.6.6.1.4 Federal Clean Air Act

Regulations under the FCAA, specifically 40 CFR 68, are intended to prevent accidental releases of hazardous substances. Facilities that store regulated substances at or above threshold quantities are required to prepare a Risk Management Plan (RMP). This plan must include hazard assessments and prevention and response strategies. The list of regulated substances is outlined in Section 112(r)(5) of the FCAA and detailed in 40 CFR 68.130.

4.6.6.1.5 Occupational Safety and Health Administration

OSHA establishes workplace safety and health standards to protect employees from hazards, including those associated with hazardous materials. OSHA regulations require employers to implement safety measures such as proper labeling, storage, handling, and disposal of hazardous substances. Key components include the Hazard Communication Standard, which ensures workers are informed about the chemical hazards they may encounter, and the Process Safety Management standard, which applies to facilities handling large quantities of highly hazardous chemicals. In mineral and petroleum extraction



operations, OSHA regulations are critical for managing worker exposure to toxic substances, flammable materials, and other chemical hazards common in drilling, refining, and storage activities. Compliance with OSHA helps ensure that employees are trained, equipped with proper protective gear, and prepared to respond to chemical spills or emergencies.

4.6.6.2 State LORS

California laws and regulations relevant to hazardous materials handled at the Project include CHSC Section 25500 (hazardous materials), and CHSC 25531 (regulated substances).

4.6.6.2.1 California Division of Occupational Safety and Health

The DOSH, better known as Cal/OSHA, protects and improves the health and safety of workers California– through the following activities: setting and enforcing standards; providing outreach, education, and assistance, and issuing permits, licenses, certifications, registrations, and approvals.

4.6.6.2.2 Title 8, CCR, Section 339; Section 3200 et seq., Section 5139 et seq., and Section 5160 et seq.

Title 8 CCR Section 339 lists hazardous chemicals relating to the Hazardous Substance Information and Training Act; Title 8 CCR Section 3200 et seq. and 5139 et seq. address control of hazardous substances; and Title 8 CCR Section 5160 et seq. addresses hot, flammable, poisonous, corrosive, and irritant substances.

4.6.6.2.3 Aboveground Petroleum Storage Act

CHSC, Section 25270 through 25270.13, Requires the preparation of a Spill Prevention, Control, and Countermeasure plan if 660 gallons oil/petroleum products are stored in a single container or collectively the site stores 1,320 gallons or more. The Spill Prevention, Control, and Countermeasure plan must be submitted to the appropriate CUPA. The Kern County Public Health Department is the designated CUPA for the Project.

4.6.6.2.4 Health and Safety Code

CHSC Section 25500 CHSC, Section 25500, et seq., and the related regulations in 19 CCR 2620, et seq., require local governments to regulate local business storage of hazardous materials in excess of certain quantities. CHSC, Section 25531, et seq., regulates the registration and handling of regulated substances. Regulated substances are any chemicals designated as an EHS by U.S. EPA as part of its implementation of SARA Title III. CHSC Section 25531 overlaps or duplicates some of the requirements of SARA and the FCAA.



4.6.6.2.5 California Hazardous Waste Control Law

CalEPA administers the California Hazardous Waste Control Law to regulate hazardous wastes. The Hazardous Waste Control Law lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

4.6.6.2.6 2022 California Fire Code

The 2022 California Fire Code (Title 24, Part 9 of the CCR) 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 and include 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 (for inhabited structures); fire service features, such as fire apparatus access roads; means of egress; fire safety during construction and demolition; and wildland-urban interface areas.

4.6.6.2.7 2022 California Building Code, Chapter 7A

Chapter 7 of the 2022 California Building Code details the materials, systems, and assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface Area is defined in Section 702A as a geographical area identified by the state as a “Fire Hazard Severity Zone,” in accordance with the PRC Sections 4201 through 4204 and Government Code Sections 51175 through 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.

4.6.6.2.8 Public Resources Code 4291–4299

California PRC Section 4291-4299 et seq. requires 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 subdivision (b) of Section 51189 of the Government Code.

4.6.6.2.9 Local LORS

4.6.6.2.10 California Accidental Release Program

As the designated CUPA for the Project, Kern County Kern County Public Health Department enforces the California Accidental Release Program (CalARP), which is designed to minimize the risk of extremely hazardous substances that potentially cause immediate harm to the public and the environment. Facilities handling or storing regulated substances at or above peak threshold quantities must register with their local CUPA and prepare a Risk Management Plan, formerly known as a Risk Management and Prevention Program (19 CFR 1910.119). CalARP is found in Title 19 CCR, Chapter 4.5.

4.6.6.2.11 Hazardous Materials Business Plan

As the designated CUPA for the Project, Kern County Kern County Public Health Department can require Hazardous Material Business Plans (HMBPs), which are an electronic compilation of detailed information on the activities, hazardous materials inventory stored and/or generated onsite, the emergency response/contingency plan for procedures in the event of a release or threatened release of a hazardous material/waste, the employee training plan(s), and safety procedures in the event of a release or threatened release of a hazardous material/waste. A HMBP provides basic information necessary for use by first responders in order to protect public health, safety, and the environment from a release or threatened release of a hazardous material/waste. The HMBP also satisfies the federal Tier II reporting requirements and the state's CERCLA. The material threshold for this program is 55 gallons of a liquid, 500 pounds of a solid, 200 cubic feet of a compressed gas, and/or the applicable state/federal threshold quantity for an extremely hazardous material.

4.6.6.2.12 Kern County Fire Department Strategic Fire Plan

The KCFD Strategic Fire Plan 2021-2026, adopted in 2021, assesses the wildland fire risks throughout the SRA within the County. The plan includes stakeholder contributions (including Aera Energy, LLC prior to acquisition by CRC) and priorities and identifies strategic targets for fire prevention as defined by the people who live and work within the County. The plan provides performance measures for fuels reduction, training, and safety for fire crews. Additionally, the plan provides an annual report of unit accomplishments (KCFD 2021).

4.6.6.2.13 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 2022 California Fire Code with some amendments. The purpose of the County's 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, 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.

4.6.6.2.14 Kern County General Plan

The Kern County General Plan's Safety Element contains local ordinances that apply to the Project (Kern County, 2009). Refer to Table 35 above. The General Plan includes the following safety-related goals and policies relevant to this Project:

4.6.7 References

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Stantec. 2025j. CalCapture CCS Project, Phase I Environmental Site Assessment. October 2025.

4.7 Land Use

This section consists of a discussion of the environmental and regulatory setting and a review of the potential impacts associated with the Project in unincorporated Kern County. Table 36 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 36 Appendix B Information Requirements for an AFC – Land Use

Summary of Requirement	Section
Land Use	
A discussion of existing land uses, general plan land use designations, and current zoning districts (including any overlay districts) at the site, land uses and land use patterns within one mile of the proposed site	Section 4.7.1
Identification of land uses	Section 4.7.1.1
A discussion of recent or proposed zone changes and/or general plan amendments	Section 2.2.6
Identification of all discretionary reviews by public agencies initiated or completed within 18 months	Section 2.2.6, Section 2.3.4
Legible maps of the areas	Section 2 - Introduction
A discussion of the compatibility of the proposed project with present and expected land uses	Section 4.7.2.2
A discussion of the legal status of the parcel(s) on which the project is proposed.	Section 2.2
A map at a scale of 1:24,000 and written description of agricultural land uses within Project area	Section 4.7
Land classifications as shown on the California Department of Conservation's Farmland Mapping and Monitoring Program's Important Farmland maps	Section 4.7.1.4
Historic Land classifications as shown on the California Department of Conservation's Farmland Mapping and Monitoring Program's Important Farmland maps	Section 4.7
Direct, indirect, and cumulative effects on agricultural land uses.	Section 4.7.2.2

4.7.1 Environmental Setting

Kern County is California’s third largest county, encompassing 8,202 square miles at the southern end of the Central Valley. The Project is in the western portion of the County in the San Joaquin Valley and is bounded by Kings and Tulare Counties to the north, Santa Barbara and San Luis Obispo Counties to the west, the Tehachapi Mountains and the Sierra Nevada Mountain Range to the east, and the northern boundary of the Los Padres National Forest to the south. Interstate 5 (I-5) is a major northwest-southeast highway located approximately nine miles northeast of the Project. The western unincorporated portion of



Kern County generally consists of industrial uses (primarily oil and gas extraction), agricultural fields, rural residential structures, and open space. Roadways in the vicinity of the Project site generally consist of two-lane state highways, including State Route (SR) 58, 43, 119, and 33, and County roads (e.g., Elk Hills Road).

4.7.1.1 Existing Land Uses within the Study Area

The Project is located within the EHOF in the Southwest edge of the San Joaquin Valley near Tupman in Kern County, California. As identified in the Kern County General Plan and illustrated in Figure 5, the Project's land use for the entire Project site is 8.4 Mineral and Petroleum and in the Western Oil and Gas Subarea (Kern County 2009). The Project site is developed with an oilfield, oil and natural gas processing facilities, and the EHPP.

Mineral and Petroleum land uses are mineral areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. The uses are limited to activities directly associated with the resource extraction. The minimum parcel size is five acres gross. Uses shall include, but are not limited to, the following:

> *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.*

The Mineral and Petroleum land use allows for 10 zone classification districts: A, A1, Open Space, Recreation-Forestry, Natural Resources (5, 10, 20, and 40 acres), Floodplain Primary District, Special Planning, and Platted Lands.

4.7.1.2 Existing Zoning within the Study Area

As illustrated in Figure 5, the Project's zoning is A – Exclusive Agriculture (Kern County 2022). Both of these zone classifications are allowable in Mineral and Petroleum land use. Table 37 provides the existing zoning for each of the APNs included in the Project. As shown in Figure 5, parcels with similar agricultural land use designations (A and A-1) surround the area within one mile of the Project in the EHOF.

Table 37 Parcels and Existing Zoning

APN	Existing Zoning
158-090-19	A – Exclusive Agriculture
158-090-16	A – Exclusive Agriculture
158-090-02	A – Exclusive Agriculture
158-090-04	A – Exclusive Agriculture
298-070-05	A-1 – Limited Agriculture
298-070-06	A-1 – Limited Agriculture

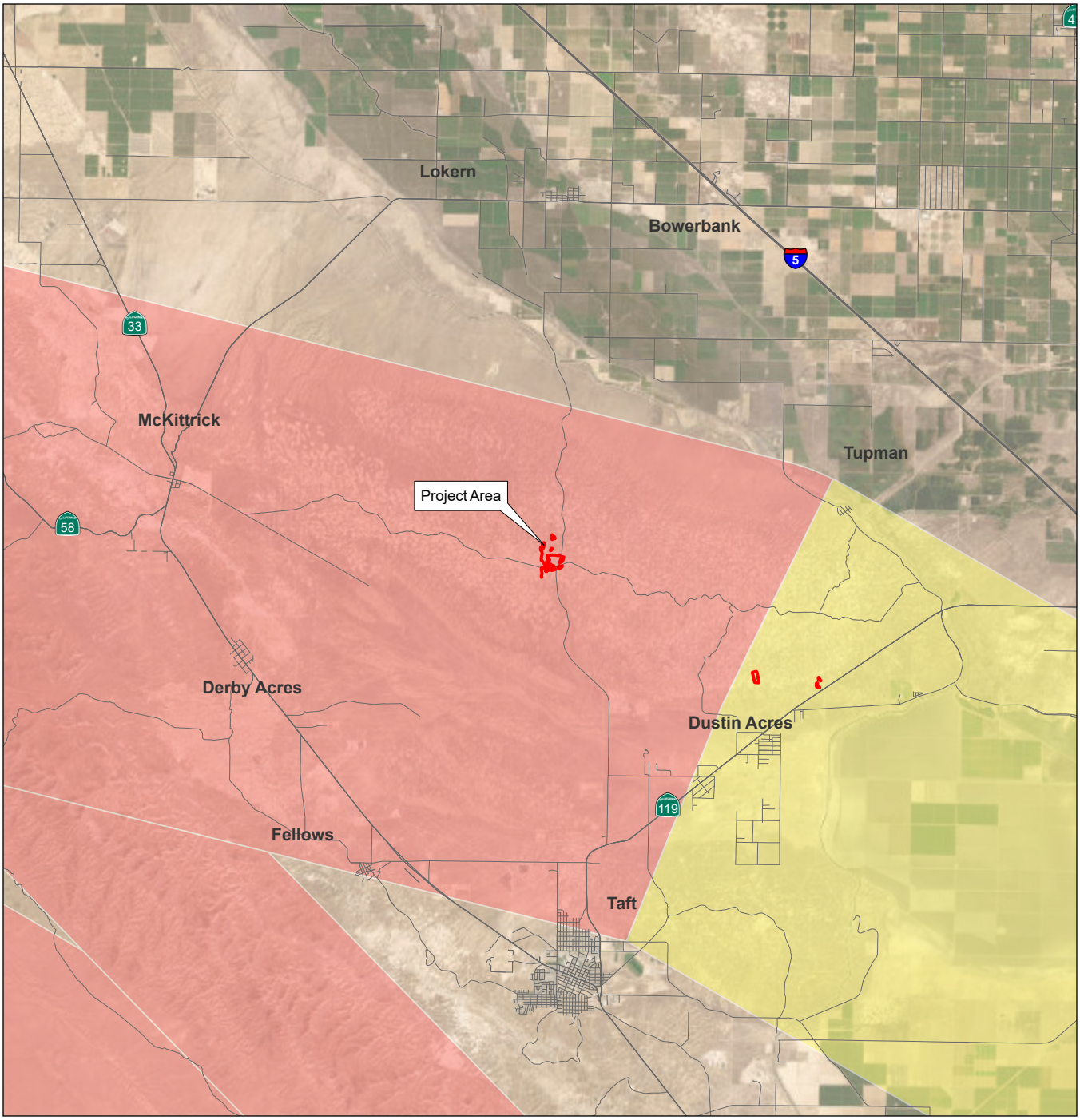
Notes:
APN – Assessor's Parcel Number

4.7.1.2.1 A – Exclusive Agriculture

The purpose of the 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 (Kern County 2022). Uses permitted and conditionally permitted in the A District also include Resource Extraction and Energy Development uses (such as mineral exploration, solar energy electrical generators, cogeneration facilities, and mineral extraction pursuant to Section 19.100).

4.7.1.3 Existing Development Standards

The Kern County Zoning Ordinance (2022 Revision) established development standards for each zoning designation. The Project is anticipated to be subject to Chapter 19.12 and Chapter 19.13 (Kern County 2022). Within the A District, no lot created shall contain less than 20 gross acres, excepting in the case of the conveyance to or from a governmental agency, public entity, public utility, community water company or mutual water company for public purposes, public utility purposes, or for rights-of-way or well sites. There is no height limit on other nonresidential structures, except in areas of protected military airspace as specified in Section 19.08.160. The Project site lies within an area of military airspace use (refer to Figure 8 – Military Flight Corridor). Projects within this area required consultation with the DOD for any structure taller than 200-feet above ground surface (Kern County 2022). Additionally, Kern County has approved the Kern County Zoning Ordinance for the regulation of oil and gas development within the portions of Kern County within County jurisdiction.





Project Area

Military Review Requirements*

All Structures Over 500 Feet

All Structures Over 200 Feet

**Kern County Zoning Code Section 19.08.160*

0 1.75 3.5 Miles

(At original document size of 8.5x11)
1:221,760

N

Stantec

Project Location	Prepared by MMD on 9/18/2025
	TR by CT 9/18/2025
Kern County, CA	IR by ES on 9/18/2025
Client/Project	185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project

Figure No.
8

Title
Military Flight Corridor

Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec, 2025; Restricted Airspace and Military Training Route, Western US: Kern County Gateway, Data Basin, Argonne National Laboratory, Acquired by Kai Foster with the Conservation Biology Institute on 10/6/2020.
3. Background: Esri. GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org Copyright:©2013 National Geographic Society, i-cubed

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4.7.1.4 Existing Farmland Mapping within the Study Area

The DOC's Farmland Mapping and Monitoring Program (FMMP) developed categorical definitions of important farmlands for land inventory purposes. Most farmland is designated by the state's FMMP, but Farmland of Local Importance is defined by each county's local advisory committee and adopted by its Board of Supervisors because it is land of importance to the local economy. There are no parcels designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance within or adjacent to the Project. The nearest Important Farmland is 4.42 miles northeast of the Project across from the California Aqueduct (APNs 159-170-09 and 159-120-03); 30.50 acres are designated as Farmland of Statewide Importance as of 2020 (DOC 2022a). There are no crops, irrigated or otherwise, on or within a one-mile radius of the Project Site. Given the above, the Project will have no effect on farmland.

In addition, the California Land Conservation Act of 1965 authorizes local governments to contract with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use (also referred to as Williamson Act contracts). The minimum term for a Williamson Act contract is ten years. No parcels at the Project site are under a Williamson Act contract or Farmland Security Zone Contract (DOC 2022b).

4.7.1.5 Utilities and Service Systems

The Project site is provided with potable water by the WKWD. Refer to Section 3.15 – Water Resources for more information on water supply. The Project site is currently served by on-site septic disposal systems.

Solid waste disposal is provided by the Kern County Public Works Department – Waste and Recycling Division. The County operates seven recycling and sanitary landfills throughout the County. The nearest landfill is the Taft Landfill, located at 13351 Elk Hills Road approximately nine miles south of the Project site. The landfill accepts batteries, clean dirt, clean inerts (concrete, asphalt, brick), construction and demolition debris, dead animals, electronic waste, green waste, ordinary household trash, tires, treated wood waste, and used motor oil (Kern County Public Works Department 2025).

The EHPP is located within the EHOF and is a nominal 550-MW combined-cycle, natural gas-fired, cogeneration power generating plant. The plant delivers electricity to the plant 230-kV switchyard, which then is transmitted via a generation tie line to the interconnection point at PG&E's Midway substation. The project site is crossed by public utilities, including several PG&E electric transmission lines over the eastern portion of the Project site. The EHPP provides about one third of its power to Elk Hills and the other two thirds onto the California power grid via an onsite switching station and twin 230-kilowatt conductors running north to the PG&E substation in Buttonwillow (approximately 8.5 miles north of the plant). Southern California Gas is the natural gas provider in this area of Kern County. The Project site is provided with telecommunications services by PacBell.

4.7.2 Impact Analysis

4.7.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether land use, agricultural resource, or utility and service systems impacts are significant. Would the proposed project:

Land Use

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Agriculture and Forestry Resources

a) Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use?

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources 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?

Utilities and Service Systems

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? Addressed in Section 4.15 – Water Resources.

c) Result in a determination by the waste water 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? Addressed in Section 4.15 – Water Resources.



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? Addressed in Section 4.15 – Waste Management.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? Section 4.15 – Waste Management.

4.7.2.2 Impact Assessment

Land Use

Less than significant. The Project will be located on six parcels, which are subject to A or A1 zoning designations. Due to the agricultural zoning designations within the Project, the Project will not displace existing nonindustrial development or result in new development that will physically divide future neighborhoods. Additionally, the Project will not introduce incompatible land uses to the area as the EHOF will remain an active oil field. The County's Mineral and Petroleum land use lists mineral and petroleum processing (excluding petroleum refining), natural gas and geothermal resources, and pipelines as acceptable uses.

Agriculture

Less than significant. Given the EHOF is an active oil field, none of the six parcels are designated as prime farmland, unique farmland, or farmland of statewide importance, are under Williamson Act contracts, or are active forest land or timberland. Therefore, the Project is consistent with the Kern County General Plan and Zoning Ordinance. The Project would result in a less than significant impact to agricultural and forestry resources.

Utilities and Service Systems

Water Supply. Refer to Section 4.16 Water Resources.

Wastewater Treatment and Disposal. Refer to Section 4.16 Water Resources.

Stormwater Drainage. Refer to Section 4.16 Water Resources.

Electric Power.

Less than significant. Construction of the project would not displace existing electrical facilities. Diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the sites where energy supply cannot be met via a hookup to the existing electricity grid. Therefore, as construction of the project would not require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

The project proposes to use power from the EHPP, and project operations are not expected to significantly increase electricity consumption. Therefore, operation of the project would not require or result in the



relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Natural Gas.

Less than significant. The project would not use natural gas during the construction phase. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded natural gas facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

The project proposes to utilize natural gas from the EHOF to provide steam for the CCU. Operation of the project would not require or result in the relocation or construction of new or expanded natural gas facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Telecommunications.

Less than significant. Installation of telecommunication equipment including underground and overhead telephone, wireless communications infrastructure such as cellular, satellite, or microwave towers are not proposed as a part of the project. Fiber optic communications would be installed within the CCU and along the CO_2 pipeline. Construction of the project would not require or result in the relocation or construction of new or expanded utility-level telecommunication facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Solid Waste. Refer to Section 4.15 Waste Management.

4.7.3 Cumulative Impacts

Less than significant. Cumulative land use impacts could arise if development of the Project, along with other past, present, or reasonably foreseeable projects, conflicts with applicable plans and policies or leads to issues such as farmland conversion. CRC will coordinate with the CEC and the CEC will coordinate with Kern County to address land use designation matters and ensure consistency with local plans and policies to ensure that (a) related projects would be confined to the related project sites and not physically divide a community; and (b) related projects would, like the Project, be required to comply with applicable County land use plans, and therefore there would be a less than significant cumulative impact. Additionally, no past, present, or foreseeable projects within the study area would introduce adjacent incompatible land uses (see Section 2.6 for a list of cumulative projects). Long-term cumulative impacts are not anticipated with the implementation of Project and the listed projects because each project is required to comply with CEQA guideline requirements for evaluating potential cumulative impacts, and/or obtain approval from Kern County prior to permitting and construction by demonstrating conformance to existing land use policies. For these reasons, the Project is be determined to have a less than significant individual and cumulative impact for land use.



4.7.4 Level of Significance

Residual impacts would be less than significant.

4.7.5 Laws, Ordinances, Regulations, and Standards

Land use and agricultural land protection at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 38.

Table 38 LORs for Land Use

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
State			
CEQA PRC Code, Sections 21000-21178.1, including Guidelines for implementation of CEQA are codified in the CCR Sections 15000-15387	Establishes policies and procedures for review of proposed power plants in California.	CEC	Section 4.7.2
Warren-Alquist Act PRC Section 25000 et seq.)	Legislation that created and gives statutory authority to the CEC.	CEC	Section 4.7.2
California Lands Conservation Act (Williamson Act)	Preserves agricultural land and encourages open space preservation and efficient urban growth.	CDOC	Section 4.7.2
Local			
Kern County General Plan Policies	Refer to Table 35		
Kern County Zoning Ordinance Section 19.08.160	Requires coordination with the Department of Defense and Federal Aviation Administration on structures that will penetrate military airspace.	Kern County Planning and Natural Resources Dept.,	Section 4.7.1.3

4.7.5.1 Federal LORS

Because the Project is located on private lands within the State of California and Kern County, there are no land-use-specific federal laws and regulations that apply to the construction and operation of the Project.

4.7.5.2 State LORS

Various State agencies have jurisdiction over local agencies and have plans and programs that apply to the Project. They include, but are not limited to, the Amended Kern Groundwater Authority's Groundwater Sustainability Plan, WKWD Urban Water Management Plan 2020, and SJVAPCD Air Quality Plans. Information on these plans can be found in Section 4.16 Water Resources and Section 4.1 Air Quality.

4.7.5.2.1 Warren Alquist Act

The Petition to Amend process is a certified regulatory process pursuant to the Warren-Alquist Act and, therefore, fulfills the requirements of CEQA. CEQA is codified in the California PRC, Section 21000-21178.1. Guidelines for implementation of CEQA are codified in the CCR, Sections 15000-15387. CRC will work cooperatively with the CEC and the County Board of Supervisors on all issues. A Petition to Amend is codified in the CCR, Section 1769 and has requirements listed in Section 1769(a)(1).

4.7.5.2.2 California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 ("Williamson Act") aims to preserve agricultural and open space land. The Williamson Act is promulgated in California Government Code Section 51200-51297.4 and, therefore, applies only to specific land parcels within the state of California. It allows private landowners to voluntarily enter into contracts with counties or cities to restrict their land to agricultural or compatible open space uses for a minimum of 10 years. In exchange, the land is assessed for property taxes based on its agricultural value rather than its market value, resulting in reduced property taxes. The Williamson Act's main objectives are to discourage the premature conversion of farmland to urban development, support California's agricultural economy, and maintain open space and rural landscapes. Local governments are responsible for administering the program, with oversight and guidance from the DOC. Kern County has an active Williamson Act Land Use Contract Program. Contracts renew automatically each year unless either the landowner or the local government initiates a non-renewal process, which gradually increases the property's tax assessment over a nine-year phase-out period.

4.7.5.2.3 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 Act status by entering into a contract with the County. Farmland Security Zone Act classification automatically renews each year for an additional 20 years. In return for a further 35 percent 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 nonagricultural uses. Kern County has an active Farmland Security Zone Act Contract Program.



4.7.5.2.4 California Department of Conservation, Division of Land Resource Protection

The DOC applies the 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.

The DOC has developed three categories for use in land use planning: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as Farmland (DOC 2004).

4.7.5.3 Local LORS

4.7.5.3.1 Kern County General Plan

The Kern County General Plan is a comprehensive policy document that guides future growth, land use, and conservation within the County. It serves as the foundation for Kern County's planning efforts and land use decisions, reflecting a shared community vision for the county's future. Local governments may also include optional elements to address specific community concerns. California State Law requires counties and cities to adopt and periodically update a General Plan to guide land use development. In compliance with California law, the Kern County Planning and Natural Resources Department initiated the process on the Kern County General Plan Update for 2040 in 2017 (Kern County 2020). The current General Plan, titled the Kern County General Plan, was originally adopted by the Board of Supervisors in 2004 (Kern County 2009). Table 39 below presents the County policies that apply to the proposed Project and how the Project is consistent with those policies.



Table 39 Project Policy Consistency with Local Planning Documents

Goals and Policies	Project Consistency
Kern County General Plan	
CHAPTER 1. LAND USE, OPEN SPACE, AND CONSERVATION ELEMENT	
1.2 NON-JURISDICTIONAL LAND	
Goal 1. To promote harmonious and mutually beneficial uses of land among the various jurisdictions and land management entities present in Kern County.	CONSISTENT. The Project promotes harmonious and mutually beneficial uses among various jurisdictions because the Project proposes a Project that is consistent with the existing land use of the Project area.
Policy 3. The County retains the maximum discretion allowed by law over land use issues of local concern, which impact the development of private and public property in the County.	CONSISTENT. The regulatory review and approval will be led by CEC per power plant siting regulations contained within the Warren-Alquist Act 1974, as amended, with the County acting as a responsible agency.
Policy 6. The County will solicit a city's comments on land use planning proposals within the city's adopted sphere of influence or within one mile of the city limits, whichever is greater.	CONSISTENT. The regulatory review and approval will be led by CEC per power plant siting regulations contained within the Warren-Alquist Act 1974, as amended, with the County acting as a responsible agency. CEC will solicit local agency comments on the proposed Project.
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. Consistent with this policy, the Project would develop a CO_2 capture facility on the location of a former DOE gas plant that will be remediated prior to construction of the proposed Project. See Section 4.6, *Hazards and Hazardous Materials*. As described in Section 4.5, *Geologic Resources and Hazards*, the Project site is not transected by a known active or potentially active fault and is not located within a State of California Alquist-Priolo Earthquake Fault Zone. Adherence to all applicable regulations and mitigation would reduce potential impacts associated with fault rupture adjacent to the proposed Project site. Based on the absence of any known active faults that cross, or are located in close proximity to, the Project site and Project compliance with applicable ordinances of the Kern County Building Code, and compliance with MMs GEO-1 through GEO-3, the potential impact of fault rupture would be less than significant. Additionally, the proposed Project would implement all other recommendations of the final design level geotechnical report. The final report's recommendations would be consistent with the Kern County Building Code (Chapter 17.08) and the most recent version of the California Building Code. As described in

Goals and Policies	Project Consistency
	Section 4.16, *Water Resources*, the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Implementation of MM HYDRO-3 would require preparation of a drainage plan that would design Project facilities to have 1 foot of freeboard clearance above the calculated maximum flood depths for the finished floor of any permanent structures and grading for the Project would be designed so that water surface elevations during flood events would not be increased by more than 1 foot. Further, the Project would be developed in accordance with the General Plan and Floodplain Management Ordinance. Thus, final review of the proposed Project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the proposed Project would not pose significant environmental or public health and safety hazards. As such, with implementation of mitigation measures, the Project would be consistent with this goal.
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. See 1.3, Physical and Environmental Constraints, Goal 1, of the Kern County General Plan, above.
Policy 3. Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.	CONSISTENT. Hazards and hazardous materials impacts are evaluated in Section 4.6, *Hazards and Hazardous Materials*. Consistent with this policy, the Project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.
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. See Section 4.16, *Water Resources*. As described therein, the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement MM HYDRO-2 and HYDRO-3, as described in that section.
Policy 9. Construction of structures that impede water flow in a primary floodplain will be discouraged.	CONSISTENT. See Section 4.16, *Water Resources*. As described therein, the Project site is not located within the 100-year floodplain and

Goals and Policies	Project Consistency
	is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement MM HYDRO-2 and HYDRO-3, as described in that section.
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.	CONSISTENT See Section 4.16, *Water Resources*. As described therein, the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement MM HYDRO-2 and HYDRO-3.
Policy 11. Protect and maintain watershed integrity within Kern County.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 of the Kern County General Plan, above. As discussed in Section 4.16, *Water Resources*, the Project site would implement BMPs during construction to avoid impacts to water quality. As described in Section 4.6, *Hazards and Hazardous Materials*, the Project would also implement MMs HM-1 through HM-8, which would require the Project proponent to properly manage wastes to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Implementation Measure D. Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above. The Project would implement MM HYDRO-2 and HYDRO-3, which would require the preparation of a Storm Water Pollution Prevention Plan (SWPPP) which would require the Project operator to conform to the requirements of Kern County's NPDES Program and that would include erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. A drainage study also would be prepared that would include the designs for a drainage plan that would minimize the potential for changes in the existing drainage patterns to increase erosion and sedimentation. A grading permit would be obtained from the County prior to commencement of construction activities. Compliance to Chapter 17.28 of the Kern County Grading Ordinance would ensure both structural and nonstructural BMPs.
Implementation Measure F. The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above, and Section 4.16, *Water Resources*. The Project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the Project

Goals and Policies	Project Consistency
	would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and MMs HYDRO-2 and HYDRO-3. Therefore, the Project would be consistent with this measure.
Implementation Measure H. Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above and Section 4.16, *Water Resources*. the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and MM HYDRO-2 and HYDRO-3.
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.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9, Policy 11, and Measure H, of the Kern County General Plan, above.
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.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Policy 11 and Measure D of the Kern County General Plan, above. The Project would implement BMPs in accordance with a SWPPP that would be required to comply with Kern County's National Pollutant Discharge Elimination System (NPDES). This would ensure compliance with the State Water Resources Control Board's Construction General Permit, as applicable
1.4 PUBLIC FACILITIES AND SERVICES	
Goal 1. Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the project.	CONSISTENT. As discussed in Section 4.11, *Socioeconomics and Environmental Justice*, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
Goal 5. Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, a Project-specific Water Supply Assessment was prepared for the Project. Based on estimated Project construction and operational water demands per the report, there is sufficient water available to meet the projected water demands of the Project.
Goal 9. Serve the needs of industries and Kern County residents in a manner that does not degrade the water supply and the environment and protect the public health and safety by avoiding surface and subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, the operator shall comply with all applicable federal, state, regional, and local agency water quality protection laws and regulations, and commonly utilized industry standards, including obtaining all applicable stormwater construction permits from the Central Valley Regional Water Quality Control Board (CVRWQCB). The operator would also implement



Goals and Policies	Project Consistency
	best management practices, such as those set forth in the Kern County Grading Ordinance. In addition, because Project construction would cause more than 1 acre of ground disturbance, the Project would implement Mitigations Measures MMs HYDRO-2 and HYDRO-3 requiring a (SWPPP to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality within any areas of the Project. Therefore, operation of the Project would not violate water quality standards, waste discharge requirements, or degrade surface or water quality in the area.
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	CONSISTENT. The Project would construct and operate a carbon capture facility and associated facilities. All infrastructure improvements associated with the Project would be fully funded by the Project proponent. No further improvements are anticipated as a part of the Project. However, should improvements be made, the Project proponent would coordinate with the County to ensure that the cost of the infrastructure improvement is properly funded. As discussed in Section 4.11, *Socioeconomics and Environmental Justice,* the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
Policy 3. Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.	CONSISTENT. Public utility impacts are evaluated in Section 4.7, Land Use, and Section 4.16*, Water Resources*. As described therein, the Project would have less- than-significant impacts on water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities.
Policy 6. The County will ensure adequate fire protection to all Kern County residents.	CONSISTENT. See 1.4, Public Services and Facilities, Goal 1, above. As discussed in Section 4.11, *Socioeconomics and Environmental Justice*, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
Policy 7. The County will ensure adequate police protection to all Kern County residents.	CONSISTENT. See 1.4, Public Services and Facilities, Goal 1, above. As discussed in Section 4.11, *Socioeconomics and Environmental Justice*, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
Policy 15. Prior to approval of any discretionary permit, the county shall make the finding, based on information provided by the CEQA documents,	CONSISTENT. The County will act as a responsible agency during CEC review and approval. As discussed in Section 4.11, *Socioeconomics and*



Goals and Policies	Project Consistency
staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	*Environmental Justice*, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
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.	CONSISTENT. See 1.4, Public Services and Facilities, Goal 1, above. Though the Project would require no new fire protection, law enforcement protection, or public facilities to accommodate the proposed Project, the Project could increase demand for such facilities in the future.
Implementation Measure C. Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	CONSISTENT. Project effects related to utilities are discussed in Section 4.7, Land Use, and Section 4.16, *Water Resources*. The Project would result in less than significant impacts to utilities.
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.	CONSISTENT. Impacts to fire protection services are evaluated in Section 4.7*, Land Use*. The Project would result in less than significant impacts to fire protection services.
Implementation Measure N. Secure complete and accurate information on all hazardous wastes generated, handled, stored, treated, transported, and disposed of within or through Kern County.	CONSISTENT. Chapter 3, *Project Description* and Section 4.6, *Hazards and Hazardous Materials* describes hazardous wastes generated, handled, stored, treated, transported, and disposed of with respect to CCS development in the Project area.
1.9 RESOURCE	
Goal 1. To contain new development within an area large enough to meet generous protections 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.	CONSISTENT. The Project site is located on land that is zoned as A (Exclusive Agriculture) and A-1 (Limited Agriculture). The Project would not involve additional change in the existing environment besides those described in this analysis and would not directly lead to other projects that would result in the loss of grazing or cultivation land. While the Project site has been used for oil extraction, and there is an oil/gas facility within the Project boundaries, the Project would not interfere with current oil and mineral extraction operations and the existing well would not be disturbed or removed as part of the Project.
Goal 2. Protect areas of important mineral, petroleum, and agricultural resource potential for future use.	CONSISTENT. See 1.9, Resource, Goal 1, above. As discussed in Section 4.5, *Geological Hazards and Resources*, of the EIR, the Project site is designated as MRZ 3 (where known or inferred mineral occurrences of undetermined mineral resource significance are present) by the Conservation's State Mining and Geology Board. Implementation of the Project would utilize the CTV I storage area, which was previously approved by Kern County.

Goals and Policies	Project Consistency
Goal 3. Ensure the development of resource areas minimize effects on neighboring resource lands.	CONSISTENT. The Project is compatible with open space and other resource management land uses. Furthermore, the placement of facilities at the Project site may deter other urban and suburban land uses from being developed nearby. The Project would not preclude the existing nearby agricultural, mineral, and petroleum extraction uses from operating.
Goal 4. Encourage safe and orderly energy development within the county, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.	CONSISTENT. The location of the site would ensure a safe and orderly development of the Project facilities. The CEC will coordinate other agencies, and staff will have the opportunity to comment on the environmental analyses. Therefore, the CEC will comply with this goal for the Project.
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.	CONSISTENT. The Project would allow the continued use of the site and is surrounding adjacent parcels for both agricultural uses and oil and gas exploration.
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.	CONSISTENT. See 1.9, Resource, Goal 5, of the Kern County General Plan, above.
Policy 10. To encourage effective groundwater resource management for the long- term economic benefit of the county, the following shall be considered: a. Promote groundwater recharge activities in various zone districts. b. Support for the development of Urban Water Management Plans and promote Department of Water Resources grant funding for all water providers. c. Support the development of groundwater management plans. d. Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater, and desalination.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, the operator would implement a SWPPP, which would reduce impacts on groundwater. In addition, the Project would not hinder County efforts to develop Urban Water Management Plans, promote Department of Water Resources grant funding, develop groundwater management plans, or develop future sources of additional surface and groundwater.

Goals and Policies	Project Consistency
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. See 1.3, Physical and Environmental Constraints, Policy 11 and Measure D and Measure N of the Kern County General Plan, above. The Project would not result in the removal of alteration of any drainages.
Policy 14. Emphasize conservation and development of identified mineral deposits.	CONSISTENT. As discussed in Section 4.5, *Geological Hazards and Resources*, and See 1.9, Resource, Goal 1, 3, and 5.
Policy 25. Discourage incompatible land use adjacent to Map Code 8.4 (Mineral and Petroleum) areas.	CONSISTENT. See 1.9, Resource, Policy 14, of the Kern County General Plan, above.
Implementation Measure B. Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres**.**	CONSISTENT. There is no active agriculture or grazing on the site that qualifies for a Williamsons Act Contract or Farmland Security Zone Contract. The Project, therefore, is consistent with this policy.
Implementation Measure C. The County Planning Department will seek review and comment from the County Engineering and Survey Services Department on the implementation of the National Pollution Discharge Elimination System for all discretionary projects.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, construction activities in the Project area that could result in a discharge to waters of the U.S. are subject to the California NPDES General Construction Permit (General Construction Activity NPDES Storm Water Permit, 2022-0057-DWQ).
Implementation Measure F. Prime agricultural lands, according to the Kern County Interim- Important Farmland 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.	CONSISTENT. According to the California DOC Farmland Mapping and Monitoring Program (FMMP), no Prime farmland is present on the Project site; the majority of the site is designated as Vacant or Disturbed Land, Nonagricultural and Natural Vegetation, Grazing, and Urban and Built-Up Land.
Implementation Measure G. Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation**.**	CONSISTENT. See 1.9, Resource, Goal 5, of the Kern County General Plan, above.
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.	CONSISTENT. See 1.9, Resource, Goal 1, and Goal 2 and Policy 14, of the Kern County General Plan, above.
1.10 GENERAL PROVISIONS	
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.	CONSISTENT. The County will serve as a responsible agency during the CEC review and approval of the Project. As discussed in Section 4.11, *Socioeconomics and Environmental Justice*, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from

Goals and Policies	Project Consistency
	the construction of the Project can be maximized to support County services.
1.10.1 PUBLIC SERVICES AND FACILITIES	
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.	CONSISTENT. See 1.4, Public Facilities and Services, Goal 1, above.
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. The County will serve as a responsible agency during the CEC review and approval of the Project. As discussed in Section 4.11, *Socioeconomics and Environmental Justice*, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
Policy 16. The developer shall assume full responsibility for costs incurred in service extensions or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.	CONSISTENT. See 1.4, Public Facilities and Services, Goal 1, Policy 1, and Policy 15, above.
Implementation Measure C. project developers shall coordinate with the local utility service providers to supply adequate public utility services.	CONSISTENT. See 1.4, Public Facilities and Services, Policy 9, above.
Implementation Measure D. Involve utility providers in the land use and zoning review process.	CONSISTENT. See 1.4, Public Facilities and Services, Policy 9, above.
Implementation Measure E. All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply, and Preservation of Environmental Health Rules and Regulations administered by the Environmental Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterizes the quality of upper groundwater in the project vicinity and evaluation of the extent to which, if any, the proposed use of alternative septic systems will adversely impact groundwater quality. If the evaluation indicates that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board, or would if the alternative septic system is installed, the applicant shall be required to supply sewage collection, treatment, and disposal facilities.	CONSISTENT. See 1.4, Public Facilities and Services, Goal 5. Water and wastewater impacts are evaluated in Section 4.16, *Water Resources*, and Section 4.7, *Land Use*. No off-site water or sewage connections to municipal systems are proposed. During construction, bottled water would be provided, and portable toilets and hand washing facilities are proposed. During operation, workers will utilize existing sanitary facilities at EHOF. Final review of the Project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the Project would not pose significant environmental or public health and safety hazards.
1.10.2 AIR QUALITY	

Goals and Policies	Project Consistency
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.	CONSISTENT. Air quality and GHG impacts are evaluated in Sections 4.1, *Air Quality*. Consistent with this policy, the proposed Project would implement MM AIR-1 through AIR-6, which would reduce impacts to air quality to the extent feasible. Air quality mitigation measures include diesel emission reduction measures during construction, fugitive dust control measures, and Valley Fever exposure minimization measures.
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.	CONSISTENT. See 1.10.2, Air Quality, Policy 18, above. The CEC will prepare a CEQA-equivalent environmental document to address air quality impacts of the Project.
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.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. As discussed therein, implementation of MM 4.3-2 would further reduce fugitive dust emissions during construction and operation, in compliance with the adopted rules and regulations of the San Joaquin Valley Air Pollution Control District on ministerial permits.
Policy 21. The County shall support air districts' efforts to reduce PM10 and PM2.5 emissions.	CONSISTENT. See 1.10.2, Air Quality, Policy 20, above air quality impacts are evaluated in Section 4.1, *Air Quality*. As discussed in that section, implementation of MMs AIR-1 and AIR-2 would further reduce PM10 and PM2.5 emissions during construction and operation.
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.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. Consistent with this policy, the proposed Project would implement MM AIR-1 through MM AIR-6, which would reduce impacts to air quality to the extent feasible. The Project would comply with all applicable San Joaquin Valley Air Pollution Control District rules and regulations.

Goals and Policies	Project Consistency
Implementation Measure F. All discretionary permits shall be referred to the appropriate air district for review and comment.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. Consistent with this measure, the necessary discretionary permits would be referred to the San Joaquin Valley Air Pollution Control 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: • Minimizing idling time. • Electrical overnight plug-ins.	CONSISTENT. Air quality impacts are evaluated in Section 4.1, *Air Quality*. Consistent with this measure, implementation of MM AIR-4 and MM AIR-5 would require diesel exhaust reduction strategies.
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.	CONSISTENT. See 1.10.2, Air Quality, Policies 18 through 21, above. This EIR serves to comply with this policy.
Implementation Measure J. The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits.	See 1.10.2, Air Quality, Policies 18 through 21, above.
1.10.3 ARCHAEOLOGICAL, PALEONTOLOGICAL, CULTURAL, AND HISTORICAL PRESERVATION	
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.	CONSISTENT. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. The proposed Project includes MM CUL-1 through

Goals and Policies	Project Consistency
	MM CUL-3 to promote the preservation of cultural and historic resources where necessary.
Implementation Measure L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).	CONSISTENT. See 1.10.3, Archaeological, Paleontological, Cultural, and Historical Preservation, Policy 25 and Measure K, above. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*, of this EIR. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA and CEC requirements.
Implementation Measure M. In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	CONSISTENT. Paleontological resource impacts are evaluated in Section 4.9, *Paleontological Resources*. MM PALEO-1 through PALEO-4, which would reduce potential impacts to known paleontological resources through hiring a qualified paleontologist shall be retained to monitor ground-disturbing activity, document, and implement measures as needed.
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.	CONSISTENT. Tribal Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. Consistent with this measure, notification regarding the proposed Project was accomplished in accordance with AB52 and the established procedures within CEC's Application for Certification requirements.
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.	CONSISTENT. Cultural resource impacts are evaluated in Section 4.3, *Cultural Resources*. The proposed Project includes MM CUL-1 through MM CUL-3, which would require consultation with the monitors or Native American monitor(s) and to conduct a Cultural Resources Sensitivity Training for all personnel working on the Project.
1.10.5 THREATENED AND ENDANGERED SPECIES	
Goal 1. Ensure that the County can accommodate anticipated future growth and development while 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.	CONSISTENT. As discussed in Section 4.2, *Biological Resources*, the Project would potentially impact special-status plant and wildlife species. To preserve these valuable natural resources, the Project would implement proposed mitigation measures. Impacts to jurisdictional waters would be less than significant under the proposed Project. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above and Section 4.16, *Water Resources*. The Project would be constructed in consideration of

Goals and Policies	Project Consistency
	the floodplain and the Kern County General Plan, Floodplain Management Ordinance and MM HYDRO-2. As discussed in Section 4.6, *Hazards and Hazardous Materials*, MM HAZ-1 through MM HAZ-8 would reduce hazards impacts and involve waste and debris management, preparation of a hazardous materials business plan, limitations on herbicide use, and contamination of subsurface materials. As discussed in Section 4.11, Socioeconomics and Environmental Justice, the Project would implement MM SOCIO-1 that addresses use of sales and use taxes from the construction of the Project can be maximized to support County services.
Policy 27. Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.	CONSISTENT. Biological resource impacts are evaluated in Section 4.2, *Biological Resources*. The proposed Project would comply with this policy and reduce potential impacts with mitigation. Additionally, the Project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species.
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.	CONSISTENT. Biological Resource impacts are evaluated in Section 4.3, *Biological Resources*. This EIR serves to comply with this policy and reduce potential impacts with mitigation. As part of the CEC's review of the proposed Project relevant state and federal agencies will be contacted to ensure that appropriate information about the Project site were being gathered. Similarly, the CEC environmental document will also be circulated to these agencies, and staff will have the opportunity to comment on the biological resources evaluation.
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.	CONSISTENT. Biological resource impacts are evaluated in Section 4.3, *Biological Resources*. The Project site is located within the Valley Region and is consistent with the applicable plans and policies related to preservation, mitigations, and reduction of impacts to biological resources. Accordingly, implementation of biological mitigation measures would further increase cooperative efforts with local, State, and federal agencies to support threatened and endangered plant and wildlife.

Goals and Policies	Project Consistency
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.	CONSISTENT. See 1.10.5, Threatened and Endangered Species, Policy 27, 28, and 29, above.
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. Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.3, *Biological Resources*. The Biological Technical Resources Report (Appendix G) indicates that there are no perennial streams or riparian corridors that drain to the Project site and there are no waters or wetlands of the United States and no riparian streams.
Implementation Measure Q. Discretionary projects shall consider effects to biological resources as required by the California Environmental Quality Act.	CONSISTENT. Biological resource impacts are evaluated in Section 4.3, *Biological Resources*. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA and CEC requirements.
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.	CONSISTENT. Biological resource impacts are evaluated in Section 4.3, *Biological Resources*. Consistent with this measure, the Project would implement mitigation measures that require consultation with the California Department of Fish and Wildlife and US Fish and Wildlife. The CEC will consult with reviewing agencies during the project review process.
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.	CONSISTENT. Biological resource impacts are evaluated in Section 4.3, *Biological Resources*. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA and CEC requirements.
1.10.6 SURFACE WATER AND GROUNDWATER	
Policy 34. Ensure that water quality standards are met for existing users and future development.	CONSISTENT. Water quality impacts are evaluated in Section 4.16, *Water Resources*. Consistent with this policy, the Project would implement best management practices during construction to avoid impacts to water quality. The Project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed. In addition, per MMs HYDRO-2 and HYDRO-3, the Project would be required to implement a SWPPP, which would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality and would be

Goals and Policies	Project Consistency
	applicable to all areas of the Project. In addition, prior to the commencement of construction activities, the Project proponent would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.
Policy 39. Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, the Project would not impact the County's ability to develop its groundwater supply. However, because Project construction would cause more than 1 acre of ground disturbance, applicable Mitigation Measures apply. The Project would implement MM HYDRO-2 and HYDRO-3 requiring a SWPPP to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality within any areas of the Project.
Policy 41. Review development proposals to ensure adequate water is available to accommodate projected growth.	CONSISTENT. Public utility impacts are evaluated in Section 4.16, *Water Resources*. As described therein, the Project would have less-than-significant impacts on water supplies.
Policy 43. Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.	CONSISTENT. See 1.9, Resources, Policy 11, above
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. Water quality impacts are evaluated in Section 4.16, *Water Resources*. Consistent with this measure, construction-related impacts related to alteration of flow patterns and impervious surfaces would be less than significant. In addition, the Project would be required to submit a drainage plan to the County for review and would implement MM HYDRO-3, which requires a final drainage plan designed to evaluate and minimize potential increases in runoff from the Project site.
Implementation Measure X. Encourage effective groundwater resource management for the long-term benefit of the County through the following: • Promote groundwater recharge activities in various zone districts. Support the development of Groundwater Management Plans. • Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water, and groundwater and desalination.	CONSISTENT. The applicant would be required to comply with mitigation measures that encourage groundwater resource management.

Goals and Policies	Project Consistency
Implementation Measure Y. Promote efficient water use by utilizing measures such as: Requiring water-conserving design and equipment in new construction. Encouraging water-conserving landscaping and irrigation methods.	CONSISTENT. Public Utility impacts are discussed in Section 4.16, *Water Resources*. As discussed therein, the Project would require water for dust suppression, fire protection, and pipeline hydrotesting. Water usage during construction, primarily for dust-suppression purposes. The water would be delivered by pipeline utilizing existing WKWD contracts, trucked and stored on-site, and would not substantially decrease groundwater supplies within the Subbasin.
1.10.7 LIGHT AND GLARE	
Policy 47. Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	CONSISTENT. Aesthetic impacts are evaluated in Section 4.14, *Visual Resources*. The proposed Project would reduce potential impacts through implementation of mitigation measures. MM VIS-2 would require compliance with the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance) and would result in the minimum illumination needed to achieve safety and security objectives.
Policy 48. Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	CONSISTENT. See 1.10.7, Light and Glare, Policy 47, above.
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.	CONSISTENT. See 1.10.7, Light and Glare, Policy 47, above.
CHAPTER 2. CIRCULATION ELEMENT	
Objective 1. To make certain that transportation facilities needed to support development are available. To ensure that these facilities occur in a timely manner so as to avoid traffic degradation.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation,* construction and operation of the Project would not disrupt normal traffic flows or otherwise conflict with the County's roadway performance policies and programs. The Project is located in a rural area and the amount of peak hour trips for operation would be generally less than 40 trips per day. Therefore, the Project would not conflict with Circulation Element Objective 1.
Objective 5. Maintain a minimum Level Of Service (LOS) D for all roads throughout the County.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation*, a Traffic Impact Analysis (TIA) was completed for the Project. The Project is located in a rural area and the amount of peak hour trips for operation would be generally less than 40 trips. Therefore, Project operation is not expected to cause any operational Level of Service (LOS) impacts to the adjacent roadway facilities.
2.3.3 HIGHWAY PLAN	

Goals and Policies	Project Consistency
Goal 5. Maintain a minimum Level of Service (LOS) D.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation*, a Traffic Impact Analysis (TIA) was completed for the Project. The Project is located in a rural area and the amount of peak hour trips for operation would be generally less than 40 trips. Therefore, Project operation is not expected to cause any operational Level of Service (LOS) impacts to the adjacent roadway facilities.
Implementation Measure B. Continuity and integrity of the arterial and collector system at the mountain/valley region and the mountain/desert region boundary must be reviewed and approved in conjunction with project adoption on an individual basis.	CONSISTENT. The Project boundary includes most of the San Joaquin Valley Floor portion of Kern County up to an elevation of 2,000 feet. The mountain/valley region and mountain/desert region interface area is outside the boundary of the Project. Therefore, the Project does not conflict with Circulation Element Implementation Measure B.
Implementation Measure C. Conformance to alignment minimum design standards, where roadways that deviate from section and mid-section lines intersect those lines, must be reviewed and approved in conjunction with project adoption on an individual basis.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation*, no roadway improvements are required to serve construction or operation of the Project.
2.3.4 FUTURE GROWTH	
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 Level Of Service (LOS) D. Utilization of the 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.	CONSISTENT. As discussed in Section 4.13, *Traffic and Transportation*, additional analysis and monitoring is not warranted for the Project due to the limited amount of peak hour trips during construction and operation of the Project. Likewise, construction and operation vehicle miles traveled (VMT) would not affect traffic characteristics in this part of Kern County or elsewhere and would not cause affected roadways to fall below LOS D. Therefore, the Project is consistent with Future Growth Policy 2.
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	CONSISTENT. As described in Section 4.13, *Transportation and Traffic*, transportation requirements of the Project during both construction and operation are limited. Regional access to the Project site would be obtained via the existing highways and two-lane roads that traverse Elk Hills as shown in Chapter 3.0, *Project Description*, Figure 3-1. The Project would not necessitate the development of additional roadway systems for Project development and is therefore consistent with Future Growth Policy 4.

Goals and Policies	Project Consistency
circulation diagram map. Developers would negotiate necessary easements to allow this.	
Implementation Measure C. project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.	CONSISTENT. With approval of a CUP, the Project would comply with the County zoning ordinance. No variances or deviations are requested as part of the Project. The Project would conform to all applicable development standards.
2.5 OTHER MODES	
2.5.4 TRANSPORTATION OF HAZARDOUS MATERIALS	
Goal 1. Reduce risk to public health from transportation of hazardous materials.	CONSISTENT. Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes are discussed in Section 4.6, *Hazards and Hazardous Materials*.
Policy 1. The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	CONSISTENT. See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.
Policy 2. Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.	CONSISTENT. See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.
Implementation Measure A. Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.	CONSISTENT. See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.
CHAPTER 3. NOISE ELEMENT	
3.2 NOISE SENSITIVE AREAS	
Goal 1. Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	CONSISTENT. Noise impacts, sensitive receptors, and County noise thresholds are evaluated in Section 4.8, *Noise*. As discussed in that section, the Project would not cause significant impacts to sensitive receptors. Thus, the Project would be consistent with this goal.
Goal 2. Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.	CONSISTENT. The land uses proposed by the Project are evaluated in Section 4.8, *Noise*. As discussed in this section, the Project would be consistent with existing land use designations of the Project site.

Goals and Policies	Project Consistency
Policy 1. Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.	CONSISTENT. See 3.3, Sensitive Noise Areas, Goal 1, above.
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).	CONSISTENT. See 3.3, Sensitive Noise Areas, Goal 1, above.
Policy 3. Encourage vegetation and landscaping along roadways and adjacent to other noise sources to increase absorption of noise.	CONSISTENT. See 3.3, Sensitive Noise Areas, Goal 1, above. Consistent with this policy the Project would be encouraged to provide vegetation and landscaping along roadways and adjacent to other noise sources to increase absorption of noise. Therefore, the Project is consistent with Safety and Health Policy 3.
Policy 4. Utilize good land use planning principles to reduce conflicts related to noise emissions.	CONSISTENT. See 3.3, Sensitive Noise Areas, Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, *Noise*, of this EIR.
Policy 7. Employ the best available methods of noise control.	CONSISTENT. See 3.3, Sensitive Noise Areas, Goal 1, above.
Implementation Measure A. Utilize zoning regulations to assist in achieving noise- compatible land use patterns.	CONSISTENT. The land uses proposed by the Project are evaluated in Section 4.8, *Noise*. As discussed in this section, the Project would be consistent with the land use and zoning designations of the Project site.
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.	CONSISTENT. As discussed in Section 4.8, *Noise*, construction and operational noise levels would not generate a substantial increase in ambient noise levels, and there are no sensitive receptors close to the Project area. Therefore, the Project is consistent with Safety and Health Implementation Measure J.
CHAPTER 4. SAFETY ELEMENT	
Goal 1. Minimize injuries and loss of life and reduce property damage.	CONSISTENT. Consistent with this goal, the Project would be required to comply with adopted safety regulations, such as the County Fire Code, and related policies in the General Plan.
4.2 GENERAL POLICIES AND IMPLEMENTATION MEASURE, WHICH APPLY TO MORE THAN ONE SAFETY CONSTRAINT	
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.	CONSISTENT. The Project does not interfere with County-wide programs related to identification, mapping, and evaluation of geologic, fire, flood safety hazard areas, and hydrogen sulfide concentrations in oilfield areas. The programs would continue regardless of the approval of the Project.
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 land use activity susceptible to such hazards.	CONSISTENT. Section 4.5, *Geological Hazards and Resources*, discusses potential geologic hazards, Section 4.16, *Water Resources*, discusses potential flood hazards, and Section 4.6, *Hazards and Hazardous Materials,* discusses potential fire hazards as a result of

Goals and Policies	Project Consistency
	Project implementation. Consistent with this measure, all hazards have been considered as part of this analysis.
Implementation Measure F. The adopted multi-jurisdictional Kern County, California Multi- Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.	CONSISTENT. As discussed in Section 4.6, *Hazards and Hazardous Materials*, the Kern Multi-Jurisdictional Hazard Mitigation Plan has characterized the agricultural floor of the San Juaquin Valley as an area of very high fire severity risk. Although the Project site is not located within a high fire hazard severity zone, construction and operational activities could increase the potential for wildland fires. Therefore, wildfire impacts would be potentially significant and require implementation of measures requiring the Project proponent to comply with Kern County Fire Codes and limit use of fire sensitive electrical equipment.
4.3 SEISMICALLY INDUCED SURFACE RUPTURE, GROUND SHAKING, AND GROUND FAILURE	
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.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Measure D, of the Kern County General Plan, above.
Implementation Measure C. The fault zones designated in 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.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1, of the Kern County General Plan, above. Consistent with this policy, the Project would not include development for human occupancy, and would not be located near an active earthquake fault.
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. Liquefaction potential is discussed in Section 4.5, *Geological Hazards and Resources*. The Project would implement MM GEO-3, which would require the Project to submit an engineering design specific geotechnical study to the Kern County Public Works Department in order to obtain required grading permits. MMs GEO-3 and GEO-4 would address potential soil stability impacts and prescribe specific design requirements to address these potential impacts related to unstable soils that could lead to liquefaction. Therefore, with implementation of this mitigation measure, the Project would be consistent with this goal to avoid impacts related to seismically-induced liquefaction.
Policy 3. Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	CONSISTENT. As discussed in Section 4.5, *Geological Hazards and Resources,* conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. Grading would be subject to compliance with the NPDES General

Goals and Policies	Project Consistency
	Construction Permit requirements and site-specific measures would be incorporated into the SWPPP as required by MM HYDRO-2 as discussed in Section 4.16, *Water Resources*. The implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Implementation of MM GEO-3, which includes adherence to the requirements of applicable building codes and earthquake safe design standards), would ensure that effects from seismic-related ground failure including liquefaction would be minimized. In addition, with regard to erosion, as discussed in Section 4.16, *Water Resources,* the Project would implement HYDRO-3, which requires the completion of a final drainage plan for the Project prior to the issuance of a grading permit. This would serve to reduce any impacts related to erosion, consistent with this policy.
4.6 WILDLAND AND URBAN FIRE	
Policy 1. Require discretionary projects to assess impacts on emergency services and facilities.	CONSISTENT. Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.6, *Hazards and Hazardous Materials*. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access.
Policy 3. The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.	CONSISTENT. The Project would not interfere or prohibit the County's ability to meet this policy. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access. All onsite employees would be trained on fire safety and how to respond to onsite fires, should they occur. See Section 4.6, *Hazards and Hazardous Materials*.
Policy 4. Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.	CONSISTENT. Consistent with this policy, Section 4.13, *Traffic and Transportation*, includes the existing requirement for preparation of a Construction Traffic Control Plan, encroachments or other necessary permits by Caltrans and/or the Kern County Roads Dept. The Project proponent. would also develop and implement a fire safety plan for use during construction and operation.
Policy 6. All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.	CONSISTENT. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access. The Project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department

Goals and Policies	Project Consistency
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.	CONSISTENT. The Project would prepare and implement a fire safety plan to ensure the provision of appropriate access.
4.9 HAZARDOUS MATERIALS	
Implementation Measure A. Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent on-site hazards from affecting surrounding communities in the event of inundation.	CONSISTENT. See 4.6, Wildland and Urban Fire, Policy 6, above.
5.3.2 KERN COUNTY'S ECONOMIC DEPENDENCE ON THE OIL MARKETPLACE	
Policy 3. The County shall encourage the conversion of existing petroleum-related facilities to other productive uses when they are no longer needed or productive.	CONSISTENT. The Project does include the conversion of oil and gas facilities.

Key:
BMP = best management practice
CCS = carbon capture and storage
CDFW = California Department of Fish and Wildlife
CEC = California Energy Commission
CEQA = California Environmental Quality Act
CIC = Cumulative Impact Charge
CO_2 = carbon dioxide
dBA = A-weighted decibels
DOC = California Department of Conservation
Ldn = average day/night sound
LOS = level of service
MM = Mitigation Measure
MRZ = Mineral Resource Zone
NOP = Notice of Preparation
NPDES = National Pollutant Discharge Elimination System
SWPPP = Storm Water Pollution Prevention Plan
VMT = vehicle miles traveled

4.7.5.3.2 Kern County Zoning Code

The Kern County Zoning Code outlines specific regulations governing both private and public property within unincorporated areas of Kern County. It defines land use restrictions and permitting processes based on the zoning designation assigned to each parcel. In addition, the Zoning Code sets forth development standards and other requirements applicable to each zoning district.

4.7.6 References

DOC. 2022a. California Important Farmland Finder. Accessed April 2025. https://maps.conservation.ca.gov/DLRP/CIFF/.

DOC. 2022b. California Williamson Act Enrollment Finder. Accessed April 2025. https://maps.conservation.ca.gov/dlrp/WilliamsonAct/App/index.html.

Kern County. 2009. Kern County General Plan. Accessed April 2025. https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_Complete.pdf.

Kern County. 2020. Kern County General Plan Update 2040. https://kern2040.com/.

Kern County. 2022. Kern County Zoning Ordinance. Accessed April 2025. https://psbweb.kerncounty.com/planning/pdfs/KCZONov2022.pdf.

Kern County Public Works Department. 2025. Disposal Sites. Accessed July 3, 2025. https://www.kernpublicworks.com/services/solid-waste/disposal-sites.

4.8 Noise

The information and analysis presented in this section has been derived from the Noise Study prepared for the Project and included as Appendix M (Stantec 2025h). Table 40 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 40 Appendix B Information Requirements for an AFC – Noise

Summary of Requirement	Section
Noise	
Identify sensitive land uses (e.g., homes, schools, hospitals) in areas where project noise may increase by 5 dB(A) or more.	Section 4.8.1
Measure and describe existing ambient noise at representative sensitive sites, including environmental conditions during monitoring; report results using standard noise metrics.	Section 4.8.1
Describe the project's main noise sources, including their levels and sound characteristics.	Section 4.8.1
Estimate project-related noise impacts at sensitive locations during construction and operation.	Section 4.8.2.3
Estimate noise levels within the project site and assess potential impacts on workers.	Section 4.8.2.3
Evaluate current and future audible noise from affected switchyards and transmission lines at property boundaries and rights-of-way.	Section 4.8.2.3

4.8.1 Environmental Setting

The Kern County General Plan defines a sensitive receptor as a single or multi-family dwelling unit, place of public assembly (a legally permitted place where 100 or more people gather together in a building or structure for the purpose of amusement, entertainment, or retail sales), church, institution, school, or hospital. The proposed Project is located within the EHOF and is bordered on all sides by existing oil and gas exploration and production. There are no noise or vibration sensitive land uses, as defined by the Kern County General Plan, located within the greater Project site. The closest noise sensitive receptors are single family homes situated along Valley West Road north of Taft, California, located approximately 4.97 miles southeast of the Project site. The closest elementary school is located in Tupman, California approximately 6.54 miles to the northeast.

Ambient noise levels for nearby noise-sensitive receptors were measured and reported as part of the Environmental Noise Assessment for the approved CRC CTV I project in Kern County, California, which is located in the same oilfield. For the CRC CTV I ambient noise assessment WJV Acoustics conducted long-term (24-hour) ambient noise measurements in the vicinity of the closest sensitive receptors, which included the community of Tupman (site LT-1), residential land uses along Taft Highway (site LT-2),

residential uses in the community of Dustin Acres (site LT-3), and the community of McKittrick (site LT-4). The range of measured hourly average noise levels (Leq), hourly maximum noise levels (Lmax), background noise levels (L90), and day-night noise level (Ldn) measured as part of the CRC CTV I project are presented in Table 41.

Table 41 *Measured Ambient Noise Levels*

Measurement Location	Measured Leq Range, dB	Measured Lmax Range, dB	Measured L90 Range, dB	Measured Ldn, dB
LT-1	39.8 – 63.1	56.4 – 86.6	32.1 – 47.6	60.8
LT-2	58.1 – 74.3	77.8 – 88.4	46.1 – 54.2	74.1
LT-3	55.9 – 70.6	77.7 – 87.5	43.1 – 51.4	71.4
LT-4	38.0 – 55.7	55.8 – 76.0	31.3 – 49.1	56.7

Section 8.36 “Noise Control” in the Kern County Code of Ordinances states it is “unlawful for any person to do, or cause to be done” several noise-producing acts within the unincorporated areas of the county, including public address systems and loud or raucous noise. The Code does not list specific noise level limits for fixed-source equipment. Per the Noise Element of the Kern County General Plan Implementation Measure F, proposed commercial and industrial uses must be designed to prevent exterior noise levels from exceeding 65 decibels (dB) Ldn and interior noise levels from exceeding 45 dB Ldn for nearby residential or other noise-sensitive areas.

The Project site is not located within 2 miles of a public airport or public use airport. The nearest public airport is the Elk Hills-Buttonwillow County Airport, located approximately five miles north of the Project site. Refer to Figure 5 that shows the locations of sensitive receptors in the vicinity of the Project site.

4.8.2 Impact Analysis

4.8.2.1 Significance Criteria

In accordance with the State’s CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether noise impacts are significant. Would the proposed project:

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

b) Generation of excessive groundborne vibration or groundborne noise levels?

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?



4.8.2.2 Impact Assessment

Short-Term Construction Noise

Less than significant. Two types of short-term noise impacts could occur during construction. The first type of short-term noise impact is traffic noise from construction equipment and worker vehicular commutes on the local roads leading to and from the Project site.

The construction of the Project is expected to minimally increase traffic counts along all roads around the Project site. There will essentially be no change in traffic noise (2 dB(A) or less) expected along these streets. Therefore, the construction of the Project should not cause increased traffic noise levels over the existing conditions.

Noise generated during construction would vary based on the specific activities and equipment used. Construction of the Project is expected to involve equipment such as off-highway trucks, tractors, front-end loaders, drill rigs, cranes, graders, rollers, excavators, welders, and forklifts. Table 42 provides the anticipated types of construction equipment along with their estimated maximum and average noise levels at a distance of 4.97 miles, which is the approximate distance between the Project and the nearest single-family residences in Taft, California.

Table 42 Estimated Construction Noise Levels at Nearest Sensitive Receptor

Construction Equipment Source	Distance to Nearest Sensitive Receptor, miles	Sound Level at Receptor		
		Lmax, dB(A)	Acoustical Use Factor	Leq, dB(A)
Crane	4.97	26.6	16%	18.7
Drill Rig Truck	4.97	25.2	20%	18.7
Excavator	4.97	26.8	40%	22.8
Forklift	4.97	29.5	40%	25.5
Front-End Loader	4.97	25.2	40%	21.2
Grader	4.97	31.1	40%	27.1
Off-Highway Truck	4.97	22.5	40%	18.6
Roller	4.97	26.1	20%	19.1
Tractor	4.97	30.1	40%	26.1
Welder	4.97	20.1	40%	16.1

Source: FHWA Roadway Construction Noise Model, v1.1, 2006

A reasonable worst-case noise scenario for general construction activity would involve the three loudest pieces of equipment, a grader, tractor, and forklift, operating simultaneously. This represents a conservative assumption, as it presumes all three pieces of equipment are running at the same time and in the same location. In practice, construction would occur in sequential phases, making it unlikely that the loudest



equipment would operate simultaneously at the point on the Project site nearest to sensitive receptors. However, the Federal Highway Administration's (FHWA) Roadway Construction Noise Model estimates this scenario would produce combined noise levels of 35.1 dBA Lmax and 31.1 dBA Leq at a distance of 4.7 miles (FHWA 2006). This scenario is calculated to be well below the 65 dB(A) Ldn exterior noise level required by Implementation Measure F in the Kern County General Plan. Additionally, any increase in noise levels from construction activities would be temporary and intermittent. Therefore, the impact would be less than significant.

Construction Worker Noise Exposure

Less than significant. Worker exposure levels during the construction of the proposed Project will vary depending on the phase of the Project and the proximity of the workers to the noise-generating activities. The Project will develop a Hearing Protection Plan which complies with DOSH requirements. The Hearing Protection Plan will require appropriate hearing protection for workers and visitors throughout the construction period.

Groundborne Vibration

Less than significant. Vibration amplitude decreases with distance and is influenced by how energy is introduced into the ground and by the soil conditions through which it travels. During construction of the Project equipment such as drill rig trucks, and rollers would be used. However, this equipment would operate at a minimum of approximately 4.97 miles from the nearest sensitive receptor. The Federal Transit Administration provides the following equation that can be used to estimate vibration levels at a given distance under typical soil conditions where PPVref is the reference peak particle velocity (in inches per second) from Table 7.4 – Vibration Source Levels for Construction Equipment, and Distance is the distance between the source and receptor (Federal Transit Administration 2018):

$$PPV = PPVref \times (25/Distance)^{1.5}$$

Applying this equation, vibration generated by Project construction would not be measurable at the nearest sensitive receptors located 4.97 miles away. Therefore, with implementation of MMs required for the CTV I project, impacts from construction vibration would be less than significant.

Operational Noise

Less than significant. The proposed Project's operational noise levels received by the surrounding community were calculated using SoundPLAN acoustic modeling software, which applies standardized prediction techniques (per International Organization for Standardization 9613) and accounts for distance, topography, vegetation, and sound shielding or reflections from buildings and acoustic barriers. The model included anticipated equipment for the CCU, including one CO_2 product compressor, one blower, and one lean vapor compressor, using noise levels provided by the manufacturers. Switchyards and overhead transmission lines would not generate significant noise when compared to the CCU equipment and was not included in the modeling. Other Project elements, including storage tanks, ducting systems, and support systems are non-noise producing and therefore were excluded from the analysis. To assess a worst-case scenario, the analysis assumed all equipment would operate simultaneously and at full capacity 24 hours a



day, with no solid fencing or noise barriers around the Project site. The model produced noise level contours illustrating the projected noise distribution in surrounding areas.

Modeling results indicate that no residences or other noise-sensitive receptors fall within the generated noise contours. The lowest modeled noise level contour, which predicts a day-night noise level of 50 dB(A) Ldn, extends approximately 3.1 miles from the center of the Project equipment. The nearest noise sensitive receptors are single-family homes along Airport Road in Taft, California, approximately 4.97 miles southeast, and an elementary school and single family homes in Tupman, California, about 6.5 miles northeast. Given distance attenuation, noise levels at these receptors would remain below 50 dB(A) Ldn and under the 65 dB(A) Ldn exterior noise limit set by Implementation Measure F in the Kern County General Plan. Based on the analysis, Project-related noise impacts are expected to be less than significant with the implementation of the of MMs required for the CTV I project.

Worker Exposure

Less than significant. Based on the noise levels of the equipment specified for the proposed Project, it is highly likely that hearing protection will be required for on-site workers. At this stage in the project, vendor information has not been specified and vendor noise specifics/guarantees are unknown. Given the facility layout and expected size of the equipment, near-field maximum noise levels of 90 dB(A) at 3 feet could be exceeded. CRC will implement hearing protection for workers potentially exposed to noise levels in excess of OSHA requirements per 29 CFR 1910.95. Signs requiring the use of hearing protection devices will be posed in all areas where noise levels commonly exceed 85 dB(A), such as inside acoustical enclosures. The Project will comply with applicable DOSH requirements. Therefore, noise impacts to workers during operation will be less than significant.

4.8.3 Cumulative Impacts

Less than significant. The scope of cumulative impacts for noise impacts consists of the EHOF. Due to the proposed Project's location within an existing oil and gas field, the impacts of the Project together with the impacts of past, present, and reasonably foreseeable future oil and gas development, including wells and abandonment activity to implement CCS projects, constitute cumulative impacts. Kern County has prepared an EIR that evaluated the potential impacts (including contributions to cumulative impacts) of oil and gas development in connection with previously proposed amendments to the Kern County Zoning Ordinance: Final Environmental Impact Report - Revisions to the Kern County Zoning Ordinance - 2015(C) Focused on Oil and Gas Local Permitting, certified on November 9, 2015, supplemented by a Supplemental EIR certified on December 11, 2018; a Supplemental Recirculated EIR (SREIR) certified on March 8, 2021; and an Addendum adopted on August 23, 2022, (collectively referred to as the "Oil and Gas EIR"). The information in these documents provides evidence for the record of the analysis of cumulative impacts of the disturbance, construction activities, and operation of the wells and abandonment activities as projected in the Oil and Gas EIR.

As stated in the Oil and Gas EIR and in the Environmental Noise Assessment for the approved CRC CTV I project, "Since oil and gas activities could occur anywhere in the Project area, the combined noise levels from the Project and existing or reasonably foreseeable projects depend on the proximity of oil and gas



activities to other noise sources at a specific location. Noise generated from construction of certain types of wells authorized under the Project, conservatively assuming use of the largest exploratory deep drilling rig (Kenai Rig), could be in excess of 65 dB(A) up to 4,000 feet from a construction site. Therefore, significant noise impacts would occur if there are sensitive noise receptors within 4,000 feet of the construction of a well. Other projects with construction or operations occurring concurrently with construction or operations of a well would also contribute to noise levels experienced by nearby sensitive noise receptors.

Other projects associated within the study area would also have to comply with the Kern County Noise Ordinance and/or the Noise Element of the Kern County General Plan and, therefore, would have to ensure noise levels did not exceed standards. The potential contribution of the Project as an impact on sensitive receptors more than 4 miles away for operations and construction are not cumulatively considerable.

4.8.4 Mitigation Measures

No mitigation measures are required for the Project to mitigate noise impacts.

4.8.5 Level of Significance

Residual impacts would be less than significant.

4.8.6 Laws, Ordinances, Regulations, and Standards

Noise at the proposed Project is governed by (LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 43.

Table 43 LORs for Noise

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
EPA Noise Control Act, 1972	Guidelines for state and local governments	EPA	Section 5.7.6.1.1
Occupational Health and Safety Act of 1970	Exposure of workers over 8-hour shift limited to 90 dBA	OSHA	Section 5.7.6.1.2
State			
Cal/OSHA, Title 8 CCR Article 105 Sections 095 et seq.	Exposure of workers over 8-hour shift limited to 90	Cal/OSHA	Section 5.7.6.2.1

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	dBA		
Local			
Kern County Code of Ordinances	Noise control ordinance	Kern County	Section 4.8.2
Kern County General Plan, Noise Element	Noise control standards for residential and noise sensitive land uses.	Kern County	Section 4.8.2

4.8.6.1 Federal LORS

4.8.6.1.1 U.S. EPA

Under the Clean Air Act, the U.S. EPA administrator established the Office of Noise Abatement and Control (ONAC) to carry out investigations and studies on noise and its effect on public health and welfare. Through ONAC, the EPA coordinated all Federal noise control activities; but in 1981 the federal government concluded that noise issues were best regulated at the state and local level. While there are no federal, state, or local standards that apply to the Project, EPA has developed noise level guidelines requisite to protect public health and welfare against hearing loss, annoyance, and activity interference. These noise levels are contained in the EPA document “Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.” One of the purposes of this document was to provide a basis for state and local governments’ judgments in setting standards. The document identifies a 24-hour exposure level of 70 dB as the level of environmental noise that will prevent any measurable hearing loss over a lifetime. Likewise, levels of 55 dB outdoors and 45 dB indoors are identified as preventing activity interference and annoyance. These levels of noise are considered those that will permit spoken conversation and other activities such as sleeping, working, and recreation, which are part of the daily human condition (EPA 1974).

4.8.6.1.2 OSHA

OSHA regulates onsite noise levels. The permissible exposure level to noise for workers is 90 dBA over an 8-hour time-weighted average (TWA) work shift, to protect hearing (29 Code of Federal Regulations 1910.95). If an employee is exposed to greater than 85 dBA as an 8-hour TWA, then a hearing conservation program will be implemented and will ensure exposure levels remain below 90 dBA 8-hour TWA through engineering controls or personal protective equipment (PPE).

4.8.6.2 State LORS

4.8.6.2.1 DOSH/Cal-OSHA

Cal/OSHA has the same regulations as the federal OSHA regulations outlined previously. The regulations are contained in Title 8, California Code of Regulations, General Industrial Safety Orders, Article 105, Control of Noise Exposure.

4.8.6.3 Local LORS

Section 8.36 “Noise Control” in the Kern County Code of Ordinances states it is “unlawful for any person to do, or cause to be done” several noise-producing acts within the unincorporated areas of the county, including public address systems and loud or raucous noise. The Code does not list specific noise level limits for fixed-source equipment.

The Noise Element in the Kern County General Plan lists specific Goals, Policies, and Implementation Measures to “ensure the residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.” Implementation Measure F) states the following:

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 or 45 dB Ldn[2].

4.8.7 References

Federal Transit Administration. 2018. Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (FTA Report No. 0123). Accessed May 2025. Retrieved from:: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

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———. 2020. Draft Supplemental Recirculated Environmental Impact Report (October 2020) Revisions to Title 19-Kern County Zoning Ordinance–(2020 A), Focused on Oil and Gas Local Permitting, Section 4.12 “Noise”, Accessed May 2025. Retrieved from:

[2] Ldn, or Day-Night Noise Level is 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.

https://psbweb.kerncounty.com/UtilityPages/Planning/EIRS/OG_SREIR/aVol1/Oil_Gas_SREIR_Oct%202020_Vol%201_04.12%20Noise.pdf

———. 2025. Noise Element from the Kern County General Plan, Accessed February 2025. Retrieved from: https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGPChapter3.pdf

Stantec. 2025h. CalCapture CCS Project, Noise Study. October 2025.

WJV Acoustics. 2023. The Environmental Noise Assessment for the CRC Carbon TerraVault I project in Kern County, California. Appendix H “Noise Assessment,” September 27, 2023.

4.9 Paleontological Resources

The information and analysis presented in this section has been derived from the Paleontological Resources Assessment prepared for the Project and included as Appendix N (Stantec 2025i). This study consisted of a pedestrian survey and an analysis of existing data including a museum records search from the Natural History Museum of Los Angeles County (LACM) and a review of the most recent geologic mapping, relevant scientific literature, and online museum collections databases. Although no response has been received, a records search was also requested from the University of California Museum of Paleontology (UCMP). Additionally, a search was conducted of the UCMP, National Museum of Natural History (NMNH), and the American Museum of Natural History (AMNH), for fossil localities recorded from the Tulare Formation in Kern County, California. Table 44 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 44 Appendix B Information Requirements for an AFC – Paleontological Resources

Summary of Requirement	Section
Paleontological Resources	
Identification of physiographic province and summary of geologic setting, formations, and stratigraphy of the project area; paleontological study area size based on regional depositional history	Section 4.9.1
Sensitivity of the project area and significance of known paleontological localities or resources; sensitivity discussion for each geologic unit on the most recent 1:24,000 scale geologic map, with rationale	Section 4.9.1
Summary of museum records, literature searches, and field surveys used to gather paleontological data; include survey dates, methods, and qualifications of surveyors	Section 4.9.1.1
Location information for known paleontological resources, survey reports, locality records, and fossil occurrence maps (1:24,000 scale) within one mile of the project and related facilities; submitted under confidentiality request	Section 4.9.1 and Appendix N - Paleontological Resources Assessment Report
Educational programs to raise awareness of paleontological impacts; mitigation measures for known resources; contingency measures for unknown resources	Section 4.9.4

4.9.1 Environmental Setting

The Study Area is located in the Great Valley geomorphic province. The Great Valley has been a depositional basin dating back to the late Jurassic, when the growing Sierra Nevada volcanic arc began shedding sediment to the west and southwest, into what was at the time a shallow sea that deepened westward across the basin (Nilsen 1990). Deposition continued into the Cenozoic, with the later initiation of mountain formation on the western side of the Great Valley in the Coast Ranges. By the Pliocene, the basin had transitioned to entirely nonmarine deposition, with sediment input from the highlands on the eastern



and western borders of the Great Valley (Bartow and Nilson 1990). The thickness of the sediments accumulated over this period from roughly 150 million years ago (Ma) varies along the valley but is over 8 miles thick in places (Orme and Graham 2018). It is this latter part of the Great Valley's history that is of most relevance to the Study Area, in terms of the surficial geology.

Locally, the Study Area is in the southwestern portion of the San Joaquin Valley, approximately 25 miles southwest of Bakersfield, California, in the Elk Hills. The EHOF stretches across the western and eastern Elk Hills. Further to the south, beyond the Midway Valley, is the Temblor Range, considered to be the source of sediments found within the Elk Hills (Woodring et al. 1932). The Elk Hills are located within the *en echelon* fold-and-thrust belt that constitutes the southwestern side of the San Joaquin Valley, largely controlled by the San Andreas Fault (Nicholson 1990). The Elk Hills, along with the nearby Kettleman Hills, Coalinga, and Lost Hills, comprise large northwest-southeast trending antiforms, with the Elk Hills composed of three anticlines separated by reverse faults (Fiore et al. 2007). These anticlines are the result of strike-slip syn-depositional faulting that began in the Miocene and continues to present day; thus, the upper layers of the sediments that fill the larger San Joaquin Basin have been deformed in the Elk Hills (Fiore et al. 2007). The Study Area is located in the eastern Elk Hills along one of the three anticline structures that dip to the north and south on the flanks of the Elk Hills, exposing beds of Pliocene and Pleistocene sediments in the Study Area (Dibblee and Minch 2005; Woodring et al. 1932).

4.9.1.1 Survey Results

Museum records search results show that NMNH database search returned 97 specimens from 18 localities from the Tulare Formation in Kern County, the UCMP database search returned five specimens and five localities from the Tulare Formation in Kern County, and the LACM records search returned at least three specimens from two localities from Tulare Formation in the Elk Hills and McKittrick Valley region. The AMNH online database did not return results, and as previously stated, no response regarding records has been received from the UCMP. The Study Area is underlain by the Tulare Formation, as discovered through a review of geological mapping and the pedestrian survey. The Tulare Formation is assessed as having high paleontological potential.

4.9.2 Impact Analysis

4.9.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether paleontological resources impacts are significant. Would the proposed project:

a) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

4.9.2.2 Impact Assessment

Less than significant with mitigation. The Study Area is underlain by the Tulare Formation, which has high paleontological potential, and so Project ground disturbance has the potential to encounter

paleontological resources when excavations impact previously undisturbed sediments. Should paleontological resources be encountered during Project activities, their damage or destruction would constitute a direct adverse impact.

Of the Project components, the main parking area, laydown areas, and staging areas are not anticipated to involve ground disturbance. As such, Project activities will be restricted to surfaces that were either surveyed during this study or previously disturbed. As no paleontological resources were recorded in these areas, future surficial activities are unlikely to pose adverse impacts to paleontological resources. Similarly, surficial leveling, likely through grading, is anticipated for several Project components, including pipeline alignments, for the CCU and overflow parking footprints, along access routes, and for the new road. The extent to which this grading may pose adverse impacts to paleontological resources is dependent upon the depth of the grading and the extent of previous disturbance. In areas of previous disturbance, shallow grading is unlikely to encounter previously undisturbed sediments and so is unlikely to pose adverse impacts. Similarly, the surface in previously undisturbed areas has been cleared through survey as part of this study, and so shallow grading within 12 inches of the existing surface is unlikely to encounter paleontological resources and is therefore unlikely to pose adverse impacts.

More extensive ground disturbance in the form of trenching, deep grading (more than 12 inches below ground surface), and augering are planned and may encounter paleontological resources in previously undisturbed sediments. As such, these activities may pose adverse impacts. These potential impacts can be mitigated with paleontological monitoring (Section 4.9.4).

Horizontal directional drilling (HDD) may occur for some portions of the main CO_2 pipeline. HDD is conducted underground and does not produce spoils. While it is possible that the drill could go through a fossil, it is not possible to determine if or when that occurs. As HDD cannot be effectively monitored due to the minimal nature of spoils and absence of cuts to observe, were unique paleontological resources to be encountered by the drill, their damage or destruction could constitute a significant and unavoidable impact. However, given the narrow diameter of the drill and the limited amount of HDD this Project will entail, it is unlikely that unique paleontological resources would lie in the drill's path.

HDD may be accompanied by excavations for bore or mud returns pits, which are excavated to the depth of the drilling to allow the drill to be introduced to its bore path. These excavations are typically a few feet wide and several feet deep, and so there is risk of encountering fossils during excavations in previously undisturbed sediments, which could pose adverse impacts. These potential impacts can be mitigated with paleontological monitoring (Section 4.9.4).

As the Project area is subject to erosion over time, paleontological resources may become exposed by increased erosion stemming from Project activities. Once exposed, paleontological resources could be damaged or destroyed. This would represent an indirect adverse impact.

Implementation of MMs PALEO-1 through PALEO-4 would reduce impacts to paleontological resources to less than significant.



4.9.3 Cumulative Impacts

Less than significant with mitigation. Due to the Project's location within an existing oil and gas field, the impacts of the Project together with the impacts of past, present, and reasonably foreseeable future oil and gas and CO_2 storage development constitute cumulative impacts. A number of other projects have been developed or are planned for the Elk Hills or adjacent regions. Each of these, particularly if they occur in areas where they impact the Tulare Formation, may individually affect paleontological resources. Therefore, potential impacts of this Project contribute to the cumulative impact of increased development in the Elk Hills and southwestern San Joaquin Valley. Additional projects located within the EHOF, particularly within 1 mile of the Project area, include CTV I CCS. Based on the prevalence of the Tulare Formation in this general area, these projects will likely encounter the Tulare Formation. Other projects located within approximately 10 miles of the Project area include Coles Levee CCS, Kern Store CCS, CTV Clean Energy Park Projects, Direct Air Capture with CCS, Kern County Oil and Gas Ordinance Second Supplemental Revised EIR (SSR-EIR) and CRC's Oil and Gas CUPs for Elk Hills, Buena Vista Hills, Kern Front, which will most likely be superseded by the return of the KC SSR-EIR for oil and gas activities. Further, projects located within the southwestern San Joaquin Valley, and within approximately 30 miles of the Project area, include Salt Creek CCS, Lost Hills Solar to Hydrogen Project, Crimson Resource Management Oil and Gas CUP, Carbon Frontier CCS, Eastridge CCS, Aera Energy South Belridge Oil and Gas CUP and Gas Extraction, and Pond Road Biomass CCS. Of these projects, those that occur in the Elk Hills or the eastern foothills of the Temblor Range are most likely to encounter the Tulare Formation. Projects located outside these areas may not encounter the Tulare Formation, as other geologic units are present beyond 10- and 30-mile radii of the present Project and may be encountered instead of the Tulare Formation.

With regard to the Project's impacts to unique paleontological resources, should direct or indirect adverse impacts arise from Project activities, they would contribute to cumulative adverse impacts within the region. While the loss of a particular fossil specimen constitutes a localized adverse impact both in terms of geography and loss of paleontological data, the collective loss of specimens over broader geographic scales as a result of multiple projects may pose a cumulative adverse impact. This is particularly true when one geologic unit is the subject of the direct impacts, as is the Tulare Formation with this Project, as the data lost are unique to that unit. Cumulative impacts to paleontological resources include the loss of paleoecological data of a geologic unit or broader region, evolutionary data for lineages of organisms, or paleobiodiversity data for taxa or regions. The application of the MMs developed for this Project (PALEO-1 through PALEO-4) will reduce Project-related direct or indirect impacts to less-than-significant, thus avoiding the Project contributing to significant cumulative impacts to paleontological resources in the region.
. .

4.9.4 Mitigation Measures

The ability to apply mitigation is tied to the nature of the ground disturbing activity. Paleontological monitoring is the most common mitigation tool, during which a trained paleontologist observes construction activities and halts construction temporarily to inspect the exposed sediments. If fossils are observed, the paleontologist will recognize them and stop work so that they can be assessed and, if found to meet significance criteria, salvage them for conservation and curation in a museum.



Construction monitoring requires a paleontologist to be able to observe either cuts into the ground, such as the sidewalls of trenches or a graded ground surface, or to observe spoils piles, such as from drilling or trenching. As grading, excavations, trenching, and augering produce cuts, spoils, or, in some cases, both, they are ideal targets for construction monitoring as a successful means of reducing potential impacts on paleontological resources to a less-than-significant level. The Tulare Formation has high paleontological potential; therefore, full-time monitoring is required for these activities when they occur in previously undisturbed areas.

MM PALEO-1. The Project Paleontologist shall prepare, design, and implement a Paleontological Monitoring and Mitigation Plan (PMMP) for the Project consistent with Society of Vertebrate Paleontology (2010) guidelines. The PMMP shall define pre-construction coordination, construction monitoring for excavations based on the activities and depth of disturbance planned for each portion of the Project site, data recovery (including halting or diverting construction so that fossil remains can be salvaged in a timely manner), fossil treatment, procurement, and reporting. The PMMP monitoring and mitigation program shall be prepared and approved by the CEC prior to issuance of the first grading permit.

MM PALEO-2. Paleontological monitoring shall be implemented when ground disturbance impacts previously undisturbed sediments of the Tulare Formation, which underlies the Study Area. Full-time monitoring should be implemented for activities such as grading, trenching, or excavation. Monitoring of wider augering (in excess of 12 inches in diameter) can be conducted as periodic spot checks, provided spoils are left accessible for the monitor to examine. Monitoring of augering under 12 inches in diameter, of shallow grading (less than 12 inches), or of HDD is not recommended. The Project Paleontologist may alter the frequency or depth of monitoring based on subsurface conditions. In places where artificial fill is present, spot checks may be appropriate to establish the depth of fill in portions of the Project site that are previously disturbed. If the Project Paleontologist assesses that Project-related ground disturbance will not affect the undisturbed Tulare Formation, then no further mitigation is required.

MM PALEO -3. The Project Paleontologist shall review and provide comments on CRC's proposed Worker's Environmental Awareness Program (WEAP) training that communicates requirements and procedures for the inadvertent discovery of fossils during construction, to be taken by the construction crew as an online training prior to the onset of ground disturbance. The final WEAP must be revised, together with the Project Paleontologist's comments, and approved by CEC.

MM PALEO-4. In the event that fossils are encountered during Project activities, work must stop in a safe radius of the find, usually 50 feet, while the paleontological technician documents the fossils. The Project Paleontologist shall assess the fossils. Should the Project Paleontologist assess the fossils as meeting criteria of scientific importance to be considered a paleontological resource, they shall be collected and curated in an accredited repository along with associated data and curation fees.

4.9.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.9.6 Laws, Ordinances, Regulations, and Standards

The LORS discussed in this section were used to evaluate the Project's impacts to paleontological resources during construction and operation and are discussed briefly in previous subsections. A summary of the LORS is presented in Table 45 below.

Table 45 LORs for Paleontological Resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
State			
CEQA, Appendix G	Applicable – Requires assessment of the potential to affect paleontological resources during earthmoving activities	CEC through CEQA equivalent process as lead agency	Sections 4.9.2 and 4.9.3
Local			
Kern County General Plan	Policy 25, which states 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".	**Kern County**	**Sections 4.9.2 and 4.9.3**

4.9.6.1 State LORS

4.9.6.1.1 California Environmental Quality Act

CEQA (PRC Section 21000 et seq) requires that before approving most discretionary projects, the Lead Agency must identify and examine any significant adverse environmental impacts that may result from activities associated with such projects. As updated in 2016, CEQA separates the consideration of paleontological resources from cultural resources (PRC Section 21083.09). The Appendix G checklist (Title 14, Division 6, Chapter 3, CCR 15000 et seq.) requires an answer to the question, "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?"

4.9.6.2 Local LORS

4.9.6.2.1 Kern County

The Kern County General Plan recognizes the importance of paleontological resources in Policy 25, which states 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" (Section 1.10.3, Archaeological, Paleontological, Cultural, and Historical Provisions). This policy includes one implementation measure designed to protect paleontological resources, which states, "in areas of known paleontological resources, the County should address the preservation of these resources where feasible" (Implementation Measure M; Kern County 2009).

4.9.7 References

Bartow, J. A., and T. H. Nilson. 1990. Review of the Great Valley sequence, eastern Diablo Range and northern San Joaquin Valley, central California. U.S. Geological Survey Open-File Report 90-226.

Dibblee, T. W., and J. A. Minch. 2005. Geologic map of the East Elk Hills and Tupman quadrangles, Kern County, California. Dibblee Geological Foundation, Map DF-103, Scale: 1:24,000.

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Orme, D.A., S. A. Graham, R. V. Ingersoll, and T. F. Lawton. 2018. "Four-dimensional model of Cretaceous depositional geometry and sediment flux in the northern Great Valley forearc, California." In Tectonics, Sedimentary Basins, and Provenance: A Celebration of the Career of William R. Dickinson (pp. 409-424). Geological Society of America.

Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the assessment and Mitigation of adverse impacts to paleontological resources. Available at https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf; Accessed on June 19, 2023.

Stantec. 2025i. CalCapture CCS Project, Paleontological Resources Assessment. October 2025.

Woodring, W.P., P. V. Roundy, and H. R. Fransworth. 1932. Geology and oil resources of the. Elk Hills California. Geological Survey, Bulletin 835, p. 1-82.

4.10 Public Health

This section discusses whether the Project would have the potential to cause significant adverse public health impacts or violate standards for public health protection in the Project site. The toxic air contaminants addressed in this analysis are pollutants for which there are no specific ambient air quality standards. Section 4.1, Air Quality / Greenhouse Gas, addresses the pollutants for which there are such ambient air quality standards, known as criteria, air pollutants. See Section 4.6, Hazardous Materials Handling, and Section 4.8, Noise, for additional analyses of human health effects from hazardous materials and noise, respectively.

The information and analysis presented in this section has been partially derived from the Air Quality and Greenhouse Gas Technical Study (Stantec 2025a), the CO_2 Modeling Phase Dispersion Report prepared by DNV Energy USA., which is included as Appendix P (DNV Energy USA Inc. 2025), and the Environmental Justice and Socioeconomics Technical Study Report (Stantec 2025k). Table 46 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 46 Appendix B Information Requirements for an AFC - Public Health

Summary of Requirement	Section
Public Health	
Assessment of potential human health risks from hazardous air emissions using HARP and OEHHA-approved cancer potency and noncancer reference exposure levels	Section 4.10.1
Listing of input data and output results used in the HARP health risk assessment, in electronic and print formats	Section 4.10.1.8
Available health studies from the local public health department related to respiratory illnesses, cancers, or related diseases within a six-mile radius of the project site	Not applicable
Map showing sensitive receptors within the area exposed to hazardous substances identified in (A)	Figure 5
Definitions for this section: (i) Sensitive receptor: infants and children, the elderly, chronically ill, and others more susceptible to exposure effects (ii) Acute exposure: time period less than or equal to one hour (iii) Chronic exposure: greater than twelve percent of a 70-year lifetime	N/A

4.10.1 Environmental Setting

4.10.1.1 Toxic Air Contaminants

CHSC, Section 39655, defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.” In addition, substances which have been listed as HAPs pursuant to 42 USC section 7412 are included as TACs under the state law pursuant to CHSC, section 39657 (b). CARB formally identified federal HAPs as TACs in CCR, Title 17, section 93001 (Office of Environmental Health Hazard Assessment [OEHHA] 2024). TACs, or air toxics, are different from criteria pollutants such as ground-level O_3, $PM_{2.5}$ and PM_{10}, CO, NO_2, SO_2, and Pb. Criteria air pollutants are regulated using NAAQS and CAAQS, as noted above. However, there are no ambient standards for most TACs, therefore, site-specific health risk assessments need to be conducted to evaluate whether risks of exposure to TACs create an adverse impact. Specific TACs have known acute, chronic, and cancer health impacts. CARB has identified TACs in CCR, Title 17, sections 93000 and 93001. The nearly 200 regulated TACs include asbestos, organic, and inorganic chemical compounds and compound categories, diesel exhaust, and certain metals. The requirements of the Air Toxic “Hot Spots” Information and Assessment Act of 1987 (Health and Saf. Code, §44300 et seq.) apply to facilities that emit these listed TACs above regulated threshold quantities. DPM and Asbestos are the TACs of concern associated with the Project. CO_2 is not listed as a TAC.

4.10.1.2 Sensitive Receptors

The SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015), defines sensitive receptors as: people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess TAC impacts on public health. There are no sensitive receptors located immediately adjacent to the project site. The community of Tupman is the nearest residential community to the east and hosts the nearest school of Elk Hills Elementary School (a public school), located approximately 6.7 miles east of the Project. Refer to Figure 6 – Sensitive Receptors Map for the nearest sensitive receptors.

4.10.1.3 Health Effects of TACs

The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. Exposure to TACs can cause serious adverse human health effects, known as injury or illness, including cancer and birth defects. Numerous other health effects also have been linked to exposure to TACs, including heart disease, sudden infant death syndrome, respiratory infections in children, lung cancer, and breast cancer (OEHHA 2015; OEHHA 2024). The primary on-site TAC emission sources for the Project would be diesel engines, including engines powering the vehicles and equipment during construction and operation. Diesel exhaust is a complex mixture of gases and fine particles including over 40 substances listed by the U.S. EPA as HAPs and by CARB as TACs.

DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. It has the ability to induce serious noncancerous effects and a status as a likely human carcinogen. The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the U.S. EPA as "likely to be carcinogenic to humans" (U.S. EPA 2002).

4.10.1.4 Health Effects of CO_2

CO_2 is not classified as a criteria pollutant or TAC, but is regulated as a GHG. CO_2 is a colorless, odorless gas at atmospheric temperatures and pressures. It is a risk to public health because it is heavier than air and may asphyxiate by the displacement of air. Exposure to excessive CO_2 can also cause headache, dizziness, difficulty breathing, and tremors and higher exposure can cause convulsions, coma, and death due to its toxicity or asphyxiation (DNV Energy USA Inc. 2025). The NIOSH has established that concentrations of 40,000 parts per million (ppm) are immediately dangerous to life and health (30 minute exposure time). OSHA has established 30,000 ppm as a short-term exposure level (15 minute exposure time) (OSHA 2025).

4.10.1.5 Health Effects of Naturally Occurring Asbestos

Naturally occurring asbestos may be present at sites with certain geologic conditions. This health hazard may occur at a project site in a geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the USGS map detailing natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the Project site (Van Gosen and Clinkenbeard 2011).

4.10.1.6 Health Effects of Valley Fever

Valley Fever is an infection caused by a fungus that lives in the soil. About 10,000 cases in the United States are reported each year, mostly from Arizona and California. Valley fever can be misdiagnosed because its symptoms are like those of other illnesses. People can get this infection by breathing in fungal spores from the air, especially when the wind blows the soil with the fungal spores into the air or the dirt is moved by human activity. About 40 percent of the people who come into contact with the fungal spores would develop symptoms that may require medical treatment, and the symptoms would not go away on their own. Some people may develop a more severe infection, especially those with compromised immune systems (Centers for Disease Control 2020).

4.10.1.7 Health Effects of CO Hotspots

A CO hotspot refers to a localized area where CO concentrations exceed ambient air quality standards. These hotspots can occur at intersections with high peak-hour traffic volumes. Specifically, CO hotspots

may be created at intersections where traffic levels are high enough to cause local CO concentrations to exceed the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm. The proposed Project would not create a CO hotspot as existing traffic levels on Elk Hills Road are low and project-related vehicle trips would not create congestion on local roadways during construction or operations.

4.10.1.8 Health Risk Assessment

To evaluate the potential health risks posed by construction and operation of the Project, TACs that may be emitted during construction and operation including fugitive dust, naturally occurring asbestos, and DPM are discussed qualitatively. According to CARB, DPM dissipates with distance, especially within 500 feet of the source (CARB 2005). As such, other air districts, including the Bay Area Air Quality Management District (BAAQMD), have determined that health risks should be evaluated 1,000 feet from the property boundary (BAAQMD 2022). Based on the Air Quality/GHG Technical Study report prepared for the proposed Project (Appendix F) a health risk assessment was not necessary.

4.10.2 Impact Analysis

4.10.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether public health impacts are significant. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determination. Would the proposed project:

a) Expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts?

4.10.2.2 Project Impacts

Diesel Particulate Matter

Less than significant with mitigation. CARB states that the concentration of DPM decreases rapidly with distance from the source and has been shown to drop approximately 70 percent within 500 feet of the source (CARB 2005). Due to the relationship between health risk and distance, CARB has released guidance on the recommended buffer distance between sources and sensitive receptors, summarized in Table 1-1 of their *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005). If a sensitive receptor is located within CARB's recommended buffer, then a quantitative health risk assessment should be performed (SJVAPCD 2015). The nearest sensitive receptors are well outside of the buffer areas for all land uses. Additionally, the Project would implement MM AIR-3 and MM AIR-4. MM AIR-4, which would require all diesel-powered construction equipment to be registered through CARB's Portable Equipment Registration Program (PERP) or meet Tier 3 equipment standards. MM AIR-5 would require the use of haul trucks from 2007 or later. Implementation of MM AIR-4 and AIR-5 would further reduce Project



DPM emissions and, therefore, the health impacts from DPM due to Project construction posed to a sensitive receptor would be less than significant with mitigation.

The primary source of TACs during long-term operations would be associated with DPM emissions from heavy-duty diesel truck use. The Project would generate approximately nine monthly truck trips to deliver new amine solvent, to off-haul spent solvent, and other maintenance activities. However, the DPM generated from the Project would be minimal given the limited number of trips, and as discussed above, the nearest sensitive receptors lie approximately 4.97 miles from the Project site. Therefore, Project operation would result in a less than significant health risk exposure from DPM.

Valley Fever

Less than significant with mitigation. Project activities would generate fugitive dust that could contain *C. immitis* spores. However, the Project would be required to comply with SJVAPCD's Regulation VIII, specifically the dust control measures outlined in Rule 8021, 8041, and 8061, see MM AIR-1. These measures would reduce the generation of fugitive dust that may include *C. immitis* spores. For example, Rule 8021, Section 5.3 requires that an owner/operator limit the speed of vehicles travelling on unpaved access roads to 15 mph, which results in a 57 percent reduction in fugitive dust emissions generated from unpaved roadway travel (South Coast Air Quality Management District [SCAQMD] 2007). Rule 8021, Section 6.3 would also require the Project to implement a Dust Control Plan, which would require SJVAPCD review and approval to ensure the dust control measures for Project construction would effectively limit VDE to 20 percent opacity. Finally, the Project would be required to implement a Worker Environmental Awareness Program, see MM AIR-3. This would reduce fugitive dust emissions and the risk of spreading *C. immitis* spores in the soil and reduce impacts to less than significant.

Quantitative Risk Assessment and CO_2 Safety

A quantitative risk assessment (QRA) to evaluate risks to the public will be prepared for the proposed Project and submitted separately to CEC. The QRA will include dispersion modeling and risk assessment of potential CO_2 release scenarios from the CCU and CO_2 pipeline. Risks from potential releases of process fluids within the CCU, including chemicals stored and used in the process, will also be assessed.

The proposed CO_2 pipeline will be located entirely within CRC's operating property; therefore, the pipeline will not be subject to U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations for hazardous liquids pipelines. With the recent passage of Senate Bill 614, the Office of the State Fire Marshal (OSFM) will develop regulations for CO_2 pipelines that are expected to be at least as stringent as the federal 49 CFR Part 195 regulations. CRC will coordinate final pipeline design with the OSFM to ensure compliance with upcoming regulations.

Hazardous Materials

Less than significant with mitigation. Small quantities of hazardous waste may be generated during the construction phase of the Project. Hazardous waste management plans will be in place so the potential for public exposure will be minimal (see Section 4.15, Waste Management). Operational plans (secondary containment, Materials Business Plan, Spill Prevention, Control and Counter-measures Plan) for the proper



management of hazardous materials during operation will reduce the potential impacts to the public. Additionally, no extremely hazardous materials will be used or stored on-site during construction or operation (see Section 4.6, Hazardous Materials). To ensure worker safety during construction, safe work practices will be followed (see Section 4.17, Worker Health and Safety).

Additionally, MMs described in Sections 4.1.4 and 4.6.4 will reduce risk to the public during construction, operation, and decommissioning of the Project.

No level of significance determinations can be made at this time, and are pending completion of the QRA.

4.10.3 Cumulative Impacts

Less than significant with mitigation. The proposed project would be in Kern County in the SJVAB. Past, present, and future development projects contribute to the region's TAC levels on a cumulative basis. Although the region experiences the existing conditions of acute, chronic, and cancer health risks due to TACs attributable to the region's development history, the project site is isolated and unlikely to be affected by the region's other industrial sources of TACs. As discussed in Section 4.1, Air Quality / Greenhouse Gas, for Air Quality cumulative analysis, a radius of six miles is normally used. Beyond six miles there is no statistically significant concentration overlap for nonreactive pollutant concentration between two stationary emission sources. According to Chapter 2.6, Cumulative Projects, the existing, approved, pending and proposed projects of potential sources of toxic air contaminants within six miles include:

- CTV I
- CRC Oil and Gas CUP-Buena Vista
- CRC Oil and Gas CUP-Elk Hills
- Kern County Oil and Gas Ordinance-related development

Past, present, and reasonably foreseeable probable future public health impacts could be attributable to each of the cumulative projects, especially those that involve construction activities or operation and maintenance activities with substantial sources of air pollutants. As discussed in Section 4.1.2, SJVAPCD developed thresholds of significance for air pollutants at levels for which the Project's individual emissions would be cumulatively considerable. If the Project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. As shown in Table 13 and Table 14 in Section 4.1.2, the Project would not exceed SJVAPCD construction or operational emissions of DPM, the primary source of TACs, and would not result in a cumulative impact.

4.10.4 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.10.5 Laws, Ordinances, Regulations, and Standards

Public Health at the proposed Project is governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 47.

Table 47 LORs for Public Health

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Federal Clean Air Act	NAAQS (40 CFR Part 50) PSD (40 CFR Part 52.21) Operating Permits (40 CFR Part 70), Regulatory Attainment Designations	U.S. EPA, SJVAPCD	Project will undergo review for compliance with NAAQS and PSD requirements.
National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61 and 63)	40 CFR Part 61	U.S. EPA, SJVAPCD	Project will undergo review for compliance with NESHAP requirements.
Comprehensive Environmental Response, Compensation and Liability Act/Superfund Amendments and Reauthorization Act	Regulates the clean-up of hazardous waste sites.	DTSC, RWQCB	Project will comply with CERCLA through the implementation of a Soil Management Plan to ensure proper handling and disposal of contaminated soils resulting from DOE-managed Areas of Concern within the Project site.
Emergency Planning and Community Right-to-Know Act	Requires one-time notification if environmental hazardous substances are stored in excess of threshold planning quantities	Kern County Environmental Health Dept.	A HMBP will be prepared for submittal to the Kern County Environmental Health Department, Hazardous Materials Program. Section 4.6.2.2.
Safe Drinking Water Act of 1974	UIC Class VI injection for CO_2 sequestration.	U.S. EPA	Refer to Chapter 2 – Project Introduction.
State			
California Health and Safety Code, Section 3960 et seq.			

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
California Clean Air Act	CAAQS, Regulatory Attainment Designations, Clean Air Plans for APCDs	CARB, SJVAPCD	Addressed in Section 4.1.2
California Health and Safety Code, Section 41700 et seq	Regulates the emission of toxic air contaminants from point sources.	CARB, SJVAPCD	Addressed in Section 4.1.2
California Occupational Safety and Health Act of 1973 –Labor Code Section 6300- 6332	Worker health and safety regulations	CARB, SJVAPCD	Refer to Section 4.17 Worker Health and Safety.
AB 2588: Air Toxic “Hot Spots” Information and Assessment Act of 1987	Regulates the emission of air toxic “hot spots” at roadway intersections.	CARB, SJVAPCD	Addressed in Section 4.1.2
Airborne Toxic Control Measures for Stationary Compression Ignition Engines, Emergency Standby Diesel-Fueled Compression Ignition Engines	Regulates the emission of HAPS from diesel engines	CARB, SJVAPCD	Addressed in Section 4.1.2
Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations	Regulates the emission of asbestos from geologic materials containing naturally-occurring asbestos.	CARB, SJVAPCD	Addressed in Section 4.10.1.6
Senate Bill 614	Requires the Office of the State Fire Marshal to adopt regulations for CO_2 pipelines.	Office of the State Fire Marshal	Regulations have not been developed at this time. The proposed Project would comply with future pipeline requirements as they are promulgated.
Local			
SJVAPCD Rules and Regulations	Requires conformance with Federal Clean Air Act and California Clean Air Act through permitting of new or modified sources.	SJVAPCD	The proposed project would require a Permit to Construct/Permit to

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			Operate from the SJVAPCD.

4.10.5.1 Federal LORS

4.10.5.1.1 Federal Clean Air Act

At the federal level, U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990. The FCAA required U.S. EPA to establish NAAQS and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

4.10.5.1.2 Title 40 Code of Federal Regulations Parts 61 National Emission Standards for Hazardous Air Pollutants

Asbestos is a HAP regulated under the NESHAP Subpart M (40 C.F.R., § 61.140). The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. CAA air toxics regulations specify work practices for asbestos to be followed during demolitions and renovations (40 C.F.R., § 61.145). The regulations require a thorough inspection of the area where the demolition or renovation would occur and advance notification of the appropriate delegated entity. Work practice standards that control asbestos emissions must be implemented, such as removing, wetting, and sealing all asbestos-containing materials in leak-tight containers and disposing of the asbestos-containing waste material as expediently as practicable.

4.10.5.1.3 Title 40 Code of Federal Regulations Parts 63 NESHAP

Stationary reciprocating internal combustion engines, including stationary “spark ignition” engines fired on natural gas, landfill gas, gasoline, or propane, are subject to the RICE NESHAP (40 C.F.R. Part 63, Subpart ZZZZ). This regulation establishes national emission limitations and operating limitations for HAPs, in terms of hydrocarbons and formaldehyde concentrations emitted from stationary combustion engines. This regulation also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. Emergency stationary combustion engines may be operated for up to 50 hours per calendar year in non-emergency situations, and the engine and after-treatment control device (if any) must be operated according to the manufacturer's emission-related written instructions (40 C.F.R., § 63.6625).



4.10.5.1.4 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 (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. 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. CERCLA also enables the revision of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP (40 CFR, 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.

4.10.5.1.5 Emergency Planning and Community Right-to-Know Act

Under the Emergency Planning and Community Right-to-Know Act, or Title III of the SARA, the U.S. EPA requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments or public health departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on site and the location of these materials.

4.10.5.1.6 The Safe Drinking Water Act of 1974

The Safe Drinking Water Act (SDWA) regulates the amount of toxic substances in drinking water sources. The SDWA requires the U.S. EPA to develop minimum federal requirements for UIC programs and other safeguards to protect public health by preventing injection wells from contaminating an underground source of drinking water (USDW).

4.10.5.2 State LORS

4.10.5.2.1 California State Health and Safety Code, Sections 39650 et seq

These sections mandated the CARB and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies. They also required that the New Source Review rule for the permitting of new and modified stationary sources of air pollution in each air pollution control district include regulations that require procedures for controlling the emission of toxic air contaminants.

4.10.5.2.2 California State Health and Safety Code, Section 41700

This section states that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable

number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

4.10.5.2.3 California Occupational Safety and Health Act of 1973 –Labor Code Section 6300- 6332

Cal/OSHA is responsible for developing and enforcing the workplace safety regulations in Title 8 CCR. This includes ensuring worker safety in the handling and use of chemicals in the workplace. Cal/OSHA hazardous materials regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA requires businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. Cal/OSHA also enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances. The hazard communication program also requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented. Workers must be informed of the hazards associated with the materials they handle and manufacturers are required to label containers and provide worker training.

4.10.5.2.4 AB 2588: Air Toxic "Hot Spots" Information and Assessment Act of 1987

The Air Toxic "Hot Spots" Information and Assessment Act of 1987 (AB 2588 [Connelly, Statutes of 1987], and codified as CHSC, § 44300 and the following), identifies TAC hot spots where emissions from specific stationary sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Many TACs are also classified as HAPs. AB 2588 requires that a business or other establishment identified as a significant stationary source of toxic emissions provide the affected population with information about the health risks posed by their emissions.

4.10.5.2.5 Airborne Toxic Control Measures for Stationary Compression Ignition Engines, Emergency Standby Diesel-Fueled Compression Ignition Engines

Statewide regulations govern the use of and emissions performance standards for emergency standby diesel-fueled engines, including those of the project. As defined in regulation (Cal. Code Regs., tit. 17, §93115.4(a)(29)), an emergency standby engine is, among other possible use, one that provides electrical power during an emergency use and is not the source of primary power at the CCU and is not operated to supply power to the electric grid. The corresponding Airborne Toxic Control Measures (ATCM) (Cal. Code Regs., tit. 17, § 93115.6) restricts each emergency standby engine to operate no more than 50 hours per year for maintenance and testing purposes. The ATCM establishes no limit on engine operation for emergency use or for emission testing to show compliance with the ATCM's standards.

4.10.5.2.6 Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations

CARB has adopted the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities (Cal. Code Regs., tit.17 § 93105). The Asbestos ATCM applies to any project that would include sites to be disturbed in a geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the USGS map detailing natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the project site (Van Gosen and Clinkenbeard 2011).

4.10.5.3 Local LORS

4.10.5.3.1 San Joaquin Valley Air Pollution Control District Rules and Regulations

SJVAPCD rules and regulations that may apply to the Project include, but are not limited to, the following:

- **Rule 2201–New and Modified Stationary Source Review Rule.** The purpose of this rule is to provide for the following:
    - The review of new and modified Stationary Sources of air pollution and to provide 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; and
    - No net increase in emissions above specified thresholds from new and modified Stationary Sources of all non-attainment pollutants and their precursors.
- **Rule 3135—Dust Control Plan Fee.** This rule sets fees to cover SJVAPCD review of Dust Control Plans and inspections.
- **Rule 4002–National Emission Standards for Hazardous Air Pollutants.** This rule incorporates the National Emission Standards for HAPs from Part 61, Chapter I, Subchapter C, Title 40 CFR and the National Emission Standards for HAPs for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, CFR.
- **Rule 4101—Visible Emissions.** This rule prohibits the emissions of visible air contaminants into the atmosphere.
- **Rule 4102–Nuisance.** The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 4601–Architectural Coatings.** The purpose of this rule is to limit VOC emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.



- **Rule 4641–Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** Limits VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations and applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.
- **Rule 8011—General Requirements.** Fugitive Dust Emission Sources. Fugitive dust regulations are applicable to outdoor fugitive dust sources. Operations, including construction operations, must control fugitive dust emissions in accordance with SJVAPCD Regulation VIII. According to Rule 8011, the SJVAPCD requires the implementation of control measures for fugitive dust emission sources. For projects in which construction-related activities would disturb equal to or greater than one acre of surface area, the SJVAPCD recommends that demonstration of receipt of an SJVAPCD-approved Dust Control Plan or Construction Notification Form, before issuance of the first grading permit, be made a condition of approval.
- **Rule 9510–Indirect Source Review.** Requires certain development projects to mitigate exhaust emissions from construction equipment greater than 50 horsepower to 20 percent below statewide average NO_x emissions and 45 percent below statewide average PM_{10} exhaust emissions. This rule also requires applicants to reduce baseline emissions of NO_x and PM_{10} emissions associated with operations by 33.3 percent and 50 percent respectively over a period of 10 years.
- **Regulation VIII–Fugitive PM_{10} Prohibitions.** Rules 8011-8081 are designed to reduce PM_{10} emissions (e.g., dust or dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

4.10.5.3.2 Kern County Multi-Hazard Mitigation Plan

The purpose of the multi-hazard mitigation plan is to reduce or eliminate the long-term risk to people and property from natural hazards and their effects in the County. The 2019-20 Update to the Plan is to help Kern County become less vulnerable to losses from future disasters. The multijurisdictional plan includes the County and the incorporated municipalities of Arvin, Bakersfield, California City, Delano, Maricopa, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The County also encompasses areas of land controlled by federal and State land management agencies, including CAL FIRE, Bureau of Land Management, and Bureau of Reclamation. While other levels of government have jurisdiction in these parts of the County, the Hazard Mitigation Plan could also be used to document and coordinate mitigation efforts among federal, State, and local jurisdictions. This plan also covers 49 special districts that include school, airport, community service, water, recreation and park, sanitation, and other districts.

4.10.6 References

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4.11 Socioeconomic – Environmental Justice

The information and analysis presented in this section has been derived from the Environmental Justice and Socioeconomics Technical Study Report prepared for the Project and included as Appendix Q (Stantec 2025k). Certain economic data are confidential, as they could provide a potential competitive advantage to other CCS developers. No estimation of construction and operational payroll estimates, expenditures for locally purchased materials, and sales tax and property taxes generated during an operational year are available. Operational costs, such as operational expenditures for locally purchased materials, are projected to increase with inflation over the life of the Project. Table 48 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 48 Appendix B Information Requirements for an AFC – Socioeconomics

Summary of Requirement	Section
Socioeconomics	
Describe the current economic and social context of the project area and region. (i) local economic base, fiscal resources, and a list of taxing agencies with their current and projected revenues. (ii) population demographics and community trends. (iii) current and projected unemployment rates. (iv) Availability of skilled labor by occupation for both construction and operation phases. (v) temporary and permanent housing options, including current vacancy rates. (vi) capacities, service standards, usage levels, and planned expansions for utilities and public services such as fire, police, medical, schools, parks, and libraries.	Section 4.11.1
Analyze the impacts of construction and operation on the local economy and community. (i) Monthly construction workforce estimates by occupation and annual estimates for permanent operations staff (ii) Percentage of non-local workers expected to relocate for the project (iii) Direct and indirect population increases due to the project (iv) Impact of population growth on housing during construction and operation (v) Impacts on utilities and public services, including response times and ability to meet service standards for non-metropolitan areas, school enrollment changes and facility/staffing impacts by district (vi) School impact fees (vii) Total construction payroll and separate estimates for permanent and contract operations staff (viii) Expenditures on locally sourced materials during construction and operation (ix) Capital cost of plant and equipment (x) Sales taxes generated during construction and annually during operation	Section 4.11.2.2

Summary of Requirement	Section
(xi) Property taxes generated annually during operation (xii) Direct, indirect, and induced income and employment effects from the project (xiii) Impacts that disproportionately affect environmental justice populations across technical areas	

4.11.1 Environmental Setting

4.11.1.1 Subject Background

California law defines Environmental Justice (EJ) as, “the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies” (Gov. Code, § 65040.12(e)(1) Pub. Resources Code, §§ 71110-71118). EJ populations are also referred to as disadvantaged communities by the California Communities Environmental Health Screening Tool (CalEnviroScreen) (CalEPA 2022). The U.S. EPA defines EJ as, “the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.”

4.11.1.2 U.S. Census Bureau

To consider EJ concerns, CEC has historically used a 6-mile radius surrounding the Project site based on the potential distance of air pollution emissions. The distance was retained due to the rural nature of the area with few residences close by and the expansive size of the Project site. The Project itself is within Census Tract 33.04 and the surrounding 6-mile radius also includes Census Tract 66 and Census Tract 34. Table 49 details U.S. Census data taken from the 2023 American Community Survey 5-Year Estimates for the Census Tract.

Table 49 Demographic Information of Project Site

Demographic Category	Census Tract 33.04	Census Tract 34	Census Tract 66	Kern County
Total Population	2,508	4,310	4,781	910,433
Socioeconomic				
Percent Low Income	19.6%	33.0%	17.4%	17.8%
Existing Unemployment	12.4%	18.5%	7.8%	8.4%
Race				
Total Minority	46.5%	53.3%	74.6%	69.3%
Black or African American alone	2.8%	0.0%	0.5%	4.8%
American Indian and Alaska Native alone	0.0%	0.6%	0.0%	0.3%
Asian alone	0.5%	0.7%	0.0%	4.9%
Native Hawaiian and Other Pacific Islander alone	0.3%	0.2%	0.0%	0.1%
Some other race alone	0.0%	0.0%	0.3%	0.5%
Two or more races:	5.7%	0.4%	2.8%	3.0%
Hispanic or Latino:	37.2%	51.5%	71.1%	55.7%
White alone	53.5%	46.7%	25.4%	30.7%

Source: U.S. Census Bureau 2023.

According to the Federal Reserve's Federal Open Market Committee meeting held in March 2025, Federal Reserve Board members and Federal Reserve Bank presidents, projected the unemployment rate to be 4.3 percent in 2026 and 4.2 percent for the longer run (Federal Reserve 2025). The main occupations (skilled workers) relating to the Project in Kern County are displayed in Table 50 below.

Table 50 *Skilled Workers by Occupation in Kern County*

Occupation for Civilian Employed Population	Number of Skilled Workers
Natural resources, construction, and maintenance occupations	64,954
Production, transportation, and material moving occupations	55,463

Source: U.S. Census Bureau 2023 Table S2401

4.11.1.3 CalEnviroScreen 4.0

CalEnviroScreen 4.0 is a science-based mapping tool used by CalEPA's OEHHA to identify disadvantaged communities pursuant to SB 535 (OEHHA 2021). The CalEnviroScreen model uses U.S. Census Bureau tract data (listed above) for identifying disadvantaged communities within California. For each Census Tract, CalEnviroScreen calculates a percentile. A higher percentile indicates a higher potential relative

burden (OEHHA 2021). Census Tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0 are considered disadvantaged (CalEPA 2022). Table 51 presents the CalEnviroScreen overall scores for the identified disadvantaged community within a 6-mile radius of the Project site.

Table 51 *CalEnviroScreen 4.0 Scores for Disadvantaged Communities*

Census Tract No.	Total Population	CalEnviroScreen 4.0 Percentile	Pollution Burden Percentile	Population Characteristics Percentile
33.04	3,358	**81**	**96**	56
34	4,762	**79**	47	**94**
66	3,415	**96**	**96**	**84**

Source: OEHHA 2021

Table 52 presents the CalEnviroScreen percentiles for the indicators that make up the pollution burden percentile within 6-mile radius of the Project site. Table 53 presents the percentiles for the indicators that make up the population characteristics.

Table 52 CalEnviroScreen Indictor Percentiles for Pollution Burden for Disadvantaged Communities

Census Tract No.	Ozone	$PM_{2.5}$	DPM	Pesticides	Toxic Releases	Traffic	Drinking Water	Lead	Cleanup Sites	Groundwater Threats	Hazardous Waste	Impaired Water Bodies	Solid Waste
33.04	**75**	57	9	**88**	**91**	3	**93**	57	**86**	**95**	**97**	0	**99**
34	**89**	**92**	16	60	5	0	62	**93**	17	7	22	0	55
66	**80**	**94**	15	**91**	68	7	**97**	65	43	66	**94**	44	**85**

Table 53 CalEnviroScreen Scores for Indicator Percentiles for Population Characteristics for Disadvantaged Communities

Census Tract No.	Asthma	Low Birth Weight	Cardiovascular Disease	Education	Linguistic Isolation	Poverty	Unemployment	Housing Burden
33.04	18	62	58	**76**	58	70	**88**	17
34	39	**92**	**95**	**86**	**93**	**99**	**94**	62
66	49	73	**78**	**80**	**83**	**86**	**89**	58

4.11.1.4 Public Services

The Project site is served by the Kern County Sheriff's Department for law enforcement and public safety services, with the closest station being the Kern County Sheriff's Station, located 8.5 miles south of the Project site at 315 N. Lincoln Street in the City of Taft. Fire protection and emergency medical services are provided by the KCFD, with the closest station being Kern County Fire Station 23, located approximately 8.0 miles southwest Project site at 100 Broadway in the community of Fellows. The nearest school is Elk Hills Elementary School located approximately 6.7 miles east within the community of Tupman. The nearest public recreational facility is Valley Acres Park, located approximately 6.1 miles southeast within the community of Valley Acres.

4.11.1.5 Socioeconomic Information

As described in the Front-End Engineering Design Study for Retrofit Post-Combustion Carbon Capture on a Natural Gas Combined Cycle Power Plant Final Report, the construction of the Project is initially estimated to cost $748 million (2020 estimate) (Electric Power Research Institute 2022). The U.S. Bureau of Labor Statics was utilized to factor in 2025 inflation for the Report's results. The construction of the Project is now estimated to cost $935 million. Further details on the scope breakdown of each of the systems are described below:

- CO_2 Capture Plant - $484 million
- Utility Systems - $334 million
- CO_2 Compression - $76 million
- Balance of Plant - $41 million

As described in the Construction and Contracting Strategy, CRC has committed to a local, union-only construction labor posture with the Kern, Inyo, Mono Counties Building and Construction Trades Council (Fluor 2025). Union-only labor excludes construction monitoring by biological resources, archaeological resources, paleontological resources, and tribal cultural resources professionals; and any work conducted by geotechnical specialists, air quality specialists, miscellaneous surveyors, and CRC employees. The Project will also require full-time construction management staff from field mobilization to mechanical completion (Fluor 2025). Based on CRC's current labor agreements, the average labor rate for construction of the Project would be $90.79 per hour, or $113.37 adjusted for 2025 (Electric Power Research Institute 2022).

4.11.2 Impact Analysis

4.11.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether population and housing impacts are

significant. Following the guidance that the questions are “intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance” the discussion focuses on characterizing the economic and social changes that would result from the Project, both potentially beneficial and adverse. Additional detailed analysis is presented in the Environmental Justice and Socioeconomics Technical Study Report where relevant to support the impact summary provided below.

Would the proposed project:

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)?

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

c) 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:

    a. Fire protection?

    b. Police protection?

    c. Schools?

    d. Parks?

    e. Other public facilities?

d) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

e) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

f) 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?

4.11.2.2 Impact Assessment

Less than significant with mitigation. Given that CRC has committed to local, union-only labor posture for the Project from the Kern, Inyo, Mono Counties Building and Construction Trades Council, and discussions with trade union representatives, the majority of delivery and worker trips are assumed to travel



from Bakersfield, approximately 34 miles from the site (Fluor 2025). Due to the local source of labor, no shortage of housing is anticipated for the construction duration (Fluor 2025). Temporary housing and permanent housing would not be necessary for the Project. Thus, construction and operation of the Project would not induce substantial unplanned population growth in the Project site or greater area, either directly or indirectly, and the Project would have no impact.

Construction and operation of the Project would not displace substantial numbers of existing people or housing because there are no residences within the EHOF nor within 4.7 miles of the Project. Thus, the Project would have no impact.

After construction, the Project will provide the following potential direct economic benefits through revenue to the Kern County General Fund (which includes school impact fees) and County service providers, which will benefit all of Kern County. According to the Kern High School District, Statutory School Facility Fees (Government Code Section 66006(b)(1)(B)) determined school impact fees (referred to as development fees) to be $0.84 per square foot of industrial development (Kern High School District 2024). However, given the small number of employees and temporary duration of work (i.e., construction), schools are unlikely to be impacted by the Project.

CRC has already committed to the following payments to Kern County through the CTV I project:

- $59.7 million of total revenue from all Cumulative Impact Oil and Gas Reservoir Pore Space Charge over 25 years of injection;
- $280,000 a year ($7 million total) for the KCFD for CO_2 training, equipment, and operation of the ReadyKern Emergency Notification program; and
- $8.5 million in a one-time sales tax payment for all Project equipment and related other oilfield expenses.

In addition, it is unlikely the personnel associated with the Project would utilize Valley Acres Park (the nearest public recreational facility located approximately 6.1 miles southeast of the Project) or other nearby existing parks and recreational facilities. Thus, the Project would have no impact on parks.

Given the small number of employees, temporary duration of work, and lack of housing in the immediate vicinity, no impacts to schools are anticipated.

4.11.3 Cumulative Impacts

Less than significant with mitigation. Cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the Project (PRC Section 21083; Title 14, CCR, Sections 15064[h], 15065[c], 15130, and 15355).

The Project, when considered with the other proposed projects (listed in Section 2.6) within 15 miles of the Project and in the same timeframe, would not lead to substantial unplanned population growth through

extension of roads or other public infrastructure. Other kinds of cumulative socioeconomic impacts are also unlikely because the Project's effects on housing, schools, and public services will be negligible. Consistent with CEQA Guidelines, the Projects is be determined to have a less than significant individual and cumulative impact for EJ.

4.11.4 Mitigation Measures

The following MM is proposed for the Project to reduce population and housing impacts (and public services impacts) to less than significant.

SOC-1: The Project proponent/operator shall work with Kern County to determine how the use of sales and use taxes from construction of the Project can be maximized. This process shall include, but is not necessarily limited to, the Project proponent/operator 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. As an alternative to the aforementioned process, the Project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the number of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The Project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.

4.11.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.11.6 Laws, Ordinances, Regulations, and Standards

Socioeconomic and Environmental Justice impacts at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 54.

Table 54 LORs for Socioeconomics and Environmental Justice

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
State			
Senate Bill 535	Mandates that a significant portion of California's Cap-and-Trade Program funds be directed toward communities most affected by pollution and socioeconomic challenges	CalEPA	Applies to Cap and Trade Program

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Local			
General Plan Policy 3.	The land areas best suited for industrial activity by virtue of their location and other criteria will be protected from residential and other incompatible development.	Kern County Planning and Natural Resources Dept.	**Yes.** No residential development is adjacent to the Project site parcels. As described in the Project Description, Section 1.3, the Project site comprises seven privately owned (CRC) parcels and the Project's CCU would be located immediately south of the EHPP on an existing disturbed area.
General Plan Policy 5.	Provide for the clustering of new industrial development adjacent to existing industrial uses and along major transportation corridors.	Kern County Planning and Natural Resources Dept.	**Yes.** The new industrial development will be adjacent to existing industrial uses and no major transportation corridors occur within or adjunct to the Project site parcels. As described in the Project Description, Section 1.1, the Project site comprises six privately owned (CRC) parcels and the Project's CCU would be located immediately south of the EHPP on existing disturbed area.

4.11.6.1 Federal LORS

4.11.6.1.1 Former Executive Order 12898

The 1994 EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, focused federal attention on the environment and human health conditions of minority communities and calls on federal agencies to achieve environmental justice as part of their mission. The EO required U.S. EPA and all other federal agencies (as well as state agencies receiving federal funds, such as CEC) to develop strategies to address this issue. The agencies were required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations. However, the EO was rescinded on January 20, 2025, pursuant to EO 14173 (Exec. No. 14173 2025).

4.11.6.2 State LORS

4.11.6.2.1 Senate Bill 535

SB 535 enacted in 2012, mandates that a significant portion of California's Cap-and-Trade Program funds be directed toward communities most affected by pollution and socioeconomic challenges. Specifically, the law requires that at least 25% of these funds benefit Disadvantaged Communities, with a minimum of 10% allocated to projects located directly within those areas. These communities are identified using CalEnviroScreen 4.0, a tool developed by CalEPA that evaluates environmental and health burdens across census tracts.

4.11.6.2.2 California Environmental Quality Act

CEQA does not include provisions for EJ specifically, but there is a legislative mandate that CEQA determinations of significance consider whether a project would "cause substantial adverse effects on human beings, whether directly or indirectly" (CEQA Section 21083[b][3]).

4.11.6.2.3 Justice Access Equity Diversity Inclusion Framework

CEC implements EJ evaluation in its siting process through its Justice Access Equity Diversity Inclusion Framework (JAEDI) (CEC 2023). To address EJ evaluation and protections, CEC partnered with the CNRA to develop the JAEDI in 2023. As a part of that process, CEC and CNRA defined Energy Justice as "the goal of achieving equity in both the social and economic participation in the energy system, while also remediating social, economic, and health burdens on marginalized communities. Energy justice explicitly centers the concerns of Tribes and Justice Communities and aims to make energy more accessible, affordable, and clean, and democratic for all communities" (CEC 2023). Marginalized communities are commonly identified as those where residents are predominantly minorities or live below the poverty level; where residents have been excluded from the environmental policy setting or decision-making process; where they are subject to a disproportionate impact from one or more environmental hazards; and where residents experience disparate implementation of environmental regulations, requirements, practices, and activities in their communities. EJ and Energy Justice efforts attempt to address the inequities of environmental protection in these communities.

4.11.6.2.4 San Joaquin Valley Air Basin Community Health Programs

The Project site is located within the SJVAB. The statewide Community Air Protection Program requires CARB to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health and to take measures to protect communities disproportionally impacted by air pollution. CARB is required to select the highest priority locations in the state for the deployment of community air monitoring systems and select locations around the state for the preparation of community emissions reduction programs. CARB's governing board has selected 19 communities (AB 617 communities) for a community emissions reduction program (CARB 2023). The Project site (and the 6-mile radius) is not located in an AB 617 community or a "consistently nominated" community.



4.11.6.3 Local LORS

4.11.6.3.1 Kern County General Plan

In California, SB 1000 was enacted to require local governments with disadvantaged communities, as defined in statute, to incorporate EJ into their general plans when two or more general plan elements (sections) are updated. The existing Kern County General Plan does not include an EJ or Socioeconomic element that identifies the locations of EJ communities throughout Kern County. In 2017, Kern County initiated the process on the Kern County General Plan Update for 2040 (Kern County 2020). As part of that process, the 2040 General Plan will include an EJ analysis, and Kern County intends to use the option of incorporating EJ policies throughout the General Plan. The current Kern County General Plan has a Land Use, Open Space, and Conservation Element, which includes policies that could be applied to EJ and socioeconomics (i.e., industrial uses near residences).

4.11.7 References

Electric Power Research Institute. 2022. Front-End Engineering Design Study for Retrofit Post-Combustion Carbon Capture on a Natural Gas Combined Cycle Power Plant Final Report. U.S. Department of Energy National Energy Technology Laboratory.

Fluor. 2025. CalCapture Project Construction and Contracting Strategy. Document No. EH-35R-CCU1-EXE-500-00001. California Resources Corporation.

Kern County Assessor Recorder. 2025. Assessor Property Search. Accessed July 2025. Available at: https://www.kerncounty.com/government/departments/assessor-recorder/property/assessor-property-search.

Stantec. 2025k. CalCapture CCS Project, Socioeconomics Technical Study Report. October 2025.

4.12 Soils

This section describes the potential impacts of Project construction and operation on surficial soil resources within and surrounding the Project site. Table 55 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 55 Appendix B Information Requirements for an AFC – Soils

Summary of Requirement	Section
Soils	
A map at a scale of 1:24,000 and written description of soil types and all agricultural land uses that will be affected by the proposed project.	Section 4.7
An assessment of the effects of the proposed project on soil resources and agricultural land uses	Section 4.7.2.2

4.12.1 Environmental Setting

The Project site is located within the EHOF in western Kern County, a region with a long history of oil and gas development. The majority of the Project would be sited on previously disturbed land. Soil-disturbing activities are anticipated to include grading, trenching, pile driving, HDD drilling, and augering for the installation of pipe supports and power poles. Grading activities are anticipated at the CCU and overflow parking area, involving an estimated 60,500 cubic yards of cut and 12,700 cubic yards of fill. An additional 1,490 cubic yards of grading would be required for construction of a new perimeter access road around the CCU.

Some limited grading would also be required, where needed, for installation of the CO_2 pipeline, and steam, water, and wastewater pipelines. Underground segments of the CO_2 pipeline would be installed in trenches approximately five feet deep and between two and five feet wide. Aboveground segments would be supported by prefabricated pipe supports installed in drilled holes approximately six feet deep and spaced at regular intervals. Steam, water, and wastewater pipelines would be located along existing pipeline corridors on existing raised pipe supports. Installation of new power poles for the 115-kV transmission line, spaced approximately every 400 feet along a 4,420-foot alignment, would require pole embedment depths of approximately six to eight feet.

The Project site is relatively flat and is located in an area with minimal slope to the west. No historical landslides or creep has been observed in the area where the Project site is located (SEI 2025). The Project site was previously graded for an oil and gas production facility and is relatively flat and is located in an area with minimal slope to the west. Permanent slopes steeper than 5:1 (horizontal to vertical) or higher than 5 feet are not anticipated to be constructed or built upon for the Project.

A description of surficial soils within the Project site was developed using the NRCS Web Soil Survey for Kern County, California, Northwestern Part and Southwestern Part (NRCS 2025a). Table 56 summarizes

the NRCS soil map units identified within the Project boundaries, including information on soil depth, texture, drainage, permeability, runoff potential, and other relevant characteristics. Soil unit descriptions were derived from the Web Soil Survey soil survey information and the NRCS Official Soil Series Descriptions database (NRCS 2025b).

Table 56 NRCS Soil Map Unit Descriptions (Surficial Soils)

Map Unit Symbol	Map Unit Name
146	Elkhills sandy loam, 9 to 50 percent slopes, eroded
150	**Elkhills-Torriorthents stratified complex, 9 to 15 percent slopes**
Soil Characteristics	
Landform:	Erosion remnants on terraces, valleys
Parent Material:	Alluvium derived from igneous and sedimentary rock
Typical Profile:	Gravelly sandy loam over stratified gravelly sand to silt loam
Depths:	Over 80 inches to water table and restrictive feature
Drainage:	Well-drained
Permeability:	High
Run-off class:	Medium (146) Low (150)
Shrink-swell potential:	Low
Capability class:	None specified (irrigated); 7e (non-irrigated)
Taxonomic class:	Coarse-loamy, mixed, superactive, calcareous, thermic Typic Torriorthents
Hydric:	This soil does not meet hydric criteria
176	Kimberlina sandy loam, 5 to 9 percent slopes
Soil Characteristics	
Landform:	Alluvial fans, valleys
Parent Material:	Alluvium derived from igneous and sedimentary rock
Typical Profile:	Sandy loam over fine sandy loam over stratified silt loam to sandy clay loam
Depths:	Over 80 inches to water table and restrictive feature
Drainage:	Well-drained
Permeability:	Moderately high
Run-off class:	Low
Shrink-swell potential:	Low
Capability class:	3e (irrigated); 7e (non-irrigated)
Taxonomic class:	Coarse-loamy, mixed, superactive, calcareous, thermic Typic Torriorthents

Map Unit Symbol	Map Unit Name
146	Elkhills sandy loam, 9 to 50 percent slopes, eroded
150	**Elkhills-Torriorthents stratified complex, 9 to 15 percent slopes**
Soil Characteristics	
217	Kimberlina-Urban land complex, 0 to 5 percent slopes
Soil Characteristics	
Landform:	Fan skirts, valleys
Parent Material:	Alluvium derived from sandstone and shale
Typical Profile:	Sandy loam
Depths:	Over 80 inches to water table and restrictive feature
Drainage:	Well-drained
Permeability:	Moderately high.
Run-off class:	Low
Shrink-swell potential:	Low
Capability class:	2e (irrigated); 7e (non-irrigated)
Taxonomic class:	Coarse-loamy, mixed, superactive, calcareous, thermic Typic Torriorthents
Hydric:	This soil does not meet hydric criteria
729	Sodic Haplocambids, thick-Torriorthents, thin-Torriorthents, very thin, eroded, complex, 30 to 60 percent slopes
733	Sodic Haplocambids, thick-Torriorthents, thin, complex, 15 to 30 percent slopes
735	Sodic Haplocambids, thick-Elkhills-Torriorthents, thin, complex, 30 to 60 percent slopes
Soil Characteristics	
Landform:	Hills, hillslopes
Parent Material:	Alluvium derived from sedimentary rock and/or granitoid rock.
Typical Profile:	Loam underlain sequentially by silt loam, find sandy loam, silty clay, and sandy clay loam
Depths:	Over 80 inches to water table and restrictive feature
Drainage:	Well-drained
Permeability:	Very low to moderately low (729) Low to moderately low (733) Low to high (735)
Run-off class:	Very high
Shrink-swell potential:	Moderate (729, 733) Low to moderate (735)

Map Unit Symbol	Map Unit Name
146	Elkhills sandy loam, 9 to 50 percent slopes, eroded
150	**Elkhills-Torriorthents stratified complex, 9 to 15 percent slopes**
Soil Characteristics	
Capability class:	None specified (irrigated); 7e (non-irrigated)
Taxonomic class:	Not applicable
Hydric:	This soil does not meet hydric criteria
Hydric:	This soil does not meet hydric criteria

Geotechnical investigations were conducted by SEI in November 2023 and July 2024 for the CRC CTV I project, which partially overlaps the southern portion of the Project site. Given the proximity and partial overlap with the CRC CTV I project, the findings from these investigations may provide insight into potential subsurface conditions at the Project site. Subsurface soils encountered in the November 2023 investigation consisted mostly of stiff medium plasticity clays and medium dense to very dense sands in the upper 14 feet, underlain by hard medium plasticity clays (SEI 2025). The July 2024 investigation consisted predominately of very stiff to hard low to high plasticity clays, very stiff to hard silts, and loose to dense sands in the upper 10 feet, with medium dense to very dense sands below 10 feet (SEI 2025). The investigations concluded that near-surface soils should provide adequate support for structures, provided the recommendations in the geotechnical report are followed (SEI 2025). Groundwater was not encountered during either investigation. According to groundwater maps prepared by the Department of Water Resources and presented on the SGMA Data Viewer, the depth to water in an unconfined aquifer was approximately 165 feet in spring 2023. Based on these observations, the geotechnical report concluded that groundwater does not appear to be an issue at the Project site (SEI 2025).

4.12.2 Impact Analysis

4.12.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether soils and wetlands impacts are significant. Would the proposed project:

Agriculture and Forestry Resources

- Involve other changes in the existing environment which, because of their location or nature, could result in the conversion of farmland to nonagricultural use?

Biological Resources

- Have a substantial adverse effect on state or federally protected wetlands?

Geology and Soils

- Result in substantial soil erosion or the loss of topsoil?
- Be located on expansive soil, as defined in Table 18-1-B of the UBC (International Code Council 1994), creating substantial direct or indirect risks to life or property?

The following subsections describe the anticipated environmental impacts on agricultural production and soils during project construction and operation.

4.12.2.2 Farmland Conversion

Less than significant. The Project would be developed on land currently used for, and historically associated with, oil and gas exploration and production. The site is not classified by the DOC as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, and no parcels within the site are subject to a Williamson Act Contract. The land capability classification of the surficial soils within the Project site is Class 7e under non-irrigated conditions. The land capability classification system indicates the general suitability of soils for most types of field crops. Class 7 soils have severe limitations that make them unsuitable for cultivation, and the “e” subclass signifies that erosion is the primary limiting factor (USDA 2014). Therefore, construction and operation of the Project would not result in the conversion of designated agricultural lands to non-agricultural uses.

4.12.2.3 Jurisdictional Wetlands

Less than significant. Based on an aquatic delineation performed by Stantec in February and June 2025, the Project site does not contain any potentially jurisdictional aquatic features. However, the Aquatic Study Area (defined as the Project site and a 50-foot survey buffer) contains three aquatic features, all ephemeral streams, that would fall under potential RWQCB and CDFW jurisdiction as Waters of the State (Stantec 2025b). Full avoidance of the potentially jurisdictional features during Project construction is anticipated. If complete avoidance cannot be achieved, it will be necessary to obtain regulatory permits including a general WDR Permit from the RWQCB and a LSAA from CDFW.

4.12.2.4 Erosion

Less than significant with mitigation. The predominantly fine-grained soils underlying the Project site are potentially susceptible to erosion or the loss of topsoil due to surface water flows and wind-driven movement. The risk for erosion due to water and wind would be greater when soils are disturbed, when existing vegetation is removed, and in areas of steeper slopes if not protected with erosion and sediment control BMPs. The on-site soils have a low to medium runoff potential (the potential for water to runoff into drainage channels vs. infiltrate directly into the soil) and soils within the staging/laydown yard have a runoff potential ranging from low to very high. The erosion potential for each on-site soil was also determined using the K-Factor (Table 57). The soil-erodibility factor (K) represents: (1) the susceptibility of soil or surface material to erosion, (2) the transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. A higher K value indicates a soil is more prone to erosion, with low K values ranging from about 0.05 to 0.20 and moderate K values from about 0.25 to 0.45.



Table 57 Erosive Potential for Soils Mapped on the Project Site

Soil Type	Runoff Class	Erosion Potential (K-Factor)
146—Elkhills sandy loam, 9 to 50 percent slopes, eroded	Medium	0.17
150—Elkhills-Torriorthents stratified complex, 9 to 15 percent slopes	Low	0.17
176—Kimberlina sandy loam, 5 to 9 percent slopes	Low	0.24
217— Kimberlina-Urban land complex, 0 to 5 percent slopes	Low	0.24
729—Sodic Haplocambids, thick-Torriorthents, thin-Torriorthents, very thin, eroded, complex, 30 to 60 percent slopes	Very high	0.43
733—Sodic Haplocambids, thick-Torriorthents, thin, complex, 15 to 30 percent slopes	Very high	0.43
735—Sodic Haplocambids, thick-Elkhills-Torriorthents, thin, complex, 30 to 60 percent slopes	Very high	0.43
Source: NRCS 2025		

For the duration of construction, BMPs will be implemented following a SWPPP that will be prepared for the Project. Additionally, as required by the SJVAPCD, a site Dust Control Plan would be prepared and implemented throughout construction of the Project. With implementation of the BMPs in the SWPPP and Dust Control Plan and MMs; it is anticipated that impacts related to water and wind erosion of soil would be mitigated to less than significant.

4.12.2.5 Expansive Soils

Less than significant with mitigation. Soil borings collected at the Project site in 2020 showed low to moderately expansive surface soils. In addition, multiple consolidation tests were conducted on the top 6-inches of samples. The results indicated that there was a low to moderate consolidation potential, ranging from -0.1 to -2.9 percent (SEI 2020). Five soil borings advanced at the Project site in November 2023 were laboratory tested to determine EI. Per the ASTM International D4829 standard for EI of Soils, soils are considered to be expansive when the EI result is greater than 20. The soil bearings had EI values of 5, 11, and 10, which indicates a very low expansion potential (SEI 2023). Additionally, shrink-swell potential ratings defined by the NRCS for soils mapped within the Project site are generally low, suggesting that expansive soils are unlikely to present significant issues. While the Sodic Haplocambids soils (Map Units 729, 733, and 735) exhibit low to moderate shrink-swell potential, these soils occur in areas designated for temporary uses such as parking, staging, and office trailers, where extensive ground disturbance is not anticipated. Therefore, impacts related to expansive soils would be less than significant.

4.12.3 Cumulative Impacts

Less than significant. A cumulative impact refers to a project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project (PRC §21083; Title 14, CCR, §15064[h], 15065[c], 15130, and 15355).

The impacts of the CalCapture CCS project are expected to be less than or mitigated to be less than significant. The implementation of the proposed Project and other projects identified within the vicinity of the CalCapture CCS project are not anticipated to result in a significant impact to agricultural lands and soils due to the lack of prime agricultural lands within the vicinity of the Project site and with implementation of adopted Building Code and other regulatory requirements.

4.12.4 Mitigation Measures

Refer to the mitigation measures presented under Section 4.5 Geologic Hazards and Resources.

4.12.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.12.6 Laws, Ordinances, Regulations, and Standards

Soil resources at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 58.

Table 58 LORs for Soils

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
CWA/Water Pollution Control Act. 1972, amended by Water Quality Act of 1987 P.L. 100-4	Regulates stormwater and non-stormwater discharges from construction and industrial activities	RWQCB – Central Valley Region, SWRCB	Section 4.12.2
NRCS (1983), *National Engineering Handbook*, Sections 2, and 3	Standards for soil conservation	NRCS	Section 4.12.2
State			

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Porter-Cologne Water Quality Control Act	Regulates discharges of waste to state waters and land	RWQCB – Central Valley, SWRCB	Section 4.12.2
Table 18-1-B of the Uniform Building Code (International Code Council 1994)	Sets standards for defining expansive soils	California Building Standards Commission	Section 4.12.2
Local			
1.3 Physical and Environmental Constraints, Implementation Measure D. Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.	Protection against soil erosion.	Kern County Public Works, Building Inspection Division	Section 4.12.2
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.	Protection against soil erosion.	Kern County Public Works, Building Inspection Division	Section 4.12.2
4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure -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.	Protection against soil erosion, slope stability, liquefaction.	Kern County Public Works, Building Inspection Division	Section 4.12.2

4.12.6.1 Federal LORS

4.12.6.1.1 Federal Clean Water Act

The CWA (33 USC Section 1251 et seq.) was enacted to restore and maintain the chemical, physical, and biological integrity of WOTUS. The CWA requires states to regulate both point source and certain nonpoint source discharges to surface waters. These discharges, which include stormwater runoff from construction activities, are regulated under the NPDES permit program, pursuant to CWA Section 402. Projects that would disturb one acre or more of soil are required to obtain NPDES coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order No. 2022-0057-DWQ). This General Permit requires the preparation and implementation of a SWPPP, which must include best management practices (BMPs) designed to minimize pollutant discharge and protect water quality in stormwater runoff.

4.12.6.1.2 U.S. Department of Agriculture Engineering Standards

The USDA National Engineering Standards manual establishes national policy governing delivery of engineering services in NRCS. The policy provides a framework for technical excellence in engineering through consistent application of engineering principles, science, and professional judgment. All engineering work performed by NRCS or for NRCS, including work by NRCS for others, must conform to the requirements of the manual (USDA 2024).

4.12.6.1.3 Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was enacted to reduce the risk of surface fault rupture to buildings intended for human occupancy. Under this Act, CGS maps known active faults and establishes Earthquake Fault Zones along their traces. Faults are categorized as active, potentially active, and inactive based on their most recent activity. Historic- and Holocene-age faults are considered active, Late Quaternary- and Quaternary-age faults are considered potentially active, and pre-Quaternary-age faults are considered inactive. To be subject to setback requirements, a fault must be demonstrated, through site-specific geologic studies, to be “sufficiently active” and “well defined.” Projects involving the construction of buildings for human occupancy, such as an operations and maintenance building, must comply with the Act's requirements if located within an Earthquake Fault Zone, and appropriate setbacks (generally fifty feet) must be established based on geologic investigations.

4.12.6.1.4 Seismic Hazards Mapping Act

The California Seismic Hazards Act of 1990 was enacted to reduce threats to public health and safety by identifying and mitigating seismic hazards beyond surface fault rupture, including those associated with strong ground shaking, liquefaction, seismically induced landslides, other ground failures, or other hazards caused by earthquakes. Pursuant to PRC, Chapter 7.8, Division 2, CGS delineates Seismic Hazard Zones through the Seismic Hazards Zonation Program, identifying areas where these hazards are known or suspected to occur. For projects located within a designated Seismic Hazard Zone, a site-specific



geotechnical investigation must be conducted prior to permitting for most urban development projects. If hazards are found, appropriate engineering design and mitigation must be incorporated into the project.

4.12.6.1.5 California Building Code

The California Building Code (2022) contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. In accordance with Chapter 18 (Soils and Foundations), geotechnical investigations must be conducted as specified in Section 1803.2 and reported in accordance with Section 1803.6. Where required by the building official, or when the investigation includes in situ testing, laboratory testing, or engineering analysis, the geotechnical investigation must be performed by a registered design professional.

4.12.6.2 Local LORS

4.12.6.2.1 Kern County General Plan

The Project site is located within the unincorporated area of Kern County, The Kern County General Plan includes goals, objectives, polices, and implementation measures applicable to geology and soils as related to the Project as summarized below:

Chapter 1. Land Use, Open Space, and Conservation Element: Policy 1 (Siting), Policy 6 (avoiding steep slopes), and Policy 7 (slope stability, wastewater drainage, and sweater treatment)

Chapter 4. Safety Element: Policy 1 (Mitigation for liquefaction potential), Policy 3 (Reduce potential for exposure of development to hazards of landslide, land subsidence, liquefaction, and erosion).

4.12.6.2.2 Kern County Code of Regulations – Title 17

All construction in the 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 California Building Code, 2019 Edition, with some modifications and amendments. The entire county is in Seismic Zone 4, a designation previously used in the Uniform Building Code 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 of 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 requirements of the Kern County Grading Code would be applied during project implementation. All required grading permit(s) would be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to geology and soils include Section 17.28.140 (Erosion Control) and Section 17.28.170 (Grading Inspection).

4.12.7 References

NRCS. 2014. Land capability classification (National Soil Survey Handbook, Part 622.03). https://efotg.sc.egov.usda.gov/references/Delete/2015-11-14/123_land_capability_10232014.pdf.

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NRCS. 2025. Web Soil Survey. Available at Web Soil Survey - Home (usda.gov). February 2025.

Soils Engineering Inc. (SEI). 2020. Geologic Hazards Study for the CO_2 Capture Project from Elk Hills Power Plant.

———. 2023. Geotechnical Investigation Report for the Elk Hills GEHA & Truck Unloading Station 4026 Skyline Road Tupman, Kern County, CA.

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4.13 Traffic and Transportation

The information and analysis presented in this section has been derived from the Transportation Impact Analysis prepared for the Project and included as Appendix R (Stantec 2025l). Table 59 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 59 Appendix B Information Requirements for an AFC – Traffic and Transportation

Summary of Requirement	Section
Traffic and Transportation	
The locations and a description of the existing switchyards and overhead and underground transmission lines that would be affected by the proposed project.	Section 3.2.10
An estimate of the existing electric and magnetic fields from the facilities listed in (A) above and the future electric and magnetic fields that would be created by the proposed project.	Section 6: TLSN-3
Specific measures proposed to mitigate identified impacts	Section 6: TLSN-1 through -6

4.13.1 Environmental Setting

I-5, SR 58, SR 33, and SR 119 each provide regional access to the Project site. I-5 is approximately 13 miles east of the Project site. SR 58 is approximately 8 miles north of the Project site. SR 33 is located to the west and south of the EHOF and allows access to CRC's EHOF from the western most gate. SR 119, also referred to as Taft Highway, is approximately 6 miles southeast of the Project site and is also a two-lane undivided roadway.

The Project site could be accessed from the south via SR 119/Taft Highway exit on I-5, Valley West Road, Elk Hills Road, and Skyline Road; from the north, the Project site could be accessed via SR 58 exit on I-5, Wasco Way, Brite Road, Buttonwillow Drive, Elk Hills Road, and Skyline Road. From the Bakersfield area, the Project site could be accessed via SR 58 to either of the preceding routes leading to the Project site. Access to the EHOF via SR 33 is unlikely given the preferred access routes. The two additional temporary staging and parking areas that are located approximately 5.5 miles southeast of the Project site could also be accessed via SR 119 exit on I-5.

The following roadways in the immediate vicinity of the Project provide access to the Project site. Skyline Road runs in an east-west direction and is generally a two-lane undivided roadway. Elk Hills Road is a Kern County two-lane undivided roadway immediately east of the Project site and runs in a north-south direction.

Kern Transit provides passenger bus service between and within rural communities of Kern County, and Kern Transit Route 120 Taft-Bakersfield is the nearest bus stop at Valley Acres, approximately 6 miles southeast of the Project site. There are no pedestrian or bike facilities in the vicinity of the Project.



Elk Hills Buttonwillow Airport is approximately 6 miles north of the Project site, and is located on 216 acres and serves general aviation training.

4.13.1.1 Existing Traffic Conditions

The Project's existing traffic conditions for the study roadway segments were evaluated based on the Level of Service (LOS) and annual average daily traffic (AADT) thresholds for uninterrupted flow rural highways. Note that vehicle miles traveled (VMT) associated with construction of the Project is addressed in the context of air quality and GHG as part of a separate study; construction VMT is temporary and is not applicable to the transportation impact thresholds of significance. AADT counts for state highways were obtained from Caltrans Traffic Census Program for the year 2022, which is the most recent available year. The AADT study locations are the roadways in the immediate vicinity of the Project that would be used to access the Project site. Additionally, the LOS for traffic is designated from A through F, with LOS A indicating free-flowing conditions and LOS F indicating severe traffic congestion and delays. Kern County has historically used a threshold of LOS D for the acceptable operation of its transportation facilities (KCGP, 2009). The Project would be considered to have an undesirable effect on traffic if it would cause the operation of a transportation facility to worsen from LOS D to LOS E or F.

4.13.2 Impact Analysis

4.13.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether transportation impacts are significant. Would the proposed project:

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 15064.3, subdivision (b)?

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d) Result in inadequate emergency access?

4.13.2.2 Impact Assessment

Less than significant. The Project does not conflict with the Kern County General Plan, any program plan, ordinance, or policy addressing the circulation system. The Project does not propose to amend or adjust roadway classifications, the roadway network, transit routes, or bicycle networks as identified in the Kern County General Plan.

The Project site is served by Kern Transit Route 120, with the nearest stop in Valley Acres, about 6 miles southeast. No pedestrian or bike facilities exist nearby, and access would be via Skyline Road, with



improvements built to Kern County standards to avoid conflicts with other infrastructure or create hazards. Construction activities would remain within the Project site and two temporary staging areas approximately 5.5 miles southeast, with no road closures or impacts to nearby bus services expected. Therefore, the Project would not modify or interfere with the bus facilities closest to the Project site during construction or operation.

Construction Traffic

Less than significant with mitigation. Although the Kern County General Plan does not have established AADT volume thresholds, Kern County has historically used a threshold of LOS D for the acceptable operation. Project-generated construction traffic was added to existing conditions to represent “existing plus Project construction conditions.” The maximum AADT volumes that would allow the highway segments to maintain an acceptable LOS D is less than or equal to 24,200. All the roadway segments continue to operate at LOS B with the addition of construction traffic and each are at or below the target threshold of LOS D. Fifty percent of Project trips (including workers and equipment/material shipments) (i.e., 506 Project trips) are oriented north of the Project site and the other fifty percent are oriented south of the Project site. Even with a conservative assumption that 100 percent of the Project trips (1,012 project trips) travel through all the study segments, the roadway segments would still continue to operate at LOS D or better. While LOS is not considered a CEQA impact, Project-generated construction traffic nonetheless does not conflict with the Kern County General Plan’s policy to maintain target LOS.

Operational Traffic

Less than significant with mitigation. Based on the information provided by CTV, Operations Trip Generation, once constructed, the operational aspects of the Project would require up to 16 employees per day; there would be approximately 40 trips per day based on an average trip rate of 2.5 trips per employee. The average trip rate of 2.5 trips per employee assumes that employees work during the day shift is 2 trips (1 trip in and 1 trip out). In addition, some employees may travel an extra trip in between (e.g., lunch, errand), and there may be occasional deliveries to the site. Therefore, the Project would generate approximately 40 trips per day based on 16 employees. This increase in trips would not be impactful to any plans because the roadway segments would likely continue to operate at LOS D or better. For CEQA analysis purposes, it is noted that the additional 40 trips is less than the 110 trips per day screening threshold for small projects presented in the OPR Technical Advisory. This overall threshold is particularly applicable to the Project and the Project Site because (among other reasons) the Project would not involve construction of new infrastructure, the Project is not located within an environmentally sensitive area, and it is consistent with the RTP/SCS. It therefore meets the key elements of the “small project” screening threshold identified by the OPR Technical Advisory.

More specifically, as explained in the OPR Technical Advisory, the small project screening threshold is based on the categorical exemption for existing facilities set forth in CEQA Guidelines Section 15301, subdivision (e)(2), which expressly includes additions to existing structures in an areas where public infrastructure is available to allow for maximum planned development and the project is not located within an environmentally sensitive area, and a project would not generate more than an additional 110 additional



trips per day. The Project would therefore cause a less-than-significant impact to VMT. The Project will result in a less than significant impact and no mitigation is required.

Criteria for Analyzing Transportation Impacts for Land Use Projects

CEQA Guidelines Section 15064.3 subdivision (b) describes the Criteria for Analyzing Transportation Impacts for Land Use Projects (what the Project would be considered under CEQA):

> *(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.*

Construction Traffic

Less than significant. Construction VMT is temporary and is not applicable to the transportation thresholds of significance recommended in the OPR Technical Advisory, which are based on a measurement of the operational average VMT per capita.

Operational Traffic

Less than significant. The OPR Technical Advisory recommends that, absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a SCS or a General Plan, projects that generate or attract fewer than 110 trips per day may generally be assumed to cause a less-than-significant transportation impact. The Project is consistent with the Kern County General Plan because the Project would not change the current or planned county roadway system.

Based on the information provided by CTV, Operations Trip Generation, once constructed, the operational aspects of the Project would require up to 16 employees per day; there would be approximately 40 trips per day based on an average trip rate of 2.5 trips per employee. The average trip rate of 2.5 trips per employee assumes that employees work during the day shift is 2 trips (1 trip in and 1 trip out). In addition, some employees may travel an extra trip in between (e.g., lunch, errand), and there may be occasional deliveries to the site. Therefore, the Project's daily operational trip generation is forecast to be approximately 40 trips per day based on 16 employees. The Project will result in a less than significant impact and no mitigation is required.

Hazardous Geometric Design Feature

Less than significant with mitigation. The Project does not increase hazards due to a geometric design feature or incompatible uses but has potential to increase hazards due to the use of oversized and/or overweight vehicles that would need to be mitigated. Development of the Project site and any site access improvements requires compliance with Kern County development guidelines and code, which follow the Kern County General Plan policies and actions that encourage the safe design of streets. Truck and waste haul-off trucks access to the Project site would be from Skyline Road, directly across from the main



construction personnel parking area. The new site access roads would be constructed, and existing access roads would be improved in accordance with Kern County standards.

During construction, the Project would generate traffic from worker commutes and equipment/material deliveries to the site and to two temporary staging areas, approximately 5.5 miles southeast. While oversized vehicles may pose some risk, equipment and materials would be stored onsite, no offsite construction is planned, and no road closures or detours are expected—minimizing potential hazards. If any road closures or detours are required, the Project would secure appropriate transportation permits and prepare and implement Traffic Control and Management Plan to ensure the safety of roadway users in accordance with Caltrans and the County requirements. Also, there would be no incompatible uses introduced to the Project site that could cause vehicle conflicts (e.g., farm equipment). Therefore, the Project would result in a less-than-significant impact with implementation of MM TRA -1 and MM TRA -2.

Inadequate Emergency Access

Less than significant with mitigation. The Project would not result in inadequate emergency access during Project operations, as there are no proposed alterations to existing public roadways. Truck access to the Project site would be from Skyline Road, directly across from the main construction personnel parking area. The Project site and the two additional temporary parking and staging areas that are located approximately 5.5 miles southeast of the Project site would be designed, constructed and maintained to allow for proper ingress and egress and comply with turning radius requirements of emergency vehicles and will not cause hazardous driving conditions since the access points would be designed in accordance with Kern County standards. However, construction activities, which may temporarily restrict vehicular traffic, would have the potential to result in temporary or intermittent interruptions in emergency access prior to the implementation of mitigation measures. Therefore, the Project would be required to implement adequate and appropriate measures to facilitate the passage of persons and vehicles through or around road detours and/or closures. With mitigation, the Project would not result in inadequate emergency access. Development of the Project site would not alter or impede emergency response routes or plans set in place by the County. Therefore, the Project would have a less-than-significant impact on emergency access with the implementation MM TRA-1 and MM TRA-2.

4.13.3 Cumulative Impacts

Less than significant. Cumulative conditions have been considered as construction of other developments in the vicinity during the same construction timeframe as the Project could have a temporary cumulative impact on traffic conditions. Environmental documents for current cumulative projects within a 5-mile radius of the Project, as provided by Kern County, were reviewed to ascertain whether they would be constructed in a similar timeframe and would affect the same roadways as the Project. The five-mile limit was selected based on Stantec's professional judgment and project experience in the preparation of traffic impact studies as the limit of potential impacts associated with a cumulative development scenario. CRC's CTV I project is included in the Cumulative Project list provided by Kern County (Appendix B). The list shows that most of the projects are either CCS projects or addressed via the Oil and Gas Ordinance and Second Supplemental Revised EIR projects located in scattered locations within Kern County. The traffic from the construction of these related projects would have a nominal effect on traffic volumes on the surrounding roadway network



due to the remote and dispersed locations of the related project sites. In addition, the Project's biggest increase in trips would only be due to construction, which is short-term and temporary. Trips from Project operation would only require up to 16 employees per day. On this basis, there would be no additional traffic impacts under cumulative conditions.

4.13.4 Mitigation Measures

The following MMs are proposed for the Project to reduce transportation impacts to less than significant.

MM TRA-1: Prior to issuance of construction permits, building permits, or encroachment permits, the Applicant or its construction contractors will prepare and submit a Traffic Control and Management Plan to the County and Caltrans for approval. The Traffic Control and Management Plan will be prepared in accordance with both the Manual on Uniform Traffic Control Divisions and Work Area Traffic Control Handbook, and must include but not be limited to the following actions:

- Specify timing of deliveries of heavy equipment and building materials.
- Direct construction traffic with a flagger.
- Place temporary signage, lighting, and traffic control devices, if required, including but not limited to appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic.
- Provide access for emergency vehicles to the Project site.
- Maintain access to adjacent property.
- Specify both construction-related vehicle travel and oversized load haul routes, minimize construction traffic during the morning and afternoon peak hours, and avoid residential neighborhoods to the maximum extent feasible.
- Obtain all necessary permits from the appropriate agencies for work within the road right-of-way for use of oversized/overweight vehicles which may require Caltrans Highway Patrol or a pilot car escort.
- Submit plans for any work on the proposed road improvements to the County and Caltrans for review and approval prior to the issuance of any encroachment or road improvement permit for the work.
- Clean or remove any material that is deposited onto the roadways as soon as possible and at least prior to the end of each working day.
- Obtain any access easements from private property owners necessary to perform required repair work.

MM TRA-2: Prior to the issuance of construction or building permits, the project proponent/operator shall provide a written statement of any movement of oversized/overweight vehicles that would require transport over publicly maintained State or County roads. The following shall be implemented for any such transport:

- Obtain all necessary encroachment permits for work within the road right of-way, or use of oversized/overweight vehicles that will utilize County maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to CEC, the Kern County Planning and Natural Resources Department, and the Kern County Public Works Department-Development Review.

4.13.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.13.6 Laws, Ordinances, Regulations, and Standards

Traffic and transportation at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 60.

Table 60 LORs for Traffic and Transportation

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Highway Capacity Manual	Provides an index of performance for the elements of a transportation system.	Federal Highway Administration	Refer to Section 4.13.2 for a discussion of the Project's traffic impacts.
State			
California Environmental Quality Act/Senate Bill 743	Requires analysis of traffic impacts based on a VMT analysis.	CEC	VMT analysis is included in Section 4.13.2
Local			
Kern County General Plan Policies, Chapter 2 Circulation Element Objective 1	To make certain that transportation facilities needed to support development are available. To ensure that these facilities occur in a timely manner so as to avoid traffic degradation.	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation,* construction and operation of the Project would not disrupt normal traffic flows or otherwise conflict with the County's roadway performance policies and

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			programs. The Project is located in a rural area and the amount of peak hour trips for operation would be generally less than 40 trips per day. Therefore, the Project would not conflict with Circulation Element Objective 1.
Objective 5	Maintain a minimum Level Of Service (LOS) D for all roads throughout the County.	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation*, a Traffic Impact Analysis (TIA) was completed for the Project. The Project is located in a rural area and the amount of peak hour trips for operation would be generally less than 40 trips. Therefore, Project operation is not expected to cause any operational Level of Service (LOS) impacts to the adjacent roadway facilities.
Goal 5	Maintain a minimum Level of Service (LOS) D.	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation*, a Traffic Impact Analysis (TIA) was completed for the Project. The Project is located in a rural area and the amount of peak hour trips for operation would be generally less than 40 trips. Therefore, Project operation is not expected to cause any operational Level of Service (LOS) impacts to the adjacent roadway facilities.
Implementation Measure B	Continuity and integrity of the arterial and collector system at the mountain/valley region and	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. The Project boundary includes most of the San Joaquin Valley Floor portion of

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	the mountain/desert region boundary must be reviewed and approved in conjunction with project adoption on an individual basis.		Kern County up to an elevation of 2,000 feet. The mountain/valley region and mountain/desert region interface area is outside the boundary of the Project. Therefore, the Project does not conflict with Circulation Element Implementation Measure B.
Implementation Measure C	Conformance to alignment minimum design standards, where roadways that deviate from section and mid-section lines intersect those lines, must be reviewed and approved in conjunction with project adoption on an individual basis.	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. As described in Section 4.13, *Traffic and Transportation*, no roadway improvements are required to serve construction or operation of the Project.
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 Level Of Service (LOS) D. Utilization of the 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	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. As discussed in Section 4.13, *Traffic and Transportation*, additional analysis and monitoring is not warranted for the Project due to the limited amount of peak hour trips during construction and operation of the Project. Likewise, construction and operation vehicle miles traveled (VMT) would not affect traffic characteristics in this part of Kern County or elsewhere and would not cause affected roadways to fall below LOS D. Therefore, the Project is consistent with Future Growth Policy 2.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	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.	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. As described in Section 4.13, *Transportation and Traffic*, transportation requirements of the Project during both construction and operation are limited. Regional access to the Project site would be obtained via the existing highways and two-lane roads that traverse Elk Hills as shown in Chapter 3.0, *Project Description*, Figure 3-1. The Project would not necessitate the development of additional roadway systems for Project development and is therefore consistent with Future Growth Policy 4.
Implementation Measure C	Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.	Kern County Planning and Natural Resource Dept., Kern County Public Works Dept.	CONSISTENT. With approval of a CUP, the Project would comply with the County zoning ordinance. No variances or deviations are requested as part of the Project. The Project would conform to all applicable development standards.

4.13.6.1 Federal LORS

4.13.6.1.1 Highway Capacity Manual

LOS is a qualitative index of the performance of an element of a transportation system. The LOS for traffic is designated from A through F, with LOS A indicating free-flowing conditions and LOS F indicating severe traffic congestion and delays. The Highway Capacity Manual Sixth Edition (HCM 6), a standard reference published by the Transportation Research Board, contains specific criteria and methods for assessing LOS.



LOS characteristics for roadway segments are presented in Table 61 – Roadway Level of Service Descriptions.

Table 61 Roadway Level of Service Description

Level of Service	Traffic Flow Description
A	Minimal or no vehicle delay
B	Slight delay to vehicles
C	Moderate vehicle delays, traffic flow remains stable
D	More extensive delays at intersections
E	Long queues create lengthy delays
F	Severe delays and congestion

Source: HCM Sixth Edition

4.13.6.2 State LORS

4.13.6.2.1 California Environmental Quality Act

CEQA guidelines state that, generally, VMT is the most appropriate measure of transportation impacts, incorporating the requirements of SB 743. SB 743 required the Governor's Office of Planning and Research (OPR) to establish recommendations for identifying and mitigating transportation impacts under CEQA (OPR 2018). Generally, SB 743 moved away from using delay-based LOS as the metric for identifying Project impacts and uses VMT instead. The final OPR Technical Advisory, released in December 2018, provides guidance on evaluating transportation impacts using VMT and is the guidance on which VMT analysis contained in this report is based on.

Prior to undertaking a detailed VMT analysis, the OPR Technical Advisory recommends a screening process "to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study." The OPR Technical Advisory suggests that lead agencies may screen out VMT impacts using project size criteria, maps of low VMT areas, transit availability, and provision of affordable housing. For this Project, the screening criterion related to project size is applicable in regard to the amount of traffic that is generated under operational conditions.

The OPR Technical Advisory recommends that absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a sustainable communities strategy (SCS) or a General Plan, projects that generate or attract fewer than 110 trips per day may generally be assumed to cause a less-than-significant transportation impact.

4.13.6.3 Local LORS

4.13.6.3.1 Kern County General Plan

The Circulation Element of the Kern County General Plan consists of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities



and facilities that are all corelated with the land use element of the General Plan. The purpose of the Circulation Element is to set up local Goals and guiding Policies about building transportation improvements. Following is a list of the Plan's seven unique Goals:

1. *To make certain that transportation facilities needed to support development are available. To ensure that these facilities occur in a timely manner so as to avoid traffic degradation.*
2. *Kern County intends to provide plans for circulation infrastructure in support of the Land Use, Open Space and Conservation Element.*
3. *To plan for transportation modes available to all segments of the population, including people with restricted mobility.*
4. *Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.*
5. *Maintain a minimum 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.*
6. *Coordinate with the California Department of Transportation (Caltrans) regarding various transportation developments within the County.*
7. *Kern County through its representatives on the Kern COG Board of Directors shall coordinate with Kern County cities and Caltrans to develop more effective transportation planning and congestion management programs.*

Kern County guidelines also specify that a traffic analysis be prepared for any City, State, or County facility (mainline, interchange, structure, intersection, or any project on the Transportation Impact Fee list) when the peak hour trip generation onto the CCU exceeds 50 trips. The Project is anticipated to generate fewer than 50 operational trips during the peak hour; therefore, no roadway would meet the traffic analysis criteria. However, the Project is expected to generate a greater number of short-term trips during construction and, as such, a study area consisting of the roadways in the immediate vicinity of the Project site has been established to determine the effect of Project trips during the construction period.

4.13.6.3.2 Kern County LOS Thresholds

Kern County has historically used a threshold of LOS D for the acceptable operation of its transportation facilities (KCGP 2009). For the purpose of this analysis, the Project would be considered to have an undesirable effect on traffic if it would cause the operation of a transportation facility to worsen from LOS D to LOS E or F.

Table 62 – Roadway Level of Service for Uninterrupted Flow Highways provides typical LOS and AADT volume thresholds for two-lane uninterrupted flow rural highways. Since Kern County does not have established AADT volume thresholds for uninterrupted flow on rural highways, the volume thresholds noted



here are based on typical values utilized by transportation engineers, such as those documented in the Florida Department of Transportation guidelines, a source commonly used by traffic engineers for analyses of this type. As shown, a two-lane undivided highway, such as those providing access to the Project site, can typically carry up to 14,000 AADT for conditions of LOS D or better.

Table 62 Roadway Level of Service for Uninterrupted Flow Highways

Lanes	Median	LOS / ADT					
		A	B	C	D	E	F
2	Undivided	-	≤ 4,600	≤ 8,200	≤ 14,000	≤ 28,500	> 28,500

Source: Florida Department of Transportation. 2023. Multimodal Quality/Level of Service Handbook, Motor Vehicle Highway Generalized Service Volume Tables.

4.13.7 References

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OPR (Governor's Office of Planning and Research). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available at: Technical Advisory on Evaluating Transportation Impacts in CEQA (lci.ca.gov). Accessed January 30, 2025.

Stantec. 2025l. CalCapture CCS Project, Transportation Impact Analysis. October 2025.

4.14 Visual Resources

The information and analysis presented in this section has been derived from the Visual Impact Analysis (VIA) prepared for the Project and included as Appendix S (Stantec 2025m). Table 63 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 63 Appendix B Information Requirements for an AFC – Visual Resources

Summary of Requirement	Section
Visual Resources	
Describe the current natural and built landscape at the project site and along any above-ground linear facilities. (i) Map and identify scenic vistas and resources within 5 miles of the project and 1 mile of linear facilities, including: a. Officially designated scenic resources from government plans. b. Natural features with aesthetic or ecological value (e.g., water bodies, rare trees). c. Man-made landmarks with architectural or cultural significance. d. Assess whether the project obstructs or alters public views of scenic resources. (ii) Describe existing nighttime lighting conditions at the site and surrounding area.	Section 4.14.1.1
If in an urbanized area, explain how the project aligns with local General Plans and zoning codes related to scenic quality, per CEQA guidelines.	N/A
Follow Appendix G I. Aesthetics guideline: (i) Map key observation points (KOPs) for public view analysis. (ii) If no scenic object is nearby, select KOPs based on stakeholder interest, visibility, or worst-case visual impact; explain selection rationale. (iii) Provide daytime, eye-level photographs from each KOP showing current conditions, with technical details (camera type, lens, date/time, distance). (iv) Create photo-realistic simulations showing the project one year post-construction from each KOP. (v) Ensure images are printable at 11" x 17" with 600 dpi resolution. (vi) Submit electronic copies of all KOP photos and simulations.	Appendix S – Visual Impact Assessment
Show and describe the project in the landscape: (i) Provide scaled elevation drawings and a table of dimensions for buildings and major equipment. (ii) Describe surface finishes and materials (e.g., color, texture). (iii) Detail any architectural or design mitigation techniques (e.g., camouflage, screening). (iv) Submit a conceptual landscape design plan including: a. Plant species, locations, quantities, growth expectations, and irrigation system layout. b. Total pervious surface area, including replaced and new surfaces. (v) Provide a lighting control and management plan: a. List luminaires, their design type, and Dark-Sky certification status; show	Appendix S – Visual Impact Assessment

Summary of Requirement	Section
locations. b. Describe reflectance from exterior surfaces and its impact on surrounding areas.	
If the project is to use a cooling tower emitting a publicly visible water vapor plume (visible plume) in the atmosphere provide the following information: (i) Provide specifications for cooling tower fan cells, stack dimensions, exhaust flow, heat rejection, and temperature. (ii) Include fogging curves for three ambient temperature conditions (low, average, high). (iii) Assess whether the visible plume will obstruct or alter views of scenic vistas or the visual character of the site.	Not submitted. Project is co-located with an existing power plant, so additional visible water vapor plume would have a minimal impact.

4.14.1 Environmental Setting

4.14.1.1 Existing Conditions / Environmental Setting

The Project is situated centrally within the EHOF, which is roughly bounded by SR 33, located approximately 6.5 miles to the southwest; SR 119, located approximately 6 miles to the southeast; I-5, located approximately 9 miles to the northeast; and SR 58, located approximately 8 miles to the northwest. The Project site itself is located at the intersection of Elk Hills Road and Skyline Road, both of which bisect the EHOF. The surrounding landscape is characterized by rolling to hilly terrain that appears relatively barren and is dominated by oil and gas extraction operations and related infrastructure. More rugged terrain begins approximately 9 miles to the southeast along the Temblor Range. The landscape transitions to agricultural uses approximately 4.5 to 5 miles northeast and 7.5 miles southeast of the Project. Other land uses within a 10-mile radius include recreational areas (e.g., Tule Elk Reserve and Buena Vista Golf Course), airstrips, light-industry, and communities of various sizes.

Communities in the vicinity are generally located along the state and federal highways that surround the EHOF. The largest community, the City of Taft (and adjoined census-designated places), is located approximately 8 miles south of the Project. The City of Taft includes residential development and a variety of other services, such as commerce (e.g., restaurants, stores, hotels), recreation (e.g., local parks and recreational fields), education (e.g., Taft City Schools and Taft College), places of worship, and an airport. Several other small communities are found along major roadways; these unincorporated communities, such as Tupman, Dustin Acres, Valley Acres, Derby Acres, and Buttonwillow, are primarily residential and offer a limited variety of other services. The closest of these communities is approximately 5 miles from the Project.

Outside the communities, there are few potential visual sensitive resources within the defined visual study area. These resources (local, State or Federally protected areas) and other publicly owned lands and include: Franklin Field (Ford City), A.W. Noon Park, (portion of) Buena Vista Aquatic Recreation Area, Tule Elk State Preserve, Lokern Ecological Reserve, Buttonwillow Park (Buttonwillow), I-5, and SRs 119, 33, and 58. These resources have been identified as they are public property (e.g., recreational uses) that have the ability to draw a higher number of users.



Potential viewers of the Project would include workers, residents, motorists/commuters, and recreationists. Views range from focused to expansive, with most viewers likely habituated to the visual presence of the oil field and its many pumping units, pipelines, and other structures.

4.14.1.2 Visual Impact Assessment

The VIA focused on the visibility and effects to views from the proposed CCU, which would be located adjacent to the south of the existing EHPP and in the vicinity of CRC's Cryo-Genic Plant. Other above-ground Project components (e.g., field office) would be obscured by the existing topography or facilities or appear to blend into the broader landscape in typical views from publicly accessible areas.

A comparison of existing site conditions and the changes to the landscape from Project implementation was based on visual simulations. To identify where the Project would be visible from visually sensitive areas, Stantec visual resources specialists reviewed aerial imagery and performed a viewshed analysis. This analysis, a GIS-based line-of-sight assessment incorporating Project feature heights and surrounding terrain, covered a 10-mile area around the Project site (referred to as the VIA) and considered the following four components: Absorber (271 feet in height), Stripper (131 feet in height), CO_2 Vent Stack (100 feet in height), and DCC (93 feet in height). Because the viewshed analysis accounted only for topography and did not include potential visual screening by vegetation or structures, it is considered conservative.

Photographs of the Project site were taken on April 4, 2025, from various locations within the VIA. A representative subset of these photographs were selected as Key Observation Points (KOPs). Site photos from the KOPs were then used to generate renderings of the existing conditions with simulated images depicting the implemented Project to provide clear before and after images of the location, scale, and visual appearance of the features that would be affected by Project implementation.

The visual quality of both the existing conditions and the simulated images for each KOP was evaluated using a scale ranging from "very low" to "very high," considering factors such as natural harmony, cultural order, overall coherence, landscape composition, and vividness. Landscape components evaluated in this assessment were based on selected concepts from the FHWA VIA for Highway Projects (FHWA 2015). The difference in visual quality ratings between existing and proposed conditions determined the degree of visual contrast introduced by the Project. The results of the analysis are provided in Table 64.

Table 64 Visual Impact for Key Observation Points

Key Observation Point	Approximate Distance from Project	Rationale	Visual Impact Rating (Existing)	Visual Impact Rating (with Project)
1 – Elk Hills Road	0.45 miles	Representative of commuters and to a lesser extent other travelers within the EHOF.	Moderately Low	Low
2 – Elk Hills Road	4.92 miles	Representative of longer-distanced views experienced by commuters and to a lesser extent other travelers along Elk Hills Road.	Moderately Low	Moderately Low
3 – State Highway 58	9.0 miles	Representative of views experienced by travelers along the roadway.	Moderately Low	Moderately Low
4 – Tule Elk State Natural Reserve	7.0 miles	Representative of visitors or workers at the natural reserve.	Moderate	Moderate
5 – State Highway 119	6.0 miles	Representative of travelers, commuters, or residents of Valley Acres.	Low	Low

4.14.2 Impact Analysis

4.14.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether **visual resources impacts are significant. Would the proposed project:**

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 point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

4.14.2.2 Impact Assessment

Scenic Vistas and Scenic Resources

No impact. There are no known designated scenic vistas, or overlooks, located within the VIA. Available broad views, which are not designated vistas, would include other portions of the industrial landscape in EHOF within which the Project would be visually consistent. As a result, the Project would not substantially alter views toward the site.

There are no officially designated or eligible state scenic highways in the study area (Caltrans 2023). Therefore, the project would not substantially damage any scenic resources within a state scenic highway. There would be no impact.

Public Views

Less than significant. The Project is located in a rural area of unincorporated Kern County within the EHOF, a heavily modified energy landscape dominated by oil extraction, power generation, and electricity transmission infrastructure. This visual character is evident in public views of the area, where broad vistas show development with a variety infrastructure.

Construction Impacts

Less than significant. Short-term impacts on the existing visual character or quality of the site and its surroundings may occur during construction. Construction-related activities would occur in areas with existing oil and gas operations. All equipment would be assembled off site to the extent practical and transported to the proposed location for installation, thus minimizing the duration of a visual impact during construction. Some major facilities could require longer-duration onsite erection or final assembly and interconnection. The use of heavy equipment, possibly including cranes, is expected for the duration of construction of the Project facilities.

Vehicle and equipment operations may produce visible dust during land-clearing operations and from traveling on unpaved roadways. Pile rigs, and possibly cranes, are likely to be visible from long distances silhouetted against the sky. Ground-level activities, such as land clearing and site preparation, require equipment, such as bulldozers, excavators, loaders, and dump trucks. Foundation and facility construction activities would require large delivery vehicles and concrete trucks. The local increase in general vehicular traffic could be a source of visual impact, depending upon the number of trips to and from a specific area. On-site parking could be noticeable during construction if certain sites require a larger number of workers. However, adverse visual impacts of construction activity would be temporary and limited to the duration of construction only, which is 2.5 years. Because the construction activities would not result in a permanent alteration of visual resources, and given their temporary nature, the project’s construction-related aesthetic impacts would be considered less than significant.

Operational Impacts

Less than significant with mitigation. The Project would consist of a CO_2 capture facility, an approximately 0.5-mile-long CO_2 pipeline route, water supply and wastewater pipelines, and electrical transmission line, in an area is a highly modified energy landscape characterized entirely by the equipment and activities associated with oil extraction, power generation, and electricity transmission.

Long-term operational impacts on the existing visual character or quality of the site would be minimal, given the presence of similar looking structures in the existing area and its surroundings. Any increases in the number of facilities would be marginal in comparison to existing facilities and infrastructure and would closely resemble facilities and infrastructure already on site.

While the scale of the Project would, in some views, slightly alter the pattern of development and overall coherence of the view, it would not do so to any extent that existing visual quality, as assessed, would be reduced. The Project would appear consistent with the existing visual character of the EHOF. Rather, it would appear in broad views as a minor addition to an already developed/altered landscape, and to those who may be on Elk Hills Road, in relative proximity, may witness an acute intensification of the Project with many of the same components visible in the wider landscape. It is anticipated that most people traveling on this roadway may be on their way to work at the EHOF, EHPP, or adjacent power generating facilities. These individuals are currently exposed to the type of infrastructure being proposed as part of the Project.

Implementation of MM VIS-1 and MM VIS-2 will further reduce the Project's impact to a less than significant level.

Light and Glare

Less than significant with mitigation. The absorber column would be illuminated for aircraft safety, in accordance with FAA Obstruction Marking and Lighting standards (FAA 2024). Nighttime lighting is currently present within the EHOF, EHPP and nearby facilities, and the additional lighting would be consistent with the existing nighttime views toward the Project. Most construction activities are likely to occur during daylight hours. While lighting may not be required during this time, there is a chance of glare reflecting off of temporary facilities that support construction and other activities such as storage of materials/equipment, and staging and parking areas. Any construction activities that are to be undertaken at night will require artificial lighting, which will be short-term and temporary. This type of lighting will be needed for drilling activities, vehicle and equipment activities, and for various activities such as providing safety, security, construction, or any other similar temporary activity.

The potential for glare is not significant but may occur. Glare would primarily result from reflectance of sunlight off light-colored surfaces and be dependent upon the location of the sun and orientation of the operation elements relative to viewers. Glare may also be temporarily associated with construction material and for longer-term during operations of the facility. Overall, glare may be subject to construction material and environmental considerations (e.g. atmospheric conditions). Any adverse visual impacts due to construction glare and lighting will be temporary and limited to the duration of construction only, which is 2.5 years.



Implementation of MM VIS-2 requires compliance with Kern County Zoning Chapter 19.81 – Outdoor lighting "Dark Sky Ordinance," which is designed to reduce unnecessary night lighting and minimize impacts on surrounding properties and protect Kern County's rural character. To that end, the Ordinance includes several requirements for the reduction of impacts associated with nighttime lighting, such as lighting height restrictions, a prohibition on most upward facing lighting, preparation of an Outdoor Lighting plan, as necessary, and limitations on wattages and lumens near residences. These requirements would reduce any potential impacts associated with project construction lighting, which would be temporary, and operational lighting to a less-than-significant level.

4.14.3 Cumulative Impacts

Less than significant. The scope of the cumulative analysis would consist of the EHOF and its viewshed. Due to the Project's location within an existing oil and gas field, the impacts of the Project together with the impacts of past, present, and reasonably foreseeable future oil and gas development, including wells and abandonment activity to implement CCS projects, constitute cumulative impacts. The geographic scope for cumulative impacts to aesthetic and visual resources is considered the EHOF and surrounding viewshed. Analysis of cumulative impacts takes into consideration the entirety of impacts that the projects, zone changes, and general plan amendments regarding cumulative projects would have on aesthetics and visual resources. This geographic scope of analysis is appropriate because the visual quality within this area is expected to be similar to that of the Project site because of its proximity, similar environment and landform, and would result in similar land use. The CTV I project, currently under construction within the EHOF, would also comply with County requirements to address visual resources impacts. Finally, Kern County has prepared an EIR evaluating the potential impacts (including contributions to cumulative impacts) of oil and gas development in connection with previously proposed amendments to the Kern County Zoning Ordinance: Final Environmental Impact Report - Revisions to the Kern County Zoning Ordinance - 2015(C) Focused on Oil and Gas Local Permitting, certified on November 9, 2015, supplemented by a Supplemental EIR certified on December 11, 2018; an SREIR certified on March 8, 2021; and an Addendum adopted on August 23, 2022. The Oil and Gas EIR is referenced herein as a source of information regarding cumulative impacts from oil and gas development (Kern County 2024).

Cumulative impacts to aesthetic and visual resources, overall are likely to be minimal. The Project would be consistent to Industrial character (temporary and/or long term) already existing within the EHOF. To experience a cumulative impact, visibility of other facilities must be within the view being experienced by the observer. Since visibility of the Project would be consistent with the industrial character of the area, the proposed Project along with cumulative development would not result in a significant visual impact from public viewpoints. Additional MMs to reduce cumulative impacts to a less than significant level are not required.

4.14.4 Mitigation Measures

The following MMs are proposed for the Project to reduce visual impacts to less than significant.

MM VIS-1: Any Project operational signage shall comply with the Kern County Zoning Ordinance.



MM VIS-2: Any new lighting, including permanent nighttime lighting, safety, security, and operational lighting shall comply with the standards in Kern County Zoning Chapter 19.81 - Outdoor Lighting "Dark Sky Ordinance." Appropriate lighting shall also address FAA lighting standards/requirements.

4.14.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.14.6 Laws, Ordinances, Regulations, and Standards

Visual resources at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 65.

Table 65 LORs for Visual Resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
The National Trails System Act (NTSA) of 1969	Viewsheds from the Pacific Crest Trail	U.S. Forest Service	Not applicable
State			
Scenic Highway Program	Scenic highways	Caltrans	Not applicable
Local			
Policy 47.	Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Kern County	Project will comply with this requirement.
Policy 48.	Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Kern County	Project will comply with this requirement.
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.	Kern County	Project will comply with this requirement.
Chapter 19.81 of the Kern County Zoning Ordinance	Protection of night sky views	Kern County	Project will conform with this requirement. See MM

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			VIS-2.

4.14.6.1 Federal LORS

4.14.6.1.1 U.S. Department of Agriculture, Forest Service

The National Trails System Act (NTSA) of 1969 seeks to preserve scenic and natural qualities along trails and recognizes the rights of private landowners and provides that full consideration will be given to minimizing effects on nearby landowners or users and their operations in the development and use of a trail. The NTSA assigns management responsibility for trails to various federal resource agencies, depending on which agency holds jurisdiction over the public lands on which the trail is located in a given area (i.e., U.S. Forest Service, National Park Service, or the Bureau of Land Management).

The Pacific Crest Trail was created under the NTSA to provide for outdoor recreation opportunities and the conservation of significant scenic, historic, natural, or cultural qualities. The Pacific Crest Trail stretches 2,650 miles from Mexico to Canada through California, Oregon, and Washington and is designated in the KCGP as a scenic feature. The U.S. Forest Service administers the Pacific Crest Trail in the vicinity of the project. The Pacific Crest Trail is located 60 miles beyond the Project at its closest point. Therefore, project compliance with the NTSA was not considered in this analysis, and no regulations would be applicable for development of CCS facilities in the Project site because the Project would not be visible from the Pacific Crest Trail.

4.14.6.2 State LORS

4.14.6.2.1 California Scenic Highway Program

The California's Scenic Highway Program was created by the State Legislature in 1963 (Caltrans 2023). The purpose of this program is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. Caltrans manages the State Scenic Highway Program, provides guidance, and assists local government agencies, community organizations, and citizens with the process to officially designate scenic highways.

A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The California Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. The status of a state scenic highway changes from eligible to officially designated when the local jurisdiction adopts scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a scenic highway (Caltrans 2023).

Several highways and state routes are located within the region that provide access to the project site. The project site is not in proximity to any Designated State Scenic Highways or scenic resources.

4.14.6.3 Local LORS

4.14.6.3.1 Kern County General Plan

The Project site is located within the KCGP area and, therefore, would be subject to applicable policies and measures of the KCGP. The Land Use, Conservation, and Open Space Element; the Circulation Element; and the Energy Element of the KCGP include goals, policies, and implementation measures related to aesthetics that apply to the project, as described below.

The Land Use, Conservation, and Open Space Element of the KCGP evaluates the visual and aesthetic setting of Kern County and assesses the potential for visual impacts. The KCGP Circulation Element provides guidelines for development near scenic routes. A scenic route is defined in the KCGP as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality. A roadway can only be designated as a scenic route by direct action of the County Board of Supervisors or the State of California. A route may not be selected as scenic until a visual assessment has been conducted to determine if the route meets the current scenic highway criteria as mentioned above, and to what extent development has encroached on the scenic views. In addition, the County must prepare and adopt a plan and program for the protection and enhancement of adjacent roadside viewshed land. No scenic routes have been designated in the project site.

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.

Circulation Element

2.3.9. Scenic Route Corridors

None of the goals, policies, or implementation measures contained in Section 2.3.9 are applicable to the proposed project.

4.14.6.3.2 Kern County Zoning Ordinance

Outdoor Lighting "Dark Skies Ordinance"

Chapter 19.81 of the Kern County Zoning Ordinance implements requirements for outdoor lighting unincorporated areas of Kern County in order to accomplish the following objectives:

1. Encourage a safe, secure, and less light-oriented nighttime environment for residents, businesses, and visitors.
2. Promote a reduction in unnecessary light intensity and glare, and to reduce light spillover onto adjacent properties.
3. Protect the ability to view the night sky by restricting unnecessary upward projections of light.
4. Promote energy conservation and a reduction in the generation of greenhouse gases by reducing wasted electricity that can result from excessive or unwanted outdoor lighting.

4.14.6.3.3 Kern County Development Standards

The Kern County Development Standards have specific regulations pertaining to lighting standards, including the requirement that lighting must be designed so that light is reflected away from surrounding land uses so as not to affect or interfere with vehicular traffic, pedestrians, or adjacent properties.

4.14.6.3.4 Kern County Specific Plans

Kern County has adopted 24 Specific Plans. These Specific Plans are intended to be an amplification of the goals and policies of the KCGP and are, therefore, consistent therewith. The project site is not located wholly or partially within any adopted Specific Plan areas.

4.14.7 References

Stantec. 2025m. CalCapture CCS Project, Visual Impact Analysis. October 2025.

Caltrans. 2023. "California State Scenic Highways". Accessed October 2023. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

4.15 Waste Management

This section addresses the production, storage, and disposal of the waste produced by the Project. The information and analysis presented in this section has been derived partially from the Phase I ESA report of the Project Site (included as Appendix O) and additional sources. Table 66 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 66 Appendix B Information Requirements for an AFC – Waste Management

Summary of Requirement	Section
Waste Management	
Phase I Environmental Site Assessment (ESA) for the proposed site using ASTM E 1527-93 or an equivalent method agreed upon with CEC Staff; completed within one year prior to application filing	Section 4.15.5, Appendix O – Phase I Environmental Site Assessment
Description of each waste stream generated during construction and operation, including origin, hazardous/nonhazardous classification (Title 22 CCR § 66261.20 et seq.), chemical composition, estimated annual weight or volume, and frequency of generation	Section 3.4.6.2, Section 4.15.1.1
Waste disposal sites potentially used for project waste, including name, location, classification (Title 23 CCR § 2530 et seq.), permitted capacity, current waste intake, estimated closure date, remaining capacity, and any enforcement actions	Section 3.4.6.2, Section 4.15.1.1, Section 4.15.2.3
Management methods for each waste stream, including waste minimization strategies, on- and off-site storage duration, reuse and recycling opportunities, treatment methods, and use of contractors	Section 3.4.6.2, Section 4.15.1.1, Section 4.15.2.3

4.15.1 Environmental Setting

As previously described, the Project is located within an unincorporated region of Kern County, outside the limits of Tupman and the City of Taft. As discussed in Chapter 3.7, Land Use, the Project's immediate vicinity is the EHOF, with Mineral and Petroleum land uses.

The EHPP provides energy to the oil and gas extraction and processing facilities, and utilizes natural gases extracted from the EHOF. The majority of the processed products are transported offsite via pipeline.

Twenty large capacity emergency storage tanks are located along the southern boundary of the EHPP and are intended to store butane, propane, gasoline, and refrigerant in the event that the main holding tanks, located at the processing facility to the west, are compromised. Onsite facilities are tied into one of several septic systems located throughout the EHOF.



4.15.1.1 Existing Waste Materials

According to the Phase I ESA, several municipal waste bins were observed around the EHPP (which includes the Project site) including near the control center, the main parking lot, and the vac truck wash rack. Two roll-on/roll-off bins of green waste from brush removal were observed at the southern end of the proposed pipeline to 35R Manifold Pipeline route. Two roll-on/roll-off bins containing petroleum saturated soils were observed north of the proposed Flex Pipeline to 27R Site route. A fenced off mound, capped with soil and measuring approximately 590 feet at its longest, was observed approximately 135 feet northwest of the proposed Flex Pipeline to 27R Site route. The mound was marked with signs reading “Hazardous Waste Area” along its fence line. No indications to suggest what materials were contained within the mound were observed; however, the mound was seen to support vegetation. Wastewater generated by the cooling system for the power plant was observed to be collected beneath the cooling system and then conveyed into infiltration wells.

Many facilities in the EHPP and EHOF are under regulatory oversight for waste materials. Historical activities at the 27R WMU west of the Project included disposal of hazardous wastes into unlined trenches. Thus, the 27R WMU at the EHPP is under regulatory oversight by DTSC and RWQCB and implemented engineering controls comprising installation of a low-permeability soil cap to prevent further mobilization of the hazardous and non-hazardous materials contained within the WMU. As of 2016, the EHOF is not a site identified with waste constituents above hazardous waste levels outside the WMU (CalEPA 2016).

Under the regulatory direction of a SWRCB order, a 2024 site investigation identified polyfluoroalkyl substances (PFAS) concentrations within onsite soils, with the highest concentrations exceeding site-specific screening levels. However, the elevated concentrations are limited in their dispersal and minimal remedial action would be required in order to mitigate existing health risks for workers posed by PFAS-containing soils.

4.15.2 Impact Analysis

4.15.2.1 Significance Criteria

In accordance with the State’s CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether waste management impacts are significant. Would the proposed project:

a) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

b) 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?

c) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?



4.15.2.2 Impact Assessment

Less than significant. The Project will be located on a site which is included on EnviroStor's list of hazardous materials sites. Portions of the CalCapture project site, including primarily the CCU facility, are located within the former Department of Energy (DOE) 35R Gas Plant site. The DOE (responsible party), in coordination with DTSC, is working towards further delineation and closure of the site, targeted for 4Q 2025 – 1Q 2026. As impacted soils and soil gas are anticipated to remain, DTSC will require environmental restrictions under a recorded Land Use Covenant (LUC). CRC is the surface and mineral owner responsible for implementation of the recorded LUC. The recorded LUC is expected to include a soils management plan for any future disturbance activities. Following closure of the site, CalCapture construction and operation activities will comply with all conditions of the recorded LUC. Given the sites are managed in accordance with applicable federal, state, and local management and reduction statutes and regulations, it would not create a significant hazard to the public or environment.

Project-related municipal waste, construction waste, and recycling materials would be transported to the Class III Taft Landfill. Taft Landfill has a maximum design capacity of approximately 11 million cubic yards and will reach its final capacity by 2074 (Kern County, 2011). The Project will not 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. CRC will continue to dispose of nonhazardous waste, including construction waste, municipal waste, and operational garbage at a Class III landfill. Nonhazardous waste will be recycled to the extent practicable.

Disposal of hazardous waste, including construction waste and operational waste, will be disposed of at a permitted be recycled or disposed of at a permitted treatment, storage, and disposal facility. As detailed in the Project Description in Chapter 2, the CCU would utilize EFG+ amine to capture and concentrate the CO_2, which would generate EFG+ waste amine due to degradation and reclaiming. Approximately 205 bbl of waste amine (a hazardous waste) would be accumulated each month, typically stored up to 30 days, and then removed by a vacuum truck and sent to a third-party hazardous waste treatment center. All waste amine would be placed in appropriate designated containers and removed from the Project site. Waste amine would be disposed of in accordance with applicable federal, state, and local management and reduction statutes and regulations at a fully regulated and permitted facility. One such licensed transfer facility is Clean Harbors, located in Wilmington, California. The Wilmington facility is permitted to receive organic liquids, which are temporarily stored at the facility before being re-packaged and shipped to the ultimate disposal or recycling facility. The ultimate disposal facility would likely change over time based on market conditions. To manage and prevent potential impacts caused by transporting waste amine, CRC and its vendors will adhere to U.S. EPA, Caltrans, DTSC, California Highway Patrol, and California State Fire Marshal regulations.

CRC would determine the toxicity and physical properties of waste amine and any additional waste streams generated to determine the proper waste classification and disposal methods in compliance with applicable regulations i.e., Title 27 CCR Section 66261 et. Seq., and through CRC's Environmental Risk Management Process, which covers all the required aspects of waste classification, tracking, and disposal. All hazardous



waste material would be submitted to the California Environmental Reporting System database along with the required maps and Consolidated Contingency and Emergency Response Plans.

In the unlikely event that a spill or leak was to occur and contaminate soil, the Kern County Environmental Health Services Department, CUPA Program would be notified. All remedial activities, soil storage and disposal will comply with federal, state, and local ordinances; generated waste will be disposed within 90 days of generation. With competent and trained personnel, small spills can be contained and cleaned up immediately. Large spills will require reporting to local emergency contacts. A designated onsite health and safety person will be responsible for implementing health and safety guidelines. For petroleum products, if the spill is over 42 gallons, all federal, state, and local reporting requirements will be followed. Onsite personnel will call local fire and emergency services in the event of a fire or injury. With implementation of these processes, impacts related to the storage and handling of waste amine will be less than significant.

4.15.3 Cumulative Impacts

Consistent with CEQA Guidelines, the Project is be determined to have a less than significant individual and cumulative impact for waste management through compliance with existing regulations.

4.15.4 Level of Significance

Residual impacts would be less than significant.

4.15.5 Laws, Ordinances, Regulations, and Standards

Waste management at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 67.

Table 67 LORs for Waste Management

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
RCRA Subtitle D	Regulates design and operation of nonhazardous solid waste landfills. Project solid waste will be collected and disposed of by a collection company in conformance with Subtitle D.	CalRecycle	Section 4.15.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste. Hazardous waste will be handled by contractors in conformance with Subtitle C.	DTSC	Section 4.15.2
Clean Water Act	Controls discharge of wastewater to the surface waters of the United States	RWQCB	Section 4.16
Clean Water Act, Underground Injection Control	Regulation of the discharge of fluids into the subsurface, including Class I – Non-hazardous liquids, and Class VI – CO_2 Sequestration	US. EPA, Region IX	Discussed in Sections 2.3.1 and 2.2.6
State			
California Integrated Waste Management Act	Controls solid waste collectors, recyclers, and depositors. Project solid waste will be collected and disposed of by a collection company in conformance with CIWMA	CalRecycle	Section 4.15.2
Assembly Bill 341 / State Bill 1018 -- Mandatory Commercial Recycling	Requires commercial businesses generating 4 cubic yards per week or more of solid waste to adopt recycling practices	CalRecycle	Section 4.15.2
Hazardous Waste Control Law (HWCL)	Controls storage, treatment, and disposal of hazardous waste. Hazardous waste will be handled by contractors in conformance with the HWCL	DTSC	Section 4.15.2
Local			
Kern County General Plan Goals and Policies Goal 9. Serve the needs of industries and Kern County	Waste management	Kern County Planning and Natural Resources Department	Section 4.15.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
residents in a manner that does not degrade the water supply and the environment and protect the public health and safety by avoiding surface and subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.			
Public Facilities. Implementation Measure N. Secure complete and accurate information on all hazardous wastes generated, handled, stored, treated, transported, and disposed of within or through Kern County.	Waste management	Kern County Planning and Natural Resources Department	Section 4.15.2
Transportation of Hazardous Materials. Goal 1. Reduce risk to public health from transportation of hazardous materials.	Waste management	Kern County Planning and Natural Resources Department	Section 4.15.2
Policy 1. The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	Waste management	Kern County Planning and Natural Resources Department	Section 4.15.2
Policy 2. Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.	Waste management	Kern County Planning and Natural Resources Department	Section 4.15.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Implementation Measure A. Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.	Waste management	Kern County Planning and Natural Resources Department	Section 4.15.2
County of Kern, Hazardous Materials Response Plan	Outlines hazard assessment, emergency management, hazardous materials response personnel, public warning information, and evacuation/sheltering measures.	Kern County, Office of Emergency Services	Section 4.15.2

4.15.5.1 Federal LORS

4.15.5.1.1 Resource Conservation and Recovery Act

The RCRA governs the management of solid and hazardous waste to protect human health and the environment. It establishes a framework for the proper handling, treatment, storage, and disposal of waste, including requirements for tracking hazardous materials from their point of generation to final disposal (commonly referred to as "cradle-to-grave" management). For mineral and petroleum extraction facilities, RCRA is particularly relevant in managing waste byproducts such as drilling fluids, produced water, and contaminated soils. While certain oil and gas exploration and production wastes are currently exempt from RCRA's hazardous waste regulations under the so-called "E&P exemption," these facilities must still comply with applicable solid waste and non-exempt hazardous waste requirements. RCRA also plays a role in site remediation efforts when contamination from past operations is identified.

4.15.5.1.2 Occupational Safety and Health Administration

OSHA establishes workplace safety and health standards to protect employees from hazards, including those associated with hazardous materials. OSHA regulations require employers to implement safety measures such as proper labeling, storage, handling, and disposal of hazardous substances. Key components include the Hazard Communication Standard, which ensures workers are informed about the chemical hazards they may encounter, and the Process Safety Management standard, which applies to



facilities handling large quantities of highly hazardous chemicals. In mineral and petroleum extraction operations, OSHA regulations are critical for managing worker exposure to toxic substances, flammable materials, and other chemical hazards common in drilling, refining, and storage activities. Compliance with OSHA helps ensure that employees are trained, equipped with proper protective gear, and prepared to respond to chemical spills or emergencies.

4.15.5.2 State LORS

California laws and regulations relevant to hazardous waste handled at the Project include CHSC Section 25500 (hazardous materials), and CHSC 25531 (regulated substances).

4.15.5.2.1 Title 8, CCR, Section 339; Section 3200 et seq., Section 5139 et seq., and Section 5160 et seq.

Title 8 CCR Section 339 lists hazardous chemicals relating to the Hazardous Substance Information and Training Act; Title 8 CCR Section 3200 et seq. and 5139 et seq. address control of hazardous substances; and Title 8 CCR Section 5160 et seq. addresses hot, flammable, poisonous, corrosive, and irritant substances.

4.15.5.2.2 Health and Safety Code

CHSC Section 25500 CHSC, Section 25500, et seq., and the related regulations in 19 CCR 2620, et seq., require local governments to regulate local business storage of hazardous materials in excess of certain quantities. CHSC, Section 25531, et seq., (CalARP) regulates the registration and handling of regulated substances. Regulated substances are any chemicals designated as an EHS by U.S. EPA as part of its implementation of SARA Title III. CHSC Section 25531 overlaps or duplicates some of the requirements of SARA and the FCAA. Facilities handling or storing regulated substances at or above peak threshold quantities must register with their local CUPA and prepare a RMP, formerly known as a Risk Management and Prevention Program (19 CFR 1910.119). CalARP is found in Title 19 CCR, Chapter 4.5.

4.15.5.2.3 California Hazardous Waste Control Law

CalEPA administers the California Hazardous Waste Control Law to regulate hazardous wastes. The Hazardous Waste Control Law lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.



4.15.5.3 Local LORS

4.15.5.3.1 Kern County General Plan

The Kern County General Plan's Safety Element has some local ordinances that apply to the Project (Kern County, 2009). The General Plan includes the following safety-related goals and policies relevant to this Project:

Goal/Policy Name	Goal/Policy Text	Project Compatibility
Safety Hazardous Materials Policy 1	The proposed siting or expansion of hazardous waste facilities will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	*The Project would comply with the Kern County Hazardous Waste Management Plan.*
Safety Hazardous Materials Policy 2	Innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.	*The Project would generate waste amine. The spent solvent would be stored within the SMS effluent tank and then removed by a vacuum truck and sent to a third-party hazardous waste treatment center. Solvent waste material would be disposed of in accordance with applicable law requirements at a fully regulated and permitted facility. CRC and site personnel would follow recommended measures described in EFG+ solvent Safety Data Sheet (SDS) Accidental Release Measures. All hazardous waste would be placed in appropriate designated containers and removed from the Project site.*

4.15.5.3.2 Kern County Hazardous Materials Business Plan

A HMBP is an electronic compilation of detailed information on the activities, hazardous materials inventory stored and/or generated onsite, the emergency response/contingency plan for procedures in the event of a release or threatened release of a hazardous material/waste, the employee training plan(s), and safety procedures in the event of a release or threatened release of a hazardous material/waste. A HMBP provides basic information necessary for use by first responders in order to protect public health, safety, and the environment from a release or threatened release of a hazardous material/waste. The HMBP also satisfies the federal Tier II reporting requirements and the state's CERCLA. The material threshold for this program is 55 gallons of a liquid, 500 pounds of a solid, 200 cubic feet of a compressed gas, and/or the applicable state/federal threshold quantity for an extremely hazardous material.



4.15.6 References

Stantec. 2025j. CalCapture CCS Project, Phase I Environmental Site Assessment. October 2025.

Kern County. 2009. Kern County General Plan. Accessed April 2025. https://psbweb.kerncounty.com/planning/pdfs/kcgp/KCGP_Complete.pdf.

Kern County. 2011. Taft Recycling and Sanitary Landfill Project, Recirculated Draft Environmental Impact Report. March. Accessed at: Taft Sanitary Landfill Recirculated Draft EIR - March 2011.

4.16 Water Resources

The information and analysis presented in this section have been derived from the Hydrology Study and Water Supply Assessment prepared for the Project and included as Appendix L and Appendix T, respectively (Stantec 2025g and Stantec 2025n). Table 68 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 68 Appendix B Information Requirements for an AFC – Water Resources

Summary of Requirement	Section
Water Resources	
Information required to apply for applicable permits: (i) Waste Discharge Requirements, NPDES Permit, Section 401 Certification or Waiver from RWQCB (ii) Construction/Industrial Waste Discharge and Industrial Pretreatment permits from wastewater agencies (iii) Nationwide and/or Section 404 Permits from U.S. Army Corps of Engineers (iv) Underground Injection Control Permits from EPA, California Division of Oil and Gas, and RWQCB	Section 2.2.6, Section 2.3, Section 4.16.2.2.1, Section 4.16. Section 5.2.7, Section 4.2.2.6
Hydrologic setting of the project, including maps (1:24,000 scale or approved alternative) and discussion of: (i) Groundwater bodies and related geologic structures (ii) Surface water bodies (iii) Water inundation zones (e.g., 100-year floodplain, tsunami zones) (iv) Flood control facilities (existing and proposed) (v) Groundwater wells within ½ mile if pumping is proposed	Section 4.16.1.5, Section 4.16.1.6, Section 4.16.2.2.1
Description of water use and discharge: (i) Source(s) of primary and backup water supplies and rationale (ii) Physical and chemical characteristics of source and discharge waters, including seasonal variation and lab data (iii) Average and maximum daily/annual water demand and wastewater discharge for construction and operation (iv) Facilities for water conveyance, treatment, and discharge; include water mass balance diagram (v) Will-serve letter or intent from water purveyor confirming supply availability and conditions (vi) Transfers/exchanges of water: parties, contracts, source, agency approvals, environmental analysis, regulations, and compliance (vii) Water and heat balance diagrams for average and peak flows, including conservation measures and reductions (viii) Will-serve letter, permit, or contract for wastewater/stormwater discharge; if unavailable, identify likely entity and discuss service assurance, capacity, and restrictions	Section 4.16.1.5, Section 4.16.1.6, Section 4.16.2.2

Summary of Requirement	Section
Stormwater drainage elements: (i) Monthly/seasonal precipitation and runoff patterns for site and surrounding area (ii) Drainage facilities and design criteria (e.g., system capacity, design storm, runoff estimates) (iii) Assumptions and calculations for runoff and flow rate changes pre- and post-construction (iv) Regional/local drainage regulations and project compliance	Section 4.16.1.5, Section 4.16.1.6, Section 4.16.2.2.1
Impacts analysis and LORS conformance: (i) Effects of project water demand on supply and other users, consistency with RWQCB basin plans, and changes to water quality (ii) Groundwater pumping impacts including aquifer drawdown modeling, effects on nearby wells, contaminant migration, and groundwater conditions (iii) Effects of construction and operation on water quality and mitigation via best management practices (iv) Wastewater disposal impacts on receiving waters, feasibility of pre-treatment, beneficial uses, and justification for not using zero liquid discharge (v) Cumulative impacts of fresh water use, alternative supply and cooling options, and justification for not using alternatives (vi) Effects on 100-year floodplain, adjacent land flooding potential, and other inundation zones (vii) Assumptions, evidence, references, and calculations used in the analysis	Section 4.16.2.2

4.16.1 Environmental Setting

4.16.1.1 Hydrogeologic Conditions

The Project is located within the Kern River Flood Canal Subwatershed (Hydrologic Unit Code ID: 180300121204), which has a total drainage area of 22,270 acres. There are no jurisdictional surface water bodies (creeks, streams, or rivers) within the Project site. However, there are superficial drainages throughout the Project site that drain in the direction of the natural topography to the north.

4.16.1.2 Kern County Subbasin Description

The Project is located in the Kern County Subbasin (DWR Subbasin No. 5-022.14) within the southernmost portion of the Tulare Lake Hydrologic Region and the larger San Joaquin Valley Groundwater Basin (WKWD GSA). The Kern County Subbasin occupies an area of approximately 2,800 square miles (GEI, 2022) and is bounded by the Sierra Nevada Mountains on the east, the Tehachapi and San Emigdio Mountains on the southeast and southwest, respectively, the Temblor Range on the west and the Kings and Tulare Counties on the northwest and northeast, respectively. The Kern County Subbasin (Subbasin) is also adjacent to the White Wolf Subbasin on the southeast, the Kettleman Plain Subbasin on the northwest and the Tulare Lake and Tule Subbasins on the north (Tukman, 2021).

4.16.1.3 Climate

Climate in the region is characterized as arid to semi-arid with average annual precipitation of six to seven inches per year. Approximately 95 percent of the precipitation falls between October and April (DWR 2015). Average precipitation by day within the Bakersfield – Buttonwillow area, located approximately six miles north of the Project site, has ranged from zero to 0.37 inches between January 2010 and July 2023. During this same time span and in the same area, average temperature by day ranges from 42.7 degrees ºF in late December to 85 ºF in mid-August (National Weather Service [NWS] and National Oceanic and Atmospheric Administration [NOAA] 2023).

4.16.1.4 Land Cover

The proposed Project is located within the developed area of the EHOF which is mostly cleared space for future use with some existing impervious surfacing. The cleared space is comprised primarily of reclaimed sites with compacted bare soil and native and non-native weedy vegetation. The existing impervious areas consist primarily of roads, parking lots, pipe-racks, oil and gas production facilities, and buildings.

4.16.1.5 Soil Characteristics

The Hydrologic Soil Group (HSG) was determined using the NRCS Web Soil Survey. The areas tributary to the Study Area consists of HSG A. Soils in HSG A categorization have high infiltration rates even when thoroughly wetted, consisting mostly of excessively well drained soils, and resulting in low runoff potential.

4.16.1.6 Site Drainage

The Project site is located at the headwaters of the watersheds analyzed. Runoff is mainly overland flow consisting of mostly sheet flow and shallow concentrated flow with some channel flow. Runoff from the Study Area drains north-east for the tributary watersheds located east of Elk Hills Road and south-east for the tributary watersheds east of Elk Hills Road. Drainage courses within the area of the Project site are hydrologically isolated and therefore do not contain Waters of the United States.

4.16.2 Impact Analysis

4.16.2.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether water resources impacts are significant.

Hydrology and Water Quality. Would the Proposed Project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface of groundwater 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 or 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?

iv) impede or redirect flood flows?

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Utilities and Service Systems. Would the Project:

a) Addressed in Section 4.7 – Land Use.

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 waste water 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) Addressed in Section 4.15 – Waste Management.

e) Addressed in Section 4.15 – Waste Management.

4.16.2.2 Impact Assessment

4.16.2.2.1 Water Quality Standards, Waste Discharge Requirements, and Groundwater Quality

Construction

Less than significant. Construction of the Project would require excavation, grading, and recontouring of soil at the Project site. During these activities, soils could be become exposed to high winds or heavy precipitation causing a substantial increase in sedimentation in storm water run-off. In addition, construction



activities would require the use of hazardous materials including but not limited to petroleum products (e.g., gasoline, diesel, and motor oil) and automotive fluids (e.g., antifreeze and hydraulic fluids). The mobilization of sediment or inadvertent spills or leaks of such pollutants could affect the quality of runoff water from the construction sites. However, because the Project would disturb more than one acre, construction would be subject to the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit). As part of this process, the CRC would be required to comply with the NPDES Construction General Permit. Compliance with this permit would require the preparation and implementation of a SWPPP that would identify pollutant sources that may affect the quality of storm water discharge and implement BMPs, such as erosion control and pollution prevention measures, to be used during construction. The Project SWPPP would include BMPs to minimize the impacts of construction activities to water quality. With implementation of the BMP requirements required by the state Construction General Permit, the potential for pollutants and sediment to affect the water quality of runoff from construction sites would be minimized to less- than-significant levels. Dewatering is not anticipated for this Project.

Operations

Less than significant. The proposed Project or variant would comply with all applicable water quality regulations for disposal of wastewater. The limited footprint of the CCU would not modify surface water quality because of the minimal increase in impervious area and peak runoff (less than 3 cubic feet per second for each watershed) from existing conditions. In compliance with U.S. EPA SPCC Plan requirements, chemical storage tanks will be provided with secondary containment with 110% capacity for the largest tank. Additionally, the proposed implementation of a lined retention basin onsite will capture the excess runoff which will be disposed via an existing UIC Class I injection well. Finally, CRC has submitted a Notice of Non-Applicability (NONA) report to the CVRWQCB that documents the EHOF's hydrological isolation from surface waters of the United States (Insight Environmental 2015). Therefore, the operation of the Project would not violate water quality standards, waste discharge requirements, or degrade surface or water quality in the area. Impacts from Project operations would be less than significant.

4.16.2.2.2 Groundwater Supplies and Groundwater Recharge

Construction

Less than significant. The Project would require water for dust suppression, fire protection, and pipeline hydrotesting. The water would be trucked from existing water hydrants within the EHOF and stored on-site, using water from CRC's existing contracted water amounts with WKWD. Therefore, impacts related to construction would be less than significant.

Operations

Less than significant. The Project would include the addition of new impervious surfaces within the CCU due to the implementation of concrete foundations, resurfacing (concrete) of existing dirt roads, development of new access roads, implementation of the proposed CO_2 compression and pumping facility, which includes the Control Room and Parking Area, injection wells, and aboveground pipelines. The



proposed facilities would not have the scale or massing to interfere with groundwater recharge in the area due to the low annual precipitation amounts and high evapotranspiration rates in the area. Storm water falling on the proposed CCU facility would be directed to a lined storm water basin and the water would be pumped out and injected into the deep subsurface via existing injection wells. Additionally, water utilized during operation of the proposed CCS project would be sourced from the WKWD under existing water contracts. Therefore, implementation of impervious surfaces and facilities would not impede groundwater management of the Subbasin.

Project operation would utilize water supplied by WKWD under existing contracts. The western anticline in the Elk Hills is believed to divert the movement of groundwater south through the Buena Vista Valley toward Buena Vista Lake. WKWD describes the Project site as predominantly made up of barren land or oil fields. The only known pumping in the area is considered *de minimis*; in general, yields of water in this area are unsuitable for domestic or industrial use" (WKWD 2022). For the same reasons there is no groundwater use, the Project site is also not suitable for groundwater recharge.

Implementation of the Project would utilize water currently allocated to CRC within its existing water contracts with WKWD. Therefore, it would not decrease groundwater supplies or impede sustainable management of the Subbasin. Impacts would be less than significant.

4.16.2.2.3 Drainage Pattern

Construction

Less than significant with mitigation. Construction of the Project would require excavation, grading, and recontouring of soils in the Project site. During these activities, soils could be become exposed to high winds or heavy precipitation causing erosion. As discussed above in Impact 1, the Project would disturb more than one acre. Therefore, the Project would be required to comply with the NPDES Construction General Permit, which would require the preparation and implementation of a SWPPP. The SWPPP would include BMPs requiring erosion control and pollution prevention measures to be used during construction. The Project SWPPP would include BMPs to minimize the impacts of construction to a less than significant level. Erosion control BMPs have been proven effective at minimizing erosion during construction and associated earthwork activities. Additionally, CRC would be required to provide regular reporting to the CVRWQCB to verify compliance with the SWPPP. The CVRWQCB would provide regulatory oversight to ensure compliance with the NPDES Construction General Permit. With implementation of the SWPPP, the Project would minimize the potential for erosion or siltation to occur during construction, and the impact would be less than significant.

Operations

Less than significant with mitigation. The proposed Project components would add a minimal amount of impervious area to the overall Project site. The increase in impervious area would primarily be located at the 7.25-acre CCU; however, impervious surfaces at this facility would be limited to equipment and vessel foundations, secondary containment basins, roads, and building footprints and the majority of the CCU surfaces would be surfaced in gravel. The Project would not modify existing drainage patterns. While the



Project proposes the addition of a storm drain system within the CCU, this storm drain system will follow existing drainage patterns and discharge to a lined sump located east of the site. The sump will be regarded as a basin in order to capture the runoff from the site, which reflects current drainage patterns at the site. Recovered storm water will be injected via an existing UIC Class I well. The potential impacts to the Project facilities from scour are expected to be minimal.

The modeled peak flow rates show the Project would not excessively create or contribute runoff water or provide substantial additional sources of polluted runoff. However, the proposed improvements may affect the peak flow runoff from the CCU. To provide added hydrologic control at the Project site, the Project proposes the use of a storm water basin to the east of the capture facility that will provide peak flow mitigation for this area.

No jurisdictional aquatic resources are present that would be directly impacted from the Project.

Given the minimal addition of impervious area combined with the implementation of the proposed basin to capture runoff, the Project would not increase any flooding potential within the EHOF or downstream.

4.16.2.2.4 Hazardous Areas

No impact. The Project is not located within flood hazard, tsunami, or seiche zones. The flood hazard was obtained from the FEMA Flood Insurance Rate Map for Kern County, California and Incorporated areas, panel 2225 of 4125 (FEMA 2008). Therefore, the Project would not create impacts during each of the construction and operation phases.

4.16.2.2.5 Water Quality Control Plan or Sustainable Groundwater Management Plan

Less than significant. The proposed Project would not result in a conflict with water quality control plans or sustainable groundwater management plans through compliance with U.S. EPA UIC Class VI regulations that protect USDWs. Therefore, the Project would not create impacts during the construction and operation phases.

Operation of the Project would not conflict with or obstruct implementation of the CWA or Basin Plan because there is no significant surface drainage, no surface water beneficial uses associated with the Project site, and the Aquifer Exemption process determined the groundwater cannot serve as a current or future source of drinking water. In addition, the Project would comply with all applicable regulatory requirements related to water quality and sustainable groundwater management. Therefore, operation of the Project would not conflict with or obstruct implementation of a water quality control or groundwater management plan. This impact would be less than significant.

4.16.3 Cumulative Impacts

Less than significant. The scope of cumulative analysis for water resources consists of the southern San Joaquin Valley area of Kern County. Due to the proposed Project's location within and existing oil and gas

field, the impacts of the Projects together with the impacts of past, present, and reasonably foreseeable future oil and gas development, including wells and abandonment activity to implement CCS projects, constitute cumulative impacts. Mitigation measures presented below would reduce Project-specific impacts to less than significant levels. Additionally, the CTV I project, currently under construction, would also comply with SWPPP requirements to address potential hydrologic and water quality impacts. Mitigation measures imposed on the CTV I project by Kern County will reduce potential hydrologic and water impacts from that Project to less than significant levels. Finally, Kern County has prepared an EIR evaluating the potential impacts (including contributions to cumulative impacts) of oil and gas development in connection with previously proposed amendments to the Kern County Zoning Ordinance: Final Environmental Impact Report - Revisions to the Kern County Zoning Ordinance - 2015(C) Focused on Oil and Gas Local Permitting, certified on November 9, 2015, supplemented by a Supplemental EIR certified on December 11, 2018; an SREIR certified on March 8, 2021; and an Addendum adopted on August 23, 2022. The Oil and Gas EIR is referenced herein as a source of information regarding cumulative impacts from oil and gas development (Kern County 2024). The proposed Project would not result in significant cumulative impacts to water resources within Kern County.

4.16.4 Mitigation Measures

The following MMs are proposed for the Project to reduce water resources impacts to less than significant.

MM HYDRO-1: Prior to The Owner/operator shall provide a comprehensive WEAP to CEC and the County with its first CCS project-related permit application in each calendar year. The program shall include all training requirements identified in Owner/operator Best Management Practices and MMs and include training for all field personnel (including Owner/operator employees, agents and contractors). The WEAP shall include protocols and training for responding to and handling of hazardous materials and hazardous waste management, and emergency preparedness, release reporting, and response requirements.

MM HYDRO-2: The Owner/operator shall comply with all applicable federal, state, regional and local agency water quality protection laws and regulations, and best management practices, as recommended by the California Storm Water Quality Association, including (where applicable) obtaining coverage under the stormwater construction general permit and industrial general permit (or Notice of Non-Availability) issued by the SWRCB.

MM HYDRO-3: The Project shall comply with the following:

1. In areas subject to NPDES stormwater permitting requirements, project Owner/operators shall file a Notice of Intent to the SWRCB to comply with the statewide General Permit for Discharges of Stormwater Associated with Construction Activities (Construction General Permit State Water Resources Quality Control Board Order No 2022-0057-DWQ) (as such permit may be amended, revised or superseded) prior to undertaking all ground-disturbing activities greater than one acre and shall prepare and implement a SWPPP for construction activities on the Project site in accordance with the Construction General Permit. For facilities requiring coverage under the Construction General Permit, the site specific SWPPP shall include measures to achieve the following objectives: (1) all pollutants and their sources, including sources of sediment associated



with construction activity are controlled; (2) all non-stormwater discharges are identified and either eliminated, controlled and treated, (3) site Best Management Practices are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity and (4) stabilization Best Management Practices to reduce or eliminate pollutants after construction are completed. The SWPPP shall be prepared by a qualified preparer and shall include the minimum Best Management Practices required for the identified risk level. The SWPPP shall include a construction site monitoring program that identified requirements for dry weather visual observations of pollutants at all discharge locations and, as applicable, depending on the project risk level, sampling of site effluent and receiving waters. A qualified SWPPP practitioner shall be responsible for implementing and all monitoring for the Best Management Practices as well as all inspection, maintenance and repair activities at the project site. If applicable, each project shall also implement and fully comply with the Industrial Storm Water Permit (Order No 2014-0057-DWQ) and Kern County Municipal Stormwater Permit (Order No 5-01-130). All plans under these requirements shall be submitted to CEC and Kern County Public Works for review and approval.

a) Any change to this State Water Regional Control Board determination will require full compliance with NPDES requirements.

2. Any operator not subject to NPDES stormwater permitting requirements shall implement Best Management Practices during construction and operation. All selected practices shall be shown on a drainage implementation plan and self-certified as complete by a licensed professional qualified in drainage and flood control issues. The plan shall be submitted to the CEC and Regional Water Quality Control Board as applicable. The following Best Management Practices shall be implemented and shown on the drainage implementation plan:

    a) Utilizing established facilities design and construction standards as applicable (e.g., American Society for the Testing and Materials American Petroleum Institute.

    b) Implementing good housekeeping and maintenance practices:

        1. Preventing trash, waste materials and equipment from construction storm water.

        2. Maintaining wellheads, compressors, tanks and pipelines in good condition without leaks or spills.

        3. Designing and maintaining graded pads to not actively erode and discharge sediment.

        4. Maintaining vehicles in good working order

        5. Providing secondary containment for all aboveground storage tanks and maintaining such containment features in good operating condition.

    c) Implementing spill prevention and response measures:

1. Utilizing preventative operating practices such as tank level monitoring, safe chemical handling and conducting regular inspections.

2. Developing and maintaining a spill response plan

3. Conducting spill response training for employees and have a process to ensure contractors have the necessary training

4. Maintaining spill response equipment on site.

d) Implementing material storage and management practices:

1. Preventing unauthorized access

2. Utilizing “run-on” and “run-off” control berms and swales

3. Stabilizing exposed slopes through vegetation and other standard slope stability methods.

3. The proposed Project shall comply with all applicable state, federal and local stormwater management laws. Prior to construction or grading, the owner/operator shall submit a drainage and flood study plan to the CEC, and they may submit the plan to Kern County Public Works - Floodplain division for review and approval.

The Owner/operator shall prepare a drainage plan that complies with requirements to address runoff and the potential for impeding or redirecting 100-year flood flows. The drainage plan shall be prepared in accordance with the Kern County Grading Ordinance, Kern County Green Code, Development Standards and approved by the Kern County Department of Public Works, Floodplain Management Section. The drainage plan shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sedimentation or any other pollutants from moving offsite and into receiving waters. The requirements of the Plan shall be incorporated into design specifications. Recommended best management practices for the construction phase must be shown on a drainage plan, and shall include the following:

a) Erosion Control -

1. Scheduling of construction activities to avoid rain events.

2. Implementing runoff erosion control methods consistent with the drainage plan when vegetation has been removed.

b) Sediment Control -

1. Secure stockpiling of soil.

2. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas.

c) Non-stormwater Control -

1. Fueling and maintenance of equipment and vehicles shall be managed so as to prevent contamination of runoff from the site.

2. Concrete handling techniques shall be consistent with the drainage plan.

d) Waste and Material Management -

1. Managing construction materials, consistent with the drainage plan and designating construction staging areas in or around the Project site.

2. Stockpiling and disposing of demolition debris, concrete, and soil in compliance with regulatory requirements and consistent with the drainage plan.

3. Prompt removal and disposal of litter.

4. Disposal of demolition debris, concrete and soil in compliance with regulatory requirements for solid waste.

5. Provide and maintain secondary containment to prevent or eliminate pollutants from moving offsite and into receiving waters.

e) Post-Construction Stabilization -

1. Ensuring the stabilization of all disturbed soils per revegetation or application of a soil binder.

4. If construction activities will alter federal jurisdictional waters, project Owner/operator s shall comply with the federal CWA Section 404 and Section 401 permitting and certification requirements. If construction activities will alter state waters, project Owner/operators shall comply with CDFW Streambed Alteration Agreement requirements.

4.16.5 Level of Significance After Mitigation

Residual impacts would be less than significant.

4.16.6 Laws, Ordinances, Regulations, and Standards

Water resources at the proposed Project are governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 69.

Table 69 LORs for Water Resources

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Clean Water Act	Controls discharges to the waters of the United States	RWQCB	Sections 4.16.2
National Pollutant Discharge Elimination System	Controls discharge of wastewater and storm water to the surface waters of the United States	RWQCB	Sections 4.16.2
Safe Drinking Water Act of 1974	UIC Class I for underground injection of non-hazardous wastewater and Class VI injection of CO_2 for sequestration.	U.S. EPA	Refer to Section 1 – Introduction.
State			
Porter-Cologne Water Quality Control Act	Regulates discharges of waste to state waters and land	RWQCB – Central Valley, SWRCB	Section 4.16.2
Sustainable Groundwater Management Act	Authorizes local agencies to manage groundwater in a sustainable manner and allows limited state intervention when necessary to protect groundwater resources.	California Department of Water Resources	Section 4.16.2
Local			
Chapter 1. Land Use, Conservation, and Open Space, Policy 10:	To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered: • Promote groundwater recharge activities in various zone districts. • Support for the development of Urban Water Management Plans	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	and promote Department of Water Resources grant funding for all water providers. • Support the development of groundwater management plans. • Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.		
Policy 34	Ensure that water quality standards are met for existing users and future development.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. Water quality impacts are evaluated in Section 4.16, *Water Resources*. Consistent with this policy, the Project would implement best management practices during construction to avoid impacts to water quality. The Project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed. In addition, per MMs HYDRO-2 and HYDRO-3, the Project would be required to implement a SWPPP, which would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			pollutants that could contaminate water quality and would be applicable to all areas of the Project. In addition, prior to the commencement of construction activities, the Project proponent would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.
Policy 39	Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, the Project would not impact the County's ability to develop its groundwater supply. However, because Project construction would cause more than 1 acre of ground disturbance, applicable Mitigation Measures apply. The Project would implement MM HYDRO-2 and HYDRO-3 requiring a SWPPP to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality within any areas of the Project.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Chapter 1. Land Use, Conservation, and Open Space Element, 1.3 Physical and Environmental Constraints, 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.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1, of the Kern County General Plan, above.
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.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See Section 4.16, *Water Resources*. As described therein, the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement MM HYDRO-2 and HYDRO-3, as described in that section.
Policy 9	Construction of structures that impede water flow in a primary floodplain will be discouraged.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See Section 4.16, *Water Resources*. As described therein, the Project site is not located within the 100-year floodplain and is

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement MM HYDRO-2 and HYDRO-3, as described in that section.
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 MMs 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.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT See Section 4.16, *Water Resources*. As described therein, the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement MM HYDRO-2 and HYDRO-3.
Policy 11	Protect and maintain watershed integrity within Kern County.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 of the Kern County General Plan, above. As discussed in Section 4.16, *Water Resources*, the Project site would implement BMPs during construction to avoid impacts to water quality. As described in Section 4.6, *Hazards and Hazardous Materials*, the Project would also implement MMs HM-1 through HM-8, which

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			would require the Project proponent to properly manage wastes to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Implementation Measure H.	Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9 and Policy 11 of the Kern County General Plan, above and Section 4.16, *Water Resources*. the Project site is not located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the Project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and MM HYDRO-2 and HYDRO-3.
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.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Goal 1 and Policy 9, Policy 11, and Measure H, of the Kern County General Plan, above.
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.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See 1.3, Physical and Environmental Constraints, Policy 11 and Measure D of the Kern County General Plan, above. The Project would implement BMPs in accordance with a

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			SWPPP that would be required to comply with Kern County's National Pollutant Discharge Elimination System (NPDES). This would ensure compliance with the State Water Resources Control Board's Construction General Permit, as applicable.
Implementation Measure X.	Encourage effective groundwater resource management for the long-term benefit of the County through the following: • Promote groundwater recharge activities in various zone districts. • Support for the development of Urban Water Management Plans and promote Department of Water Resources grant funding for all water providers. • Support the development of Groundwater Management Plans. • Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water, and groundwater and desalination.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. The applicant would be required to comply with mitigation measures that encourage groundwater resource management.
1.4. Public Facilities and Services Goal 9.	Serve the needs of industries and Kern County residents in a manner that does not	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, the operator shall comply with

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	degrade the water supply and the environment and protect the public health and safety by avoiding surface and subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.		all applicable federal, state, regional, and local agency water quality protection laws and regulations, and commonly utilized industry standards, including obtaining all applicable stormwater construction permits from the Central Valley Regional Water Quality Control Board (CVRWQCB). The operator would also implement best management practices, such as those set forth in the Kern County Grading Ordinance. In addition, because Project construction would cause more than 1 acre of ground disturbance, the Project would implement Mitigations Measures MMs HYDRO-2 and HYDRO-3 requiring a (SWPPP to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality within any areas of the Project. Therefore, operation of the Project would not violate water quality standards, waste discharge requirements, or degrade surface or water quality in the area.
1.9. Resource Policy 11	Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. SThe Project would not result in the removal of alteration of any drainages.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	runoff and silt deposition through utilization of grading and flood protection ordinances.		
Implementation Measure C	The County Planning Department will seek review and comment from the County Public Works Department, Engineering and Survey Services Division on the implementation of the National Pollution Discharge Elimination System for all discretionary projects.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, construction activities in the Project area that could result in a discharge to waters of the U.S. are subject to the California NPDES General Construction Permit (General Construction Activity NPDES Storm Water Permit, 2022-0057-DWQ).
1.10. General Provisions Implementation Measure E	All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site-specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. Water and wastewater impacts are evaluated in Section 4.16, *Water Resources*, and Section 4.7, *Land Use*. No off-site water or sewage connections to municipal systems are proposed. During construction, bottled water would be provided, and portable toilets and hand washing facilities are proposed. During operation, workers will utilize existing sanitary facilities at EHOF. Final review of the Project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the Project would not pose significant environmental or public health and safety hazards.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.		
1.10.6. Surface Water and Groundwater Policy 34	Ensure that water quality standards are met for existing users and future development.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. Water quality impacts are evaluated in Section 4.16, *Water Resources*. Consistent with this policy, the Project would implement best management practices during construction to avoid impacts to water quality. The Project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed. In addition, per MMs HYDRO-2 and HYDRO-3, the Project would be required to implement a SWPPP, which would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality and would be applicable to all areas of the Project. In addition, prior to the commencement of construction activities, the Project proponent would be required to adhere to the requirements of the

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.
Policy 39	Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. As discussed in Section 4.16, *Water Resources*, the Project would not impact the County's ability to develop its groundwater supply. However, because Project construction would cause more than 1 acre of ground disturbance, applicable Mitigation Measures apply. The Project would implement MM HYDRO-2 and HYDRO-3 requiring a SWPPP to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality within any areas of the Project.
Policy 41	Review development proposals to ensure adequate water is available to accommodate projected growth.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. Public utility impacts are evaluated in Section 4.16, *Water Resources*. As described therein, the Project would have less-than-significant impacts on water supplies.
Policy 43	Drainage shall conform to the Kern County Development Standards	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. See 1.9, Resources, Policy 11, above

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	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 CEQA, to prevent the degradation of the watershed to the extent practical.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. Water quality impacts are evaluated in Section 4.16, *Water Resources*. Consistent with this measure, construction-related impacts related to alteration of flow patterns and impervious surfaces would be less than significant. In addition, the Project would be required to submit a drainage plan to the County for review and would implement MM HYDRO-3, which requires a final drainage plan designed to evaluate and minimize potential increases in runoff from the Project site.
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 Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. Public Utility impacts are discussed in Section 4.16, *Water Resources*. As discussed therein, the Project would require water for dust suppression, fire protection, and pipeline hydrotesting. Water usage during construction, primarily for dust-suppression purposes. The water would be delivered by pipeline utilizing existing WKWD contracts, trucked and stored on-site, and would not substantially decrease groundwater supplies within the Subbasin.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
4.5. Landslides, Subsidence, Seiche, and Liquefaction, Policy 3	Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Kern County Planning and Natural Resources Dept., Kern County Public Works Dept.	CONSISTENT. As discussed in Section 4.5, *Geological Hazards and Resources,* conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. Grading would be subject to compliance with the NPDES General Construction Permit requirements and site-specific measures would be incorporated into the SWPPP as required by MM HYDRO-2 as discussed in Section 4.16, *Water Resources*. The implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Implementation of MM GEO-3, which includes adherence to the requirements of applicable building codes and earthquake safe design standards), would ensure that effects from seismic-related ground failure including liquefaction would be minimized. In addition, with regard to erosion, as discussed in Section 4.16, *Water Resources,* the Project would implement HYDRO-3, which requires the completion of a final drainage plan for the Project prior to the issuance of a grading permit.

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
			This would serve to reduce any impacts related to erosion, consistent with this policy.

4.16.6.1 Federal LORS

4.16.6.1.1 Clean Water Act

Regulatory authorities exist on both the State and federal levels for the control of water quality in California. The U.S. EPA is the federal agency, governed by the CWA, responsible for water quality management. The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies. Section 303 of the CWA requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards to protect those uses for all WOTUS.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are the waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans to improve water quality. This process includes development of Total Maximum Daily Loads (TMDL) that set discharge limits for non-point source pollutants. The Ducheny Bill (AB 1740) requires the SWRCB and its nine Regional Water Quality Control Boards to post this list and to provide an estimated completion date for each TMDL. The list is administered by the Regional Boards, in this case, the Central Valley RWQCB. The Project site does not contain any surface waters and therefore, no surface water resources are included in the California 303(d) List of Impaired Water Bodies.

4.16.6.1.2 National Pollutant Discharge Elimination System

Part of the CWA provides for the NPDES, in which discharges into navigable waters, are prohibited except in compliance with specified requirements and authorizations. Under this system, municipal and industrial facilities are required to obtain a NPDES permit that specifies allowable limits based on available wastewater treatment technologies for pollutant levels in their effluent. In California, the U.S. EPA has delegated the implementation of this program to the SWRCB and to the RWQCB. Storm water discharges are regulated somewhat differently.

Storm water runoff from construction areas of one acre or more require either an individual permit or coverage under the statewide General Construction Storm Water Permit. In addition, specific

industries, including wastewater treatment plants that have direct storm water discharges to navigable waters are required to obtain either an individual permit issued by the RWQCB, or obtain coverage under the statewide General Industrial Storm Water Permit for storm water discharges.

A non-point source is a diffused source, such as land runoff, precipitation, deposit from the atmosphere, or percolation. Major non-point sources of water pollution are agriculture, mining, oil and gas extraction, pastureland and feedlots, land disposal, and urban runoff. For non-point sources, the Basin Plan outlines the approach that the Regional Board has taken to control non- point source pollution in its Urban Runoff Management scheme. Part of the strategy involves the permitting of storm water discharges from all facilities associated with industrial activities and from all construction activities that result in the disturbance of land totaling one acre or more.

4.16.6.1.3 Federal Emergency Management Agency

Under EO 11988, FEMA is responsible for the management and mapping of areas subject to flooding during a 100-year flood event (i.e., one percent chance of occurring in a given year). FEMA requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year flood plain.

4.16.6.1.4 The Safe Drinking Water Act of 1974 (42 USC §300f et seq.)

The SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect all waters actually or potentially designed for drinking use, whether from aboveground or underground sources, including rivers, lakes, reservoirs, springs, and groundwater wells (EPA 2016). The SDWA authorizes the U.S. EPA to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water.

Oil and gas extraction typically produces large amounts of brine, which can contain toxic metals and radioactive substances. These brines can cause damage to the environment and public health if discharged into water or land. Deep underground injection of brines in formations isolated from underground sources of drinking water prevents soil and contamination. Injection became the preferred way to dispose of waste fluids when states began to implement rules preventing disposal of brine to surface water bodies and soils (EPA 2016).

The U.S. EPA has authority under the SDWA to regulate the subsurface injection of fluids below, into, and above an USDW and has established an UIC program by regulations promulgated under the Act (40 CFR 144-147). A USDW is defined as any aquifer that (1) supplies a public water system or (2) contains enough groundwater to supply a public water system and either currently supplies drinking water for human consumption or contains less than 10,000 mg/L of TDS. An injection well is used to place fluid underground into porous geologic formations that may range from deep sandstone or limestone to a shallow soil layer. Injected fluids may include water, wastewater, brine (saltwater), or water mixed with chemicals (EPA 2016). The U.S. EPA ensures that underground injection wells do not endanger any current and future underground or surface sources of drinking water (EPA 2016). Injection wells are separated into six



classes. Class I wells inject hazardous and non-hazardous wastes into deep, isolated rock formations that are separated from the lowest USDW by layers of impermeable clay and rock. Class II wells inject fluids associated with oil and natural gas production operations. Class III wells inject super-heated steam, water, or other fluids into formations to dissolve and extract minerals. Class IV wells inject hazardous or radioactive wastes into underground sources of drinking water and were banned by the U.S. EPA in 1984 (EPA 2016). Class IV wells may only operate as part of a U.S. EPA or state-authorized groundwater cleanup action. Class V injection wells include wastewater disposal wells used by the geothermal industry and shallow septic system and cesspool wells that drain liquid waste into the ground. Class VI wells are used to inject CO_2 into deep rock formations for long-term underground storage, also called geologic sequestration or "storage." Geologic storage refers to technologies to reduce CO_2 emissions to the atmosphere and mitigate climate change (EPA 2016).

4.16.6.1.5 National Flood Insurance Act

FEMA is responsible for managing the National Flood Insurance Program (NFIP), which makes federally backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The NFIP, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level (known as base flood elevation), and a requirement that subdivisions be designed to minimize exposure to flood hazards.

To facilitate identifying areas with flood potential, FEMA has developed Flood Insurance Rate Maps (FIRMs) that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements. Kern County is a participating jurisdiction in the NFIP and, therefore, all new development must comply with the minimum requirements of the NFIP.

4.16.6.2 State LORS

4.16.6.2.1 State Water Resources Control Board

SWRCB, located in Sacramento, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate factors which may affect the quality of Waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine RWQCBs. The Project is located within the Central Valley Region.

4.16.6.2.2 Regional Water Quality Control Board, Central Valley Region

The RWQCB Basin Plan (Third Edition, May 2018) was referenced to determine existing and potential beneficial uses of groundwater in the Project site, which is located in Detailed Analysis Unit 260. Per



SWRCB Resolution No. 88-63, groundwater is designated for municipal and industrial groundwater beneficial uses (RWQCB 2018; SWRCB 2006). However, as defined in the Aquifer Exemption application and supporting materials, groundwater supply is not sufficient quantity or quality to serve these potential uses (EPA 2018). Additionally, this is within WKWD's Western Watch Area, which is described as predominantly made up of barren land or oil fields (WKWD 2022). Depth to water in the Spring of 2022 ranged between 122 to 148 feet and shows a gradient to the east-southeast. However, depth to groundwater is estimated at over 500 feet below ground surface in the Project site. A groundwater assessment conducted in 1987 encountered no groundwater to a depth of 420 feet. In addition, a 1000-foot soil boring was drilled in 1991 at the nearby and no groundwater was encountered (SEI 2022). Lastly, any groundwater that is encountered in this area is generally unusable due to high salinity levels.

4.16.6.2.3 Department of Water Resources

The major responsibilities of the California DWR 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, the 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.

4.16.6.2.4 Porter-Cologne Water Quality Control Act (California Water Code §13000 et seq.)

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (Water Code Sections 13000 et seq.), passed in 1969, is the primary statute covering the quality of waters in California and requires protection of water quality by appropriate designing, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by an RWQCB. The SWRCB is the primary State agency responsible for protecting the quality of the State's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing the CWA Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs. The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining WDRs, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every three years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as previously discussed. The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "Waters of the State" file a report of waste discharge. Absent a potential effect on the quality of "Waters of the State," no notification is required. However, the RWQCB encourages

implementation of BMPs similar to those required for NPDES stormwater permits to protect the water quality objectives and beneficial uses of local surface waters.

4.16.6.2.5 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA), effective January 1, 2015, authorizes local agencies to manage groundwater in a sustainable manner and allows limited state intervention when necessary to protect groundwater resources. The SGMA requires the creation of a Groundwater Sustainability Agency (GSA) that would develop and implement a Groundwater Sustainability Plan (GSP) to manage and use groundwater in a manner that can be maintained during the planning and implementation horizon without undesirable results, defined as follows:

1) Chronic lowering of groundwater levels, indicating a significant and unreasonable depletion of supply;

2) Significant and unreasonable reduction of groundwater storage;

3) Significant and unreasonable seawater intrusion;

4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies;

5) Significant and unreasonable land subsidence that substantially interferes with surface land uses; and

6) Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

The DWR has determined that processed water generated by oil and gas production is not groundwater. A comprehensive, detailed record of the groundwater in the Kern County basins that include both the project and cumulative projects and the Sustainable Groundwater Management Act plans are provided in Section 4.9, Hydrology and Water Quality of the Kern County Oil and Gas Supplemental Recirculated EIR (SREIR) (2020/2021).

The WKWD GSA was created June 28, 2016, when WKWD's Board of Directors adopted Resolution 16.03, electing to become a GSA in the Subbasin and included the WKWD service area. The WKWD is a member of the Kern Groundwater Authority (KGA) and has a Management Area Plan within the KGA's GSP. The WKWD GSA jurisdictional area is defined by the WKWD service boundary with some additional proximal parcels owned and operated by oil production companies and other private landowners. The WKWD GSA is located along the western edge of the Subbasin and comprises 299 square miles. The WKWD GSA formed two management areas, the North Project and South Project management areas, and three watch areas that include the Lake Watch Area, Little Santa Maria Valley Watch Area, and the Western Watch Area. The Project is located in the Western Watch Area because "the only known pumping in the area is considered de minimis; in general, yields of water in this area are unsuitable for domestic or industrial use"



(WKWD 2022). Subsequently, no management or monitoring actions have been established in the Western Water Area.

The SGMA allows for multiple GSPs implemented by multiple GSAs and coordinated pursuant to a single coordination agreement that covers the entire basin to be an acceptable planning scenario (Water Code § 10727). In the San Joaquin Valley Kern County Subbasin ("Subbasin"), six GSPs were prepared by 17 GSAs for the various management areas established in the Subbasin pursuant to the coordination agreement and submitted to the California DWR for review. Collectively, the six GSPs and the coordination agreement are referred to as the Plan for the Subbasin. Individually, the GSPs include the following:

- Kern Groundwater Authority Groundwater Sustainability Plan–Amended July 2022, prepared by the KGA GSA, Semitropic Water Storage District GSA, Cawelo Water District GSA, City of McFarland GSA, Pioneer GSA, WKWD GSA, and Westside District Water Authority GSA
- Amended Kern River Groundwater Sustainability Plan, July 2022, prepared by the Kern River GSA and Greenfield County Water District GSA
- Buena Vista Water Storage District GSA Groundwater Sustainability Plan, July 2022, prepared by the Buena Vista Water Storage District GSA
- Olcese Groundwater Sustainability Agency Groundwater Sustainability Plan, July 2022, prepared by the Olcese Water District GSA
- Henry Miller Water District Groundwater Sustainability Plan, July 2022, prepared by the Henry Miller Water District GSA
- South of Kern River Groundwater Sustainability Plan, July 2022, prepared by the Arvin GSA, Tejon-Castaic Water District GSA
- Wheeler Ridge-Maricopa GSA

On March 2, 2023, the DWR deemed the six GSPs inadequate for the following deficiencies:

- Deficiency 1 involved how the Plan for the Subbasin established and justified undesirable results that represent effects caused by groundwater conditions occurring throughout the Subbasin.
- Deficiency 2 involved the establishment of minimum thresholds for the chronic lowering of groundwater levels.
- Deficiency 3 involved the establishment of sustainable management criteria for land subsidence.

These findings are based on all uses of groundwater in the region and not specific to oil and gas production. Under the SGMA, the Groundwater Authorities are required to begin implementation of the plans, although found inadequate, while working to amend the plans and address the deficiencies.



4.16.6.2.6 NPDES Construction General Permit

Construction associated with the Project would disturb more than one acre of land surface affecting the quality of stormwater discharges. Therefore, the Project would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2022-0057-DWQ, NPDES No. CAS000002. The Construction General Permit regulates discharges of pollutants in stormwater associated with construction activity to WOTUS from construction sites that disturb one acre or more of land surface, or that are part of a common plan of development or sale that disturbs more than one acre of land surface. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation, construction of buildings, and linear underground projects, including installation of water pipelines and other utility lines. The Construction General Permit requires that construction sites be assigned a Risk Level of 1 (low), 2 (medium), or 3 (high), based both on the sediment transport risk at the site and the receiving waters risk during periods of soil exposure (e.g., grading and site stabilization). The sediment risk level reflects the relative amount of sediment that could potentially be discharged to receiving water bodies and is based on the nature of the construction activities and the location of the site relative to receiving water bodies. The receiving waters risk level reflects the risk to the receiving waters from the sediment discharge. Depending on the risk level, the construction projects could be subject to the following requirements:

- Effluent standards; Good site management “housekeeping”
- Non-stormwater management
- Erosion and sediment controls
- Run-on and runoff controls
- Inspection, maintenance, and repair
- Monitoring and reporting requirements

The Construction General Permit requires the development and implementation of a SWPPP that includes specific BMPs designed to prevent sediment and pollutants from contacting stormwater from moving offsite into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The SWPPP must be prepared before the construction begins. The SWPPP must contain a site map(s) that delineates the construction work area, existing and proposed buildings, parcel boundaries, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the Project site. The SWPPP must list BMPs and the placement of those BMPs



that the applicant would use to protect stormwater runoff. Additionally, the SWPPP must contain 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. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers, such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, vehicle and equipment washing and fueling. The Construction General Permit also sets post-construction standards (i.e., implementation of BMPs to reduce pollutants in stormwater discharges from the site following construction).

4.16.6.2.7 California State Nondegradation Policy

In 1968, as required under the Federal antidegradation policy, SWRCB adopted a nondegradation policy aimed at maintaining a high quality of waters in California. The nondegradation policy states that the disposal of wastes into State waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the State and to promote the peace, health, safety, and welfare of the people of the State. Any discharges associated with the Project would be required to comply with this policy.

4.16.6.3 Local LORS

4.16.6.3.1 Kern County General Plan

Construction and operation of the proposed project would be subject to policies and regulations contained within the general plans including the Kern County General Plan (KCGP), Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to hydrology and water quality. The policies and implementation measures in the KCGP related to hydrology and water quality that are applicable to the project are provided in this section. The project site is located within the KCGP area and, therefore, would be subject to applicable policies and measures of the KCGP. The Land Use, Conservation, Open Space Element, and the Safety Element of the KCGP include goals, policies, and implementation measures related to hydrology and water quality that apply to the project, described as follows.



General Plan Policies, Water Supply

Chapter 1. Land Use, Conservation, and Open Space

Policies

Policy 10: To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered:

- Promote groundwater recharge activities in various zone districts.
- Support for the development of Urban Water Management Plans and promote Department of Water Resources grant funding for all water providers.
- Support the development of groundwater management plans.
- Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 35: Ensure that adequate water storage, treatment, and transmission facilities are constructed concurrently with planned growth.

Policy 38: Encourage utilization of wastewater treatment facilities which provide for the reuse of wastewater.

Policy 39: Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

4.16.6.3.1.1 General Plan Policies, Hydrology

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

1.3. Physical and Environmental Constraints

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 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 MMs 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 H. Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.

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.

Implementation Measure X. Encourage effective groundwater resource management for the long-term benefit of the County through the following:

i. Promote groundwater 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 Groundwater Management Plans.

iv. Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water, and groundwater and desalination.

1.4. Public Facilities and Services

Goals

Goal 9. Serve the needs of industries and Kern County residents in a manner that does not degrade the water supply and the environment and protect the public health and safety by avoiding surface and subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.



1.9. Resource

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.

Implementation Measures

Implementation Measure C. The County Planning Department will seek review and comment from the County Public Works Department, Engineering and Survey Services Division on the implementation of the National Pollution Discharge Elimination System for all discretionary projects.

1.10. General Provisions

Implementation Measures

Implementation Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site-specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

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 groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

Policy 40. Encourage utilization of community water system rather than the reliance on individual wells.

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 CEQA, to prevent the degradation of the watershed to the extent practical.

Implementation Measures

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.

4.5. Landslides, Subsidence, Seiche, and Liquefaction

Policies

Policy 3. Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

4.16.6.3.2 Kern County Code of Building Regulations

Kern County Grading Ordinance (17.28)

Chapter 17.28 Kern County Grading Code. Requirements of the Kern County Grading Code will be implemented. A grading permit will be obtained prior to commencement of construction activities. Of particular note with respect to hydrology and water quality is Section 17.28.140 Erosion Control, which addresses the following:

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.

Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.

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.

4.16.6.3.3 Floodplain Management

Kern County has adopted a Floodplain Management Ordinance (Chapter 17.48 of the Building and Construction Code) that applies to “any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, or storage of equipment or materials.” The purposes of the ordinance



include the promotion of “public health, safety, and general welfare, and to minimize public and private losses due to flood conditions” and compliance “with the requirements of the NFIP Regulations.” Among other implementation measures, the ordinance (1) restricts or prohibits certain uses that are susceptible to flood damage or increase erosion and flood heights or velocities; (2) requires that uses vulnerable to floods be protected against flood damage at the time of initial construction; (3) controls the alteration of natural floodplains, stream channels, and natural protective barriers that accommodate or channel flood waters; (4) controls filling, grading, dredging, and other development which may increase flood damage; and (5) prevents or regulated the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

4.16.6.3.4 Kern County Development Standards

The Kern County Development Standards apply to all developments within Kern County that are outside of incorporated cities. These standards establish minimum design and construction requirements that will result in improvements that are economical to maintain and will adequately serve the general public. The requirements set forth in these standards are considered minimum design standards and will require the approval of the entity that will maintain the facilities to be constructed prior to approval by the County.

4.16.6.3.5 Central Valley Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan that recognizes and reflects regional differences in existing water quality, the beneficial uses of the region’s groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses. The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the project proponent to provide background information on construction activities. Project proponents must apply for the permit under one of the following four conditions:

1) All storm water is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.

2) All storm water runoff is not retained on site but does not discharge to a water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.

3) All storm water runoff is not retained on site, and the discharge is to a water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.



4) Construction activity is between 1 to 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

4.16.7 References

California Department of Water Resources (DWR). 2006. California's Groundwater Bulletin 118 San Joaquin Valley Groundwater Basin Kern County Subbasin. 7p.

FEMA. 2008. Flood Risk Insurance Rate Map for Kern County, California and Incorporated Areas, Panel 2225 of 4125. Accessed Online at: https://msc.fema.gov/portal/home.

GEI. 2022. Kern Groundwater Authority Groundwater Sustainability Plan. 949p.

National Oceanic and Atmospheric Administration. NOAA. 2025. Atlas 14, Volume 6, Version 2 Point Precipitation Frequency Estimates. Accessed online at: https://hdsc.nws.noaa.gov/pfds/.

Soils Engineering Inc. 2023. Preliminary Soil and Geologic Evaluation Terra Vault 1 Carbon Capture Project Elk Hills, Kern County, California.

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U.S. Environmental Protection Agency. 2018. Aquifer Exemption Request for the Elk Hills Oilfield, Phase 2 Area, Kern County, California. 16 p.

4.17 Worker Health and Safety

This subsection summarizes the worker health and safety issues that may be encountered during the construction and operation of the CalCapture CCS Project, pursuant to the CRC Safety Manual (CRC 2024). Due to the nature of this subject, this subsection is formatted differently than the other subsections in Section 4.0. This subsection contains worker safety information, rather than an analysis of Project impacts and proposed MMs. Table 70 below presents a cross-reference for the location of CEC application information submittal requirements as per Title 20 CCR, Division 2, Chapter 5, Appendix B.

Table 70 Appendix B Information Requirements for an AFC - Worker Safety

Summary of Requirement	Section
Worker Safety	
A description of the safety training programs which will be required for construction and operation personnel.	Section 4.17.2.2
A complete description of the fuel handling system and the fire suppression system.	Section 4.17.2.1
Provide draft outlines of the Construction Health and Safety Program and the Operation Health and Safety Program	Section 4.17.4

4.17.1 Setting

The CCS project would capture CO_2 from the existing EHPP and transport it to the CCTV I pipeline header for injection at the CTV I UIC Class VI injection wells. The Project is located within EHOF within an unincorporated area of southwestern Kern County and is surrounded exclusively by oil and gas exploration and production.

Construction is anticipated to require 2.5 years to complete and during peak construction, is anticipated to require approximately 500 workers, including indirect personnel. Construction activities would include, but are not limited to, excavation and grading, piling installation, foundation construction, backfilling, mechanical and structural steel erection, installation of mechanical equipment and above-ground piping, and installation of new electrical lines.

During the operations phase it is expected up to 16 permanent personnel would be required to monitor operations and conduct maintenance. The CO_2 capture operations would utilize both hazardous and non-hazardous chemicals, which would be managed in accordance with applicable federal, state, and local laws, regulations, and ordinances.

4.17.2 Health and Safety Program

4.17.2.1 Hazard Analysis

Workers will be exposed to construction, operation conditions, and activities that pose potential safety hazards. A comprehensive hazard analysis has been conducted to identify and evaluate these risks and to identify control measures. This analysis outlines the potential hazards anticipated during both construction and operation phases of the project and identifies the health and safety programs that have been developed and will be implemented to avoid, mitigate, or manage these hazards appropriately.

The hazard analysis for construction is presented in Table 71, which includes the program(s) and plan(s) designed to reduce the occurrence of each hazard.

Table 71 Construction Hazard Analysis

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
Suspended Load or Dropped Objects	Rigging configuration rated for service. Exclusion zone accounts for failure. Hard physical barrier. Overhead tools and equipment secured, or exclusion zone.	Equipment certified for application. Pre-use equipment inspections. Certified operator at controls of suspended load. Qualified rigger and signal person. Stop & Clear. Spotter(s) & communication established. Lift ticket demonstrates load w/in safe capacity. Critical Lift Plan Acceptance. Tag Line use.	Crane Usage and Lift Plan Sling Use Guidelines
Fall from elevation	Engineered guardrails or barriers installed. Rated fall protection equipment & anchor points. Hole covers & floor grating secured.	Equipment inspection & use by competent person. Fall protection & rescue plan acceptance. Safe ladder use. Pre-planning loads to avoid climbing.	Fall Protection Policy Scaffold Safety Portable Ladder Safety Personal Protective Equipment Top Tank Access Requirements
Mobile Equipment	Seat belt use. Site control maintained for equipment work area. Hard physical barrier. Technology that intervenes collision.	Know slope operational limits. Look Up & Live. Journey Management Plan. Spotter(s) & communication established. Never use cell phone while operating equipment.	Training and Site Access Spotter Policy Forklift Procedures Vacuum Trucks

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
		Be fit for duty.	
Motor Vehicle Incident	Seat belt use. Load securement for internal & external cargo. Recommend safety features.	Be fit for duty. Ensure vehicle is maintained. Journey Management Plan.	Vehicle Safety Spotter Policy
Rotating Equipment	Machine Guarding. Exclusionary zones.	All shirts tucked when working. No hoodies or drawstrings.	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy
Electrical Work	Lock-out tag-out. Verify Zero Energy/Try. Insulated line covers. Exclusion zones to protect people. Electrically rated tools/equipment. GFCI required for electrical tools. Flash protection boundary with hard physical barriers. Utilize remote operation of equipment or remote racking when feasible.	Look Up and Live. Arc flash labeling. Certified Personnel.	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Electrical Safety Program
Power Lines	Hazard delineation when working w/in 100 ft of electrical installations Zones Minimum 15 ft buffer from energized power lines Interlock devices for Booms Lock-out tag-out Verify Zero Energy/Try	Look Up and Live. Energized Electrical & High Voltage Work Permit	Overhead Powerline Encroachment Guidelines
Explosion	Exclusion Zones Steam suits Explosive ordinance disposal (EOD) suit Shooting key process (wireline) Hot tap controls for in-service equipment	Gas monitoring Equipment calibration Approved SWP	Compressed Gas Cylinder Guidelines Controlled Access Policy
Excavation or trench 5 ft of depth or greater	Sloping and benching Trench box Excavation support system/shoring	Competent Person Approved SWP/CSP Gas monitoring	Confined Space Entry Guidelines Trenching and Excavation Guidelines

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
	Rated fall protection equipment & anchor points		
Sound (<140 dB	Sound dampening walls or barricades Proper ear protection for decibels	Testing and labeling of equipment	Occupational Noise Exposure Guidelines
High Dose of toxic radiation	Exclusion Zones Radiation shielding	Use of calibrated Geiger counter	Naturally Occurring Radioactive Material Guidelines
Exposure to toxic chemicals	Lock-out tag-out Verify Zero Energy/Try Effective ventilation Respirator	Gas monitoring Approved SWP/CSP	Hydrogen Sulfide Guidelines Chemical Approval Process Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Blinding Policy Hazard Communication Program
Biological (Venomous snakes, insects, spiders; Virus (Valley Fever, Hanta, etc.))	Snake boots/guards	Environmental Awareness Training	Infection Disease Control Plan Bloodborne Pathogens Program Personal Protective Equipment
Working Outdoors	Proper PPE	Be fit for duty.	Heat Illness Prevention Program Personal Protective Equipment Policy Hydrogen Sulfide Guidelines Permit to Work System HSE Recognition Program
High Temperatures	Lock-out tag-out Surface insulation Tool that forces safe distance/MAD Heat resistant clothing/thermal suits/Kevlar sleeves	Controlled directional bleeding	Heat Illness Prevention Program Hot Work Guidelines Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Blinding Policy

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
Fire with sustained fuel source	Remote fuel shut off Fire extinguisher/suppression	Gas detection monitoring Emergency Action Plan	Fire Fighting Policy
Steam	Pressure release valve Lock-out tag-out Heat resistant clothing/thermal suits/Kevlar sleeves	Avoid line of fire on first break	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Blinding Policy

* The hazards and hazard controls provided are generic to construction activities. During various phases of construction, additional hazard analysis will be performed to evaluate the relevant hazards more specifically and to develop appropriate controls.

The hazard analysis for operations is presented in Table 72, and also includes the program(s) and plan(s) designed to reduce the occurrence of each hazard.

Table 72 Operations Hazard Analysis

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
Suspended Load or Dropped Objects	Rigging configuration rated for service. Exclusion zone accounts for failure. Hard physical barrier. Overhead tools and equipment secured, or exclusion zone.	Equipment certified for application. Pre-use equipment inspections. Certified operator at controls of suspended load. Qualified rigger and signal person. Stop & Clear. Spotter(s) & communication established. Lift ticket demonstrates load w/in safe capacity. Critical Lift Plan Acceptance. Tag Line use.	Crane Usage and Lift Plan Sling Use Guidelines
Fall from elevation	Engineered guardrails or barriers installed. Rated fall protection equipment & anchor points. Hole covers & floor grating secured.	Equipment inspection & use by competent person. Fall protection & rescue plan acceptance. Safe ladder use. Pre-planning loads to avoid climbing.	Fall Protection Policy Scaffold Safety Portable Ladder Safety Personal Protective Equipment Top Tank Access Requirements
Mobile Equipment	Seat belt use. Site control maintained for equipment work area. Hard physical barrier. Technology that intervenes collision.	Know slope operational limits. Look Up & Live. Journey Management Plan. Spotter(s) & communication established. Never use cell phone while operating equipment. Be fit for duty.	Training and Site Access Spotter Policy Forklift Procedures
Motor Vehicle Incident	Seat belt use. Load securement for internal & external cargo. Recommend safety features.	Be fit for duty. Ensure vehicle is maintained. Journey Management Plan.	Vehicle Safety Spotter Policy
Rotating Equipment	Machine Guarding. Exclusionary zones.	All shirts tucked when working. No hoodies or drawstrings.	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy
Working on electrical equipment and systems	Lock-out tag-out. Verify Zero Energy/Try. Insulated line covers.	Look Up and Live. Arc flash labeling. Certified Personnel.	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
	Exclusion zones to protect people. Electrically rated tools/equipment. GFCI required for electrical tools. Flash protection boundary with hard physical barriers. Utilize remote operation of equipment or remote racking when feasible.		Electrical Safety Program
Explosion	Exclusion Zones Steam suits Explosive ordinance disposal (EOD) suit Shooting key process (wireline) Hot tap controls for in-service equipment	Gas monitoring Equipment calibration Approved SWP	Compressed Gas Cylinder Guidelines
Sound (<140 dB	Sound dampening walls or barricades Proper ear protection for decibels	Testing and labeling of equipment	Occupational Noise Exposure Guidelines
High Dose of toxic radiation	Exclusion Zones Radiation shielding	Use of calibrated Geiger counter	Naturally Occurring Radioactive Material Guidelines
Exposure to toxic chemicals	Lock-out tag-out Verify Zero Energy/Try Effective ventilation Respirator	Gas monitoring Approved SWP/CSP	Hydrogen Sulfide Guidelines Chemical Approval Process Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Blinding Policy Hazard Communication Program
Biological (Venomous snakes, insects, spiders; Virus (Valley Fever, Hanta, etc.))	Snake boots/guards	Environmental Awareness Training	Infection Disease Control Plan Bloodborne Pathogens Program Personal Protective Equipment Policy
Working Outdoors	Proper PPE	Be fit for duty.	Heat Illness Prevention Program

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan
			Personal Protective Equipment Policy Hydrogen Sulfide Guidelines Permit to Work System HSE Recognition Program
High Temperatures	Lock-out tag-out Surface insulation Tool that forces safe distance/MAD Heat resistant clothing/thermal suits/Kevlar sleeves	Controlled directional bleeding	Hot Work Guidelines Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Blinding Policy
Fire with sustained fuel source	Remote fuel shut off Fire extinguisher/suppression	Gas detection monitoring Emergency Action Plan	Fire Fighting Policy
Maintaining and repairing high-pressure systems	Pressure release valve Lock-out tag-out Heat resistant clothing/thermal suits/Kevlar sleeves	Avoid line of fire on first break Gas monitoring Equipment calibration Approved SWP	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Blinding Policy Line Breaking, Tank and Vessel Opening Policy Stop Valve Closure Policy
Troubleshooting and maintenance of systems and general operational activities (contact with hazardous energy sources such as electrical, thermal, or mechanical)	Lock-out tag-out Verify Zero Energy/Try Tool that forces safe distance/MAD Heat resistant clothing/thermal suits/Kevlar sleeves Machine Guarding Exclusionary Zones	Certified Personnel. Shirts tucked in while working. No hoodies or drawstrings.	Control of Hazardous Energy (lockout/tagout) Program Controlled Access Policy Training and Site Access Policy Electrical Safety Program Facility Safety Equipment HSE Recognition Program
Ergonomic Injuries	Avoid extreme flexion Use proper tools designed for task Anti-vibration tools and/or gloves Use anti-slip mats, carpet cable covers and mud chuckers to prevent slips, trips, and falls.	Stretching Use proper body positions	Ergonomics Program

Hazard*	Direct Controls	Indirect Controls	Safety Program/Plan

* The hazards and hazard controls provided are generic to operations. During various phases of operation additional hazard analysis will be performed to evaluate the relevant hazards more specifically and to develop appropriate controls.

4.17.2.2 Training and Safety Programs

To protect the safety and health of workers during the construction and operation of the CalCapture CCS Project, health and safety programs that have been designed to mitigate hazards and comply with applicable regulations will be implemented. Periodic audits will be performed by qualified individuals to determine whether proper work practices are being used to mitigate hazardous conditions and to evaluate regulatory compliance.

4.17.2.2.1 Construction Health and Safety Program

The following is a summary of construction safety programs and plans that have been developed and will be implemented during construction. Full descriptions of each program/plan are included in the CRC Safety Manual (CRC 2024).

- **Injury and Illness Prevention Program**: A company-wide system of roles, responsibilities, communication strategies, hazard assessment and control, and training programs designed to create a proactive safety culture.
- **General Safety Programs**
    - ***General Safety Requirements***: Outlines general safe work practices to be implemented on all CRC properties.
    - ***Continuous Work Hours Guideline*:** Guidelines for when emergencies or operational needs may require work beyond normal work schedules and long hours.
    - ***Smoking Policy***: Limits smoking, e-cigarettes, and vaping to designated smoking areas and allows for further restrictions on smoking based on operating conditions or local regulations.
    - ***Drug and Alcohol Policy***: Requires workers to be alcohol and drug-free at work, prohibits the use or possession of alcohol and drugs, mandates random testing for safety-sensitive roles, and enforces disciplinary actions.
    - ***Occupational Noise Exposure***: Requires monitoring, training, PPE, and controls to prevent hearing loss; workers exposed to ≥85 dBA TWA must be included in a hearing conservation program and receive annual training.
    - ***Facility Safety Equipment***: Details type, location, and labeling of equipment such as fire extinguishers, eyewash stations, gas monitors, flammable storage cabinets, first aid supplies, AEDs, SCBAs, earthquake kits, and windsocks.
    - **Training and Site Access Policy:** Requires completion of HSE Orientation/Safety Training (including additional safety training requirements for certain sites and activities) and issuance of a badge for site access.



  - **Permit to Work System:** Requires a Job Safety Analysis (pre-job work plan) be completed for all work performed, requires a Safe Work Permit for certain jobs and outlines process for permit approval.
  - **HSE Recognition Program:** Encourages safe and productive work practices, enhances worker involvement in safety activities, and improves safety performance by recognizing workers for their contributions to HSE goals.

- **Management of Change and Pre-Startup Safety Review Program:** Outlines process for identification and management of hazards created by changes in processes, technology, equipment, and requires periodic auditing.
- **Emergency Action Plan:** Procedures for fire response, medical incidents, evacuations, spill response, and natural disasters. Emergency drills and training are regularly conducted.
- **Incident Reporting Requirements**: Requires immediate reporting of all incidents, with 911 used for all life-threatening emergencies. Provides dispatcher contact numbers and detailed information regarding response coordination and required notifications in case of emergencies.
- **Fire Fighting Policy**: Allows for workers to respond only to incipient stage of fires and only if it safe to do so. Requires immediate notification for all other fires.
- **Stop Work Authority Policy:** Allows work believed to be unsafe to be stopped at any time without reprisal and outlines the stop work process.
- **Personal Protective Equipment**: Establishes minimum PPE standards (e.g., non-conductive hard hats, flame-resistant clothing, safety glasses, hard-toe boots, H_2S monitors) and requires additional PPE based on task-specific hazards.
- **Construction Safety Programs and Plans**
  - ***Vehicle Safety***: Includes requirements for driver safety, best practices, vehicle maintenance, defensive driving training, and provides protocol in case of accidents.
  - ***Spotter Policy***: Outlines when spotter(s) are required and the spotter process and obligations.
  - ***Forklift Procedures****:* Requires only trained/certified and authorized personnel operating forklifts, requires refresher training for operators, and outlines general forklift use guidelines.
  - ***Portable Ladder Safety***: Outlines safety requirements including secure placement, maintaining three points of contact, inspection before use, with added precautions including attendants for climbs over 6 feet and work area barricading when needed.
  - ***Vacuum Trucks***: Establishes safe work practices including proper training, gas detection, equipment safeguards, grounding, and hazard-specific precautions.
  - ***Gasoline Transportation and Storage***: Requires gasoline to be in labeled, DOT-approved containers (≤5 gallons), stored in designated flammable storage areas away from ignition sources, used only as fuel, and removed after task completion.

- ***Container Guidelines***: Requires chemical product containers be properly labeled and not reused for any other purpose, outlines container labeling requirements, and requires grounding for certain containers.
- ***Crane Usage and Lift Plan***: Requires equipment certification, operator certification, pre-use and annual inspections, and quadrennial inspections for cranes > 3 tons. Provides rigging equipment and configuration guidelines and crane lift plans.
- ***General Rules for Well Work Safety***: Outlines 'Meet and Greet' Process, general safety rules, and well servicing requirements when working with, visiting, or conducting well service operations.
- ***Slings***: Establishes standard work practices for use, requires daily and/or annual inspections, and outlines maintenance and replacement requirements for slings (wire rope slings, synthetic slings, and alloy steel chain) used for lifting.
- ***Top Tank Access Requirements***: Outlines methods for accessing tank tops and prohibits walking or other entry onto tank tops unless a permit is obtained.
- ***Blinding Policy***: Safe work practices to be employed when using blinds including authorized agent, lockout/tagout, and controlled access requirements.
- ***Confined Space Entry***: Outlines worker training requirements, roles, and responsibilities for confined space work.
- ***Control of Hazardous Energy (lockout/tagout) and Controlled Access Policy***: Covers lockout/tagout procedures, other energy isolation methods, permitting, training, and audits; includes controlled access situations and barricading requirements.
- ***Line Breaking, Tank and Vessel Opening***: Outlines safety procedures including jobsite preparation, verification protocols, use of PPE, atmospheric monitoring, and tank gauging.
- ***Fall Protection Policy***: Stipulates only trained and authorized personnel may work from heights, outlines evaluation of hazards, fall protection systems, and required fall protection equipment and equipment inspections.
- ***Hot Work***: Designates hot work areas, outlines hot work permit requirements, fire watch responsibilities, and safe welding and cutting practices.
- ***Ignition Sources in Class 1 Hazardous Areas***: Defines Class 1 Hazardous Areas and provides guidelines for working in such areas including atmospheric testing and specific controls before entry or operation of vehicles.
- ***Electrical Safety Program***: Details permit requirements, hazard assessments, labeling, worker qualifications/training, PPE, approach boundaries, and task-specific safety protocols.
- ***Overhead Powerline Encroachments***: Requires an Encroachment Plan and pre-route inspection for work within 15 feet of overhead lines; outlines controls and minimum clearance distances.
- ***Scaffold Safety***: Requires fall protection if above 6 feet, outlines safety requirements for scaffold construction, inspection, tagging, and modification and for scaffold proper use.



- ***Safety Bypass System***: Procedure and tracking for safety systems or equipment when removed, isolated, shut down, or not functioning as intended, including review, approval, and communication requirements.
- ***Stop Valve Closure***: Outlines procedures and responsibilities for safely closing stop valves around pressure relieving devices on pressure vessels and heat exchangers, requires permits, qualified personnel, and overpressure relief plans.
- ***Trenching and Excavation***: Safe work practices include Dig Alert notification, permit approval, protective systems (shoring, sloping, etc.), daily inspections, safety zones, proper access/egress, and traffic plating.
- ***Hydrogen Sulfide***: Requires annual training and first-aid/CPR training in some instances, requires personal H_2S monitors to be worn at all field locations, outlines emergency procedures and contacts, outlines H_2S testing requirements.
- ***Naturally Occurring Radioactive Material Program***: Requires monitoring surveys and outlines survey frequencies, storage requirements, training requirements, and signage.

- **Infectious Disease Control Plan**: Details preventative measures, medical management, and training requirements.
- **Bloodborne Pathogens Program**: Details exposure controls, work practice controls, and proper exposure response.
- **Heat Illness Prevention Program**: Includes monitoring requirements, high-heat procedures, prevention, and control.
- **Respiratory Protection Program**: Details respiratory hazard controls including use of respirators. Outlines respirator selection and use, storage, fit testing, medical requirements, inspection and repair, and training requirements.
- **Hazard Communication Program and Chemical Approval Process**: Requires chemical inventory, Safety Data Sheets, proper labeling, storage, and handling, and worker training. Details safety guidelines for changing, storing, and moving chemicals.

4.17.2.2.2 Operation Health and Safety Program

The hazards anticipated during the operations and maintenance phase of the Project are expected to be similar in nature, though generally less extensive, than those encountered during the construction phase. All relevant safety plans and programs outlined in the construction phase analysis will continue to be applied, as appropriate, during operations and maintenance to ensure continued worker health and safety.

4.17.2.2.3 Safety Training

To ensure that employees recognize and understand how to protect themselves from potential hazards, comprehensive training programs for construction and operation will be implemented. Training requirements have been identified for each job classification within the CRC organization. Workers complete safety training that is applicable to the respective job responsibilities classified and the completion



of training is tracked and documented. Safety and health training is accomplished through several methods, including scheduled training sessions, safety and health bulletins, HSE On-Boarding Program, and computer-based training. Training frequency is based upon existing regulations, company policy, and situational factors (e.g., when new requirements or processes are introduced, or a job change occurs).

All employees working on any CRC location will be required to complete the HSE On-Boarding Program, which includes the 'CRC Safety Orientation' and 'Kern County Environmental Awareness' trainings. Orientation covers such topics as site-specific hazards, hazard communication, fire prevention, and emergency reporting and response practices. Completing these safety trainings is a mandatory pre-requisite to obtaining a badge for site access. Additional trainings for site-specific access or specific tasks and/or jobs may also be required.

4.17.3 Laws, Ordinances, Regulations, and Standards

Worker safety at the proposed Project is governed by LORS established and enforced at the federal, state, and local levels. Applicable laws are addressed and described below and summarized in Table 73.

Table 73 LORs for Worker Safety

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
Federal			
Title 29 Code of Federal Regulations Part 1910	Contains the minimum occupational safety and health standards for general industry in the United States	OSHA	Section 4.17.2
Title 29 Code of Federal Regulations Part 1926	Contains the minimum occupational safety and health standards for the construction industry in the United States	OSHA	Section 4.17.2
State			
California Occupational Safety and Health Act, 1970	Establishes minimum safety and health standards for construction and general industry operations in California	Cal/OSHA	Section 4.17.2
8 CCR 339	Requires list of hazardous chemicals relating to the Hazardous Substance Information and	Cal/OSHA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	Training Act		
8 CCR 450	Addresses hazards associated with pressurized vessels	Cal/OSHA	Section 4.17.2
8 CCR 750	Addresses hazards associated with high-pressure steam	Cal/OSHA	Section 4.17.2
8 CCR 1509	Addresses requirements for construction, accident, and prevention plans	Cal/OSHA	Section 4.17.2
8 CCR 1509, et seq., and 1684, et seq.	Addresses construction hazards, including head, hand, and foot injuries and noise and electrical shock	Cal/OSHA	Section 4.17.2
8 CCR 1528, et seq., and 3380, et seq.	Requirements for PPE	Cal/OSHA	Section 4.17.2
8 CCR 1532, and 5206	Addresses Chromium IV (Hexavalent Chromium)	Cal/OSHA	Section 4.17.2
8 CCR 1597, et seq., and 1590, et seq.	Requirements addressing the hazards associated with traffic accidents and earthmoving	Cal/OSHA	Section 4.17.2
8 CCR 1604, et seq.	Requirements for construction hoist equipment	Cal/OSHA	Section 4.17.2
8 CCR 1620, et seq., and 1723, et seq.	Addresses miscellaneous hazards	Cal/OSHA	Section 4.17.2
8 CCR 1709, et seq.	Requirements for steel reinforcing, concrete pouring, and structural steel erection operations	Cal/OSHA	Section 4.17.2
8 CCR 1920, et seq.	Requirements for fire	Cal/OSHA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	protection systems		
8 CCR 2300, et seq., and 2320, et seq.	Requirements for addressing low-voltage electrical hazards	Cal/OSHA	Section 4.17.2
8 CCR 2395, et seq.	Addresses electrical installation requirements	Cal/OSHA	Section 4.17.2
8 CCR 2700, et seq.	Addresses high-voltage electrical hazards	Cal/OSHA	Section 4.17.2
8 CCR 3200, et seq., and 5139, et seq.	Requirements for control of hazardous substances	Cal/OSHA	Section 4.17.2
8 CCR 3203, et seq.	Requirements for operational accident prevention programs	Cal/OSHA	Section 4.17.2
8 CCR 3270, et seq., and 3209, et seq.	Requirements for evacuation plans and procedures	Cal/OSHA	Section 4.17.2
8 CCR 3301, et seq.	Requirements for addressing miscellaneous hazards, including hot pipes, hot surfaces, compressed air systems, relief valves, enclosed areas containing flammable or hazardous materials, rotation equipment, pipelines, and vehicle-loading dock operations	Cal/OSHA	Section 4.17.2
8 CCR 3360, et seq.	Addresses requirements for sanitary conditions	Cal/OSHA	Section 4.17.2
8 CCR 3511, et seq., and 3555, et seq.	Requirements for addressing hazards associated with stationary engines and compressors, as well	Cal/OSHA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	as portable, pneumatic, and electrically powered tools		
8 CCR 3649, et seq., and 3700, et seq.	Requirements for addressing hazards associated with field vehicles	Cal/OSHA	Section 4.17.2
8 CCR 3940, et seq.	Requirements for addressing hazards associated with power transmission, compressed air, and gas equipment	Cal/OSHA	Section 4.17.2
8 CCR 5109, et seq.	Requirements for addressing construction accident and prevention programs	Cal/OSHA	Section 4.17.2
8 CCR 5110, et seq.	Requirements for the implementation of an ergonomics program	Cal/OSHA	Section 4.17.2
8 CCR 5139, et seq.	Requirements for addressing hazards associated with welding, sandblasting, grinding, and spray-coating	Cal/OSHA	Section 4.17.2
8 CCR 5150, et seq.	Requirements for confined space entry	Cal/OSHA	Section 4.17.2
8 CCR 5155, et seq.	Requirements for use of respirators and for controlling employee exposure to airborne contaminants	Cal/OSHA	Section 4.17.2
8 CCR 5160, et seq.	Requirements for addressing hot, flammable, poisonous, corrosive, and irritant substances	Cal/OSHA	Section 4.17.2
8 CCR 5192, et seq.	Requirements for conducting emergency	Cal/OSHA	

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	response operations		
8 CCR 5193, et seq.	Requirements for controlling employee exposure to bloodborne pathogens associated with exposure to raw sewage water and body fluids associated with first aid/CPR duties	Cal/OSHA	Section 4.17.2
8 CCR 5194, et seq.	Requirements for employee exposure to dusts, fumes, mists, vapors, and gases	Cal/OSHA	Section 4.17.2
8 CCR 5405, et seq.; 5426, et seq.; 5465, et seq.; 5500,net seq.; 5521, et seq.; 5545,net seq.; 5554, et seq.; 5565,net seq.; 5583, et seq.; 5606, et seq.	Requirements for flammable liquids, gases, and vapors	Cal/OSHA	Section 4.17.2
8 CCR 5583, et seq.	Requirements for design, construction, and installation of venting, diking, valving, and supports	Cal/OSHA	Section 4.17.2
8 CCR 6150, et seq.; 6151, et seq.; 6165, et seq.; 6170, et seq.; 6175, et seq.	Requirements for fire protection	Cal/OSHA	Section 4.17.2
Title 24, Part 3, California Electrical Code	Requirements for electrical safety, which include the Uniform Electrical Code, Title 24, Part 3	Cal/OSHA	Section 4.17.2
8 CCR, Part 6	Requirements for health and safety for working with tanks and boilers	Cal/OSHA	Section 4.17.2
Health and Safety Code Sections 25500 through 25541	Requirements for the preparation of a Hazardous Material Business Plan that details emergency response plans for a	Cal/OSHA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
	hazardous materials emergency at the facility		
Local			
Specific hazardous material handling requirements	Hazardous materials used or stored shall conform to the Uniform Fire Code.	Kern County Environmental Health Department, CUPA Program	Section 4.17.2
Emergency Response Plan	Kern County Environmental Health Department is the designated CUPA and is responsible for administering the Hazardous Materials Business Plans filed by businesses located in the county.	Kern County Environmental Health Department, CUPA Program	Section 4.17.2
Hazardous Materials Business Plan	Kern County Environmental Health Department, CUPA Program is the designated CUPA and is responsible for administering the Hazardous Materials Business Plans filed by businesses located in the county.	Kern County Environmental Health Department, CUPA Program	Section 4.17.2
National Standards			
NIOSH- National Institute for Occupational Safety and Health	Conducts research and makes recommendations for prevention of work-related injury and illness.	CDC	Section 4.17.2
NFPA 10, Standard for Portable Fire Extinguishers	Requirements for selection, placement, inspection, maintenance, and employee training for portable fire extinguishers	NFPA	Section 4.17.2
NFPA 11, Standard for Low- Expansion Foam and Combined Agent Systems	Requirements for installation and use of low-expansion foam and combined-agent systems	NFPA	Section 4.17.2
NFPA 11A, Standard for Medium- and High-Expansion Foam Systems	Requirements for installation and use of medium- and high-expansion foam systems	NFPA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
NFPA 12, Standard on Carbon Dioxide Extinguishing Systems	Requirements for installation and use of carbon dioxide extinguishing systems	NFPA	Section 4.17.2
NFPA 13, Standard for Installation of Sprinkler Systems	Guidelines for selection and installation of fire sprinkler systems	NFPA	Section 4.17.2
NFPA 13A, Recommended Practice for the Inspection, Testing, and Maintenance of Sprinkler Systems	Guidance for inspection, testing, and maintenance of sprinkler systems	NFPA	Section 4.17.2
NFPA 14, Standard for the Installation of Standpipe and Hose Systems	Guidelines for selection and installation of standpipe and hose systems	NFPA	Section 4.17.2
NFPA 15, Standard for Water Spray Fixed Systems	Guidelines for selection and installation of water spray fixed systems	NFPA	Section 4.17.2
NFPA 17, Standard for Dry Chemical Extinguishing Systems	Guidance for selection and use of dry chemical extinguishing systems	NFPA	Section 4.17.2
NFPA 20, Standard for the Installation of Centrifugal Fire Pumps	Guidance for selection and installation of centrifugal fire pumps	NFPA	Section 4.17.2
NFPA 22, Standard for Water Tanks for Private Fire Protection	Requirements for water tanks for private fire protection	NFPA	Section 4.17.2
NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances	Requirements for private fire service mains and their appurtenances	NFPA	Section 4.17.2
NFPA 26, Recommended Practice for the Supervision of Valves Controlling Water Supplies	Supervision guidance for valves controlling water supplies	NFPA	Section 4.17.2
NFPA 30, Flammable and Combustible Liquid Code	Requirements for storage and use of flammable and combustible liquids	NFPA	Section 4.17.2
NFPA 37, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines	Fire protection requirements for installation and use of combustion engines and gas turbines	NFPA	Section 4.17.2
NFPA 50A, Standard for Gaseous Hydrogen Systems at Consumer Sites	Fire protection requirements for hydrogen systems	NFPA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
NFPA 54, National Fuel Gas Code	Fire protection requirements for use of fuel gases	NFPA	Section 4.17.2
NFPA 59A, Standard for the Storage and Handling of Liquefied Petroleum Gases	Requirements for storage and handling of liquefied petroleum gases	NFPA	Section 4.17.2
NFPA 68, Guide for Explosion Venting	Guidance in design of facilities for explosion venting	NFPA	Section 4.17.2
NFPA 70, National Electric Code	Guidance on safe selection and design, installation, maintenance, and construction of electrical systems	NFPA	Section 4.17.2
NFPA 70, Article 480, National Electric Code (Storage Batteries)	Requirements for safe installation and wiring for battery electrical systems	NFPA	Section 4.17.2
NFPA 70B, Recommended Practice for Electrical Equipment Maintenance	Guidance on electrical equipment maintenance	NFPA	Section 4.17.2
NFPA 70E, Standard for Electrical Safety Requirements for Employee Workplaces	Employee safety requirements for working with electrical equipment	NFPA	Section 4.17.2
NFPA 71, Standard for the Installation, Maintenance, and Use of Central Station Signaling Systems	Requirements for installation, maintenance, and use of central station signaling systems	NFPA	Section 4.17.2
NFPA 72A, Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Guard's Tour, Fire Alarm, and Supervisory Service	Requirements for installation, maintenance, and use of local protective signaling systems	NFPA	Section 4.17.2
NFPA 72E, Standard on Automatic Fire Detection	Requirements for automatic fire detection	NFPA	Section 4.17.2
NFPA 72F, Standard for the Installation, Maintenance, and Use of Emergency Voice/Alarm of Communication Systems	Requirements for installation, maintenance, and use of emergency and alarm communications systems	NFPA	Section 4.17.2
NFPA 72H, Guide for Testing Procedures for Local, Auxiliary, Remote Station, and Proprietary Protective Signaling Systems	Testing procedures for types of signaling systems anticipated for facility	NFPA	Section 4.17.2

Laws, Ordinances, Regulations and Standards	Requirements/ Applicability	Administrating Agency	Application for Certification Section Explaining Conformance
NFPA 75, Standard for the Protection of Electronic Computer/Data Processing Equipment	Requirements for fire protection systems used to protect computer systems	NFPA	Section 4.17.2
NFPA 78, Lightning Protection Code	Lightning protection requirements	NFPA	Section 4.17.2
NFPA 80, Standard for Fire Doors and Windows	Requirements for fire doors and windows	NFPA	Section 4.17.2
NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems	Requirements for installation of air conditioning and ventilating systems	NFPA	Section 4.17.2
NFPA 101, Code for Safety to Life from Fire in Buildings and Structures	Requirements for design of means of exiting the facility	NFPA	Section 4.17.2
NFPA 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants	Guidelines for testing and marking of fire hydrants	NFPA	Section 4.17.2
NFPA 850, Recommended Practice for Fire Protection for Fossil Fuel Steam Electric Generating Plants	Requirements for fire protection in fossil-fuel steam electric generating plants	NFPA	Section 4.17.2
NFPA 1961, Standard for Fire Hose	Specifications for fire hoses	NFPA	Section 4.17.2
NFPA 1962, Standard for the Care, Maintenance, and Use of Fire Hose Including Connections and Nozzles	Requirements for care, maintenance, and use of fire hoses	NFPA	Section 4.17.2
NFPA 1963, Standard for Screw Threads and Gaskets for Fire Hose Connections	Specifications for fire hose connections	NFPA	Section 4.17.2
American National Standards Institute / American Society of Mechanical Engineers, Boiler and Pressure Vessel Code	Specifications and requirements for pressure vessels	American National Standards Institute / American Society of Mechanical Engineers	Section 4.17.2
American National Standards Institute, B31.2, Fuel Gas Piping	Specifications and requirements for fuel gas piping	American National Standards Institute	Section 4.17.2

Notes: CCR = California Code of Regulations; NFPA = National Fire Protection Association; CUPA = Certified Unified Program Agency; OSHA = Occupational Safety and Health Administration; CDC = Centers for Disease Control,

4.17.3.1 Federal LORS

4.17.3.1.1 Occupational Safety and Health Act (CFR 29)

The Occupational Safety and Health Act of 1970 established the framework for ensuring safe working conditions for employees and created OSHA, which is responsible for developing and enforcing workplace safety and health regulations. Under this authority, OSHA developed the Occupational Safety and Health Standards (29 CFR § 1910), which apply to most non-construction, general industry workplaces and the Safety and Health Regulations for Construction (29 CFR § 1926), which apply specifically to the construction industry. These standards cover a broad range of occupational safety and health topics and contain the minimum occupational safety and health standards for general industry and the construction industry, respectively. The HAZWOPER Standard (29 C.F.R. 1910.120) outlines health and safety requirements for employers and employees involved in hazardous water operations and emergency response.

4.17.3.2 State LORS

4.17.3.2.1 California Occupational Safety and Health Act (CCR Title 8)

The California Occupational Safety and Health Act of 1973 established the framework for ensuring safe working conditions for employees in California and created the Division of Occupational Safety and Health (Cal/OSHA), which is responsible for developing and enforcing workplace safety regulations specific to the state. Under this authority, Cal/OSHA developed Title 8 of the CCR, which outlines occupational safety and health standards for a wide range of industries. These regulations cover general industry safety standards, construction industry requirements, and specific health and safety protocols. Title 8 includes both the General Industry Safety Orders (GISO) and the Construction Safety Orders (CSO), providing the minimum safety and health standards for workers in California's non-construction and construction sectors. Title 8, CCR, § 5192 covers regulations for hazardous waste operations and emergency response.

4.17.3.2.2 California Building Code (CCR Title 24)

Title 24 of the CCR, also known as the California Building Standards Code, provides minimum standards to safeguard life, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of buildings and structures. The code is comprised of multiple parts, including the Building, Fire, Electrical, Mechanical, Plumbing, and Energy Codes. These standards play a key role in protecting worker health and safety during both the construction and operational phases of a project by reducing exposure to hazardous conditions.

4.17.4 References

CRC. 2024. CRC Safety Manual. October 2024.



5 Alternatives

CEC regulations require that Applications for Certification require the following:

> *1) A discussion of the range of reasonable alternatives to the project, or to the location of the project, including the no project alternative, 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 an evaluation of the comparative merits of the alternatives. In accordance with Public Resources Code section 25540.6(b), a discussion of the applicant's site selection criteria, any alternative sites considered for the project, and the reasons why the applicant chose the proposed site.*
>
> *(2) An evaluation of the comparative engineering, economic, and environmental merits of the alternatives discussed in subsection (f)(1)* (Title 20, CCR, Appendix B, Section f).

For the CalCapture Project, the following alternatives section has been prepared to meet CEC and CEQA requirements. This chapter describes alternatives considered but eliminated from further consideration, including the reasons for elimination, and compares the environmental impacts of two alternatives retained with those associated with the proposed CalCapture CCS project.

5.1 Summary of Project Impacts Relevant to Evaluation of Alternatives

Potentially significant adverse environmental impacts that would result from the Project are evaluated in Chapter 3. The MMs have been included to reduce those impacts. The environmental analysis concludes that the Project has the potential to cause significant environmental impacts in the following categories:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources/Tribal Cultural Resources
- Energy Resources
- Geologic Hazards and Resources
- Greenhouse Gas Emissions
- Hazardous Materials Handling
- Noise
- Paleontological Resources
- Soils
- Traffic and Transportation
- Water Resources

The significant impacts identified for the proposed project and proposed mitigation measures are summarized below.



5.1.1 Aesthetics

As discussed in Section 4.14, *Visual Resources*, portions of the Project would be visible within the surrounding landscape, but generally at a considerable distance from the public. At these distances, the Project would be identifiable primarily to viewers who know where to look and understand the facility's context and changes to the landscape. Along California State Routes, portions of the Project may be visible extending above the ridgeline but would generally appear as part of the broader industrial setting. Closer views would occur along Elk Hills Road; however, travelers on this roadway are primarily workers commuting to the EHOF, EHPP, or adjacent power facilities who are already accustomed to similar infrastructure. There are no designated scenic vistas or State Scenic Highways within 10 miles of the Project site, and therefore the Project would not affect these resources. Based on this analysis, the Project would not be visible to an extent that would substantially alter the existing visual character or quality of the area. Due to the project's proposed location within an existing oil and gas field, the impacts of the project together with the impacts of past, present, and reasonably foreseeable future oil and gas development, including wells and abandonment activity to implement CCS projects, constitute cumulative impacts. Overall, cumulative impacts to aesthetic and visual resources are expected to be minimal. However, the Project could contribute to the impacts already experienced by other projects such as the EHOF. With implementation of MMs, the Project would result in less than significant impacts on visual and aesthetic resources, including cumulative impacts.

5.1.2 Air Quality

As explained in Section 4.1, Air Quality/GHG Emissions, with regard to significant impacts on air quality, the Project requires mitigation related to the adopted regulatory programs incorporated within the SJVAPCD's O_3 and PM attainment plans. The Project does not have the potential to contribute significantly to cumulative impacts within the region because the Project is consistent with the growth projections within the RTP/SCS, would fall below SJVAPCD thresholds, and would be consistent with SJVAPCD rules and regulations as well as the Kern County General Plan. The Project would have a less than significant impact regarding exposure of sensitive receptors to substantial pollutant concentrations. Overall, the Project's incremental effects on air quality would not be cumulatively considerable and less than significant with mitigation.

5.1.3 Biological Resources

As explained in Section 4.2, Biological Resources, with mitigation, the Project's potential to have a direct or indirect adverse effect on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by wildlife agencies would be reduced to a less than significant. Similarly, the Project's potential to substantially affect any sensitive natural community identified by local or regional plans or by wildlife agencies would be less than significant with mitigation. Full avoidance of jurisdictional water features during Project construction is anticipated and so the Project would not impact riparian habitat or federally protected wetlands through direct removal, filing, hydrological interruption. Additionally, with mitigation, the Project would not substantially interfere with the movement of native resident or migratory wildlife species, established wildlife corridors, or the use of wildlife nursery sites. The



Project would not conflict with any local policies or ordinances protecting biological resources, such as tree preservation policies or ordinances. Any adverse impacts related to the Project's potential to conflict with the provisions of a HCP, natural community conservation plan, or other approved local, regional, or state HCP would be mitigated to a less than significant level.

5.1.4 Cultural Resources

As explained in Section 4.3, Cultural Resources, with mitigation, the Project would have a less than significant impact with respect to its potential to cause a substantial adverse change in the significance of a historic resource. With the implementation of MMs, the Project would have a less than significant impact with respect to its potential to cause a substantial adverse change in the significance of an archaeological resource. With mitigation, the Project would also have a less than significant impact with respect to its potential to disturb any human remains. With mitigation the Project would not result in a cumulative impact to historic, archaeological, or human remains.

Should the Project result in a substantial adverse change in the significance of P-15-010099 through disturbance of surface or subsurface deposits, the impact could be cumulatively significant. However, avoiding the use of exclusionary fencing, archaeological/tribal monitoring, and work stoppage in the event of an accidental discovery would ensure preservation in place or implementation of other appropriate measures to mitigate impacts to less than significant.

5.1.5 Energy Resources

As explained in Section 4.4, Energy, the Project would have a less than significant impact with respect to its potential to cause a substantial environmental impact due to an unnecessary consumption of energy. The Project would also not significantly conflict with or obstruct state or local plans for renewable energy or energy efficiency. Additionally, the proposed Project's contribution to cumulative energy impacts would be determined to be less than significant. One mitigation measure is proposed to comply with an over-arching requirement from the CTV I project approval regarding electricity reporting. Therefore, with mitigation, the Project would not result in cumulative impacts to Energy Resources.

5.1.6 Geologic Hazards and Resources

As explained in Section 4.5, Geologic Hazards and Resources, although the Project site may be subject to regional seismic hazards such as strong ground shaking, the potential for known earthquake fault rupture, seismic-related ground failure (including liquefaction and landslides), subsidence, and impacts from collapse or expansion of soils was determined to be low. With mitigation, the Project would have a less than significant impact related to these geologic hazards, as well as less than significant impacts associated with potential soil erosion or loss of topsoil. The Project is not located within an Alquist-Priolo Fault Zone and does not overlie any known active faults. Compliance with California Building Code requirements would reduce potential impacts from seismic ground shaking, while a design-level geotechnical investigation and design-level grading information would provide additional mitigation recommendations to address potential geologic hazards, as necessary. Additionally, the Project would not result in the loss of known mineral



resources. Because geologic hazards are localized, and the Project is not located near other projects in the area, cumulative impacts would be less than significant. Therefore, with standard design and MMs incorporated, the Project would result in less than significant impacts related to geologic hazards, including cumulative impacts.

5.1.7 Greenhouse Gas Emissions

As explained in Section 4.1, Air Quality/GHG Emissions, the Project potential adverse effects related to direct and indirect GHG emissions would be mitigated to less than significant levels through the incorporation of MMs. The Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs.

5.1.8 Hazardous Materials Handling

As explained in Section 4.6, Hazardous Materials Handling, Project construction and operation would occur in accordance with all applicable local standards set forth by the County, State and federal health and safety requirements that are intended to minimize hazardous materials risk to the public, and existing regulations regarding the management, transport, and disposal of hazardous materials. Were a spill, leak, or disturbance to occur, workers, the public, and the environment could be subjected to potential hazards from disturbed contaminated soils and hazardous materials on the site, which would be a significant impact. With mitigation, the Project would not create a significant hazard to the public or the environment through the transport, use, and disposal of hazardous materials. Overall, the Project's impacts from hazardous materials handling would not be cumulatively considerable and would be less than significant with mitigation.

5.1.9 Noise

As explained in Section 4.9, Noise, although noise and groundborne vibration associated with the Project would result in less than significant impacts on the nearest sensitive receptors, and the Project would not contribute significantly to cumulative impacts within the vicinity of the Project site. Since oil and gas activities could occur anywhere in the Project site, the combined noise levels from the Project and existing or reasonably foreseeable projects depend on the proximity of these activities to other noise sources at a specific location, and would be addressed through mitigation within the CTV I project approval and the Oil and Gas Ordinance EIR approval. Other projects with construction or operations occurring concurrently with the Project would further contribute to noise levels experienced by nearby sensitive receptors. Cumulative noise impacts were determined to be less than significant.

5.1.10 Paleontological Resources

As explained in Section 4.12, Paleontological Resources, with mitigation, the Project would have a less than significant impact with respect to its potential to cause a substantial adverse change in the significance of a paleontological resource or site or unique geologic feature. The Projects' contribution to cumulative impacts would be less than significant with mitigation.



5.1.11 Soils

As explained in 4.12, Soils, with implementation of MMs, the Project would result in less than significant impacts on agricultural lands, state or federally protected wetlands, and soils. The Project site does not include prime farmland and therefore would not convert farmland to a nonagricultural use. Although potential jurisdictional features were identified within the survey buffer, none were located within the Project site, and full avoidance during Project construction is anticipated. Past soil borings performed at the Project site indicate soils with a very low expansion potential. The on-site soils have a low to medium runoff potential and soils within the staging/laydown yard have a runoff potential ranging from low to very high. With implementation of the BMPs in the SWPPP and Dust Control Plan, impacts related to water and wind erosion of soil would be reduced to less than significant levels. Overall, the Project's impacts to soils would not be cumulatively considerable and would remain less than significant with implementation of adopted Building Code, other regulatory requirements, and adopted MMs.

5.1.12 Traffic and Transportation

As explained in Section 4.13, Traffic and Transportation, there is no conflict with the Kern County General Plan, any program plan, ordinance, or policy addressing the circulation system. Operational traffic would occur during the workday but would have a less than significant impact, requiring no mitigation. Additionally, the Project is consistent with the Kern County General Plan because the Project would not change the current or planned county roadway system, and will result in a less than significant impact, requiring no mitigation. The Project does not increase hazards due to a geometric design feature or incompatible uses. However, it has the potential to increase hazards due to the use of oversized and/or overweight vehicles that would need to be mitigated. Therefore, the Project would result in a less than significant impact with mitigation. The Project would not result in inadequate emergency access, and would have a less than significant impact on emergency access with mitigation. Due to the remote and dispersed locations of the related projects, construction traffic would have minimal impact on surrounding traffic volumes. As the Project's main traffic increase is short-term and due to construction, no cumulative traffic impacts are expected.

5.1.13 Water Resources

As explained in Section 4.16, Water Resources, during construction, regarding violation of water quality standards or WDRs or otherwise substantially degrade surface or groundwater quality, there would be less than significant impacts with MMs. Similarly, during operations, impacts would be less than significant. The proposed Project would utilize available water from committed water supply deliveries. The Project will have minimal impacts, both during construction and operation, regarding substantially decreasing groundwater supplies or interfering substantially with groundwater recharge. The Project will have less than significant impacts, both during construction and operations, in regard to substantially alter the existing drainage pattern of the site or area. The Project is not located in a flood hazard, tsunami, or seiche zones, or risk release of pollutants due to inundation. On a Project and cumulative level, the Project would not result in a conflict with water quality control plans or sustainable groundwater management plans.



5.2 Project Objectives

CRC's Project Objectives are as follows:

- Construct and operate facilities and infrastructure to capture, transport, inject, and permanently sequester 95 percent of CO_2 produced from the EHPP within the EHOF in a safe, secure, and economically feasible manner;
- Reduce the greenhouse emissions intensity of CRC's existing EHPP facility by capturing CO_2 from an existing stationary source;
- Generate environmental, social, and economic benefits for Kern County and the State of California by implementing low carbon technologies and developing CCS infrastructure in the region;
- Minimize new disturbance by siting facilities within existing developed areas; and
- Contribute to California's goal to achieve carbon neutrality by 2045 by integrating carbon capture into existing operations in Kern County.

5.3 Alternatives Considered and Rejected

Several alternatives to reduce the project's significant impacts were considered by Stantec. The following alternatives were initially considered but were eliminated from further consideration in this analysis because they do not meet project objectives and/or were infeasible.

5.3.1 Replacement of Elk Hills Power Plant with Renewable Energy

This alternative would involve the decommissioning of the EHPP and replacing the 550 MW of electricity generated with a renewable source of energy. The EHPP is a nominal 550-MW natural gas-fired, combined-cycle, cogeneration power plant on 12 acres, certified by the CEC on December 6, 2000, and began commercial operation on July 24, 2003. This alternative would address one of the project objectives: Support California's EO B-55-18, for California to achieve carbon neutrality by 2045. However, EHPP continues to provide critical electricity supply to the California grid. According to a California Independent System Operator (CAISO) 2023 annual report (the most recent annual report available), natural gas-fired power plants provide a significant portion (44%) of California's in-state electrical generation (https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2023-total-system-electric-generation).

The replacement of 550 MW of gas-generated electricity, some of which is used for oilfield production with the remainder going to the PG&E distribution lines would require an estimated 550 MW of commercial scale solar on at least 3,371 acres and a battery energy storage system capable of storing up to approximately 4,000 megawatt-hours (MWh) of energy storage. The land required to develop renewable energy at the EHOF would result in significant and unavoidable impacts to air quality, biological, cultural, and water

resources. Since the Replacement of the EHPP with the Renewable Energy Alternative would not achieve most of the project's basic objectives, and would result in greater environmental impacts at the Project site, it is rejected for further analysis.

5.3.2 Off-site Alternative

The Offsite Alternative would carry out the project in a different location, outside of the SJVAB. The project site, however, was selected because of its proximity to the EHPP. The proposed CCS facilities would be operated in areas in which oil and gas activity is currently the primary land use and therefore a compatible land use. There are also no established residential communities within or adjacent to the Project site.

The alternative would place the CCU outside the SJVAB to reduce the determination of significant for air impacts on air quality based on higher thresholds. However, existing power plants outside of the SJVAB would not have the appropriate sequestration area requirements, including sufficient pore space within a depleted oil and gas reservoir, and sole-land ownership. Thus, this alternative is technically infeasible and therefore, it is rejected for analysis.

5.3.3 Nature-Based Solutions

The Nature Based Carbon Storage Alternative, would replace the mechanical capture of CO_2 and storage in the underground oil and gas reservoir rock layer with planting of trees or other type of appropriate crop in order to store atmospheric CO_2. The proposed project site is located within the EHOF, an existing oil and gas field where the area characterized by extensive oil and gas exploration and production, including existing well pads, processing facilities, pipeline routes, and access roads located on hilly terrain. Under this alternative, CRC would have to cease and remove all oil and gas exploration and production equipment within Elk Hills and then utilize the area for a nature-based carbon storage alternative. The most applicable nature-based carbon storage alternative for the area of the Project site would be regenerative agriculture, as it coincides with the current zoning. Planting of trees would be one example of regenerative nature-based carbon storage for the highest ability to store atmospheric carbon. If 9,000 acres (approximate size of the CTV I 26R and A1/A2 storage areas) of the project site were remediated of all oil and gas facilities and prepared for planting, an estimated 400 to 1,000 trees per acre could be planted, resulting in a new forest area of 3.6 million to 9 million trees. This would require the importation of additional water, require extensive grading, and application of soil nutrients to achieve. This alternative was determined to be infeasible due to the projected water use and endangered species habitat impacts and has been excluded from further analysis.

5.3.4 Direct Air Capture

Under this alternative, CRC would not capture the gas from the EHPP as the initial source but instead utilize a direct air capture (DAC) system to capture atmospheric CO_2. DAC is a technology that captures CO_2 directly from the atmosphere, usually through a mechanical system, although some passive capture techniques are also being developed. In a mechanical system, fans or wind are used to drive ambient air through a contactor unit, where the air passes across a chemical sorbent that selectively reacts with and



traps CO_2, allowing the other components of the air to pass through and exit the system. Currently, the most developed adsorbent materials are in liquid or solid forms (Kern County Carbon Management Business Park – Report 2023, Appendix K-2).

Captured atmospheric CO_2 can be permanently and safely stored in geologic reservoirs to deliver negative emissions or be used to produce low carbon intensity products, such as synthetic fuels that work in existing vehicles and infrastructure. Current DAC technologies are primarily distinguished by using one of two types of sorbents: liquid solvents (L-DAC) and solid sorbents (S-DAC). In both techniques, DAC pulls air from the atmosphere and passes it over the sorbent material. The sorbent material captures the CO_2, and the rest of the air passes through and exits the DAC unit. L-DAC typically uses hydroxide solutions (a liquid solvent) as the bonding sorbent, whereas S-DAC relies on a CO_2 "filter" or dry amine-based chemical sorbents. In both cases, the CO_2 from the air is chemically bound into a new compound, and then is subsequently broken down to release (1) a high-purity stream of CO_2 for storage, and (2) the original sorbent components for reuse.

Both technologies require electricity and heat to operate; the electricity drives the fans and controls inlet systems, while the heat releases the trapped CO_2. However, S-DAC requires temperatures of only approximately 100 degrees Celsius (ºC) to break the chemical bonds linking the CO_2 to the sorbent material, whereas L-DAC requires temperatures around 900 ºC. Such temperatures are difficult to reach using renewable energy sources like wind or solar. If natural gas is used to attain the necessary heat, the associated CO_2 released from the use of L-DAC technology would need to be recaptured and stored to avoid counteracting the benefit of DAC.

The direct land footprint of DAC is smaller than that of alternative carbon-removal processes, it requires renewable energy to operate, which results in large amounts of commercial scale solar. A DAC capable of generating 1 million tons a year of CO_2 for injection would require over 3,860 acres of land (550 MW) of energy. This land use would be in addition to the land required for the carbon capture area.

DAC facilities are expected to produce zero or-near zero emissions onsite that could be hazardous to the environment or human health. Hazardous waste is not a significant concern for DAC facilities. Wastewater is also not generated in significant amounts in DAC processes, as the only water used is contained within close-loop systems. Some DAC operations actually produce water as part of the process. Solid waste buildup can occur in the CO_2 recovery equipment, as happens in traditional monoethanolamine (MEA) scrubbers that are used for point source carbon capture. Similar environmental regulation and disposal guidelines would need to be followed. Chemicals used in sorbent plants would degrade over time as heat is applied to release captured CO_2, but those degradation products (e.g., ammonia) are expected to be contained within the DAC plant and not released into the environment and have established regulation and disposal protocols. Liquid DAC (L-DAC) requires approximately 2.8 MWh of energy for every metric ton of CO_2 captured (estimates range from 1.8 to 3.7 MWh per metric ton of CO_2). Each L-DAC contactor unit captures approximately 300 to 600 MT per year, and units are modular and stackable.

Thus, footprints vary depending on how high units are stacked or how they are spread out. To capture 1 MMTPY of CO_2, we estimate a facility would require about 200 acres of space. Reported estimates range from 50 to 1,730 acres, depending on how contactor units are arranged.



DAC has been determined to have a technology readiness level (TRL) 6 (Technology Demonstration), meaning it has full prototypes at scale but is not yet ready for commercial development (University of Waterloo, 2025). Also, this alternative would only meet two of the five stated Project Objectives for the CalCapture project. This alternative has been excluded from further analysis based on these reasons.

5.3.5 Alternative Technologies

CRC and legacy parent company Occidental Petroleum (Oxy) initiated feasibility studies on CO_2 capture at EHPP as early as 2007. After several project re-starts over the ensuing decade the project was resumed in 2018. At that time, a strategy was developed to evaluate a mix of technologies and technology providers, targeting a decision point on selected direction(s) by the end of 2019.

Since the 2018 re-start, CRC has engaged 10+ technology companies around CO_2 capture/generation applications to the gas-fired EHPP. Technologies evaluated include: 1) Amine/Amino Acid Temperature Swing Absorption, 2) Adsorption via solid media, 3) Membrane Separation, 4) Fuel Cell carbon capture, 5) Oxy combustion with capture, and 6) Utilization of existing Elk Hills infrastructure such as amine units and gas plant chillers/compressors. Following this period of extensive evaluation, Fluor's Econamine+ amine absorption process was selected in early 2024 as the preferred commercial technology.

5.3.5.1 Technology/Vendor Evaluation

All designs and alternative technologies, including potential synergistic combinations of applications, remained under consideration for selection through the end of 2022. During the evaluation period, a range of techno-economic selection criteria were considered to rank potential technologies:

- Capital cost per net tonne of CO_2 captured.
- Annual operating cost per net tonne of CO_2 captured.
- Life cycle carbon intensity reduction
- Criteria pollutant reduction
- Minimization of net freshwater use
- Technology Readiness Level (TRL)
- Net value of Incentives (45Q credits, LCFS credits, Cap and Trade avoidance, clean power premium)
- Holistic project economics

5.3.5.2 Technology Evaluation Results

In 2022, CRC concluded that amine absorption temperature swing processes were the only commercially proven carbon capture systems operating at the field scale targeted by CRC at the EHPP. Below is a summary of the non-selected technology alternatives:

Fuel Cell Capture: CRC worked with multiple fuel cell providers, including one process that captures point-source generated CO_2 at the fuel cell intake (low TRL). The historic challenge with fuels cells has been a high capital cost and reliance on Investment Tax Credits (ITC's). When benchmarked against the four primary conventional amine absorption technologies that CRC evaluated, the fuel cell option levelized cost per tonne of CO_2 captured (LCOC) was 10%-15% higher. Currently, the ITC for fuel cells is expected to be eliminated. Combined with the low TRL and associated technical risk, competitiveness of fuel cells as a post combustion capture (PCC) retrofit solution is currently challenged.

Solid Amine Adsorption: CRC evaluated two different technologies that featured solid amine adsorption. The first alternative claimed strong economic potential, with a projected LCOC competitive with the amine adsorption alternatives, but was still at bench-scale, with a very low TRL and questionable scalability. Currently, this technology has still not been demonstrated at sub-commercial scale. The second alternative was a design built for coal-powered plants and had a high LCOC similar to fuel cells along with a freshwater requirement much higher than the alternatives. Currently, this technology provider continues to pursue a design suitable for capture on a natural gas sourced plant and appears to be several years away from a competitive solution.

Membrane Capture: CRC also evaluated using membrane capture as an alternative. The technology at the time did not appear efficient for a natural gas application at ~4% CO_2 concentration. Results included a LCOC more than 15% higher than conventional amines and an optimal CO_2 recovery efficiency of ~60% vs 90% for conventional amines.

Amine Absorption with Rotating Equipment: CRC evaluated a technology that utilized rotating absorber and stripper technologies to minimize plant sizes. Driven by an extremely high operating cost associated with electricity and amine usage, LCOC exceeded the conventional amine alternatives by 20%-25%. Additionally, carbon credit incentives on a per tonne basis were ~10% below the standard liquid amines.

Absorption with chilled ammonia: A chilled ammonia capture process was also evaluated by CRC. Given the high energy demand to run the associated refrigeration plant, LCOC exceeded the standard amines by 25%-30%.

Oxy-combustion: An oxy-combustion power system designed to fully replace the existing power plant was also evaluated. This alternative, driven by very high operating costs associated with air separation and a resultant very high heat rate (~3X EHPP with amine capture) was burdened by a LCOC 35% above the conventional amine plants and highest of all options considered.



5.3.5.3 Amine Absorption at EHPP

In late 2018, Fluor and two other major post-combustion capture vendors provided updated high-level designs with capital and operating cost estimates. After completion of a Pre-FEED study in mid-2019, the Fluor amine absorption concept was selected by CRC for a Front-End Engineering Design (FEED) study funding application submitted in May 2019 to the DOE (DE-FOA-2058). The U.S. Department of Energy funding was awarded to the project in Q3 2019. The Fluor option was chosen by CRC for several reasons, including: 1) Preliminary design work was more comprehensive than the alternatives, 2) The combination of capital and operating costs was competitive, 3) Experience level exceeded the other options, and 4) The Fluor design was amenable to reducing the volume of fresh water required, a critical factor in the arid conditions of California's South Central Valley.

Fluor's EFG+ technology is a proven, cost-effective process for removal of CO_2 from low pressure stack gases containing oxygen. Fluor technology is installed at more than 30 licensed facilities worldwide with source gases derived from a variety of fuels including natural gas, coal, light fuel oil, heavy fuel oil, and LPG. Fluor's most prominent large-scale application was a 15-year deployment at Northeast Energy Associate's 40-MW NGCC power plant in Bellingham, Massachusetts in the early 2000's. Based on this level of commercial experience, the EFG+ process is considered to have a TRL Level of 9. Other technology companies being considered had varied application experience generally with smaller applications or coal plant projects.

Following completion of the initial Fluor DOE-funded FEED study in mid-2022, CRC chose to perform a second comparative FEED study with a 4th amine absorption technology provider, which was completed in January of 2023. Both FEED studies were subsequently reviewed by two independent owners engineering firms hired by CRC to benchmark cost, schedule and technical efficiencies. Based on the results of these evaluations along with high-level commercial discussions with multiple technology providers, CRC made a final decision to move forward with Fluor in early 2024.

As discussed above, the Fluor technology was selected based on its proven performance, TRL, modest water use, technical efficiency, and capital and operating cost. Based on CRC's extensive study of the Fluor Econamine absorption technology, other technologies have been excluded from further analysis.

5.4 Alternatives to the Project

Alternatives that would avoid or substantially lessen any of the significant effects of the Project and feasibly attain most of the basic Project objectives are evaluated in Sections 4.5.1 and 4.5.2, below. The alternatives are discussed with respect to their relationship to the Project's objectives. Stantec considered the following two alternatives, which are discussed individually below:

- Alternative 1 – "No Project" Alternative
- Alternative 2 – Reduced Project

5.4.1 "No Project" Alternative

As required by CEQA Guideline §15126.6, this section describes and analyzes a "no project" alternative for the purpose of comparing the impacts of approving the Project with the impacts of not approving the Project. The No Project Alternative assumes that the Project's CCU, CO_2 pipeline, and related infrastructure improvements for the capture, transfer, and storage of CO_2 would not be approved or constructed.

The No Project Alternative would not result in up to 1.6 million tons per year of concentrated CO_2 capture and storage for up to 26 years. Therefore, the No Project Alternative would not contribute to the California Resource Corporation's adopted goals of Full- Scope Net Zero emissions by 2045. Additionally, the No Project Alternative would not support California's EO B-55-18, for California to achieve carbon neutrality by 2045 and net negative emissions thereafter.

5.4.1.1 Environmental Analysis

5.4.1.1.1 Aesthetics

Under the No Project Alternative, the Project site would remain as an operational power plant and no new development would take place. No changes to the visual character of the site would occur and there would be no impacts to daytime or nighttime views in the area. Therefore, the No Project Alternative would result in less impact to visual resources and aesthetics compared to the proposed Project.

5.4.1.1.2 Air Quality

Under the No Project Alternative, the EHPP would remain as an operational power plant, and there would be no new construction activities or new operational activities that would generate new air emissions. The No Project Alternative would not contribute to a cumulative net increase of criteria pollutant in the Project's region beyond what presently is attributed to existing operations. Therefore, the No Project Alternative would result in less impacts related to air quality compared to the proposed Project.

5.4.1.1.3 Biological Resources

Under the No Project Alternative, the Project site would continue operating as a power plant, and any existing biological resources within, including special-status plant and wildlife species, would not be subject to additional disturbance, as no new construction or operational activities would occur. The Project site would remain in its current condition, and the saltbush scrub and non-native grassland habitat that persists among the existing infrastructure would not be impacted. As a result, the No Project Alternative would have less impact on biological resources compared to the proposed Project.

5.4.1.1.4 Cultural Resources

Under the No Project Alternative, the Project site would continue to operate as an oil and gas field, and no new ground disturbing activities would occur. Therefore, disturbance to potential historical resources, archeological resources, or human remains located on site would not occur, and mitigation would not be



required. There would be no impact and the No Project Alternative would result in less impacts related to cultural resources as compared to the proposed Project.

5.4.1.1.5 Energy Resources

Under the No Project Alternative, the EHPP would remain as an operational power plant , and no new energy consumption activities would occur beyond what presently is attributed to existing operations. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, both the No Project Alternative and the Project would result in less than significant impacts related to energy, and impacts would be less than the proposed Project.

5.4.1.1.6 Geologic Hazards and Resources

Under the No Project Alternative, the Project site would remain as an operational power plant, and no new ground disturbance would occur. As such, the No Project Alternative would not directly or indirectly cause potential adverse effects involving rupture of a known earthquake fault or strong ground shaking, seismic-related ground failure, subsidence, collapse or expansion of soils, or result in substantial soil erosion or loss of topsoil. Therefore, the No Project Alternative would result in fewer impacts related to geology and soils compared to the proposed Project.

5.4.1.1.7 Greenhouse Gas Emissions

Under the No Project Alternative, the EHPP would remain as an operational power plant, and no construction or new operational activities would occur. The EHPP would continue to emit GHG emissions as a result of ongoing operations. GHG emission reductions resulting from operation of the proposed CCU would not be realized. Impacts would be less than significant under this alternative; however, impacts from implementation of this alternative would be greater than those of the Project as it would not result in the capture of GHG emissions (an estimated net reduction of 1,5899,213 MT of CO_2e per year) attributed to the Project.

5.4.1.1.8 Hazardous Materials Handling

Under the No Project Alternative, the EHPP would remain as an operational power plant, and no construction or new operational activities would occur. The EHPP would remain in its current condition, but no hazardous material impacts associated with the Project (such as amine use) would occur. This alternative would continue to involve the use, transport, and disposal of hazardous materials associated with the Project site and would continue to follow the state and federal rules and regulations. Without the use of amines to capture CO_2, the No Project Alternative would result in less hazardous material-related safety and spill concerns than the Project. Therefore, the No Project Alternative would result in less impacts to hazardous material use than the Project.



5.4.1.1.9 Noise

Under the No Project Alternative, the Project site would remain as an operational power plant. No new noise sources from construction or operation would be introduced beyond those already associated with existing activities, and existing noise conditions would remain unchanged. As a result, the No Project Alternative would not generate a substantial temporary or permanent increase in ambient noise levels, nor would it produce excessive groundborne vibration. Therefore, the No Project Alternative would result in fewer impacts related to noise and vibration compared to the proposed Project, which would involve new construction and operational activities, even though such impacts under the Project would be reduced to less than significant levels with implementation of mitigation.

5.4.1.1.10 Paleontological Resources

Under the No Project Alternative, the Project site would remain as an operational oil and gas field, and no construction or new operational activities would occur. The No Project Alternative would not involve construction in the vicinity of the paleontological resources discussed in the analysis, and the No Project Alternative would not cause a substantial adverse change in the significance of a paleontological resource that is defined by the Society of Vertebrate Paleontology (SVP). Therefore, the No Project Alternative would result in less impact related to paleontological resources compared to the Project.

5.4.1.1.11 Soils

Under the No Project Alternative, the Project site would remain as an operational power plant, and no new ground and soil disturbance would occur. As a result, there would be no impacts related to water or wind erosion of soil, and the No Project Alternative would result in fewer impacts related to soils compared to the proposed Project.

5.4.1.1.12 Traffic and Transportation

Under the No Project Alternative, the Project site would remain as an operational oil and gas field. No new transportation activities would occur beyond what is currently attributed to existing operations. Existing traffic patterns and volumes on nearby roadways would remain unchanged. Additionally, the No Project Alternative would not conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). The No Project Alternative would not substantially increase hazards due to a geometric design feature or result in inadequate emergency access. Therefore, both the No Project Alternative and the Project would result in less impact related to transportation and traffic, and would result in similar impacts.

5.4.1.1.13 Water Resources

Under the No Project Alternative, the Project site would remain as an operational oil and gas field. The Project site's existing hydrology and water supply would remain unchanged, as no development or ground disturbance would occur. The Proposed Project would continue to rely on the current water supply. As



such, this alternative would not violate water quality standards or WDRs; substantially alter the existing drainage patter of the site or area in a manner that would substantially increase the rate or amount of surface runoff which would result in flooding on site or off site; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system; contribute to inundation by a flood hazards, tsunami, or seiche; or conflict with or obstruct implementation of a water quality control plan or groundwater management plan. Therefore, the No Project Alternative would result in less impact related to water resources as compared to the Proposed Project.

5.4.2 Reduced Project

The Reduced Project alternative would reduce the capacity of the proposed carbon capture unit by 50% than currently proposed. It is assumed that the Reduced Project Alternative would also result in a slightly smaller physical footprint for CCU construction (approximately 50% less area). The Reduced Project alternative would result in lessening of identified impacts to air quality, biological resources, cultural resources, paleontological resources, and water resources. However, a reduction in the CCU capacity would also result in the reduction in CO_2 capture and sequestration achieved under the Proposed Project.

5.4.2.1 Environmental Analysis

5.4.2.1.1 Aesthetics

Under the Reduced Project Alternative, the Project site would have a slightly smaller physical footprint, with some areas remaining as an operational power plant and in oil and gas production rather than being developed for CCU facilities. While the footprint would be smaller, the elements of the CCU that would be most visible, such as the absorber, would remain. Because the features of the proposed Project most likely to have some visibility would still be present, the Reduced Project Alternative would result in similar visual and aesthetic impacts compared to the proposed Project.

5.4.2.1.2 Air Quality

Under the Reduced Project Alternative, the EHPP would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. There would still be new construction activities and new operational activities that would generate new air emissions. Construction of the Reduced Project Alternative would still contribute to a cumulative net increase of criteria pollutant in the Project's region beyond what presently is attributed to existing operations. Therefore, the Reduced Project Alternative would result in less impacts related to air quality compared to the proposed Project.

5.4.2.1.3 Biological Resources

Under the Reduced Project Alternative, the Project site would have a slightly smaller physical footprint, with some areas remaining as an operational power plant and in oil and gas production rather than being developed for CCU facilities. By limiting the extent of new ground disturbance, this alternative would reduce the potential for impacts on existing biological resources, including special-status plant and wildlife species,

native vegetation, and habitat. As a result, the Reduced Project Alternative would have less impact on biological resources compared to the proposed Project.

5.4.2.1.4 Cultural Resources

Under the Reduced Project Alternative, the Project site would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. There would still be new construction activities and operational activities that could potentially impact cultural resources. Additionally, a slightly smaller physical footprint for the CCU has the potential to result in a lessening of the identified impacts for the proposed Project. Therefore, the Reduced Project Alternative would result in slightly less impacts related to cultural resources compared to the proposed Project.

5.4.2.1.5 Energy Resources

Under the Reduced Project Alternative, the EHPP would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. New energy consumption activities would occur beyond what presently is attributed to existing operations, but present energy consumption would also be reduced. As such, the Reduced Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, both the Reduced Project Alternative and the Project would result in less than significant impacts related to energy and impacts of the Reduced Project Alternative would be less than the proposed Project.

5.4.2.1.6 Geologic Hazards and Resources

Under the Reduced Project Alternative, the Project site would have a slightly smaller physical footprint, with some areas remaining in oil and gas production rather than being developed for CCU facilities. New construction and operational activities would still occur, but likely at a reduced scale and duration. These activities could still result in adverse effects such as rupture of a known earthquake fault, strong ground shaking, seismic-related ground failure, subsidence, collapse or expansion of soils, or substantial soil erosion or loss of topsoil. Because construction and operational activities would be slightly reduced, the Reduced Project Alternative would result in slightly fewer impacts related to geologic hazards and resources compared to the proposed Project.

5.4.2.1.7 Greenhouse Gas Emissions

Under the Reduced Project Alternative, the EHPP would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. GHG emission reductions resulting from operation of the proposed CCU would still be realized, but less than the proposed Project. Impacts would be less than significant under this alternative; however, impacts from implementation of this alternative would be greater than those of the Project as it would result in 50% less capture of GHG emissions attributed to the Project.

5.4.2.1.8 Hazardous Materials Handling

Under the Reduced Project Alternative, the EHPP would result in a smaller physical footprint because areas no longer designated for CO_2 storage would remain as an operational oil and gas field. Construction and new operational activities that involve the use, transport, and disposal of hazardous materials associated with the Project (such as the use of amines) would occur. This alternative would also follow the state and federal rules and regulations. Therefore, both the Reduced Project Alternative and the Project would result in less than significant impacts related to hazardous materials and impacts of the Reduced Project Alternative would be less than the proposed Project.

5.4.2.1.9 Noise

Under the Reduced Project Alternative, the Project site would have a slightly smaller physical footprint, with some areas remaining in oil and gas production rather than being developed for CCU facilities. This alternative would involve similar types of construction and operational activities as the proposed Project, though potentially at a reduced scale and duration. As such, noise and groundborne vibration levels would be generally comparable to those of the proposed Project. With implementation of MMs (MM NOISE-1), impacts related to noise and vibration would remain less than significant. Therefore, the Reduced Project Alternative would result in similar less than significant noise impacts at nearby sensitive receptors as the proposed Project with incorporated mitigation.

5.4.2.1.10 Paleontological Resources

Under the Reduced Project Alternative, the Project site would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. There would still be new construction activities and operational activities that could potentially impact paleontological resources. Additionally, a slightly smaller physical footprint for the CCU has the potential to result in a lessening of the identified impacts for the proposed Project. Therefore, the Reduced Project Alternative would result in slightly less impacts related to paleontological resources compared to the proposed Project.

5.4.2.1.11 Soils

Under the Reduced Project Alternative, the Project site would result in a smaller physical footprint and areas no longer designated for CCU development would remain in oil and gas production. Similar types of construction and operational activities would still occur, with comparable potential for soil disturbance, runoff, and erosion. As a result, impacts related to soils under the Reduced Project Alternative would be similar to those identified for the proposed Project and would remain less than significant with implementation of BMPs, regulatory requirements, and MMs.

5.4.2.1.12 Traffic and Transportation

Under the Reduced Project Alternative, the Project site would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. There would still be new construction activities and new operational activities that would generate new traffic and transportation



beyond what is currently attributed to existing operations. Therefore, the Reduced Project Alternative would result in similar impacts related to traffic and transportation compared to the proposed Project.

5.4.2.1.13 Water Resources

Under the Reduced Project Alternative, the Project site would result in a smaller physical footprint and areas no longer designated for CCU would remain as an operational oil and gas field. While this alternative would reduce the overall footprint, new construction activities and operational activities could potentially impact water resources. Impacts may still arise due to water use during construction and from long-term operational uses associated with the CCU. However, because the Reduced Project would occupy a smaller area, the total volume of water required for construction and operation could be reduced. Therefore, the Reduced Project Alternative would result in slightly less impacts related to water resources compared to the proposed Project.

5.5 Comparative Impacts of Project to Alternatives

A summary of the comparative impacts of the Project to the alternatives analyzed is provided in Table 74 below.

Table 74 Summary Comparison of Impacts of Project Alternatives

Issue Area	Project	No Project	Reduced Project
Air Quality	Less than Significant with Mitigation	Less Than Project	Less Than Project
Biological Resources	Less than Significant with Mitigation	Less Than Project	Less Than Project
Cultural Resources	Less than Significant with Mitigation	Less Than Project	Same as Project
Energy Resources	Less than Significant with Mitigation	Less Than Project	Less Than Project
Geologic Hazards and Resources	Less than Significant with Mitigation	Less Than Project	Less Than Project
Greenhouse Gas Emissions	Less than Significant with Mitigation	Greater Than Project	Greater Than Project
Hazardous Materials Handling	Less than Significant with Mitigation	Less Than Project	Less Than Project
Noise	Less than Significant	Less Than Project	Same as Project
Paleontological Resources	Less than Significant with Mitigation	Less Than Project	Less Than Project
Soils	Less than Significant with Mitigation	Less Than Project	Same as Project
Traffic and Transportation	Less than Significant with Mitigation	Less Than Project	Same as Project
Visual Resources	Less than Significant with Mitigation	Less Than Project	Same as Project

Issue Area	Project	No Project	Reduced Project
Water Resources	Less than Significant with Mitigation	Less Than Project	Less Than Project

5.6 Environmentally Superior Alternative

Identification of an environmentally superior alternative is required under CEQA (California Code of Regulation Section 15126.6(e)(2)). The No Project Alternative would be environmentally superior to the project on the basis of the minimization or avoidance of physical environmental impacts but would have greater impacts than the project for GHG emissions. Section 15126.6(e)(2) of the CEQA Guidelines state that if the No Project Alternative is found to be environmentally superior, “the EIR shall also identify an environmentally superior alternative among the other alternatives.” Although the No Project Alternative is the environmentally superior alternative in certain issue areas, it is not capable of meeting any of the project objectives.

The proposed Project was identified as the Environmental Superior Alternative, as the proposed Project would maximize the CO_2 capture rate for the existing power plant. The Reduced Project alternative would result in less direct impacts to the Project site (and less impacts to Air Quality, Biological Resources, Cultural Resources, Energy, Water Resources), it not achieve this primary Project objective of capturing up to 95% of the CO_2 emitted from the EHPP and conveying the CO_2 to the CTV I project for injection and geologic storage.

6 Compliance with Existing Conditions of Certification

The following Table 75 presents the current CEC Conditions of Certification (COC) for the EHPP and indicates whether each measure will remain unchanged, would not apply, or require revision in regard to the CalCapture CCS Project. The EHPP Project (Docket 99-AFC-01C[1]) was certified by the CEC on December 6, 2000, and began commercial operation on July 24, 2003.

Table 75 Existing Conditions of Certification and Proposed Measures

Existing Conditions of Certification	Project Compliance
BIO-1. Construction site and/or ancillary facilities preparation (described as any ground disturbing activity other than Energy Commission approved geotechnical work) shall not begin until an Energy Commission Compliance Project Manager (CPM) approved Designated Biologist is available to be onsite.	This measure would apply to the proposed Project. CRC would retain CPM approved biologists onsite during construction. Refer to Mitigation Measure (MM) BIO-GEN-1.
BIO-2. The CPM approved Designated Biologist shall perform the following during project construction and operation: • Advise the project owners Construction Manager on the implementation of the Biological Resource COC; • Supervise or conduct mitigation, monitoring and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as, wetlands and special status species; and • Notify the project owner and the CPM of any non-compliance with any Biological Resources Condition of Certification.	This measure would apply to the proposed Project. CRC would retain CPM approved biologists onsite during construction. Refer to Mitigation Measure (MM) BIO-GEN-1.
BIO-3 The project owner's Construction Manager shall act on the advice of the Designated Biologist to	This COC measure would apply to the proposed Project. CRC would retain CPM approved

Existing Conditions of Certification	Project Compliance
ensure conformance with the Biological Resources COC.	biologists onsite during construction. Refer to Mitigation Measure (MM) BIO-GEN-1.
BIO-4 The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and, once approved, shall implement the measures identified in the plan.	This COC measure would be revised for the proposed Project. The BRMIMP for the proposed Project would include the Biological Resources mitigation measures.
BIO-5 The project owner shall develop and implement a CPM approved WEAP in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about sensitive biological resources associated with the project.	This COC measure may be revised for the proposed Project. CRC would modify the WEAP developed for the CTV I project as proposed under MM BIO-GEN-7.
BIO-6 Prior to start of any ground disturbance activities, the project owner shall acquire an ITP from CDFG in accordance with Section 2081(b) of the California Fish and Game Code and implement the permit terms and conditions.	This COC measure would be revised for the proposed Project. CRC would acquire the proper permits if required by CEC and CDFW. Refer to MM-BIO-GEN-2, BIO-GEN-3, BIO-GEN-8, BIO-RP-1, BIO-RP-2, BIO-CBB-1, BIO-CBB-2, BIO-BUOW-1, BIO-BUOW-2, BIO-BNLL-1, BIO-BNLL-2, , BIO-TLL-1, BIO-TLL-2, BIO-GKR-1, GIO-GKR-2, BIO-GKR-3, BIO-SJAS-1, BIO-SJAS-2, BIO-SJKF-1, BIO-SJKF-2, BIO-SJKF-2, BIO-SJKF-3, BIO-SJKF-4, and BIO-SJKF-5.
BIO-7 Prior to start of any streambed disturbance activities, the project owner shall acquire a Streambed Alteration Agreement from CDFG in accordance with Section 1603 of the California Fish and Game Code and implement the permit terms and conditions.	This COC measure would be revised for the proposed Project as CRC proposes to avoid streambeds. Refer to MM BIO-RP-1 and BIO-RP-2.

Existing Conditions of Certification	Project Compliance
BIO-8 Prior to the start of any ground disturbance activities, the project owner shall provide a final copy of the USFWS Biological Opinion in accordance with Section 7 of the FESA and incorporate the terms of the biological opinion into the Biological Resources Mitigation Implementation and Monitoring Plan. The project owner will implement the terms and conditions contained in the Biological Opinion.	This COC measure would be revised for the proposed Project. CRC would acquire the proper permits if required by CEC and USFWS.
BIO-9 To compensate for impacts to sensitive species habitat, the project owner shall provide a non-refundable check for $163,000 to the Center for Natural Lands Management to purchase, administer, and manage in perpetuity compensatory lands near the project vicinity.	The proposed Project would not have a significant impact on habitats, as the Carbon Capture Unit area is previously developed area.
BIO-10 The project owner will incorporate into the planned permanent or unexpected permanent closure plan measures that address the local biological resources. The biological resource facility closure measures will also be incorporated into the EHPP project BRMIMP.	This COC measure would be incorporated into the measures for the proposed Project.
CUL-1 Prior to the start of project-related earth disturbing activities to include: • vegetation clearance; • ground disturbance and preparation and site excavation activities; or • parking or movement of heavy equipment onto or over the project surface. The project owner shall provide the CEC Compliance Project Manager (CPM) with the name and statement of qualifications for its designated cultural resource specialist who will be responsible for	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
implementation of all cultural resources COC, and for the team member professionally qualified in historic or industrial archaeology.	
CUL-2 Prior to the start of any earth disturbing or earth moving activities, the project owner shall provide the designated cultural resource specialist and the CPM with: • maps and drawings showing the final project design and site layout, • the final alignment of all linear facilities, and • the location of all auxiliary work areas. Prior to the start of project related earth-disturbing activities, the designated cultural resources specialist, a qualified historical or industrial archaeologist, and a qualified (as determined by the cultural resource specialist) Native American monitor, shall conduct: • a reconnaissance survey, • any necessary presence/absence testing, • data recovery, and • significance evaluation of the final project site and other areas expected to be affected by pre-construction, construction and operation of the proposed project. Surveys of the linear facilities shall use the centerlines and rights-of-way delineated by the survey stakes placed for final project engineering and design. Prior to the start of project related earth disturbing activities, the designated cultural resources specialist shall prepare, and the project owner shall submit to the CPM for review and written approval, a Cultural Resources Monitoring and	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts to cultural resources within areas subject to project related earth disturbance.	
CUL-5 Prior to the start of earth disturbing or earth moving activities, the designated cultural resources specialist shall prepare an employee training program. The project owner shall submit the cultural resources training program to the CPM for review and written approval.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-6 Prior to the start of earth disturbing or earth moving activities and throughout the project construction period as needed for all new employees, the project owner shall ensure that the designated cultural resource trainer(s) provide(s) the CPM-approved cultural resources training to all project managers, construction supervisors, and workers.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-7 The designated cultural resource specialist or the specialist delegated monitor(s) shall have the authority to halt or redirect earth disturbing activities or construction if previously unknown cultural resource sites or materials are encountered during project related grading, augering, excavation and/or trenching. Cultural resources monitors shall be members of the approved cultural resources team with a background and experience appropriate to the project area being monitored. If such resources are found and the specialist determines that they are not significant, the specialist will document the observation and assessment and allow construction	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
to resume, the project owner shall notify the CPM of the find as set forth in the Verification.	
CUL-8 Prior to the start of any earth disturbing or earth moving activity including landscaping, and each week throughout the project construction period, the project owner shall provide the designated cultural resource specialist and the CPM with a current schedule of anticipated monthly project activity. The schedule shall include a map indicating the area(s) where ground disturbing or construction activities will occur one month in advance.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-9 Prior to the start of project-related vegetation clearance; ground disturbance and grading; site or project mobilization; site preparation or excavation activities; implementation of erosion control measures; or the movement or parking of heavy equipment other vehicles onto or over the project surface, the project owner and the designated cultural resources specialist shall consult with Native American tribal representatives to identify affected tribes or bands and to develop an agreement(s) for qualified (as determined by the cultural resources specialist) Native American monitors to be present throughout the project pre-construction surveys and construction phase of the project.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-10 Throughout the pre-construction reconnaissance surveys and the monitoring and mitigation phases of the project, the designated cultural resources specialist or delegated monitor(s) shall keep daily log describing the area and nature of work, any resource finds the progress or status of the resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The daily logs shall indicate by tenths	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
of a post mile, where and when monitoring has taken place, where monitoring has been deemed unnecessary, and where cultural resources were found.	
CUL-11 The designated cultural resource specialist or designated monitor(s), shall be present at all times the specialist deems appropriate to monitor construction-related grading, excavation, trenching, augering, or other disturbance of existing surface in the vicinity of previously recorded archaeological sites and in areas where cultural resources have been identified.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-12 The project owner shall ensure that the designated cultural resource specialist obtains and maintains a current US Bureau of Land Management (BLM) Archaeological Resource Use Permit to gain access to lands managed by the BLM or other federal agencies, to conduct any surveys, monitoring, data and/or artifact recovery activities on these lands. This use permit is to be obtained from the area office of the BLM in Bakersfield, California, no less than 10 days prior to the start of cultural resource activities governed by the permit.	This COC measure would not apply to the proposed Project.
CUL-13 The project owner shall ensure that: • the designated cultural resource specialist meets the professional qualifications specified by the BLM; • the CRMMP prepared per Energy Commission Condition **CUL-4**, also reflects BLM requirements for an Archaeological Treatment Plan; and • all surveys, monitoring, and data and/or artifact recovery activities implemented	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
during the construction and operation of the Elk Hills project comply with these requirements.	
CUL-14 The project owner shall ensure that the designated cultural resource specialist performs the recovery, preparation for analysis, analysis, preparation for curation, and delivery for curation of all cultural resource materials encountered and collected during preconstruction surveys and during the monitoring, data recovery, mapping, and mitigation activities related to the project.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-15 Following completion of data recovery and site mitigation work, the project owner shall ensure that the designated cultural resources specialist prepares a proposed scope of work for the final Cultural Resources Report. The project owner shall submit the proposed scope of work to the CPM for review and written approval.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-16 The project owner shall ensure that the designated cultural resources specialist prepares a Cultural Resources Report. The project owner shall submit the report to the CPM for review and written approval.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-17 The project owner shall submit an original, an original-quality copy, and a computer disc copy of the CPM-approved Cultural Resource Report to the public repository to receive the recovered data and materials for curation (or other format to meet the repository requirements), with copies to the State Historic Preservation Officer(SHPO) and to the appropriate regional archaeological information	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
center(s). The disc files must meet SHPO requirements for format and content.	
CUL-18 Following the filing of the CPM-approved Cultural Resource Report with the appropriate entities, the project owner shall ensure that all cultural resource materials, maps and data collected during data recovery and mitigation for the project are delivered to a public repository that meets the U.S. Secretary of the Interior standards for the curation of cultural resources. The project owner shall pay any fees for curation required by the repository.	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.
CUL-19 Prior to transmission line earth disturbing activities and construction, the project owner shall: 1. Design the transmission line in the areas cited to span the sensitive cultural resource site areas. 2. In the area between MP 5.0 to MP 6.0 and MP 7.5 to MP 9.0 of Route 1A, if it is not possible to span potential cultural resources, at each area of ground disturbance, the cultural resource specialist will survey the area. The survey will determine with appropriate methods whether the site represents a potentially significant cultural resource or has been formally determined not to be eligible. 3. To determine the presence or absence of subsurface deposits, the cultural resources specialist will conduct detailed surface examination of an area 100 feet in diameter around the pole site. If cultural materials are found to be present, the designated cultural resource specialist will conduct an excavation at the center of the pole site. The preferred means of excavation will include a hand excavation unit 1-meter by 1- meter using archaeological methods and techniques. However, if	This COC measure would be revised for the proposed Project. Refer to proposed MM CUL-1, CUL-2, and CUL-3.

Existing Conditions of Certification	Project Compliance
deemed appropriate by the cultural resource specialist, the excavation may be conducted using auger or backhoe. 4. If sensitive cultural resources are located in situ, the pole shall be moved to a new location, and that alternate location will be surveyed and tested, if necessary, to insure that there are no sensitive cultural resources present. If it is not possible to move the pole site, the designated cultural resources specialist will design and implement MMs, i.e., data recovery according to the research design. 5. In areas where human remains may be unearthed, representative of the Native American Community shall be requested to be on site during excavations and earth disturbing activities.	
GEO-1 Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s), certified by the State of California, to carry out the duties required by the 1998 edition of the California Building Code (CBC) Appendix Chapter 33, Section 3309.4.	This COC measure would be revised for the proposed Project. Refer to proposed MM GEO-1, GEO-2, GEO-3, and GEO-4.
GEO-2 The assigned engineering geologist(s) shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 Engineered Grading Requirement, and Section 3318.1 — Final Reports. Those duties: 1. Prepare the Engineering Geology Report. This report shall accompany the Plans and Specifications when applying to the CBO for the grading permit. 2. Monitor geologic conditions during construction. 3. Prepare the Final Engineering Geology Report.	This COC measure would be revised for the proposed Project. Refer to proposed MM GEO-1, GEO-2, GEO-3, and GEO-4.

Existing Conditions of Certification	Project Compliance
GEO-3 The project owner shall submit a linear facility (transmission lines and utility lines) development plan (LFDP). The LFDP shall address any actions to be undertaken by the project owner to ensure no hazard or problems will be created with the existing wells in the construction site and laydown areas. The LFDP shall be submitted to the Division of Oil and Gas and Geothermal Resources (DOGGR) for review and comment. The linear facility development plant shall include a discussion of how a minimum setback from existing oil wells is to be maintained.	This measure does not apply to the proposed Project.
PAL-1 Prior to the start of any project-related construction activities, the project owner shall ensure that the designated paleontological resource specialist approved by the CPM is available for field activities and prepared to implement the COC.	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.
PAL-2 Prior to the start of project construction, the designated paleontological resource specialist shall prepare and submit to the CPM for review and approval a Paleontological Resources Monitoring and Mitigation Plan (PRMMP). The PRMMP shall identify general and specific measures to minimize potential impacts to sensitive paleontological resources. After CPM approval, the project owner s designated paleontological resource specialist shall be available to implement the PRMMP, as needed, throughout project construction.	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.
PAL-3 Prior to the start of construction, throughout the project construction period and as needed for all new employees, the project owner and the designated paleontological resource specialists shall prepare and conduct CPM-approved training to all,	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.

Existing Conditions of Certification	Project Compliance
project managers, construction supervisors, and workers who operate ground disturbing equipment.	
PAL-4 The designated paleontological resource specialist shall be present at all times he or she deems appropriate to monitor construction-related grading, excavation, trenching, and/or augering in areas where potentially fossil bearing sediments have been identified. If the designated paleontological resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner.	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.
PAL-5 The project owner, through the designated paleontological resource specialist shall ensure recovery; preparation for analysis; analysis; identification and inventory; preparation for curation; and the delivery for curation of all significant paleontological resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.
PAL-6 The project owner shall ensure preparation of a Paleontological Resources Report by the designated paleontological resource specialist. The Paleontological Resources Report shall be completed following completion of the analysis of the recovered fossil materials and related information. The project owner shall submit the paleontological report to the CPM for approval.	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.

Existing Conditions of Certification	Project Compliance
PAL-7 The project owner shall include in the facility closure plan a description regarding facility closure activity s potential to impact paleontological resources. The conditions for closure will be determined when a facility closure plan is submitted to the CPM twelve (12) months prior to closure of the facility. If no activities are proposed that would potentially impact paleontological resources, then no MMs for paleontological resource management are required in the facility closure plan.	This COC measure would be revised for the proposed Project. Refer to MM PALEO-1, PALEO-2, PALEO-3, and PALEO-4.
SOILS&WATER 1 Prior to beginning any clearing, grading or excavation activities associated with project construction, the project owner will develop and implement a SWPPP as required under the General Stormwater Construction Activity Permit.	This COC measure would be revised for the proposed Project. Refer to MM HYDRO-1, HYDRO-2, and HYDRO-3.
SOIL&WATER-2. Prior to the initiation of any earth moving activities, the project owner shall submit an erosion control and revegetation plan for staff approval. The final plan shall contain all the elements of the draft plan with changes made to address the final design of the project.	This COC measure would be revised for the proposed Project. Refer to MM HYDRO-1, HYDRO-2, and HYDRO-3.
SOIL&WATER-3. Sixty days prior to commercial operation, the project owner must submit a notice of intent to the SWRCB to indicate that the project will operate under provisions of the General Industrial Activity Storm Water Permit. As required by the general permit, the project owner will develop and implement a SWPPP.	This COC measure would be revised for the proposed Project. Refer to MM HYDRO-1, HYDRO-2, and HYDRO-3.
SOIL&WATER-4. The Project shall employ water conservation measures to limit water use to a maximum of 3,000 acre-feet per year.	This COC will be implemented during the proposed Project.



Existing Conditions of Certification	Project Compliance
SOIL&WATER-5. The Project shall fund the acquisition of water or water rights for the purpose of water conservation or environmental enhancement. Such funding shall result in at least 1000-acre feet per year of water conservation or environmental enhancement over the life of the Project, except that such funding shall total no more than an annual payment of $100,000 with 3.5 percent per year added thereafter. The first payment shall be made when commercial operation begins, and a payment shall be made each year thereafter for the life of the Project. The measure(s) will be selected by mutual agreement of the Developer and CURE. Examples of such measures include, but are not limited to, the following: a. Contribution to the CalFed Environmental Water account, which is the option preferred by the Parties; b. Acquisition of water from Berenda Mesa Water District that could be applied to environmental enhancement purposes in the Delta or otherwise managed to promote water conservation.	This COC measure does not apply to the proposed Project.
WASTE-1 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.	CRC would comply with this requirement for the proposed Project.
WASTE-2 Upon becoming aware of any impending enforcement action, which may compromise the proper management of project related wastes, the project owner shall notify the CPM of any such action taken or proposed to be taken against it, or against any waste hauler, or disposal facility, or treatment operator with which the owner contracts.	CRC would comply with this requirement for the proposed Project.

Existing Conditions of Certification	Project Compliance
WASTE-3 Prior to the start of both construction and operation, the project owner shall prepare and submit to the CPM, for review and comment, a waste management plan for all wastes generated during construction and operation of the facility, respectively.	CRC would comply with this requirement for the proposed Project. Refer to MM HM-2.
WASTE-4 The project owner shall have an environmental professional (as defined by American Society for Testing and Materials Practice 1527-97 Standard Practice for Phase I ESAs) available on site during soil excavation activities. If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, or other signs, prior to any further construction activity at that location, the environmental professional shall: • inspect the site, determine the need for sampling to confirm the nature and extent of contamination, • file a written report to the project owner stating the recommended course of action.	CRC would comply with this requirement for the proposed Project. Refer to MM HM-5 and HM-6.
LAND-1 Prior to the start of construction, the project owner shall submit site development plan for the project to Kern County for its review and comment. The site development plan shall also be submitted to the CEC s CPM for review and approval. The site development plan shall comply with all applicable provisions of Chapters 19.12, 19.86, and 19.82 of the Kern County Zoning Ordinance. The project owner shall provide a letter of comment from the Kern County Planning Director stating that the project is consistent with the provisions of the Kern County General Plan and Zoning Ordinance. The	**Proposed Text: LAND-1** Prior to the start of construction, the project owner shall submit site development plan for the project to Kern County for its review and comment. The site development plan shall also be submitted to the CEC's CPM for review and approval. The site development plan shall comply with all applicable provisions of Chapters 19.12, 19.81, 19.86, and 19.82 of the Kern County Zoning Ordinance. The project owner shall provide a letter of comment from the Kern County Planning Director stating that the project is consistent with the provisions of the Kern County

Existing Conditions of Certification	Project Compliance
project owner shall submit to the CPM for review and approval site development plan, including a landscaping plan. The project owner shall submit a letter from the Kern County Planning Director stating that the site development plan conforms to Kern County Zoning Code and has been approved by the County. If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan. The landscaping shall not be planted before the plan is approved. The project owner shall notify the CPM when the landscaping has been planted and is ready for inspection. Prior to the start of construction, the project owner shall submit to the CPM proof of compliance with the Subdivision Map Act, and Kern County s action thereupon.	General Plan and Zoning Ordinance. The project owner shall submit to the CPM for review and approval site development plan, including a landscaping plan. The project owner shall submit a letter from the Kern County Planning Director stating that the site development plan conforms to Kern County Zoning Code and has been approved by the County. If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan. The landscaping shall not be planted before the plan is approved. The project owner shall notify the CPM when the landscaping has been planted and is ready for inspection. Prior to the start of construction, the project owner shall submit to the CPM proof of compliance with the Subdivision Map Act, and Kern County s action thereupon.
NOISE-1 Prior to the start of rough grading, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the EHPP. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall also be posted at the EHPP site during construction in a manner visible to passersby. This telephone number shall be maintained until the EHPP has been operational for at least one (1) year.	This COC measure would be revised for the proposed Project. Refer to MM NOISE-1.
NOISE-2 Throughout the construction and operation of the EHPP, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.	This COC measure would be revised for the proposed Project. Refer to MM NOISE-1.

Existing Conditions of Certification	Project Compliance
NOISE-3 Prior to the start of rough grading, the project owner shall submit to the CPM for review a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and, also, to comply with applicable OSHA standards.	This COC measure would be revised for the proposed Project. Refer to MM NOISE-1.
NOISE-4 The noise MMs to be employed by the project owner may include (but not be limited to): 1. Provide standard outdoor/weather enclosures for the CTG packages. 2. Provide air inlet silencers for the combustion turbines.	This COC measure would be revised for the proposed Project. Refer to MM NOISE-1.
NOISE-5 The project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted within thirty (30) days after the facility is operating at an output of 80% of rated capacity or greater, by a qualified person in accordance with the provisions of Title 8, CCR, sections 5095-5100 (Article 105) and Title29, CFR Part 1910.The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare are port of the survey results and, if necessary, identify proposed MMs that will be employed to comply with the applicable state and federal regulations.	This COC measure would be revised for proposed Project.
NOISE-6 Noisy construction work (that which causes off-site annoyance, as evidenced by the filing of a legitimate noise complaint) shall be restricted to the hours of 7 a.m. to 7 p.m. on weekdays and from 8 a.m. to 6 p.m. on weekends and holidays.	This COC measure would be revised for the proposed Project.

Existing Conditions of Certification	Project Compliance
SOCIO-1 The project owner shall pay the statutory school impact development fee as required at the time of filing for the online building permit with the Kern County Department of Engineering and Survey Services and Building Inspection.	This COC measure would be revised for the proposed Project. Refer to MM SOC-1.
SOCIO-2 In a timely manner after certification, the project owner shall reach agreement with the KCFD, La Paloma Generating Company, Midway Sunset and Sunrise Cogeneration and Power Company (if the Sunrise project has been certified) on Elk Hills share of the total funding for the following: 1. Purchase of a new 105-foot Pierce Quint Aerial ladder truck equipped for high angle and confined space rescues; 2. Provide for (a) First year funding for nine new positions for personnel to cover three shifts for the new truck; and (b)First year funding for a replacement ladder truck.	This COC measure does not apply to the proposed Project.
TRANS-1. The project owner shall comply with Caltrans and Kern County limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.	This COC measure would be revised for the proposed Project. Refer to MM TRA-1 and TRA-2.
TRANS-2. The project owner or its contractor shall comply with Caltrans and Kern County limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.	This COC measure would be revised for the proposed Project. Refer to MM TRA-1 and TRA-2.

Existing Conditions of Certification	Project Compliance
TRANS-3. The project owner shall ensure that all federal and state regulations for the transport of hazardous materials are observed during both construction and operation of the facility.	This COC measure would be revised for the proposed Project. Refer to MM TRA-1 and TRA-2.
TRANS-4 The project owner or its contractor shall install crossing structures and netting, if required by Caltrans, across SR 58 as a safety precaution and to reduce the potential for damage from falling construction materials or equipment during cable-stringing activities. Prior to cable stringing, the project owner shall consult with Caltrans, and prepare and submit to the CPM a safety plan and implementation program.	This measure does not apply to the proposed Project.
TRANS-5 Following construction of the power plant and all related facilities, the project owner shall meet with the CPM and Kern County to determine if any actions are necessary and develop a schedule to complete the repair of any roadways damaged due to project construction.	This COC measure would be revised for the proposed Project. Refer to MM TRA-1 and TRA-2.
TRANS-6 If the traffic signal planned for the SR 119/99 junction is not in place prior to the start of construction of the Elk Hills Power Project, the project owner shall provide traffic control at the SR 119/99 junction during construction of the EHPP through the use of policeman/flagman during peak traffic hours. The project owner shall provide traffic control during the construction phase of the Elk Hills Power Project until the traffic signal is installed.	This measure is not applicable to the proposed Project.
TRANS-7 The project owner shall provide two entrances to the Elk Hills Power Project. The project owner shall direct normal traffic to and from the power plant site through the existing OEHI of Elkhills,	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
Inc. gate located on the west side of Elk Hills Road at Skyline Road. The project owner shall construct a temporary,40-foot wide, 135-foot long access road extending from Elk Hills Road approximately 600 feet north of the intersection of Skyline Road and Elk Hills Road. The project owner shall only utilize temporary access road for receiving heavy and over-sized equipment and materials during project construction.	
TRANS-8 Prior to the start of project construction, the project owner shall consult with Kern County, and prepare and submit to the County for approval a construction traffic control plan and implementation program for use of the temporary access road off Elk Hills Road and north of Skyline Road by trucks delivering heavy and/or over-sized construction equipment and materials. The plan shall address the following issues: 1. timing of heavy and/or over-sized equipment and materials deliveries; 2. signing, lighting, and traffic control device placement; and 3. use of a flagman.	This COC measure would be revised for the proposed Project. Refer to MM TRA-1 and TRA-2.
TRANS-9. The project owner shall develop and implement a safety management plan for delivery of ammonia. The plan shall include procedures, protective equipment requirements, training, a checklist, and the specification of delivery routes.	This COC measure would be revised for the proposed Project. Refer to MM TRA-1 and TRA-2.
VIS-1. Prior to the start of commercial operation, the project owner shall treat the project structures, buildings, towers, substation, tanks and transmission poles visible to the public in a non-reflective color to blend with the surroundings. The project owner shall treat the cooling towers with a heat-resistant color	This COC measure would be revised for the proposed Project. Refer to MM VIS-1 and VIS-2.

Existing Conditions of Certification	Project Compliance
that minimizes contrast and harmonizes with the surrounding environment.	
VIS-2 Any fencing for the project shall be non-reflective.	This COC measure would be revised for the proposed Project. Refer to MM VIS-1 and VIS-2.
VIS-3 Prior to the start of commercial operation, the project owner shall design and install all lighting such that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized.	CRC would comply with this requirement for the proposed Project.
VIS-4 To minimize potential visual impacts, the project owner shall not place any electrical transmission poles directly in front of any residences.	This measure is not applicable to the proposed Project.
VIS-5 Prior to the start of commercial operation, the project owner shall implement a landscape plan that meets the requirements of the Kern County Zoning Code. The project owner shall submit to the CPM for review and approval specific plan describing its landscaping proposal. The project owner shall provide the CPM a letter of comment from the Kern County Planning Director stating that the landscape plan is consistent with the provisions of the Kern County General Plan and Zoning Ordinance. The plan shall include, but not be limited to: 1. a detailed landscape plan, at a reasonable scale, which includes a list of proposed tree and shrub species and sizes and a discussion of the suitability of the plants for the site conditions and mitigation objectives. 2. maintenance procedures, including any needed irrigation; and	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
3. a procedure for replacing unsuccessful plantings.	
TSE-1 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to requirements listed below. The substitution of Compliance Project Manager (CPM) approved equivalent equipment and equivalent substation configurations is acceptable.	This measure is not applicable to the proposed Project.
TSE-2 The project owner shall inform the CPM of any impending changes, which may not conform to the requirements 1(a) through 1(i) of **TSE-1**, and have not received CPM approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CPM.	This measure is not applicable to the proposed Project.
TSE-3 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM approved changes thereto, to ensure conformance with CPUC GO-95 and CPUC Rule No. 21 and these conditions. In case of non-conformance, the project owner shall inform the CPM in writing, within 10 days of discovering such nonconformance and describe the corrective actions to be taken.	This measure is not applicable to the proposed Project.
TLSN-1. The project owner shall construct the proposed transmission line according to the requirements of GO-95, GO-52, Title 8, Section 2700 et seq, of the CCR and PG&E's EMF reduction guidelines.	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
TLSN-2. The project owner shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints and interference of radio or television signals from operation of the line.	This measure is not applicable to the proposed Project.
TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields before and after the line is energized. Measurements should be made at appropriate points along the route to allow verification of design assumptions relative to field strengths. The areas to be measured should include the facility switchyard and any residences within 100 feet of the right-of-way.	This measure is not applicable to the proposed Project.
TLSN-4 The project owner shall ensure that combustible material in close proximity to the energized conductors (e.g., tree branches) are cleared from the right-of-way as required under the provisions of: 1. PRC, section 4292, and 2. Cal. Code of Regs., tit. 14,／1250.	This measure is not applicable to the proposed Project.
TLSN-5 The project owner shall send a letter to all owners of property within 100 feet or adjacent to the right-of-way at least sixty (60) days prior to first transmission of electricity. The letter shall consist of the following: • A discussion of the nature and operation of a transmission line. • A discussion of the project owner s responsibility for grounding existing fences, gates and other large permanent chargeable objects identified during transmission line	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
construction within the right-of-way regardless of ownership; • A discussion of the property owner s responsibility for grounding and to notify the project whenever the property owner adds or installs a metallic object; and • A statement recommending against fueling motor vehicles or other mechanical equipment underneath the line.	
TLSN-6 The project owner shall ensure the grounding of any ungrounded permanent metallic objects identified during transmission line construction within the right-of-way, regardless of ownership. Such objects shall include fences, gates, and other large permanent chargeable objects. These objects shall be grounded according to procedures specified in the National Electrical Safety Code. In case of a refusal by the property owner to permit such grounding, the project owner shall so notify the CPM. Such notification shall include, when possible, the owner s written objection. Upon receipt of such notice, the CPM may waive the requirement for grounding the object involved.	This measure is not applicable to the proposed Project.
AQ-C1 Prior to breaking ground at the project site, the project owner shall prepare a Construction Fugitive Dust Mitigation Plan (CFDMP), which specifically: • identifies fugitive dust MMs that will be employed for the construction of the Elk Hills Power Project and related facilities; and • identifies measures to limit fugitive dust emissions from construction of the project site and linear	This COC measure would be revised for the proposed Project. Refer to MM AIR-1, AIR-2, AIR-3, AIR-4, AIR-5, and AIR-6.

Existing Conditions of Certification	Project Compliance
facilities. Measures that should be addressed include the following: • the identification of the employee parking area(s) and surface of the • parking area(s); • the frequency of watering of unpaved roads and disturbed areas; • the application of chemical dust suppressants; • the use of gravel in high traffic areas; • the use of paved access aprons; • the use of posted speed limit signs; • the use of wheel washing areas prior to large trucks leaving the project site; and, • the methods that will be used to clean tracked-out mud and dirt from the project site onto public roads.	
AQ-C2 The project owner shall do all of the following: 1. Ensure that all heavy earthmoving equipment has been properly maintained, including, but not limited to: • bulldozers, • backhoes, • compactors, • cranes • dump trucks	This COC measure would be revised for the proposed Project. Refer to MM AIR-1, AIR-2, AIR-3, AIR-4, AIR-5, and AIR-6.

Existing Conditions of Certification	Project Compliance
• loaders, • motor graders • trenchers, and • other heavy duty construction related trucks.	
AQ-1 No air contaminant shall be released into the atmosphere, which causes public nuisance. [District Rule 4102]	CRC would comply with this requirement for the proposed Project.
AQ-2 The project owner shall submit selective catalytic reduction, oxidation catalyst, and continuous emission monitor design details to the District at least 30 days prior to the construction of permanent foundations. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-3 Combustion turbine generator (CTG) and electric generator lube oil vent shall be equipped with mist eliminators to maintain visible emissions from lube oil vents shall no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-4 The CTG shall be equipped with continuously recording fuel gas flow meter. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-5 CTG exhaust shall be equipped with continuously recording emissions monitor for NO_x (before and after the SCR unit), CO, and O2 dedicated to this unit. Continuous emission monitors shall meet the requirements of 40 CFR parts 60 and 75 and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM	This COC would be revised for the proposed Project. Refer to MM AIR-6.



Existing Conditions of Certification	Project Compliance
results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in Conditions **AQ-13, 16, 17 and 18**. [District Rule 2201]	
AQ-6 Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-7 Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with U.S. EPA test methods. [District Rule 1081]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-8 Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidizing catalyst if required to meet NO_x and CO emission limits. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-9 The project owner shall monitor and record exhaust gas temperature at the selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-10 CTG and duct burner shall be fired on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as) per 100 dry-standard cubic feet of natural gas. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-11 Startup is defined as the period beginning with initial turbine firing until the unit meets the lb/hr and ppmv emission limits in Condition AQ-15. An extended startup shall be defined as a startup that	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
occurs after the steam turbine has been shutdown for 72 hours or more. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Aborted shutdown is defined as the period beginning with initiation of turbine shutdown and ends when the unit has ramped up and is meeting the lb/hr and ppmv emission limits. Startup and shutdown duration shall not exceed the following: • three hours for a regular startup, • seven hours for an extended startup, • and one hour for a shutdown and aborted shutdown, per occurrence. [District Rule 2201 ad 4001].	
AQ-12 Ammonia shall be injected when the SCR catalyst temperature exceeds 500 degrees F. The project owner shall monitor and record catalyst temperature during periods of startup. [District Rules 2201]	This measure is not applicable to the proposed Project.
AQ-13 During startup or shutdown of any gas turbine engine(s), combined emissions from both gas turbine engines (s-3523-1-0 and —2-0) heat recovery steam generator exhausts shall not exceed any of the following limits in any one hour: • NO_x (as NO_2) 76 lbs • CO 38 lbs	This measure is not applicable to the proposed Project.
AQ-14 During an extended startup, the combined emission from both CTG and HRSG shall not exceed 800 lbs NO_x or 3,600 lbs CO per event. During shutdown of CTG, the combined emissions from	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
both CTG and HRSG exhausts shall not exceed either 102.5 lbs NO_x or 220.0 lbs CO per event.	
AQ-16 Emission rates from each CTG, on days when a startup or shutdown occurs, shall not exceed any of the following: • PM_{10} 432 lb/day • SO_2 86.4 lb/day • NO_2 418.5 lb/day • VOC 96.0 lb/day • CO 326.7 lb/day [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-17 Emission rates from both CTGs (S-3523-1 and -2), on days when startup or shutdown occurs for either or both turbines, shall not exceed any of the following: • PM_{10} 864.0 lb/day • SO_2 172.8 lb/day • NO_2 817.8 lb/day • VOC 192.0 lb/day • CO 640.4 lb/day. [District Rule 2201] The project owner shall provide records of compliance as part of the quarterly reports of Condition **AQ-35.**	This measure is not applicable to the proposed Project.
AQ-18 Annual emissions from both CTGs calculated on a twelve (12) consecutive month rolling basis shall not exceed any of the following:	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
PM_{10} – 216,960 lb/year, SO_x (as SO_2) - 57,468 lb/year, NO_x (as NO_2) - 285,042 lb/year, VOC - 64,478 lb/year, and CO - 223,040 lb/year. [District Rule 2201]	
AQ-19 Each one-hour period in a one-hour rolling average will commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. The twenty-four-hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-20 Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each calendar month in twelve-consecutive month rolling emissions will commence at the beginning of the first day of the month. The twelve-consecutive-month rolling emissions total to determine compliance with annual emissions will be compiled from the twelve (12) most recent calendar months. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-21 Prior to or upon startup of S-3523-1-0, -2-0, & 3-0, emission offsets shall be surrendered for all calendar quarters in the following amounts, at the offset ratio specified in Rule 2201 (6/15/95 version) Table 1, PM_{10} - Q1: 78,596 lb, Q2: 79,470 lb, Q3: 80,343 lb, and Q4: 80,343 lb; SO_x (as SO_2) - Q1: 14,170 lb, Q2: 14,328 lb, Q3: 14,485 lb, and Q4: 14,485 lb; NO_x (as NO_2) - Q1: 65,353 lb, Q2:	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
66,079 lb, Q3: 66,805 lb, and Q4: 66,805 lb; and VOC - Q1: 10,967 lb, Q2: 11,089 lb, Q3: 11,211 lb, and Q4: 11,211 lb. [District Rule 2201]	
AQ-22 NO_x and VOC emission reductions that occurred from April through November may be used to offset increases in NO_x and VOC respectively during any period of the year. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-23 NO_x ERCs may be used to offset PM_{10} emission increases at a ratio of 2.42 lb NO_x: 1 lb PM_{10} for reductions occurring within fifteen (15) miles of this facility, and at 2.72 lb NO_x: 1 lb PM_{10} for reductions occurring greater than fifteen (15) miles from this facility. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-24 At least thirty (30) days prior to the construction of permanent foundation, the project owner shall provide the District with: • written documentation that all necessary offsets have been acquired or that • binding contracts to secure such offsets have been entered into. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-25 Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppm @ 15% O2 = ((a- (bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol),	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NO_x concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, the project owner may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH3 CEM, the project owner must submit a monitoring plan for District review and approval [District Rule 4102]	
AQ-26 Compliance with the short term emission limits (lb/hr and ppmv @ 15%O2) shall be demonstrated within 60 days of initial operation of each gas turbine engine and annually thereafter.	This measure is not applicable to the proposed Project.
AQ-27 Compliance with the startup NO_x, CO, and VOC mass emission limits shall be demonstrated for one of the CTGs (S-3523-1, or -2) upon initial operation and at least every five years thereafter by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081]	This measure is not applicable to the proposed Project.
AQ-28 Compliance with natural gas sulfur content limit shall be demonstrated within sixty (60) days of operation of each gas turbine engine and periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 1081, 2540, and 4001]	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
AQ-29 The District must be notified thirty (30) days prior to any compliance source test, and a source test plan must be submitted for approval fifteen (15) days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within sixty (60) days of testing. [District Rule 1081]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-31 The following test methods shall be used: • PM_{10}: U.S. EPA method 5 (front half and back half), • NO_x: U.S. EPA Method 7E or 20, • CO: U.S. EPA method 10 or 10B, • O_2: U.S. EPA Method 3, 3A, or 20, • VOC: U.S. EPA method 18 or 25, • ammonia: BAAQMD ST-1B, and • fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-32 The project owner shall notify District of the: • date of initiation of construction no later than 30 days after such date; • date of anticipated startup not more than 60 days nor less than 30 days prior to such date; and	This COC would be revised for the proposed Project. Refer to MM AIR-6.

Existing Conditions of Certification	Project Compliance
• date of actual startup within fifteen (15) days after such date. [District Rule 4001]	
AQ-33 The project owner shall maintain hourly records of NO_x, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NO_x and CO emissions. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-34 The project owner shall maintain records of SOx lb/hr, lb/day, and/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-35 The project owner shall maintain the following records for the CTG: occurrence, duration, and type of any startup, shutdown, or malfunction; emission measurements; total daily and annual hours of operation; and hourly quantity of fuel used. [District Rules 2201 & 4703]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-36 The project owner shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor. [District Rules 2201 & 4703]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-37 All records required to be maintained by this permit shall be maintained for a period of five (5) years and shall be made readily available for District inspection upon request. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.

Existing Conditions of Certification	Project Compliance
AQ-38 Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, and paragraphsv5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the U.S. EPA. [District Rule 1080]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-39 Not later than one (1) hour after its detection, the project owner shall notify the District of any breakdown condition, unless the owner or operator demonstrates to the Districts satisfaction that the longer reporting period was necessary. [District Rule 1100]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-40 The District shall be notified in writing within ten (10) days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of initial failure, the estimated emissions in excess of those allow	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-41 Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with U.S. EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-42 The project owner shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and	This COC would be revised for the proposed Project. Refer to MM AIR-6.

Existing Conditions of Certification	Project Compliance
guidance specified in 40 Carports 60, Appendix F. [District Rule 1080]	
AQ-43 Within thirty (30) days of the end of the quarter, for each calendar quarter, the project owner shall submit a written report to the APCO that includes: • time intervals, • data and magnitude of excess emissions, • nature and cause of excess (if known), • corrective actions taken and preventive measures adopted. Averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-44 The project owner shall submit an application to comply with Rule 2540 -Acid Rain Program twenty four (24) months before the unit commences operation. [District Rule 2540]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-45 No air contaminant shall be released into the atmosphere which causes public nuisance. [District Rule 4102]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-46 At least thirty (30) days prior to commencement of construction, project owner shall submit to the District:	This COC would be revised for the proposed Project. Refer to MM AIR-6.

Existing Conditions of Certification	Project Compliance
• drift eliminator design details; and • vendor specific emission justification for the correction factor to be used to correlate blowdown TDS to drift TDS and the amount of drift that stays suspended in the atmosphere utilizing the equation in Condition **AQ-51**. [District Rule 2201]	
AQ-47 The project owner shall submit to the District cooling tower design details (including the cooling tower type and materials of construction) at least thirty (30) days prior to commencement of construction, and, at least ninety (90) days before the tower is to be operated. [District Rule 7012]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-48 No hexavalent chromium containing compounds shall be added to cooling tower circulating water. [District Rule 7012]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-49 Drift eliminator drift rate shall not exceed 0.0006%. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-50 PM_{10} emission rate shall not exceed 11.7 lb/day. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-51 Compliance with the PM_{10} daily emission limit shall demonstrated as follows: PM_{10} lb/day = circulating water recirculation rate * total dissolved solids concentration in the blowdown water * design drift rate * correction factor. [District Rule 2201]	This COC would be revised for the proposed Project. Refer to MM AIR-6.

Existing Conditions of Certification	Project Compliance
AQ-52 Compliance with PM_{10} emission limit shall be determined by circulating water sample analysis by independent laboratory within 90 days of initial operation and weekly thereafter. [District Rule 1081]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-53 No air contaminant shall be released into the atmosphere which causes public nuisance. [District Rule 4102]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-54 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]	This COC would be revised for the proposed Project. Refer to MM AIR-6.
AQ-55 The engine shall be equipped with a turbocharger and intercooler/aftercooler. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-56 The engine shall be equipped with an operational non-resettable hour meter. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-57 The engine shall be equipped either with a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency unless UL certification would be voided. [District Rule 2201]	This measure is not applicable to the proposed Project.
This measure is not applicable to the proposed Project.	This measure is not applicable to the proposed Project.

Existing Conditions of Certification	Project Compliance
AQ-59 The sulfur content of the diesel fuel used shall not exceed 0.05% by weight. [District Rule 2201]	This measure is not applicable to the proposed Project.
AQ-60 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]	This measure is not applicable to the proposed Project.
AQ-61 The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 77 hours per year. [District Rules 2201 and 4701]	This measure is not applicable to the proposed Project.
AQ-62 The project owner shall maintain records of hours of non-emergency operation and of the sulfur content of the diesel fuel used. Such records shall be made available for District inspection upon request for a period of five (5) years. [District Rules 2201 and 4701]	This measure is not applicable to the proposed Project.
AQ-66 The project owner/operator shall not employ the duct burner during startup or shutdown events.	This measure is not applicable to the proposed Project.
AQ-67 The project owner/operator shall demonstrate compliance with all applicable limitations for any gas turbines on the project site that are equipped with an intermittently operating auxiliary burner both with and without the burner in operation.	This measure is not applicable to the proposed Project.
HAZ-1. Unless approved in advance by the CPM, other than those identified in Appendix B, the project owner shall not use any hazardous material in reportable quantities--as specified in Title 40, CFR, Part 355, Subpart J, section 355.50. The proposed	This COC would be revised for the proposed Project. Refer to MM HM-1, HM-2, HM-3, HM-4, HM-5, HM-6, HM-7, HM-8, HM-9, HM-10, HM-11, and HM-12.

Existing Conditions of Certification	Project Compliance
project shall not use anhydrous ammonia but instead shall use aqueous ammonia with a concentration of less than 20%.	
HAZ-2 The project owner shall provide a Process Safety Management Plan as specified in Title 8, CCR, section 5189 et seq. At a minimum, the project owner shall include a full description per the referenced code section: • Operating procedures • Training • Initial training • Refresher/supplemental training • Certification and Testing • Mechanical Integrity• Written Procedures • Inspection and Testing • Equipment Deficiencies • Quality Assurance • Management of Change • Incident Investigation • Emergency Planning and Response, and • Employee Participation	This COC would be revised for the proposed Project. Refer to MM HM-1, HM-2, HM-3, HM-4, HM-5, HM-6, HM-7, HM-8, HM-9, HM-10, HM-11, and HM-12.
HAZ-3 The project owner shall: • Provide a Risk Management Plan (if otherwise required by law) and Process Safety Management Plan (as described in Condition **HAZ-2**) to the Kern County Environmental Health Department and the CPM for review and approval at the time the plans	This COC would be revised for the proposed Project. Refer to MM HM-1, HM-2, HM-3, HM-4, HM-5, HM-6, HM-7, HM-8, HM-9, HM-10, HM-11, and HM-12.

Existing Conditions of Certification	Project Compliance
are first submitted to the U.S. EPA and the California OSHA). • Show all recommendations of the Kern County Environmental Health Department in the final document. A copy of the final plans, reflecting all comments, shall be provided to the Kern County Environmental Health Department and the CPM once reviewed by U.S. EPA and Cal OSHA.	
HAZ-4 The project owner shall design and site the hydrogen storage facility so that it complies with the following conditions: 1. The hydrogen storage facility will consist of truck mounted carbon steel tanks with a total capacity of 60,000-standard cubic feet and working pressure in the range of 2,500 to 3,500 psia suitable for storing and transporting hydrogen and will be compliant with the applicable American Society of Mechanical Engineer (ASME) pressure vessels codes, as well as the USDOT codes. 2. The tanks will be equipped with pressure relief valves. 3. The storage site will include crash posts placed appropriately to prevent vehicular accidents. 4. The storage site will be located such that it is at least 50 feet from any habitable structure, the combustion turbines and the anhydrous aqueous ammonia storage facility. 5. The storage site will be placed in relation to the combustion turbines so that if an overspeed accident occurs, it will not have a significant potential to cause damage to the tanks.	This COC would be revised for the proposed Project. Refer to MM HM-1, HM-2, HM-3, HM-4, HM-5, HM-6, HM-7, HM-8, HM-9, HM-10, HM-11, and HM-12.

Existing Conditions of Certification	Project Compliance
6. The hydrogen tanks procedure for connection and disconnection will be included in the PSMP and RMP required by COC **HAZ-2** and **HAZ-3**.	
HAZ-5 The project owner shall design the aqueous ammonia storage facility so that it complies with the following conditions: • shall include two tanks (12,000 gallons each) designed to either the ASME • Pressure Vessel Code and ANSI K61.1 or to API 620. In either case, the storage tanks shall be protected by a secondary containment basin capable of holding150% of the storage volume of one tank plus the volume associated with 24 hours of rain assuming 25 year storm.	This COC would be revised for the proposed Project. Refer to MM HM-1, HM-2, HM-3, HM-4, HM-5, HM-6, HM-7, HM-8, HM-9, HM-10, HM-11, and HM-12.
SAFETY-1. The project owner shall submit to the CPM a project construction safety and health program, which shall include: • A construction injury and prevention program • A construction fire protection and prevention program • A personal protective equipment program	This COC would apply to the proposed Project.
SAFETY-2. The project owner shall submit to the CPM a project operation safety and health program containing the following: • An operation injury and illness prevention plan • An emergency action plan	This COC would apply to the proposed Project.

Existing Conditions of Certification	Project Compliance
• An operation fire protection plan • A personal protective equipment program	
SAFETY-3. The project owner shall design and install all exterior lighting to meet the requirements contained in the Visual Resources COC and in accordance with the American National Standards Practice for Industrial Lighting, ANSI-IES-RP-7.	This COC would be revised for the proposed Project. See VIS-1.

Appendices

Appendix A Contact Information and Parcel Information

Exhibit A
Cal Capture
Legal Description

All those portions of land described as follows:

All of Section 26, Township 30 South, Range 23 East, Mount Diablo Meridian, in the unincorporated area of Kern County, State of California, as per the official plat thereof.

Containing 640 acres, more or less.

APN 158-090-02

Parcel 1 of Lot Line Adjustment No. 106-01, in the unincorporated area of Kern County, State of California, as per the certificate of compliance recorded as Doc. No. 0202063510, of Official Records.

Containing 5 acres, more or less.

APN 158-090-16

Parcel 1 of Parcel Map 12,273, in the unincorporated area of Kern County, State of California, recorded in book 61, at pages 91 through 94, of Parcel Maps in the Office of the County Recorder.

Excepting therefrom that parcel identified by the State Board of Equalization on S.B.E. Map No. 149-15-37, more particularly described as follows:

Commencing at the West ¼ Corner of Section 31, in Township 30 South, Range 24 East, Mount Diablo Base and Meridian; thence, along the West Line of said Section 31, North 547.7 a distance of feet distance; thence, leaving said section line, West a distance of 450 feet to the True Point of Beginning; thence, West a distance of 200 feet; thence North a distance of 200 feet; thence, East a distance of 200 feet; thence South a distance of 200 feet.

Containing 1,285.76 acres, more or less.

APN 158-090-04 and 158-090-19

END DESCRIPTION

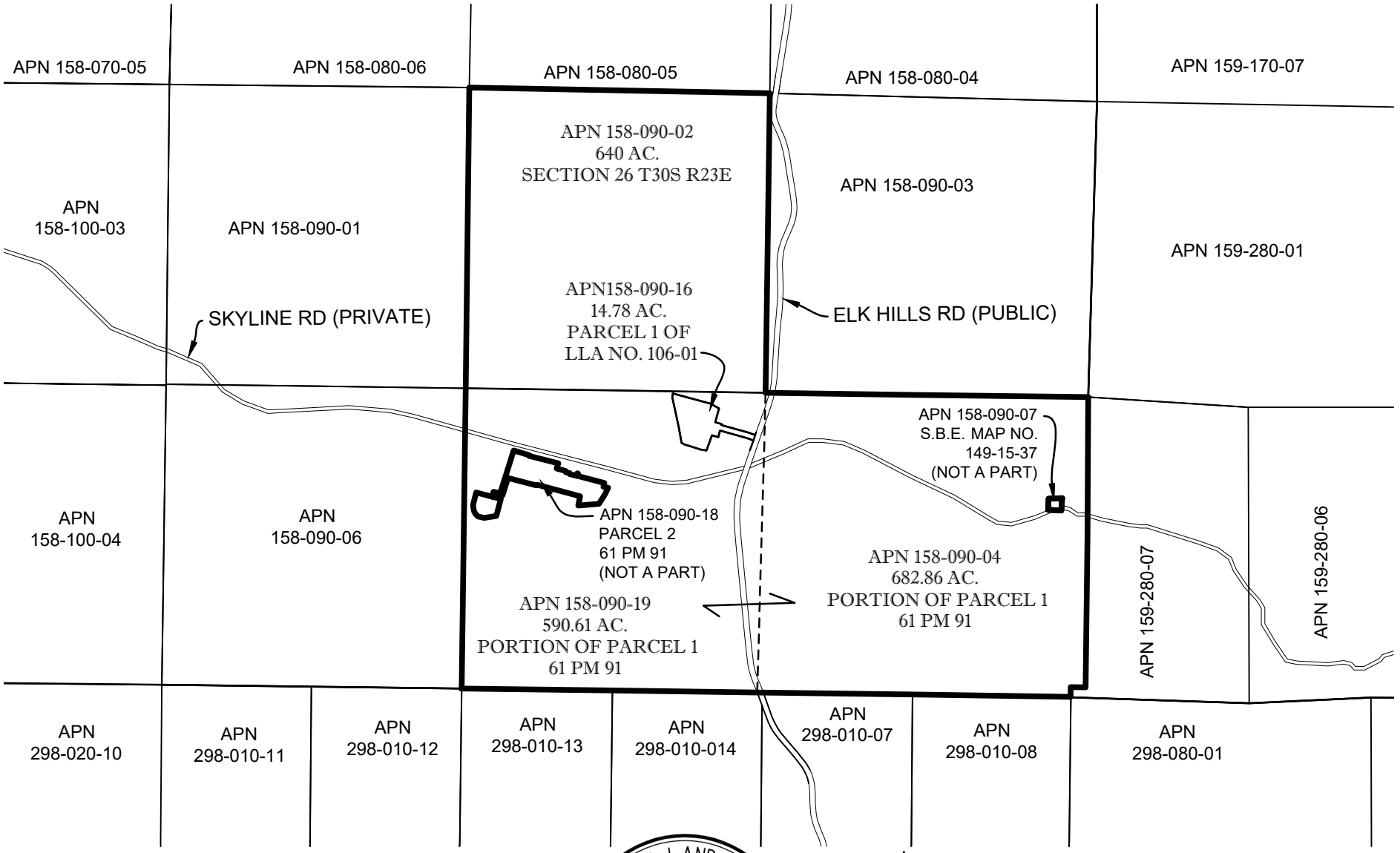
This description was prepared by me or under my direct supervision in conformance with the requirements of the Professional Land Surveyor's Act.

July 24, 2025

Ian McClain, PLS 8310 — Date



Stantec



Stantec
200 East Carrillo St. Suite 101, Santa Barbara, CA 93101
Phone: (805) 963-9532

PROFESSIONAL LAND SURVEYOR
IAN McCLAIN
NO. 8310
STATE OF CALIFORNIA

N

EXHIBIT B

CAL CAPTURE

COUNTY OF KERN
STATE OF CALIFORNIA

P.N. 185806775 DWG: 185806775_CRC_EXH_B_REV1.dwg

SCALE: 1:2500

PLOT DATE: 7/24/2025

CRC CalCapture CCS - Parcel Information

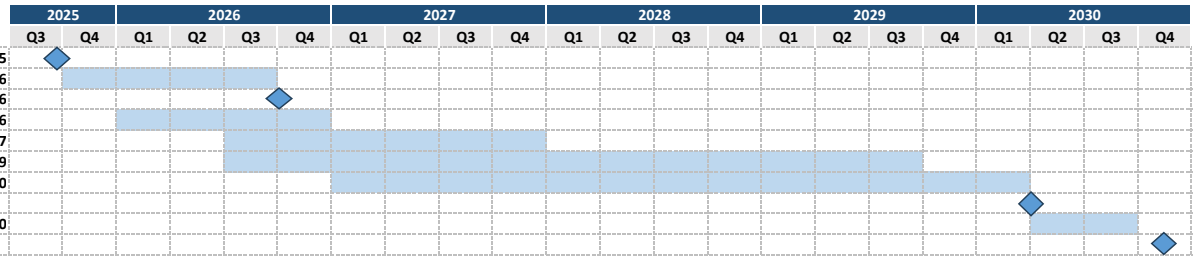
	APN	Owner
Main Parcels	158-090-02-00-3	CALIFORNIA RESOURCES ELK HILLS LLC
	158-090-16-00-4	ELK HILLS POWER LLC
	158-090-19-00-3	CALIFORNIA RESOURCES ELK HILLS LLC
	158-090-04-00-9	CALIFORNIA RESOURCES ELK HILLS LLC
Island Parcels	158-090-07-00-8	SOUTHERN CALIF GAS CO
	158-090-18-00-0	CALIFORNIA RESOURCES ELK HILLS LLC
Surrounding Parcels	158-080-06-00-2	CALIFORNIA RESOURCES ELK HILLS LLC
	158-080-05-00-9	CALIFORNIA RESOURCES ELK HILLS LLC
	158-080-04-00-6	CALIFORNIA RESOURCES ELK HILLS LLC
	158-090-01-00-0	CALIFORNIA RESOURCES ELK HILLS LLC
	158-090-03-00-6	CALIFORNIA RESOURCES ELK HILLS LLC
	159-280-01-00-2	CALIFORNIA RESOURCES ELK HILLS LLC
	158-090-06-00-5	CALIFORNIA RESOURCES ELK HILLS LLC
	159-280-07-00-0	CALIFORNIA RESOURCES ELK HILLS LLC
	298-010-12-00-9	CALIFORNIA RESOURCES ELK HILLS LLC
	298-010-13-00-2	CALIFORNIA RESOURCES ELK HILLS LLC
	298-010-14-00-5	CALIFORNIA RESOURCES ELK HILLS LLC
	298-010-07-00-5	CALIFORNIA RESOURCES ELK HILLS LLC
	298-010-08-00-8	CALIFORNIA RESOURCES ELK HILLS LLC
	298-010-09-00-1	CALIFORNIA RESOURCES ELK HILLS LLC
	298-080-01-00-8	CALIFORNIA RESOURCES ELK HILLS LLC

Appendix B Engineering Information

CalCapture Project Schedule

Updated 9/26/25

Task/Milestone	Planned Start	Planned Finish
CEC PTA Application Submittal		9/30/2025
CEC PTA Review	9/30/2026	9/30/2026
CEC PTA Certification		9/30/2026
APCD ATC	1/1/2026	12/31/2026
Detailed Engineering	7/1/2026	12/31/2027
Procurement	7/1/2026	9/30/2029
Construction & Pre-Commissioning	1/1/2027	3/31/2030
Initial Start-Up	4/1/2030	
Commissioning	4/1/2030	11/19/2030
Full-Scale Operation	11/20/2030	









ELK HILLS POWER PROJECT

KERN COUNTY, CALIFORNIA
COLOR TREATMENT PLAN

SECTION 6

COLOR CHIP AND CHART ENCLOSURES

Color chips and charts to assist in the evaluation of the aesthetic qualities of the proposed treatment plan are enclosed as follows:

Field Applied Color Treatment Generally –

1) Color chip for Carboline D249 – walls and general plant structures. This will be the most widely used color.
2) Color chip for Carboline D276 "Cardboard" – trim/accents
3) Color chip for Carboline 3848 "Eggshell" – roofs

The color chip for Carboline D249 is clear coated to approximate the sheen of Carbothane 833 for approval purposes. The other color chips are representative of the proposed color only. Field-applied paint in these colors will be selected to match the semi-gloss sheen of Carboline's Carbothane 833 products as indicated in the technical specification for painting to minimize reflectivity.

Pre-fabricated Buildings Generally – Color chart from United Steel Structures, Inc.

1) Walls – Sahara Tan
2) Trim – Burnished Slate
3) Roofs – Light Stone

Switchyard Control Building and Miscellaneous Pre-fabricated Buildings – Color chart from Parkline, Inc.

1) Walls – Desert Tan
2) Trim – Roman Bronze
3) Roofs – Arctic White

Combustion Turbine Generator Sound Attenuation Panels – Color chart from J & G Steel

1) Panels - Light Stone

The selected colors for the pre-fabricated panels are the closest commercially available matches to the specified colors for the field-applied paint

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3.6 PAINT SYSTEM SCHEDULE

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Structural Steel Not galvanized Ambient to 200°F	PS-1	SSPC SP 10	Inorganic Rich Zinc (2.5 to 4) Ref.: DuPont Ganicin 347-Y-912			High Solids Epoxy Mastic (3 to 8) Ref.: DuPont 25P	Polyacryl Anhydride Enamel (2 to 4) Ref.:Du Pont 50P	Air cure at ambient temperatures
Structural Steel Not galvanized Ambient to 200°F (Alternative to PS-1)	PS-2	SSPC SP 6	Inorganic Zinc (2.5 to 4) Ref.:Carboline Carbozinc 11HS or equal.	SSPC SP10	Zinc-Rich Epoxy (3 to 5) Ref.:Carboline Carbozinc 859 or equal	Epoxy (4 to 6) Ref.:Carboline Carboguard 888 or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 (133HB)or equal	Air cure at ambient temperatures
Structural Steel, Grating and Accessories Galvanized	PS-3	SSPC SP 1 SSPC SP 2	Epoxy Polyamide (4 to 6) Ref.:Carboline Carboguard 888 or equal.	SSPC SP 1 SSPC SP 3	Rustbond Penetrating Sealer Epoxy (1 to 4) Ref.: ZRC, Subox, Galvanox or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 or equal	N/A	Include gratings, bolts, washers, nuts; anchor bolts; exposed embedded steel in concrete. Air cure at ambient temperatures See also footnote (7).
Pipe, Fittings, Valves Carbon /Low Alloy Steel Uninsulated Ambient to 200°F	PS-1	SSPC SP 10	Inorganic Rich Zinc (2.5 to 4) Ref.: DuPont Ganicin 347-Y-912			High Solids Epoxy Mastic (3 to 8) Ref.: DuPont 25P	Polyacryl Anhydride Enamel (2 to 4) Ref.:Du Pont 50P	Air cure at ambient temperatures
Pipe, Fittings, Valves Carbon /Low Alloy Steel Uninsulated Ambient to 200°F (Alternative to PS-1)	PS-2	SSPC SP 6	Inorganic Zinc (2.5 to 4) Ref.. Carboline Carbozinc 11HS or equal	SSPC SP 6	Zinc-Rich Epoxy (3 to 5) Ex. Carboline Carbozinc 859 or equal	Epoxy (4 to 6) Ref.:Carboline Carboguard 888 or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 (133HB)or equal	Primer and intermediate coats applied to pipe and pipe spools in shop. Repair coats shall be applied in the field. Air cure at ambient temperatures

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Pipe, Fittings, Valves Carbon/ Low Alloy Steel Uninsulated 150°F to 450 °F	PS-5	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	Silicone Co-Polymer (2 to 2.5) Ref.:Dampney Thurmalox 260C or equal		Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
Pipe, Fittings, Valves Carbon/ Low Alloy Steel Uninsulated 450°F to 1000°F	PS-7	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	Silicone Co-Polymer (1.0 to 2.0) Ref.:Dampney Thurmalox 230C or equal		Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
Pipe, Fittings, Valves Carbon/ Low Alloy Steel Galvanized Uninsulated Ambient	PS-3	SSPC SP 1 SSPC SP 2	Epoxy Polyamide (4 to 6) Ref.:Carboline Carboguard 888 or equal.	SSPC SP 1 SSPC SP 3	Rustbond Penetrating Sealer Epoxy (1 to 4) Ref.: ZRC, Subox, Galvanox or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 or equal	N/A	Include bolts, washers, nuts. See also footnote (7). Air cure at ambient temperatures
Pipe, Fittings, Valves Stainless Steel Uninsulated	---	N/A	None	N/A	None	None	None	No paint required
Pipe, Fittings, Valves, Carbon/Low Alloy Steel Insulated -50°F to 250 °F	PS-9	SSPC SP 10	Amine Cured Novolac Epoxy (8 to 10) Ref.:Carboline Thermaline 450	SSPC SP 10	Amine Cured Novolac Epoxy (8 to 10) Ref.:Carboline Thermaline 450	N/A	N/A	Exposed, uninsulated portions of insulated items shall be coated per uninsulated requirements (channels, saddles, etc.) Support clips to be coated as if insulated. Air cure at ambient temperatures

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Pipe, Fittings, Valves, Carbon/Low Alloy Steel Insulated 150°F to 450 °F	PS-11	SSPC SP 10	Polymeric Compound (5 to 6) Ref.:Dampney Thurmalox 215 or equal		Polymeric Compound (5 to 6) Ref.:Dampney Thurmalox 215 or equal	Polymeric Compound (5 to 6) Ref.:Dampney Thurmalox 216 or equal		Air cure at ambient temperatures and higher.
Pipe, Fittings, Valves, Carbon/Low Alloy Steel Insulated 450°F to 1000 °F	PS-13	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal					Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
Pipe, Fitting, Valves, Stainless Steel Insulated	---	N/A	None	N/A	None	None	None	No paint required
Vessels, Heat Exchangers, Carbon and Low Alloy Steel Uninsulated Ambient to 200°F	PS-1	SSPC SP 10	Inorganic Rich Zinc (2.5 to 4) Ref.: DuPont Ganicin 347-Y-912			High Solids Epoxy Mastic (3 to 8) Ref.: DuPont 25P	Polyacryl Anhydride Enamel (2 to 4) Ref.:Du Pont 50P	Air cure at ambient temperatures
Vessels, Heat Exchangers, Carbon and Low Alloy Steel Uninsulated Ambient to 200°F (Alternative to PS-1)	PS-2	SSPC SP 6	Inorganic Zinc (2.5 to 4) Ref.:Carboline Carbozinc 11HS or equal.	SSPC SP 6	Zinc-Rich Epoxy (3 to 5) Ref.:Carboline Carbozinc 859 or equal	Epoxy (4 to 6) Ref.:Carboline Carboguard 888 or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 (133HB)or equal	Air cure at ambient temperatures

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Vessels, Heat Exchangers, Carbon and Low Alloy Steel Uninsulated 200°F to 450°F	PS-5	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	Silicone Co-Polymer (2 to 2.5) Ref.:Dampney Thurmalox 260C or equal		Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
Vessels, Heat Exchangers, Carbon/Low Alloy Steel Uninsulated 450°F to 1000°F	PS-7	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	Silicone Co-Polymer (1.0 to 2.0) Ref.:Dampney Thurmalox 230C or equal		Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
Vessels, Heat Exchangers, Carbon/Low Alloy Steel Insulated Up to 250 °F	PS-9	SSPC SP 10	Amine Cured Novolac Epoxy (8 to 10) Ref.:Carboline Thermaline 450	SSPC SP 10	Amine Cured Novolac Epoxy (8 to 10) Ref.:Carboline Thermaline 450		N/A	Exposed, uninsulated portions of insulated items shall be coated per uninsulated requirements (channels, saddles, etc.) Support clips to be coated as if insulated. Air cure at ambient temperatures
Vessels, Heat Exchangers, Carbon/Low Alloy Steel Insulated 150 °F to 450°F	PS- 11	SSPC SP 10	Polymeric Compound (5 to 6) Ref.:Dampney Thurmalox 215 or equal		Polymeric Compound (5 to 6) Ref.:Dampney Thurmalox 215 or equal	Polymeric Compound (5 to 6) Ref.:Dampney Thurmalox 216 or equal		Air cure at ambient temperatures and higher.
Vessels, Heat Exchangers, Carbon/Low Alloy Steel Insulated 450°F to 1000°F	PS-13	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal					Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Vessels, Heat Exchangers Stainless Steel Insulated/Uninsulate	---	N/A	None	N/A	None	None	None	No paint required
Tanks, Shop Fabricated and Field Erected Carbon/Low Alloy Steel Uninsulated Ambient to 200°F	PS-1	SSPC SP 10	Inorganic Rich Zinc (2.5 to 4) Ref.: DuPont Ganicin 347-Y-912		High Solids Epoxy Mastic (3 to 8) Ref.: DuPont 25P	Polyacryl Anhydride Enamel (2 to 4) Ref.:Du Pont 50P		Air cure at ambient temperatures See also footnotes 5 and 6
Tanks, Shop Fabricated and Field Erected Carbon/Low Alloy Steel Uninsulated Ambient to 200°F (Alternative to PS-1)	PS-4	SSPC SP 6	Inorganic Zinc (2.5 to 4) Ref.:Carboline Carbozinc 11HS or equal.	SSPC SP 6	Zinc-Rich Epoxy (3 to 5) Ref.:Carboline Carbozinc 859 , Carbomasitc 15 or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 (133HB)or equal		Air cure at ambient temperatures See also footnotes 5 and 6.
Tanks, Shop Fabricated and Field Erected Carbon/Low Alloy Steel Insulated Ambient to 250°F	PS-9	SSPC SP 10	Amine Cured Novolac Epoxy (4 to 6) Ref.:Carboline Thermaline 450	SSPC SP 10	Amine Cured Novolac Epoxy (4 to 6) Ref.:Carboline Thermaline 450			Air cure at ambient temperatures .Exposed, uninsulated portions of insulated items shall be coated per uninsulated requirements (channels, saddles, etc.). See also footnotes 5 and 6.

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Tanks, Shop Fabricated and Field Erected Stainless Steel Insulated / Uninsulated	---	N/A	None	N/A	None	None	None	No paint required
Skid Mounted Equipment Supports / Structural Steel -50°F to 200°F	PS-1	SSPC SP 10	Inorganic Rich Zinc (2.5 to 4) Ref.: DuPont Ganicin 347-Y-912			High Solids Epoxy Mastic (3 to 8) Ref.: DuPont 25P	Polyacryl Anhydride Enamel (2 to 4) Ref.:Du Pont 50P	Air cure at ambient temperatures
Skid Mounted Equipment Supports / Structural Steel Ambient to 200°F (Alternate to PS-1)	PS-2	SSPC SP 6	Inorganic Zinc (2.5 to 4) Ref.:Carboline Carbozinc 11HS or eqal.	SSPC SP 6	Zinc-Rich Epoxy (3 to 5) Ref.:Carboline Carbozinc 859 or equal	Epoxy (4 to 6) Ref.:Carboline Carboguard 888 or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 (133HB)or eqal	Coating system should be allowed final curing time before application of the low temperature range and mechanical impacts to be avoided. Air cure at ambient temperatures
Skid Mounted Equipment Pipe, Valves, and Fittings	PS-14	Manufacturer Standard	Manufacturer Standard	SSPC SP 1 SSPC SP 3	None	Surface Tolerant Epoxy Mastic (4 to 6)	Acrylic Urethane (1.5 to 2.5)	SSPC SP 3 required only at bare areas where steel is exposed. Air cure at ambient temperatures
Skid Mounted Equipment Pumps, Equipment, and Components	PS-15	Manufacturer Standard	Manufacturer Standard	SSPC SP 3	None	None	Surface Tolerant Epoxy Mastic (4 to 6 mils)	Damaged areas only.
Mechanical and Electrical Equipment (Color to match)	PS-15	Manufacturer Standard	Manufacturer Standard	SSPC SP 3	None	None	Surface Tolerant Epoxy Mastic (4 to 6 mils)	Damaged areas only.

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
HRSG Breechings and Stacks Uninsulated Ambient to 450°F	PS-5	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal	Silicone Co-Polymer (2 to 2.5) Ref.:Dampney Thurmalox 260C or equal		Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
HRSG Breechings And Stacks Insulated 150° to 1000°F	PS-12	SSPC SP 6	Modified Silicone Co-Polymer (5 to 6) Ref.:Dampney Thurmalox 225HB or equal					Air cure at ambient temperatures and higher. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11.
Structural Aluminum, Grating, Accessories and insulation jackets.	PS-3	SSPC SP 1 SSPC SP 2	Epoxy Polyamide (4 to 6) Ref.:Carboline Carboguard 888 or equal.	SSPC SP 1 SSPC SP 3	Rustbond Penetrating Sealer Epoxy (1 to 4) Ref.: ZRC, Subox, Galvanox or equal	Polyurethane (3 to 5) Ref. Carboline Carbothane 833 or equal	N/A	Coating to be applied if required on drawings / specifications. Air cure at ambient temperatures
Concrete surface a) STG pedestal b) CTG foundations								
Concrete surfaces in containments of: Acid storage tank, Caustic storage tank, Chemical feed areas								Areas shall be coated per concrete lining specification for chemicals. See notes on the foundation drawings.

PAINTING SYSTEM SCHEDULE

Item	Paint System	Initial Surface Prepar.	Primer / First Coat (mils DFT)	Repair Surface Prepar.	Repair Primer (mils DFT)	Second Coat (mils DFT)	Third Coat (mils DFT)	Remarks
Concrete surfaces in sumps: Backwash, Water treatment sumps								Areas shall be coated per concrete lining specification for chemicals. See notes on the foundation drawings
Battery Room a) Floor b) Vertical surfaces.	PS-15		Carboline Semstone 5401 or equivalent Carboline Semstone 5401 or equivalent			Carboline Semstone 145 or equivalent Carboline Semstone 145 or equivalent		Product to be applied on the concrete surface. Surface preparation and coating thickness shall be according to the manufacturer recommendation.
Industrial Bldgs Wood	PS-16	Wood Primer		---	None	None	Exterior Alkyd Non Chalk (1.5 to 2.5)	
Industrial Bldgs Concrete Block Exterior	PS-17	SSPC SP7 + SSPC SP1 (16)	Water Base Epoxy + Inert Mineral Filler (15)	---	None	None	Epoxy (5 to 7)	.
Industrial Bldgs Concrete Block Interior	PS-18			---	None	None	Interior Flat (1.5 to 2.5)	
Industrial Bldgs Interior/ Exterior	PS-19	SSPC-SP8	Epoxy (4 to 6)	---	None	None	Urethane (2 to 3)	

Appendix C Site Photographs

Stantec

Photographic Log

Client:	**California Resources Corporation, LLC**	**Project:**	**CalCapture - CUP Application**
Site Name:	**CalCapture Carbon Capture and Sequestration Project**	**Site Location:**	**Elk Hills Oilfield, Kern County, California**

Photograph ID: 1 **Photo Location:** 35.281809, -119.465833 **Direction:** Southwest **Comments:** View of Elk Hills Power Plant from Elk Hills Road.	
Photograph ID: 2 **Photo Location:** 35.279079, -119.467048 **Direction:** Southwest **Comments:** View of Elk Hills Oil Field Gate 4, located off of Skyline Road, from Elk Hills Road.	

Client:	**California Resources Corporation, LLC**	**Project:**	**CalCapture - CUP Application**
Site Name:	**CalCapture Carbon Capture and Sequestration Project**	**Site Location:**	**Elk Hills Oilfield, Kern County, California**

Photograph ID: 3

Photo Location:
35.278531, -119.471603

Direction:
Northeast

Comments:
View of proposed Capture Facility location (foreground) and Elk Hills Power Plant.



Photograph ID: 4

Photo Location:
35.277642, -119.471746

Direction:
East

Comments:
View of proposed 26R field office location from western boundary looking east.



Client:	**California Resources Corporation, LLC**	**Project:**	**CalCapture - CUP Application**
Site Name:	**CalCapture Carbon Capture and Sequestration Project**	**Site Location:**	**Elk Hills Oilfield, Kern County, California**

Photograph ID: 5 **Photo Location:** 35.277291, -119.470501 **Direction:** East **Comments:** View of proposed primary parking areas location from western boundary looking east.	
Photograph ID: 6 **Photo Location:** 35.283581, -119.474214 **Direction:** Northeast **Comments:** View of existing substation and proposed 115KV electrical line route (left).	

Client:	**California Resources Corporation, LLC**	**Project:**	**CalCapture - CUP Application**
Site Name:	**CalCapture Carbon Capture and Sequestration Project**	**Site Location:**	**Elk Hills Oilfield, Kern County, California**

Photograph ID: 7

Photo Location:
35.285343, -119.472479

Direction:
North

Comments:
View of proposed substation location.



Photograph ID: 8

Photo Location:
35.282168, -119.466798

Direction:
West

Comments:
View of proposed raw water line route.



Client:	**California Resources Corporation, LLC**	**Project:**	**CalCapture - CUP Application**
Site Name:	**CalCapture Carbon Capture and Sequestration Project**	**Site Location:**	**Elk Hills Oilfield, Kern County, California**

Photograph ID: 9 **Photo Location:** 35.274719, -119.472831 **Direction:** Northwest **Comments:** View of proposed CO2 line route.	
Photograph ID: 10 **Photo Location:** 35.280772, -119.465981 **Direction:** North **Comments:** View of proposed overflow parking or staging area from western boundary facing north.	

Client:	**California Resources Corporation, LLC**	**Project:**	**CalCapture - CUP Application**
Site Name:	**CalCapture Carbon Capture and Sequestration Project**	**Site Location:**	**Elk Hills Oilfield, Kern County, California**

Photograph ID: 11

Photo Location:
35.278197, -119.466335

Direction:
West

Comments:
View of proposed overflow parking areas I and II from approximate center looking west.



Photograph ID: 12

Photo Location:
35.244408, -119.387240

Direction:
South

Comments:
View of proposed 10G staging area location from northern boundary looking south.



Appendix D Soil Management Plan

This information is submitted as a separate docket submittal due to file size.

Appendix E Air Quality – Greenhouse Gases Technical Study

This information is submitted as a separate docket submittal due to file size.

Appendix F Aquatic Resource Delineation Report

This information is submitted as a separate docket submittal due to file size.

Appendix G Biological Resources Technical Report

This information is submitted as a separate docket submittal due to file size.

Appendix H Cultural Resources Survey

This information is submitted as a separate docket submittal due to file size.

Appendix J Energy Utilization Study

This information is submitted as a separate docket submittal due to file size.

Appendix K Geohazards Assessment

This information is submitted as a separate docket submittal due to file size.

Appendix L Hydrology Study

This information is submitted as a separate docket submittal due to file size.

Appendix M Noise Study

This information is submitted as a separate docket submittal due to file size.

Appendix N Paleontological Resources Assessment

This information is submitted as a separate docket submittal due to file size.

Appendix O Phase 1 Environmental Site Assessment

This information is submitted as a separate docket submittal due to file size.

Appendix P Quantitative Risk Assessment

This information is submitted as a separate docket submittal due to file size.

Appendix Q Environmental Justice and Socioeconomics

This information is submitted as a separate docket submittal due to file size.

Appendix R Transportation Impact Analysis

This information is submitted as a separate docket submittal due to file size.

Appendix S Visual Impact Assessment

This information is submitted as a separate docket submittal due to file size.

Appendix T Water Supply Assessment

This information is submitted as a separate docket submittal due to file size.

With every community, we redefine what's possible.

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

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