DRAFT Environmental Assessment – ATLiS Project

Department of Energy Loan Programs Office – Advanced Technology Vehicles Manufacturing

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Acronyms and Abbreviations

Acronym	Definition
ADT	average daily traffic
afy	acre-feet per year
APCD	Air Pollution Control District
APE	area of potential effect
ATVM Program	Advanced Technology Vehicle Manufacturing Program
BHER	BHE Renewables, LLC
BMP	best management practice
BRGP	Black Rock Geothermal Project
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalGEM	California Geologic Energy Management
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Imperial
CTR	commute trip reduction
CTR	Controlled Thermal Resources, Inc.
CUP	conditional use permit
CUPA	Certified Unified Program Agency
cy	cubic yard
dB	decibel
dBA	A-weighted decibel
DLE	direct lithium extraction
DOE	U.S. Department of Energy
DPS	distinct population segment
DTSC	Department of Toxic Substance Control
EA	environmental assessment
EIR	environmental impact report
EJ	environmental justice
ENGP	Elmore North Geothermal Project
EPA	U.S. Environmental Protection Agency
ESM or Applicant	EnergySource Minerals, LLC
EV	electric vehicle
Fe	iron
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMMRP	Final Mitigation Monitoring and Reporting Program
FTA	Federal Transit Administration

g/h	gallons per hour
GHG	greenhouse gas
gpm	gallons per minute
HCl	hydrochloric acid
HKL1	Hell's Kitchen Lithium 1
HKP1	Hell's Kitchen Power 1
HMBP	Hazardous Materials Business Plan
hp	horsepower
HR1	Hudson Ranch 1
HR2	Hudson Ranch 2
ICAPCD	Imperial County Air Pollution Control District
ICAPCD Handbook	CEQA Air Quality Handbook
ICE	intersection control evaluation
ICPDS	Imperial County Planning and Development Services
IID	Imperial Irrigation District
IPaC	Information for Planning and Consultation
IS	initial study
kg	kilogram
KGRA	known geothermal resource area
kwh	kilowatt-hour
LandMark	LandMark Geo-Engineers and Geologists
L_{eq}	equivalent continuous sound level
Li	lithium
Li_2CO_3	lithium carbonate
LiOH	lithium hydroxide
L_{max}	maximum sound level
LOS	level of service
LPO	Loan Programs Office
Mn	manganese
maf	million acre-feet
MBGP	Morton Bay Geothermal Project
MBTA	Migratory Bird Treaty Act
mpg	miles per gallon
$MTCO_2e$	metric tonnes of carbon dioxide equivalent
MW	megawatt
NAAQS	National Ambient Air Quality Standard
NAHC	Native American Heritage Commission
NATA	National-Scale Air Toxics Assessment
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NOP	notice of preparation
NO_X	nitrogen oxides
NRCS	Natural Resources Conservation Service
OHP	Office of Historic Preservation
OSHA	Occupational Safety and Health Administration
Pb	lead
PCE	passenger car equivalent
PM_{10}	inhalable particulate matter
$PM_{2.5}$	fine particulate matter
Project	build a commercial lithium production plant

QSA	quantification settlement agreement
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gas
SB	Senate Bill
SHPO	State Historic Preservation Office
SiO_2	silica
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
STLC	soluble threshold limit concentrations
SUV	sport utility vehicle
SWPPP	Stormwater Pollution Prevention Plan
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Office
TTLC	total threshold limit concentrations
TWSC	two-way stop-controlled
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEIA	U.S. Energy Information Administration
USFWS	U.S. Fish and Wildlife Service
VDE	visual dust emissions
WEAP	Worker Environmental Awareness Program
Zn	zinc

1. PURPOSE AND NEED

1.1 Introduction

EnergySource Minerals, LLC (ESM or Applicant), is proposing to build a commercial lithium (Li) production plant within the known geothermal resource area (KGRA) at Salton Sea in Imperial County, California (Project). The plant will be capable of producing lithium carbonate (Li_2CO_3), lithium hydroxide (LiOH), and other commercially viable substances.

ESM has applied for a federal loan pursuant to the U.S. Department of Energy (DOE) Advanced Technology Vehicle Manufacturing Program (ATVM Program), which was created by the Energy Independence and Security Act of 2007 to provide incentives, including funds for engineering costs, for projects that retrofit, expand, or create manufacturing facilities in the United States for advanced-technology vehicles or qualifying components. The ATVM Program is designed to stimulate the technology required to meet program objectives.

The decision as to whether to provide a loan (i.e., federal financial assistance) constitutes a major federal action, requiring DOE to conduct an environmental review under the National Environmental Policy Act (NEPA). The Loan Programs Office (LPO) has prepared this environmental assessment (EA) in accordance with NEPA (42 United States Code 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500–1508), and the DOE NEPA implementing regulations (10 CFR Part 1021). LPO is using the NEPA process to inform its decision whether as to issue a loan to the Applicant to support the Project.

1.2 Purpose and Need for Agency Action

The purpose and need for agency action, issuance of a federal loan, is to comply with DOE's mandate under Section 136 of the Energy Independence and Security Act of 2007 to select projects for financial assistance that are consistent with the goals of the act. The primary goal of the ATVM Program is to improve fuel economy for light-duty vehicles and thereby reduce ozone precursors, greenhouse gas (GHG) emissions, and particulate matter emissions associated with vehicle emissions.

1.3 Background

The ATVM Program is administered by DOE's LPO. LPO has reviewed the application and determined that it is eligible and substantially complete per the rules governing the ATVM Program in 10 CFR Part 611. ESM was subsequently invited to enter into LPO's due diligence process.

Prior to applying to DOE's ATVM Program, ESM applied to the County of Imperial (County) for a conditional use permit (CUP) for the Project. Consistent with the requirements of the California Environmental Quality Act (CEQA), ESM prepared an environmental impact report (EIR) for the County Planning and Development Services Department to evaluate the potential environmental impacts of the Project (State Clearinghouse No. 2020120143). An initial study (IS) and notice of preparation (NOP) were distributed on December 11, 2020, to state, regional, and local government agencies as well as interested parties for a 34-day public review period to solicit comments and inform agencies and the public of the Project. The Draft EIR was circulated for a statutory 45-day public review period, starting on June 28, 2021, and ending on August 17, 2021 (50 actual days). The Final EIR, including the associated Mitigation, Monitoring, and Reporting Plan, was approved/certified on September 30, 2021; the County's CUP was issued to ESM on the same day. Where relevant, LPO incorporates by reference information from the EIR to assist in development of this EA.

1.4 Scope of Environmental Assessment

LPO is preparing this EA to address issues associated with construction and operation of a new Li production facility in Imperial County. DOE is preparing this EA to comply with NEPA, the CEQ regulations implementing NEPA (40 CFR Parts 1500−1508), and the DOE NEPA implementing procedures (10 CFR Part 1021). If no significant impacts are identified during preparation of this EA, DOE will issue a Finding of No Significant Impact. If potentially significant impacts are identified, DOE will prepare an environmental impact statement. As presented below, natural, physical, and socioeconomic resources that may be subject to potentially significant environmental issues are identified, along with resources that would not be subject to potentially significant environmental issues, thereby narrowing the scope of the environmental review to environmental issues deserving of study.

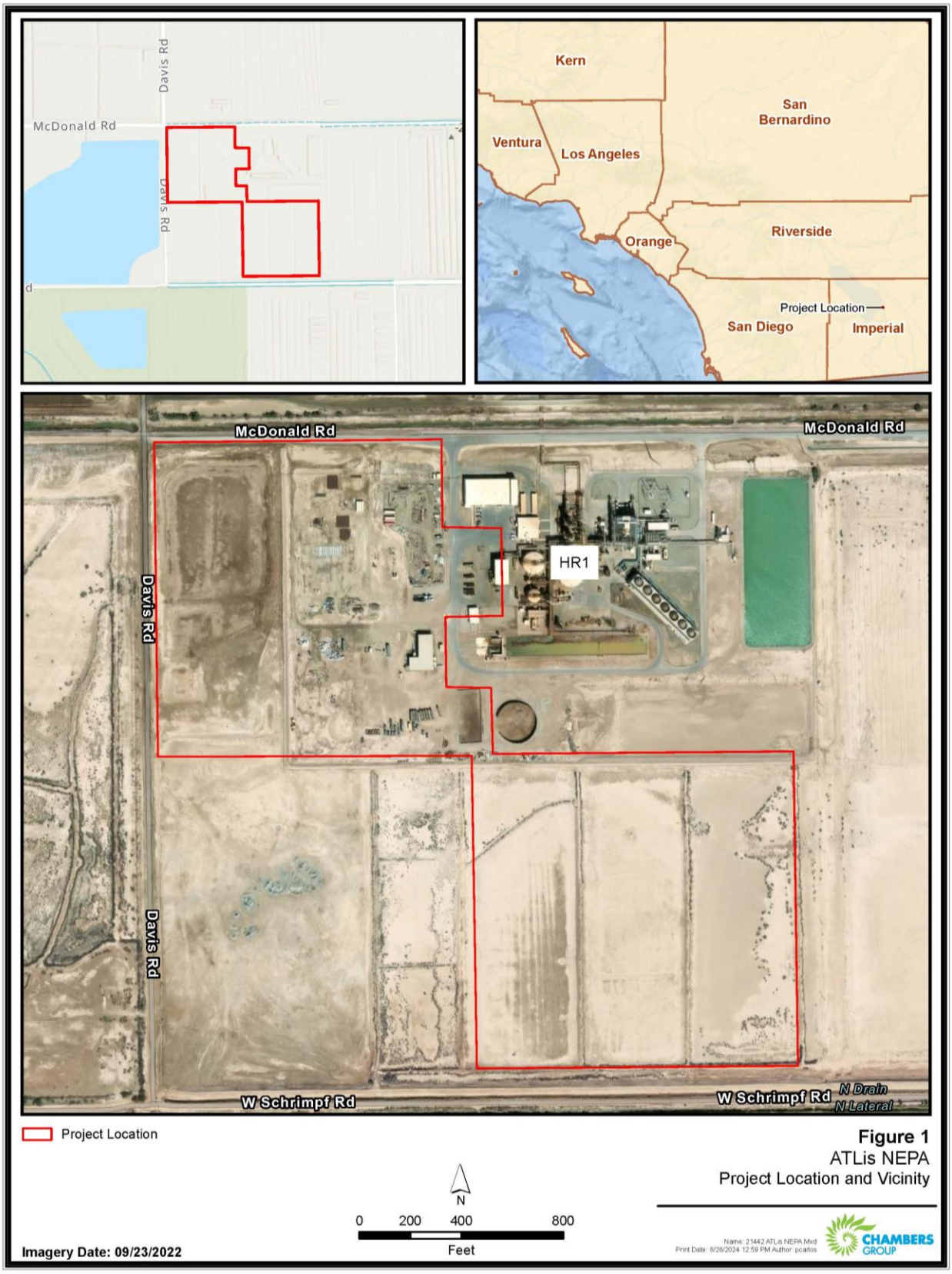
ESM proposes to construct the Project at 477 West McDonald Road, in Calipatria, Imperial County, California (see Figure 1). The following activities, described in detail in Chapter 2, are included in the scope of the Proposed Action and would receive federal financial assistance:

- Construction and operation of a production plant to extract Li, manganese (Mn), zinc (Zn), and other commercially viable substances from geothermal brine and then process the extracted substances to produce commercial quantities of Li products.
- Construction and operation of brine supply and return pipelines and a steam/steam condensate delivery pipeline, with interconnections to the adjacent Hudson Ranch 1 (HR1) power plant.
- Construction of an underground power interconnection line from the existing Imperial Irrigation District (IID) and HR1 substation located at the northeast corner of the HR1 site.
- Fire suppression system designed to meet the overall fire protection requirements for the plant.
- Construction of a laydown yard that will also support temporary offices during construction and serve as a truck management yard during operations.
- Construction of offices, repair facilities, shipping and receiving facilities, and other infrastructure.

Appendix A includes a summary of the consultation efforts and correspondence with federal, state, and local agencies, as well as Native American Tribes. Appendix B includes a list of the permits and approvals that will be required for construction and operation of the Project. The required permits and approvals include the County's CUP, the air emissions permits issued by the Imperial County Air Pollution Control District (ICAPCD), and the land use planning permits, encroachment permits, and utility permits issued by the County. The Project will be designed to avoid any discharge of water from the site during construction and operations (i.e., all water will be contained within the site). As such, state and federal stormwater and/or National Pollution Discharge Elimination System permits will not be required for Project construction or operations.

The CEQA Final EIR Mitigation, Monitoring, and Reporting Plan contains enforceable requirements to avoid or minimize resource impacts (see Appendix C). The Project design, as described in Chapter 2, incorporates these requirements, and the effects analysis in Chapter 3 assumes full implementation of the requirements.

Figure 1: ATLiS NEPA Project Location and Vicinity



This EA describes the Project and its potential impacts on multiple resource areas due to construction and operation of the Li production facility. The resource areas assessed in this EA consist of:

- Cultural resources, including Native American interests
- Water resources, including floodplains, groundwater, and surface water
- Air quality
- Noise
- Transportation
- Biological resources, including threatened and endangered species
- Socioeconomics and environmental justice
- Health and safety
- Waste management

These resource areas were identified as potentially affected by the Project; therefore, each was assessed to determine the nature, extent, and significance of those impacts (see Chapter 3). The EA examines the direct, indirect, and cumulative effects of the Project. The assessment combined desktop research and analysis of existing available information with select field studies, including site assessments related to the presence/absence of wetlands, water bodies, cultural resources, biological resources, and threatened and endangered species.

Impacts on the following resources are not anticipated to be significant; therefore, these resources topics are not included in the scope of this EA:

- Geology – The environmental commitments developed in the EIR and provided in Appendix C would reduce impacts associated with seismic ground shaking and expansive soils.
- Land Use – The Project would be consistent with current County land use designations and zoning.
- Recreation – No public parks or other developed federal, state, or County recreational facilities are in the Project area or immediate vicinity.
- Terrestrial Vegetation – The general reconnaissance survey conducted in 2020 determined that only a minimal amount of vegetation is present on the Project site. The vegetation that is present occurs in disturbed soils. No sensitive plant species are present.
- Soils and Farmland – Two soil types are found on the Project site: Imperial silty clay, wet (map symbol 114), occurs on 99.9 percent of the site; Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes (map symbol 115), occurs on 0.1 percent of the site. Both soil types support “farmland of statewide importance”; however, no prime or unique farmland soil types are present (U.S. Department of Agriculture [USDA], Natural Resources Conservation Service [NRCS] 2024). Development of the 70.8-acre Project site will result in a loss of 0.0072 percent of farmland of statewide importance in Imperial County (see NRCS consultation in Appendix A).
- Visual Resources – The Project is not within the viewshed of any scenic vistas, and building heights would be consistent with the visual landscape and existing infrastructure in the Project area.
- Wetlands – Desktop and field assessments of jurisdictional waters regulated by the U.S. Army Corps of Engineers (USACE) were conducted for the Project in 2020 (Olmos 2024b). These assessments confirmed that the Project site does not contain jurisdictional waters. Furthermore, water would not be discharged off-site.

2. DESCRIPTION OF THE PROPOSED ACTION

Under the Proposed Action, the DOE LPO will issue an ATVM loan to ESM for construction and initial operation of ATLiS, a commercial Li production plant within a Salton Sea geothermal field at 477 West McDonald Road, in Calipatria, Imperial County, California (Figure 1). The Project will include construction and operation of an Li production plant as well as associated infrastructure. The Project will intake geothermal brine from the adjacent HR1 geothermal power plant (Figure 2), remove impurities, extract Li (and other commercially viable minerals), return the depleted brine (minus Li and impurities) to HR1 for reinjection into deep bedrock, and process and package the Li products for market.

Project facilities will consist of approximately 730,000 square feet of processing, operations, and warehouse buildings (e.g., aboveground process tanks, pipes and pipe racks, office buildings, warehouses, parking areas) as well as County road improvements that are part of the Project but not subject to federal financing. ATLiS is planned to operate for 30 to 40 years.

The Project site is zoned M-2-G-PE (Medium Industrial/Geothermal Overlay – Pre-existing). The County General Plan (County 2015a) designates the land use for the Project site as Agriculture (County 2015a). The County's CUP, issued September 30, 2021, allows the Project to proceed at this site (see also Section 1.3.). Project facilities will be located on land that is currently within three parcels. One parcel is currently owned by ESM, one is in the process of being purchased by ESM, and the third is currently owned by Hudson Ranch Power I, LLC; ESM has an option to purchase the third parcel. The parcels will be aggregated through a subdivision map, which has been submitted to the County, to form an approximately 79-acre parcel for the Project, as illustrated in Figures 1 and 3. The barren soil in the area has been previously disturbed and used for geothermal testing and operations.

The Project site is accessed from State Route 111 (Highway 111) and West McDonald Road. Road improvements, such as new turn lanes and paving, will be made part of the Project; however, these improvements, as described in Section 3.11, *Cumulative Impacts*, are not subject to federal financing.

The Project site is surrounded by open vacant land. West of the Project site is vacant IID-owned marsh land, which adjoins the Salton Sea. North of the Project site is vacant land that is used mostly by duck hunting clubs; it is also the location of HR1 production and injection wells. To the south is vacant land that has never been in production; it is also the site of numerous naturally occurring "mud-pots." The elevation at the Project site is approximately 225 feet below mean sea level.

The Li production process has four main stages: impurity removal, Li extraction, purification and crystallization, and battery specification packaging (Figure 4). Each production stage is described in detail in Section 2.1.3.

2.1 Construction

Construction will begin with light grading on the 79-acre Project site. Connections to the existing IID/HR1 substation will occur after grading. Construction activities will be subject to the CEQA mitigation monitoring and reporting program requirements as well as the voluntary protection measures identified in Appendix C.

2.1.1 Construction of Project Structures and Equipment Installation

The Project site, as shown in Figures 2 and 3, will include construction of the DOE-funded buildings and structures listed below. Project construction activities and structures are shown in Figure 3.

Figure 2: ALTiS NEPA Site Plan

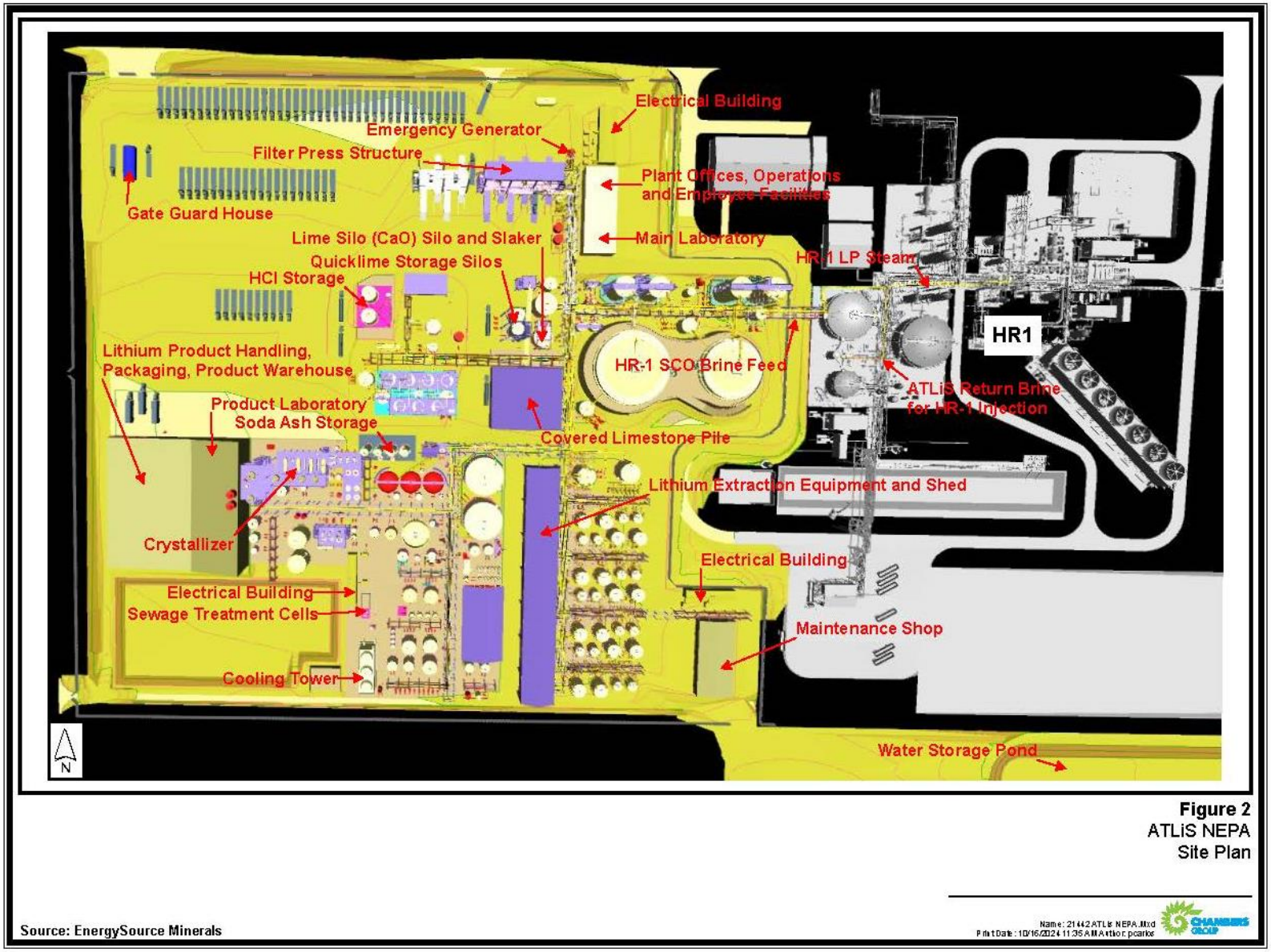


Figure 3: ATLiS NEPA Site Plan Overview

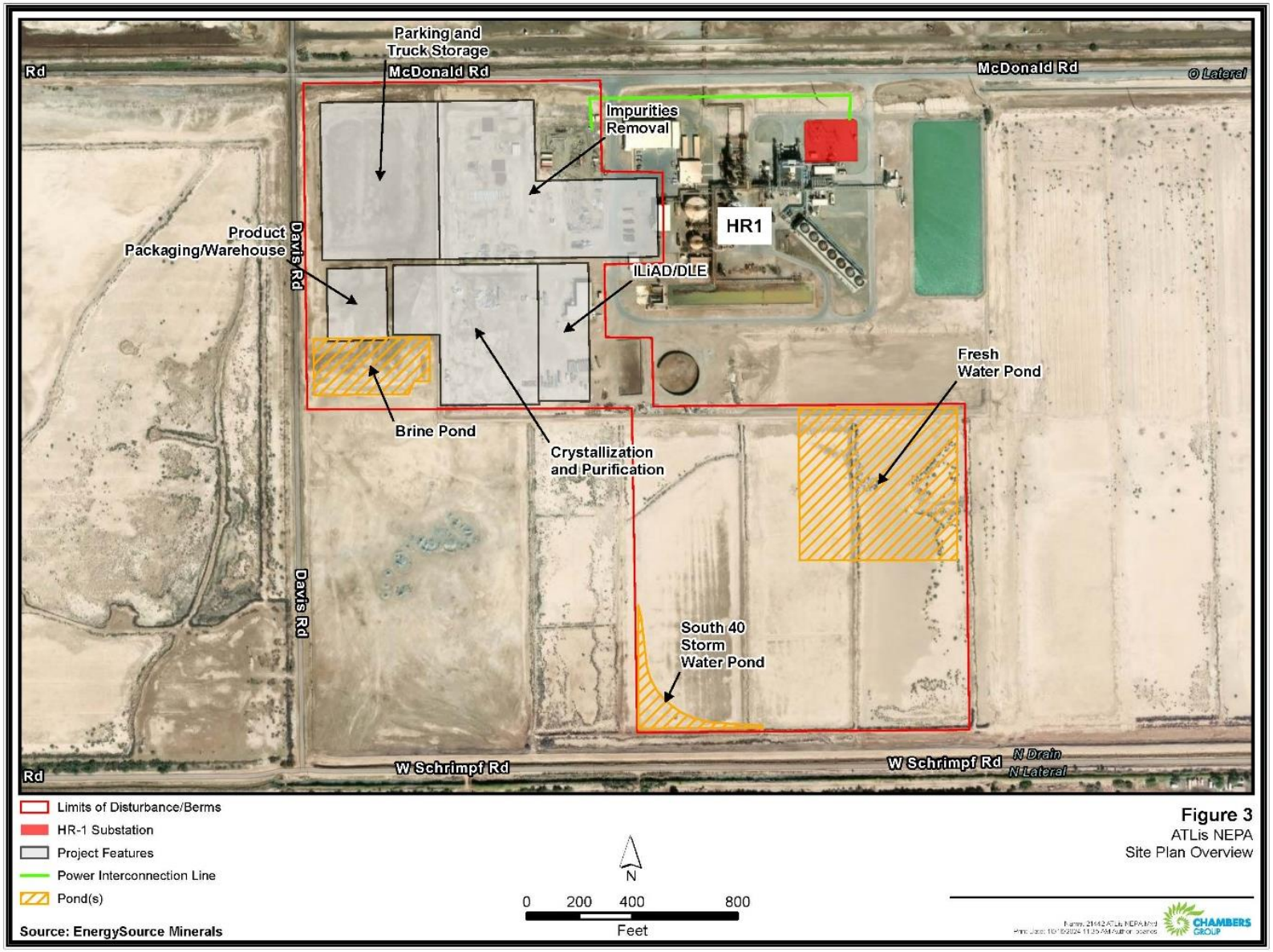
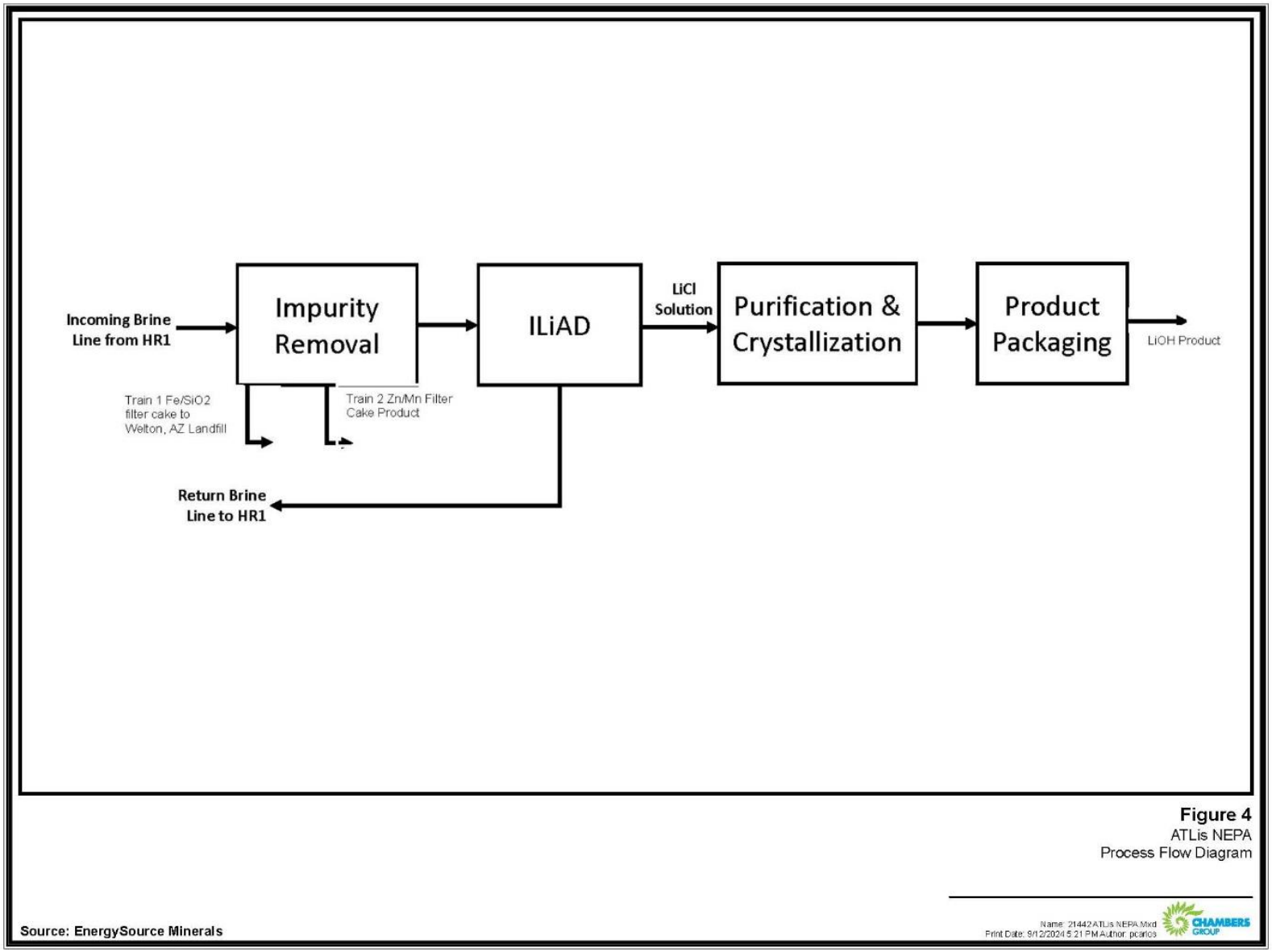


Figure 4: ATLis NEPA Process Flow Diagram



2.1.1.1 Impurity Removal

The impurity-removal and the product-extraction processing areas (8.16 acres) will be constructed on concrete pads with a containment curb. The impurity-removal process will consist of a series of interconnected tanks and pipelines, including a pipeline for brine delivery from HR1 to the Project site. Additional buildings and structures associated with this process stage include:

- Hydrochloric acid off-loading tanks
- Filter press sheds (which will house filter presses)
- Limestone stockpile and solution tanks
- Calcium oxide silo and slacker
- Mn and Zn co-product (filter cake) handling, production, and warehouse building

2.1.1.2 ILiAD/Direct Lithium Extraction

The ILiAD, or direct lithium extraction (DLE), process will occur in a series of tanks under a ramada structure. The arrangement of these facilities is part of the Applicant's proprietary technology. Additional buildings and structures associated with this process stage include:

- Li extraction equipment
- Li extraction shed and tanks
- Brine return pipeline (to HR1)

2.1.1.3 Crystallization and Purification

Crystallization and purification facilities consist of a series of interconnected tanks and pipelines. The processing facilities will be erected on concrete pads with a concrete containment curb or in designated buildings. Additional buildings and structures associated with this process stage include:

- Cooling tower
- Soda ash storage
- Crystallizers
- Pipeline to the production building

2.1.1.4 Product Packaging/Warehouse

The product production, handling and packaging, and warehouse buildings will be approximately 80 feet tall. Additional buildings and structures associated with this process stage include:

- Li product production building (which will house the proprietary technology for manufacturing the Li carbonate and Li hydroxide products)
- Li product handling, packaging, and warehouse buildings (which will house the filtration and drying equipment for the Li products and the area for bagging and palletizing finished products)
- Materials warehouse (which will store equipment, reagents, etc.)

2.1.1.5 Balance of Plant Areas

Throughout the site, including the balance of the plant areas (e.g., ponds and ancillary facilities), structures and facilities will vary in height; the maximum height will be 100 feet. The buildings, structures, and facilities making up the balance of the plant include:

- Pipe racks and process pipelines
- Gate guard house
- Water storage ponds and detention basins
- Plant offices (which will house offices and meeting rooms)
- Operations and employee facilities (which will house offices for supervisors, meeting rooms, breakroom/lunchroom, locker/shower rooms)
- Electrical buildings (which will house motor control centers, electric switchgear, and metering to power plant operations)
- Emergency generator building
- Chemical laboratory building (which will contain a wet chemistry laboratory and analytical instruments for analysis of in-process and finished products)
- Parking and truck storage

An existing earthen berm for flood protection will be relocated to the outer perimeter of the site.

Other plant facilities will be used to transport liquid and steam between the Project site and HR1 or for water storage. These are described in more detail below, along with utility connections and site security.

Pipe Rack and Process Pipelines

A pipe rack, also known as a pipeline bridge, is an aboveground overhead structure that carries pipes from one process unit to another. The pipe rack will facilitate brine delivery between the Project site and HR1. A post-clarifier brine delivery pipeline from HR1 to the Project's process area and a depleted brine return pipeline from the process area to HR1 will be constructed on one or more pipe racks. A steam/steam condensate delivery pipeline will also be constructed on a pipe rack.

The delivery and return pipelines will be constructed with minimal use of flanged connections to reduce the potential for pipe leaks. Automatic valves will be integrated into the pipeline system, which will close quickly in the event of a pipe rupture to minimize the size of any potential spill.

Fire Water and Freshwater Pond

The Project will have its own fire suppression system and a new freshwater storage containment pond, as shown in Figure 3. The fire suppression system will be designed to meet the overall fire protection requirements for the Project. The new pond, which will be located on the southern half of the Project site, will obtain water from the "N" lateral, located outside the Project site, and supply raw water to the site (see Figure 3). The lined pond will provide both fire protection water and process water. The bottom third of the pond will be restricted to fire protection use only. The pond will cover approximately 7.6 acres and have a capacity of 17.2 million gallons.

Brine Storage Pond

The brine pond (Figure 3) will be used as an emergency pond in the event of a spill within the plant; it will also collect stormwater runoff. This pond, which will be dry under normal conditions, will be used to empty vessels and the pipeline during planned and unplanned outages. All fluid contained in the brine pond will returned to the process stream. The pond will cover approximately 3.4 acres and have a capacity of up to 8.7 million gallons.

South 40 Stormwater Detention Basin

The Project will have its own detention basin, as shown in Figure 3. The detention basin will be engineered and constructed to meet the stormwater storage requirements for the Project site. The detention basin will not be lined because the clay soil in the Project area does not allow water to percolate. The basin will cover 1.7 acres and have a capacity of 1.9 million gallons.

If the basin contains standing water 48 hours after a storm, the Applicant will implement mosquito abatement measures, as required by the County. The detention basin will require periodic vegetation clearing.

Security Fence and Landscaping

A 6-foot-high chain-link security fence, topped with barbed wire, will be constructed around the Project site. The fence will meet the conditions included in the County's CUP for obscured fencing around processing areas. Because of the security required for the HR1 power plant, as well as the interconnectivity between HR1 and the Project, security protocols for both HR1 and the Project will be similar in nature.

Utility Installation

The Project site will require electrical connections from the IID/HR1 substation because of increased usage. Therefore, the Project will make modifications to the IID/HR1 substation, adding a switch and transformer to connect an underground transmission line to the new facility. A short underground power line (approximately 800 feet) will be installed along McDonald Road near the northeast corner of the HR1 property, running between the IID/HR1 substation and the plant site, as shown in Figure 3.

Telecommunication services on-site will most likely be provided by AT&T for phone and fiber internet. All utility infrastructure required for the Project will be built entirely within previously disturbed areas, particularly within the HR1 plant site. This will expand the area covered by existing utilities.

Potable water will be provided from a permitted on-site water treatment plant. The Project will be constructed so that water will not be discharged off-site. All water will be managed on-site.

Sanitary waste (sewage) will be processed by a new on-site sewage treatment plant. No further permitting for sewage treatment will be required because the plant will be designed to avoid any discharges to the ground. The effluent will be treated to an "almost" tertiary level and be diverted into the cooling tower.

One emergency 600-horsepower (hp) propane generator will be used to keep vital Project plant systems operating during power outages. In the rare case of an outage, the Project site will be powered under a "dual method." Power from IID (i.e., the geothermal power source from HR1), or other sources, will be distributed to the Project site from the modified substation. However, the Project will store 20,000 gallons of propane to allow 3 days of operation in an emergency. No natural gas usage will be required for the Proposed Action.

Parking and Truck Storage

Project site driveways, parking areas, and maneuvering areas will be constructed to County standards, which generally require a minimum of 3 inches of asphaltic concrete paving or higher-quality material.

Ancillary Features, Structures, etc.

The western portion of the Project site is within the Federal Emergency Management Agency (FEMA) 100-year floodplain (FEMA 2024). During construction of the HR1 plant, an administrative flood plan permit was approved for the HR1 site and an earthen flood protection berm was constructed to surround the western and southern sides of the parcel. The Project is in an area of Imperial County that has been designated as having a special flood hazard because of its proximity to the Salton Sea. Therefore, the existing berm will be relocated to the outer perimeter of the site.

2.1.2 Project Schedule

Site construction will not be phased by area. The entire Project site will be under construction during each stage (e.g., grading, utility infrastructure, equipment installation). The construction schedule is anticipated to cover 28 months.

The installation of the manufacturing equipment is planned for the second quarter of 2025. This will be completed in phases to ramp up production in response to the availability of skilled workers, with initial equipment arriving on-site in mid- to late 2025 and continuing through 2026. Following the installation of the manufacturing equipment, trials and debugging will be performed in phases.

Startup for trial operations, debugging, and validation will occur sequentially as process systems are completed, beginning in 2026, with the facility becoming partially operational in late 2027. Full production is expected in the fourth quarter of 2027.

2.1.3 Construction Workforce

On average, 100 construction workers will commute to the Project site during the estimated 28-month construction phase. Approximately 200 to 250 construction workers are anticipated at peak periods, which are anticipated to occur over 6 months in early Year 2. Construction will occur over one shift daily. Some nighttime construction work is anticipated to avoid extreme temperatures in summer months.

2.1.4 Construction Traffic

It is assumed that half the construction workforce will begin or end a shift during peak hours, resulting in 280 daily passenger vehicle trips. In addition, it is estimated that, on average, 20 to 24 trucks per day will travel in and out of the Project site during construction, except during grading, when about 50 to 60 trucks will be traveling in and out of the Project site.

2.2 Operations

2.2.1 Process Operations

Processing plant operations will use brine produced from HR1's geothermal fluid management activities for the commercial production of Li, Zn, and Mn products. The manufacturing process shown in Figure 4 consists of the general processing steps listed below; these steps will be described in more detail in the sections that follow.

1. Impurity removal
2. ILiAD/DLE – Li extraction as lithium chloride
3. Crystallization and purification
4. Product packaging

2.2.2 Manufacturing Process Summary

Impurity Removal

Geothermal brine from the HR1 power plant site will be transported by pipeline to the Project's impurity removal area. Brine will be processed at a rate of approximately 7,000 gallons per minute (gpm). This projected rate is used throughout this Project description; however, the actual amount of brine processed will be optimized to take advantage of the available facilities on the HR1 and Project sites.

Iron (Fe) and silica (SiO_2) will be removed from the brine, followed by the removal of the Mn and Zn (product) in a two-stage process. The separated Fe-SiO_2 material, as well as the Mn-Zn material, will be dewatered in the filter press sheds. The Mn-Zn material will be produced at a rate of 50,447 pounds per hour (wet weight). The mineral-depleted brine will then be transported by pipeline to the Li extraction area (see ILiAD discussion, next).

Initially, the separated Fe-SiO_2 filter cake material will be managed as a waste stream. The waste material will be collected and analyzed in conformance with laboratory testing protocols, ensuring that it will be handled and disposed of in an appropriate manner. Disposal is discussed Section 2.2.5, *Shipping and Receiving*. The Fe-SiO_2 is not a hazardous waste under the Resource Conservation and Recovery Act (RCRA); however, it is considered a hazardous material under California state law. If and when opportunities exist to use this material, the Applicant will market Fe-SiO_2 as an additional product and ship it to a third party for use in other industrial processes; it will no longer be a waste but a marketable product. The market for Fe-SiO_2 is currently being developed. With approximately 7,000 gpm as the target rate for brine processing, approximately 136,200 metric tonnes (dry weight) of Fe-SiO_2 will be processed annually. This filter cake, approximately 190,000 tonnes per year (wet weight), will be hauled by trucks to a waste management facility in Wellton, Arizona, until viable commercial alternatives for the Fe-SiO_2, or Fe, exist.

HCl is used as a reagent for pH control in this phase of the process.

ILiAD/Direct Lithium Extraction

The mineral-depleted brine will be fed to an Li extraction area, which will be outside under a ramada structure on a concrete pad. The area will contain proprietary Li extraction media. Li from the brine will be retained on the extraction media. The LiCl produced from the extraction process will be transported by pipeline from the Li extraction area to the Li purification area.

Processed Li-depleted brine will be returned to the HR1 facility through a brine return pipeline and injected directly into HR1's wells to replenish the geothermal resource, in conformance with California Geologic Energy Management (CalGEM) guidelines.

Crystallization and Purification

Impurities removed from the LiCl product will be recycled in the impurity-removal stage for further processing. The purified LiCl will then be concentrated in an evaporator or through an equivalent process. The purified, concentrated LiCl will be transported by pipeline from the Li purification area to the Li product production building. Proprietary technology will be used to convert the LiCl into lithium carbonate (Li_2CO_3) and then into lithium hydroxide (LiOH).

The final product will be transported to an Li product handling, production, and warehouse building where the crystals will be separated from the Li-rich fluid in a dewatering system. The Li crystals will be dried and cooled.

The Mn and Zn product will be precipitated into Mn and Zn oxides/hydroxides, then dewatered in filter presses to form wet cake.

Product Packaging and Warehouse

The dried Li products will be packaged, palletized, staged, and loaded into trucks for distribution in the Li product handling, production, and warehouse buildings. The dried Li products will be loaded into bulk bags in a bagging station. Packaging is expected to use 500- to 1,000-kilogram (kg) super sacks.

After dewatering, the Mn and Zn oxides/hydroxides will be transported in covered dump trucks and hauled off-site to market (see Section 2.2.5 for transportation details).

2.2.3 Utilities

2.2.3.1 Water Supply Source and Requirements

The Project will require approximately 90,000 gallons per hour (g/h) of water, or about 3,400 acre-feet per year (afy). A water supply assessment was completed during the CEQA EIR process; the assessment was approved by the County on September 30, 2021. As of September 2023, ESM and the IID have an executed water supply agreement. Under the agreement, ESM will purchase 3,400 afy of water from IID for Project cooling water and additional process water (IID 2023). Approximately 112 g/h, or about 3 afy, of canal water will be purchased for potable water purposes, including use in washbasins, eyewash equipment, showers and toilets in crew quarters, and sinks in the sample laboratory.

2.2.3.2 Wastewater

Sanitary waste generated by the Project will be collected in an underground self-contained sewage treatment plant. The sewage treatment plant will have an aboveground control room. The effluent will be treated to an “almost” tertiary level and diverted into a cooling tower. The sewage treatment plant will have a capacity of 2,100 gallons per day; it will be designed to process 20 gallons per person per day. This is the only on-site waste treatment associated with the Project.

There is no process wastewater associated with the Project. As it is processed, Li-depleted brine will be returned to the HR1 facility through a brine return pipeline and injected directly into HR1’s wells to replenish the geothermal resource.

2.2.3.3 Electricity

Up to 17 megawatts (MW) of electrical power will be needed for Project operations. Electricity will be purchased from the IID. New breakers and power distribution lines will be installed at the existing HR1 substation (see Figure 3). A buried power distribution line in the McDonald Road right-of-way will run from the IID/HR1 substation to the Project electrical building.

2.2.3.4 Telecommunications

Telecommunication services will most likely be provided by AT&T for phone and fiber internet, the same as on the HR1 site.

2.2.4 Staffing and Operational Timeframe

Beginning with start-up operations, the Project will be operated by approximately 71 full-time, on-site employees. Plant operations will continue 24 hours per day, 7 days per week. It is projected that up to 40 employees will be on-site at any given time, with 24 day-staff employees and two rotating shifts with 16 additional employees overlapping the day-staff to cover nights, weekends, and holidays.

2.2.5 Shipping and Receiving

During operations, approximately 14 incoming truck trips each day will deliver reagent chemicals, cooling tower treatment chemicals, consumptive media, product packaging materials, and gasoline and diesel fuel to the production plant. A one-time delivery of propane will power the emergency generator for 3 days. Additional propane deliveries may be needed in case of a multi-day power outage, the probability of which is low.

Outgoing Li products will require about three trucks per day (including one truckload of dry Li), 10 truckloads of filter cake, and seven truckloads of Mn-Zn products. Approximately 20 total trucks per day will travel in and out of the Project site during normal operations (40 roundtrips), as provided in the breakdown by material type in Table 1. The majority of the outgoing waste generated on-site is expected to be delivered to and processed at Republic Services in Wellton, Arizona.

McDonald Road will serve as the primary road for Project traffic.

Table 1. Operational Traffic

Material Type	Truck Trips (Number/Day)
Incoming reagent chemicals, cooling tower treatment chemicals, consumptive media, product packaging materials, gasoline, propane, and diesel	14
Incoming 31% HCl	6
Outgoing Mn-Zn products	7
Outgoing filter cake (silica, iron, and minerals)[a]	10
Outgoing dried Li product	3
Total roundtrips	40

Notes:
[a] *Fe-Si0$_2$ included in filter cake*

2.2.6 Waste Management

During operations, product extraction processes will generate solid hazardous and both solid and liquid nonhazardous waste. General solid nonhazardous waste generated by routine building operations and maintenance is estimated to total 10 to 20 tonnes per year. Hazardous waste from facility maintenance will include used oil and oily rags. Approximately two or three 50-gallon drums of used oil will be sent to the recycling facility every 3 months. All wastes generated at the facility will be collected, categorized, and disposed of or recycled in accordance with all applicable federal, state, and local environmental regulations. No on-site treatment of wastes will occur.

The Project will return the Li-depleted brine by pipeline to HR1 for re-injection. The solid waste generated as a result of brine processing, generally referred to as “filter cake,” is a mixture of SiO_2, Fe, and other minerals, as well as water (30 to 40 percent), all of which are contained in the brine extracted from the reservoir. This filter cake, approximately 190,000 tonnes per year (wet weight), will be hauled by trucks to a waste management facility in Wellton, Arizona, until viable commercial alternatives for the SiO_2, or Fe, exist. The waste will be tested prior to disposal to ensure compliance with RCRA standards for disposal.

Initially, the separated Fe-SiO_2 will be managed as a waste stream. The waste material will be collected and analyzed in conformance with laboratory testing protocols, ensuring that it will be handled and disposed of in an appropriate manner. (As noted in Section 2.2.2, Fe-SiO_2 is not a hazardous waste under the RCRA but is considered to be a hazardous material under California state law.)

3. ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

In each of the following sections, a specific resource area is addressed with both qualitative and, where applicable, quantitative information to concisely describe the nature and characteristics of the resource that may be affected by the Project as well as the potential direct and indirect impacts on that resource given Project controls. A conclusion regarding the significance of impacts is provided for each resource area. Resources not included in this EA are geology, land use, recreation, aesthetic and visual resources, soils and prime farmland, wetlands, and terrestrial vegetation, as discussed in Section 1.4.

Section 3.11 provides a review of the present and reasonably foreseeable federal and nonfederal actions that may contribute to a cumulative impact when added to the impacts of the Proposed Action. The impacts of past actions were reviewed and included as part of the affected environment to establish the current condition of the resource (the baseline condition) that may be affected by the Proposed Action.

Appendix C lists the CEQA mitigation monitoring and reporting program requirements and voluntary conservation measures that would be implemented for the Project to reduce impacts from construction and operations. The County, as the lead agency under CEQA, must ensure that CEQA-required mitigation measures are fulfilled as part of Project implementation.

3.2 Cultural Resources

The area of potential effect (APE) includes the entirety of ESM's 79-acre Project site, all of which may be disturbed because of site clearing, grading, and/or new building footprints, and a 0.5-mile buffer around the Project site. The total APE area is approximately 1,115 acres. The APE encompasses existing HR1 buildings and facilities; these structures were constructed in 2012 or later.

Cultural surveys and records searches were initiated in 2020 for areas in or around the Project site during preparation of the CEQA EIR for the Project. Using information from previous surveys and records searches, DOE concluded that no historic properties would be affected; the California Office of Historic Preservation (SHPO) concurred with the finding and assigned Project Number DOE 2024 0523 001 on May 23, 2024.

If cultural resources, such as human remains, lithics, pottery, or remnants of older construction, are discovered during Project activities, work would cease in the vicinity of the discovery. The SHPO, Office of the State Archaeologist, and all tribes with interest in the area would be notified. A qualified archaeologist or a designated representative of the SHPO, Office of the State Archaeologist, or Tribal Historic Preservation Office (THPO) would evaluate any such discovery and, in consultation with the SHPO, implement the appropriate measures before construction activities would resume.

Because of the absence of adverse impacts on cultural resources within and surrounding the Project site, as well as the controls that are in place to address an unanticipated discovery of such resources, the impact on cultural resources as a result of the Project would not be significant.

3.2.1 Native American Interests

As part of its Section 106 review process, DOE sent letters to 21 federally recognized tribes and one non-federally recognized tribe for information on nearby cultural resources and any comments or concerns they had on the potential for those resources to be affected by the Project. The following tribes were notified (additional details regarding tribal outreach are included in Appendix A):

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians

- Barona Group of the Capitan Grande
- Campo Band of Mission Indians
- Chemehuevi Reservation
- Cocopah Indian Tribe
- Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California
- Ewiiaapaayp Band of Kumeyaay Indians, California
- Iipay Nation of Santa Ysabel
- Inaja-Cosmit Band of Indians
- Jamul Indian Village
- Kwaaymii Laguna Band of Indians (non-federally recognized)
- La Posta Band of Mission Indians
- Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation, California
- Mesa Grande Band of Diegueno Mission Indians
- Quechan Tribe of the Fort Yuma Indian Reservation, California and Arizona
- San Pasqual Band of Diegueno Mission Indians of California
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Sycuan Band of the Kumeyaay Nation
- Torres Martinez Desert Cahuilla Indians
- Twenty-Nine Palms Band of Mission Indians of California
- Viejas Band of Kumeyaay Indians

The Chemehuevi Reservation and the Mesa Grande Band of Diegueño Mission Indians have expressed an interest in the Project. DOE has provided a copy of the Section 106 consultation package and the SHPO's concurrence letter to both tribes. The San Pasqual Band of Diegueño Mission Indians of California responded by phone on May 8, 2024, confirming they do not have comments or concerns with the Project.

No adverse impacts on traditional cultural properties are anticipated because of the low likelihood for traditional cultural properties occurring within the Project site, as evidenced by DOE tribal correspondence and SHPO consultation (Appendix A) as well as the previously disturbed nature of the Project site. Therefore, impacts on cultural resources, including Native American interests, as a result of the Project would not be significant.

3.3 Water Resources

3.3.1 Surface Water and Groundwater

No rivers or streams pass through the Project site or flow directly adjacent to the Project site. The IID "O" lateral canal is approximately 50 feet north of the Project site (along McDonald Road), the IID "N" lateral canal is approximately 0.25 mile to the south (along Schrimpf Road), and the Alamo River is approximately 0.7 mile to the southwest. The "O" and "N" laterals lead toward the Alamo River and surrounding wetlands, which then feed into the Salton Sea.

The Project will be designed to avoid any discharge of water from the site during construction and operations (i.e., all water will be contained within the site).

A Stormwater Pollution Prevention Plan (SWPPP) would be developed to minimize off-site erosion and sedimentation during Project construction. As part of the SWPPP as well as the Drainage and Grading Plan, the Project would implement standard industry best management practices (BMPs) to control and minimize off-site discharges during Project construction. Permits and approvals for Project construction and operation are identified in Appendix B.

During Project operations, stormwater runoff generated on the Project site would be collected in an on-site stormwater basin; the water may be allowed to evaporate or may be used as process water. The collected stormwater runoff in the basin would be sampled and analyzed for quality and compatibility prior to use in facility processes. In the event that the collected stormwater cannot be used in facility processes, the stormwater would be allowed to evaporate in the detention basin. If the basin still contains standing water after 48 hours, the Applicant would implement mosquito abatement measures, as required by the County. With the anticipated evaporation rates and the potential to use some stormwater in facility processes, periodic discharges are not anticipated.

During Project operations, fewer than 1,320 gallons of petroleum hydrocarbons and hazardous materials would be stored in chemical storage containers. Secondary containment would be provided in all petroleum hydrocarbon and hazardous material storage areas. Storage areas are identified in Figure 2 and Figure 3. In addition, spill containment areas and sumps that could be subject to spills of immiscible chemicals would be drained to a dilution water tank. Any oil spills (e.g., from vehicles) would be collected with absorbent pads and disposed of as required by law and in accordance with the provisions of the Spill Prevention, Control, and Countermeasure (SPCC) Plan and Hazardous Materials Management Plan for the Project site. The Project site would be graded so that spills would be directed into area drains that are concrete and fiberglass lined, then pumped through aboveground piping to be reprocessed within the system. In the event that collected spill material cannot be used in facility processes, the Applicant would use a vacuum truck for cleanup and removal.

Process wastewater would not be generated by the Project; therefore, permitted off-site wastewater discharges would not occur. Stormwater generated from the Project site during operations would be retained on-site. The clay soil in the Project area would not allow water to percolate into areas below the stormwater retention basin. Therefore, the Project would not result in off-site discharges that could violate water quality standards, or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. Therefore, there would be no significant impacts on surface water or groundwater as a result of the Project.

3.3.2 Floodplains

As discussed in the 2021 EIR for the Project (County 2021), the western portion of the Project site is within the FEMA 100-year floodplain (FEMA 2024) and is also designated as special flood hazard area by the County. In addition, even with the water conservation measures that the IID is required to follow and the water use restrictions for farm operations, the Salton Sea has receded several miles from the Project site. Because of ongoing receding of the Salton Sea shoreline, a petition that calls for reassessing the floodplain in the area has been initiated by another party; the matter is being addressed by FEMA because of the ongoing receding of the Salton Sea shoreline.

During construction of the HR1 plant, an administrative flood plan permit was approved for the HR1 site; an earthen flood protection berm was constructed to surround the western and southern sides of the HR1 site. The berm is intended to prevent flooding on the HR1 site.

HR1's existing berm currently bisects the western half of the Project site. Therefore, the existing berm would be relocated to the outer perimeter of the Project site, ultimately providing flood protection to both the Project and HR1 sites. Under County regulations (Section 91604), the HR1 site received an exemption from the County floodplain administrator, allowing the plant to be built. Because the Project site is within an area that was previously approved by the County, no additional action by the floodplain administrator is required.

Because the berm would be relocated to the perimeter of the Project site to flood protection for the Project, and because of the continued recession of the Salton Sea, there would be no significant impacts on floodplains as a result of the Project.

3.4 Air Quality

The Project site is in Imperial County, which is managed by the Imperial County Air Pollution Control District (ICAPCD). National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone, sulfur dioxide (SO_2), nitrogen dioxide (NO_2), inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb). The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Areas are classified under the federal Clean Air Act as either "attainment" or "nonattainment" areas for each criteria pollutant, based on whether the NAAQS have been achieved or not. Attainment relative to the state standards is determined by the California Air Resources Board (CARB). The air basin has been designated by the U.S. Environmental Protection Agency (EPA) as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$. Currently, the air basin is in attainment with respect to the NAAQS for CO, SO_2, NO_2, and lead. Lead emissions are not expected from the Project.

The ICAPCD has addressed issues regarding each of three nonattainment pollutants in separate State Implementation Plans (SIPs). The Project would not conflict with the applicable air quality plans, which include the 2017 Ozone SIP, 2018 PM_{10} SIP, and 2018 $PM_{2.5}$ SIP. The CEQA Air Quality Handbook (ICAPCD Handbook), prepared by ICAPCD on December 12, 2017, states that any project that emits pollutants at levels that are less than the screening thresholds, as identified in Tables 2 and 3, during construction and operation is in compliance with the most current ozone and PM_{10} attainment plans. No further demonstration of compliance with the plans is required.

The Project's construction and operational air emissions were calculated in a 2020 air quality analysis. Table 3 shows the maximum daily emissions for each year of Project construction. Construction-related emissions would not exceed the ICAPCD thresholds of significance.

Per ICAPCD requirements, the Project would be required to implement standard measures for both construction and operations to minimize potential air quality impacts.

ICAPCD issued Conditions for Authority to Construct and Permit to Operate (#4675) on January 26, 2023. The air permit describes the controls that would be implemented during Project operation to minimize potential air quality impacts, which include the following:

- HCl Scrubber: This scrubber would be operated whenever HCl storage tanks are being filed. The emission rate is limited to 3.58 pounds per day.
- Air Injection Exhaust Scrubber: This scrubber would be operated whenever gas from Train 1 and 2 is being exhausted, the emission rate is limited to 2.64 pounds of PM10 per day and 254.6 pounds of ammonia per day.

The air permit also includes conditions for HCl storage tanks, material handling, cooling tower operations, emergency standby generator operations, and recordkeeping and reporting. Tables 2 and 3 reflect the air

modeling and Project emissions calculations used in issuing the air permit. The modeling and calculations were completed as part of the CEQA EIR.

Table 2: Construction-Related Criteria Pollutant Emissions

Construction Year	Pollutant Emissions (pounds/day)								
	VOCs (ROGs)	NOX	CO	PM10 (dust)	PM10 (exhaust)	PM10 (total)	PM2.5 (dust)	PM2.5 (exhaust)	PM2.5 (total)
Year 1	10.71	55.46	272.30	14.10	0.79	14.88	4.99	0.78	5.77
Year 2	30.31	42.61	182.21	6.99	0.46	7.45	1.90	0.46	2.36
Year 3	29.86	36.68	178.72	6.99	0.43	7.42	1.90	0.42	2.33
Significance Thresholds	75	100	550	—	150	—	—	—	150
Exceed Thresholds?	No	No	No		No				No

Source: CalEEMod Version 2016.3.2; ICAPCD 2017 (https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf)
VOCs = volatile organic compounds; ROGs = reactive organic gases; NO_X = nitrogen oxides

Table 3: Operational Summer Criteria Pollutant Emissions

Emissions Sources	Pollutant Emissions in Pounds/Day (Summer Scenario)					
	VOCs ROG	NOX	CO	SO2	PM10	PM2.5
Area-source emissions	3.03	0.00	0.01	0.00	0.00	0.00
Energy-source emissions	0.00	0.00	0.00	0.00	0.00	0.00
Operational vehicle emissions	0.51	3.95	7.03	0.03	1.37	0.37
Off-road equipment	0.24	1.42	1.79	0.00	0.07	0.07
Stationary equipment	2.17	6.17	5.76	0.01	0.35	0.35
Total Summer Emissions	**5.96**	**11.54**	**14.60**	**0.04**	**1.79**	**0.79**
ICAPCD Significance Thresholds	**55**	**55**	**550**	**150**	**150**	**150**
Exceed Thresholds?	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2; ICAPCD 2017 (https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf)

The Project's operational daily criteria pollutant emissions during summer months are shown in Table 3. Wintertime emissions were determined to be equal to or less than the summertime emissions shown in Table 3; therefore, they are not repeated here.

As shown in Tables 2 and 3, both construction and operational emissions would be below ICAPCD thresholds. According to the ICAPCD Handbook, projects that are within the ICAPCD thresholds are consistent with the regional air quality plans. Furthermore, the standard mitigation measures provided in the ICAPCD Handbook have been incorporated into the Project. The Project would be required to implement ICAPCD Regulation VIII regarding fugitive dust control measures during construction and operation. In addition, filter cake, consisting of Fe-SiO_2 and Mn-Zn and 30 to 40 percent water, would be transported without drying to eliminate dust potential. Furthermore, any stationary sources of emissions operated on-site would be required to adhere to ICAPCD Rule 207, New and Modified Stationary-Source

Review, and Rule 201, which requires permits to construct and operate stationary sources. Because of the location of the Project site and existing air quality conditions, the level of anticipated air emissions, and the controls that would be implemented during Project construction and operation, impacts on air quality as a result of the Project would not be significant.

3.5 Noise

Noise would be created during construction of the Project as well as during operational activities. For example, the use of on-site equipment as well as the movement or loading of materials could generate noise. In addition, both construction and operation of the Project would generate additional trips to the Project site. These additional trips made by workers' vehicles and by trucks would create additional roadway noise.

The Noise Element of the Imperial County General Plan provides the applicable noise standards for the Project, along with plans and policies to protect the public from noise intrusion (County 2015b). The Noise Element requires construction noise from a single piece of equipment or a combination of different pieces of equipment to not exceed 75 decibels (dB), equivalent continuous sound level (L_{eq}), when averaged over an 8-hour period and measured at the nearest sensitive receptor. This standard assumes a construction period consisting of days or weeks. In cases where construction times are extended, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a 1-hour period. The standards prescribed in the Noise Element also require the operation of construction equipment to be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday or 9:00 a.m. to 5:00 p.m. Saturday, unless the County Planning and Development Services Director authorizes otherwise. No commercial construction operations are permitted on Sundays or holidays.

Table 4 provides a list of the typical construction equipment that could be used each day, along with the associated measured noise emissions.

The nearest sensitive receptor to the Project site is a single residence on the north side of Pound Road, just over 1 mile north of the Project site. Noise from proposed construction activities would be below the County's noise standard (i.e., 75 A-weighted decibels [dBA]) at the nearest home. In addition, construction noise levels would be below the lowest measured ambient noise level in the Project vicinity (i.e., 48.5 dBA L_{eq}). They would also be below both the residential sound-level limits provided in Section 90702.00 of the County's Municipal Code (i.e., 50 dB between 7:00 a.m. and 10:00 p.m. and 45 dB between 10:00 p.m. and 7:00 a.m.).

All construction activities associated with the Project would occur within the allowable times for construction (i.e., between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. Saturday, unless the County Planning and Development Services Director authorizes otherwise).

Operation of the Project would include the use of machinery to separate and purify minerals obtained from geothermal fluid management at the neighboring HR1 power plant. Most material processing would occur within structures and pipelines that would emit nominal noise. The exact equipment that would be used in operation of the Project has not yet been determined; therefore, it is not possible to obtain noise specifications from manufacturers. However, in general, operational activities would be less noise intensive than those occurring at the adjacent HR1 power plant, as indicated by the noise analysis completed for the Project (County 2021). Because the Project would create lower operational noise levels than the HR1 power plant, it can be deduced that operation of the Project would also be below the County's operational noise standards (County Municipal Code, Section 90702.00) of 50 dB between 7:00 a.m. and 10:00 p.m. and 45 dB between 10:00 p.m. and 7:00 a.m. at the nearest home to the north.

Vehicle noise is a combination of the noise produced by a car's engine, exhaust, and moving tires. The level of traffic noise depends on three primary factors: (1) the volume of traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. The Project would not propose any uses that would require a substantial number of truck trips (see Section 3.6, *Transportation*) and would not alter the speed

limit on any existing roadway. As such, the evaluation of the Project's potential off-site noise impacts focuses on the change in traffic volumes that would occur with development of the Project.

Table 4: Construction Equipment Noise and Noise Levels at Nearest Receptor

Equipment	Acoustical Use Factor (percent)[a]	Maximum Sound Level at 50 feet (dBA L_{max}*)	Maximum Sound Level at Nearest Receptor (dBA L_{max})[b]
Off-highway trucks (flatbed truck)	40	74.3	33.4
Rollers	20	80.0	39.2
Crawler tractor (dozer)	40	81.7	40.8
Excavators	40	80.7	39.9
Graders	40	85.0	44.2
Water trucks (dump truck)	40	76.5	35.6
Compactors	40	83.2	42.4
Rubber-tired loaders (front-end loader)	40	79.1	38.3
Scrapers	40	83.6	42.8
Cranes	16	80.6	39.7
Generator sets	50	80.6	39.8
Concrete pump (pump)	50	80.9	40.1
Plate compactors (compactor)	20	83.2	42.4
Rough-terrain forklifts (gradall)	40	83.4	42.6
Skid-steer loaders (front-end loader)	40	79.1	38.3
Tractor/loader/backhoe (tractor)	40	84.0	43.2
Aerial lifts (man lift)	20	74.7	33.9
Welders	40	74.0	33.2
Air compressors	40	77.7	36.8
Pavers	50	77.2	36.4
Paving equipment	50	77.2	36.4

Source: Federal Highway Administration, Roadway Construction Noise Model (RCNM), Version 1.1 (2017).
[a.] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[b.] The nearest receptor is a single residence approximately 5,500 feet north of the proposed construction activities.
dBA = A-weighted decibels
**Lmax is the maximum sound level during a measurement period or a noise event.*

The Noise Element defines the Noise Impact Zone as the area that is likely to be exposed to significant noise. It also identifies a Roadway Noise Impact Zone as the area within 1,100 feet of a State Highway or within 150 feet of a Collector Street (County 2015b). Noise above the limits included in Table 5 for a single residence is considered the threshold for a "substantial permanent increase in ambient noise levels."

The potential off-site traffic noise impacts created by ongoing operation of the Project have been analyzed using the Federal Highway Administration (FHWA) model (FHWA 2017). Noise impacts have been calculated for existing conditions with Project construction and existing conditions with Project operations.

Table 5 shows that, for existing conditions, the Project's temporary noise increases at nearby homes from the additional vehicular traffic during construction would not exceed the Federal Transit Administration's

(FTA's) allowable increase thresholds (FTA 2006). Table 6 shows that operational traffic noise would not result in a substantial permanent increase in ambient noise levels under existing-year conditions.

Table 5: Existing Year with Project Construction Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[a]			Increase Threshold[b]
		Existing	Existing with Project Construction	Project Contribution	
Highway 111	North of Hazard Road	60.5	60.6	0.1	+2 dBA
Highway 111	South of McDonald Road	62.2	62.2	0.0	+2 dBA
Highway 111	South of Sinclair Road	64.5	64.7	0.2	+1 dBA

Source: FHWA,1978, Traffic Noise Prediction Model (FHWA-RD-77-108).
[a] Noise levels do not take into account existing noise barriers.
[b] Increase Threshold obtained from the FTA's allowable noise impact exposures (FTA 2006).
CNEL = Community Noise Equivalent Level

Table 6: Existing Year with Project Operational Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[a]			Increase Threshold[b]
		Existing	Existing With Project Operations	Project Contribution	
Highway 111	North of Hazard Road	60.5	60.5	0.0	+2 dBA
Highway 111	South of McDonald Road	62.2	62.4	0.2	+2 dBA
Highway 111	South of Sinclair Road	64.5	64.6	0.1	+1 dBA

Source: FHWA,1978, Traffic Noise Prediction Model (FHWA-RD-77-108).
[a] Noise levels do not take into account existing noise barriers.
[b] Increase Threshold obtained from the FTA's allowable noise impact exposures (FTA 2006).
CNEL = Community Noise Equivalent Level

Project construction would not create a substantial temporary increase in ambient noise levels that would be in excess of applicable noise standards. Project operations would not create a substantial permanent increase in ambient noise levels that would be in excess of applicable noise standards. Construction and operational traffic associated with the Project would not result in a substantial temporary increase in ambient noise levels under existing conditions. Therefore, the Project's noise impacts would not be significant.

3.6 Transportation

The Project site is approximately 3.8 miles southwest of the community of Niland, a census-designated place in an unincorporated area of Imperial County. The site is north of West Schrimpf Road, east of Davis Road, and south of McDonald Road. Vehicles enter and exit the site during operation and maintenance of the HR1 facility. The two driveways to the Project site are located along McDonald Road.

The primary roadways and intersections that would be used for access to the Project site during construction and subsequent operational activities are outlined below.

State Route 111 (Highway 111) is classified as a State Highway/Expressway in the County General Plan Circulation and Scenic Highways Element (County 2008). Highway 111 is a north–south route that connects the three largest cities in Imperial County: Calexico, El Centro, and Brawley. It runs from Interstate 10 in Riverside County to the Mexican border. Outside the towns of Calipatria and Niland, Highway 111 is a two-lane, undivided north–-south roadway, providing one travel lane in each direction. The posted speed limit is generally 65 mph.

Hazard Road is an east–west route through Imperial County. It is currently an unpaved two-lane roadway within the Project vicinity.

Sinclair Road is an east–west route through Imperial County. It is currently a paved, two-lane undivided roadway within the Project vicinity.

English Road is a north–south route through Imperial County. It is currently an unpaved two-lane roadway north of Sinclair Road and a two-lane paved roadway south of Sinclair Road.

McDonald Road is an east–west route though Imperial County. Currently, McDonald Road is an unpaved two-lane roadway west of Highway 111 and a two-lane paved roadway east of Highway 111. A separate project proposes paving McDonald Road between the intersection at Highway 111 and the Project site prior to construction of the Project; therefore, the “operations” analysis reflects the proposed improvements.

Average daily traffic (ADT) volumes on study area segments of Highway 111 were obtained from the Caltrans Traffic Census Program for 2017 (Caltrans 2017), the latest available data as of the date of this report. AM and PM peak-hour intersection turning movement volume counts at study area intersections were commissioned by Linscott, Law, & Greenspan Engineers in September 2019 (Linscott, Law, & Greenspan Engineers 2021). Table 7 summarizes the ADT volumes on all study area segments. It should be noted that a growth factor of 2 percent per year was applied to all ADT volumes to represent 2021 conditions. In addition, it should be noted that, for unpaved segments along McDonald Road and Sinclair Road, the estimated ADT volumes assume that PM peak-hour volumes make up approximately 10 percent of the ADT (Linscott, Law, & Greenspan Engineers 2021).

Road improvement agreements have been executed, according to the CEQA EIR analysis, which used 2021 traffic conditions. For consistency, this analysis uses the same data source.

Table 7: Existing Traffic Volumes

Street Segment		Source	ADT[a]
Highway 111	North of Hazard Road	Caltrans	3,800
	Hazard Road to McDonald Road	Caltrans	3,800
	McDonald Road to Sinclair Road	Caltrans	3,800
	South of Sinclair Road	Caltrans	6,400
McDonald Road	Project site to English Road	LLG	270E
	English Road to Highway 111	LLG	220E
Sinclair Road	English Road to Highway 111	LLG	320E

Source: Caltrans 2017 Traffic Census Program; Linscott, Law, & Greenspan Engineers 2021
[a] A growth factor of 2% per year was applied to the 2017 Caltrans segment ADTs to reflect 2021 conditions.
LLG = Linscott, Law, & Greenspan Engineers; E = estimated volumes because the road is unpaved.

The Project study area is located in a rural area. All intersections are unsignalized. As of the date of the traffic study (2021), all studied intersections were at level of service (LOS) B or better during both AM and PM peak hours, as shown in Table 8.

Table 8: Traffic Study Existing Intersection Operations (2021)

Intersection	Control Type[b]	Peak Hour	Existing	
			Delay[a]	LOS
1. Highway 111/Hazard Road	TWSC	AM	0.0	A
		PM	0.0	A
2. Highway 111/McDonald Road	TWSC	AM	8.9	A
		PM	8.9	A
3. English Road/McDonald Road	TWSC	AM	9.0	A
		PM	0.0	A
4. English Road/Sinclair Road	TWSC	AM	0.7	A
		PM	1.0	A
5. Highway 111/Sinclair Road	TWSC	AM	10.2	B
		PM	9.6	A

Notes:
[a.] Delay per vehicle in seconds
[b.] Minor street with stop-controlled intersection; left-turn delay reported
TWSC = two-way stop-controlled intersection

It is estimated that, on average, 20 to 25 trucks per day would travel to and from the Project site during construction, except the grading phase when about 50 to 60 trucks would travel to and from the Project site each day. An average of 100 workers would commute to the Project site during construction. It is anticipated that the majority of construction workers, as well as trucks, would come from the nearby communities of Calipatria, Brawley, and El Centro. During construction, McDonald Road would not be a viable option for the first 2 to 3 months because it would be unpaved. Construction traffic from the south would use the paved Sinclair Road to access the site.

Operation of the ATLiS plant would produce multiple products for off-site shipment to market by truck. Products would be transported on existing roadways to distribution points, generally in the Greater Los Angeles area, Arizona, or Texas.

McDonald Road would be paved and a site entrance would be constructed as part of a separate project. Operations would then use McDonald Road, reducing use of Sinclair Road.

The truck traffic estimates include about 20 trucks per day with outgoing products, including three truckloads of dry Li, 10 truckloads of filter cake (silica, iron, and minerals), and seven truckloads of Mn-Zn products. Most outgoing waste generated on-site is expected to be delivered to and processed at Republic Services in Wellton, Arizona. Truck traffic also includes about 14 deliveries of reagent chemicals, cooling tower treatment chemicals, consumptive media, product packaging materials, and diesel fuel, gasoline, and propane, along with six truckloads of 31 percent HCl.

In calculating daily trip generation during Project construction, construction staff and truck activity numbers were based on the information above. As shown in Table 9, Project construction would generate a total ADT volume of 420, with 84 total AM peak-hour trips and 82 total PM peak-hour trips.

Table 9: Construction Trip Generation

Trip Type	Daily Total (ADT)[a]	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employees[b]	280	70	0	70	0	70	70
Trucks (w/PCE)[c]	120	5	5	10	5	5	10
Miscellaneous trips	20	2	2	4	1	1	2
Total	420	77	7	84	6	76	82

Notes:
[a] ADT = average daily traffic (total 24-hour bi-directional traffic on a roadway segment)
Assumes half of total employees begin or leave shift during peak hour
[b] PCE = passenger car equivalent (2.5), used to reflect the additional impacts of heavy vehicles in technical analyses (24 inbound trucks × 2 (in and out) × 2.5 (PCE) = 120 total trips (Linscott, Law, & Greenspan Engineers 2021).

Project construction would generate a maximum ADT volume of 420, including a maximum ADT volume of 280 from employee and miscellaneous trips, with 72 trips during the AM peak hour and 72 trips during the PM peak hour. Approximately 24 truck trips are estimated during Project construction. A "passenger car equivalent" (PCE) factor of 2.5 is applied to truck trips to account for the reduced performance characteristics (stopping, starting, maneuvering) of heavy vehicles in the traffic flow, resulting in a maximum of 120 truck trips. An analysis of intersections and street segments is provided in Tables 10 through 12.

Table 10: Operations Trip Generation

Trip Type	Daily Total (ADT)[a]	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employees (42)[b]	84	30	0	30	0	30	30
Trucks (w/ PCE)[c]	120	10	5	15	13	8	21
Miscellaneous Trips/Deliveries[d]	20	1	1	2	2	2	4
Total	224	41	6	47	15	40	55

Notes:
[a] ADT = average daily traffic (total 24-hour bi-directional traffic on a roadway segment)
[b] Assumes half of total employees begin or leave shift during peak hour
[c] PCE = passenger car equivalent (2.5), used to reflect the additional impacts of heavy vehicles in technical analyses (24 inbound trucks × 2 (in and out) × 2.5 (PCE) = 120 total trips (Linscott, Law, & Greenspan Engineers 2021 and [a] 2024 pers. comm.).
[d] U.S. Mail, FedEx, etc. (separate from process shipments)

Table 11 summarizes intersection operations throughout the study area during Project operations. As shown, all the intersections in the study area would continue to operate at LOS B or better during the AM and PM peak hours.

Table 11: Existing-plus-Project Intersection Operations

Intersection	Control Type[c]	Peak Hour	Existing plus Project		Change Delay[b]	Impact Type
			Delay[a]	LOS		
1. Highway 111/Hazard Road	TWSC	AM	0.0	A	0.0	None
		PM	0.0	A	0.0	
2. Highway 111/McDonald Road	TWSC	AM	9.1	A	0.2	None

Intersection	Control Type[c]	Peak Hour	Existing plus Project		Change Delay[b]	Impact Type
			Delay[a]	LOS		
		PM	9.2	A	0.3	
3. English Road/McDonald Road	TWSC	AM	9.3	A	0.3	None
		PM	0.0	A	0.0	
4. English Road/Sinclair Road	TWSC	AM	0.7	A	0.0	None
		PM	1.0	A	0.0	
5. Highway 111/Sinclair Road	TWSC	AM	10.6	B	0.4	None
		PM	9.9	A	0.3	

TWSC = two-way stop-controlled intersection

Table 12 summarizes street segment operations throughout the Project study area during operation of the Project. As shown, all the street segments in the study area would continue to operate at LOS A on a daily basis.

Table 12: Existing-plus-Construction Street Segment Operations

Street Segment		Capacity[a] (LOS E)[b]	Existing Plus Project			Impact Type
			ADT[c]	LOS[d]	V/C[e]	
Highway 111	North of Hazard Road	22,700	3,824	A	0.170	None
	Hazard Road to McDonald Road	22,700	3,824	A	0.169	None
	McDonald Road to Sinclair Road	22,700	3,950	A	0.167	None
	South of Sinclair Road	22,700	6,555	A	0.230	None
McDonald Road	Project Site to English Road	1,500	449	A	0.430	None
	English Road to Highway 111	1,500	394	A	0.147	None
Sinclair Road	English Road to Highway 111	1,500	325	A	0.427	None

Notes:
[a] *County roadway classification*
[b] *Roadway capacity corresponds to LOS E from County Standard Street Classification, average daily vehicle trips table*
[c] *Average daily traffic volumes*
[d] *Level of service*
[e] *Volume/capacity ratio*

Trip generation for Project operations was obtained from the Project description. As shown in Table 10, a total ADT volume of 179, with 47 total AM peak-hour trips and 55 total PM peak-hour trips, would occur during Project operations. Peak-hour traffic volumes assume that half the workers would arrive/depart in the AM/PM peak hours. However, a meaningful number of worker trips may arrive/depart outside peak hours because of earlier start times. Although detailed schedules have not yet been established, these assumptions are based on experience with similar projects. To be conservative, it was assumed that carpooling was not provided. These conservative assumptions are intended to represent a worst-case scenario for AM/PM peak-hour traffic. In addition, 10 trips per day (ADT volume of 20) were added to account for miscellaneous trips such as deliveries during Project operations.

Based on these assumptions, Project operations would generate a maximum ADT volume of 104 from employee and miscellaneous trips, with 32 trips during the AM peak hour and 34 trips during the PM peak hour. Twenty-four truck trips are estimated during Project operations. A PCE factor of 2.5 was applied to these trips for purposes of analysis. The trucks would generate an additional 120 trips per day.

The capacity analyses performed for the key roadway segments and unsignalized and signalized intersections indicate that impacts would not be significant during construction or day-to-day operations of the Project.

3.7 Biological Resources

Chambers Group biologists conducted a general reconnaissance survey within the Project site to determine the potential for occurrences of sensitive species, vegetation communities, or habitats that could support sensitive wildlife species (Chambers 2021). The survey occurred on October 30, 2020.

3.7.1 Flora and Fauna

Vegetation

Two vegetation communities, ruderal and bare ground, were observed present within the Project site during the October 2020 reconnaissance survey. As shown in Figure 5, ruderal habitat covers 10.24 acres, or 12 percent, of the southern portion of the site, which was previously used as a duck hunting club. Two species were observed during the October 2020 survey: scattered iodine bush (*Allenrolfea occidentalis*) and a few scattered Mediterranean tamarisk (*Tamarix ramosissima),* a non-native species. Because of scattered vegetation, compacted conditions, and frequent disturbance, the ruderal areas on-site are poor habitat for sensitive plants and animals. Bare ground makes up 74.73 acres, or 88 percent, of the Project site. Areas classified as bare ground are generally devoid of vegetation but do not contain any form of pavement. Because of the lack of vegetation, it is poor habitat for sensitive plants and animals.

Wildlife

All wildlife and wildlife signs observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded during the October 2020 field survey. Additional survey time was spent in habitats that were likely to be used by wildlife (e.g., native vegetation, wildlife trails) or in habitats with the potential to support state and/or federally listed or otherwise sensitive species. Notes were made on the general habitat types, species observed, and conditions on the Project site. A total of 12 wildlife species were observed during the survey, including migratory bird species. Wildlife species observed or detected during the site survey were characteristic of existing conditions on the Project site.

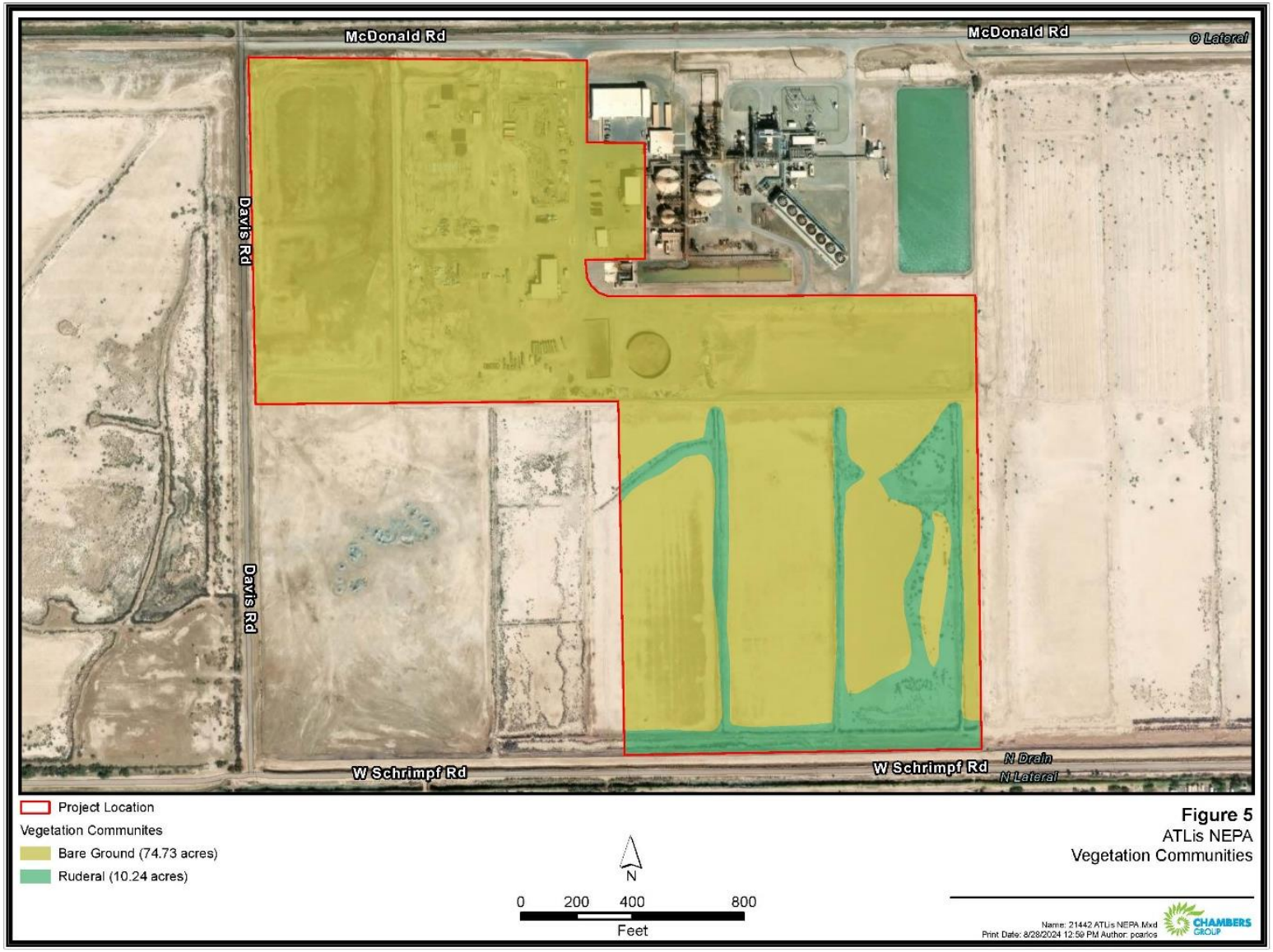
Appendix C lists enforceable requirements and voluntary measures to reduce impacts on wildlife. For example, a Worker Environmental Awareness Program training would be required for construction crews prior to beginning site work. Habitat adjacent to construction routes would be inventoried prior to construction. Refer to Appendix C for more information.

Given the existing disturbance, ongoing industrial activity, and lack of suitable habitat on-site, as well as the measures identified in Appendix C, impacts on non-special-status wildlife, including migratory birds, and plant species are not anticipated to be significant.

3.7.2 State Threatened and Endangered Species and Species of Concern

A California Natural Diversity Database search returned 27 federally and/or state-listed endangered or threatened species, species of concern, or otherwise sensitive wildlife species that could occur within the Project site (Strand 2023). Species that are both federally and state listed are discussed in Section 3.7.3.

Figure 5: ATLiS NEPA Vegetation Communities



Of the 27 wildlife species identified, only one species, burrowing owl (*Athene cunicularia* [state species of concern]), was present within or directly adjacent to the Project site during the October 2020 survey (Chambers Group 2020 and Strand 2023). In addition, this species has been recorded nesting in areas within or surrounding the Project site. Approximately 10 artificial burrowing owl burrows are located within 130 feet of the Project's western boundary. These burrows were installed as mitigation for other projects in the surrounding area. The artificial burrows are outside the Project boundary and therefore would be avoided during construction activities, consistent with CEQA mitigation monitoring and reporting program requirements. With implementation of the required burrowing owl mitigation measures identified in Appendix C (BIO-1 through BIO-5), no direct effects would occur. Implementation of the owl mitigation measures would minimize the potential for indirect effects.

Seven sensitive plant species were identified in the California Natural Diversity Database search (Chambers Group 2020 and Strand 2023). However, based on a literature review and the October 2020 site survey, it was determined that none of the seven species are present on the Project site because of the lack of suitable habitat.

Given the required mitigation measures for burrowing owl, as well as the absence of state-listed sensitive plant species, impacts on state-listed threatened and endangered species would not be significant.

3.7.3 Federally Threatened and Endangered Species

Federal special-status species were identified using the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool (Olmos 2024a). Three threatened and endangered species and one candidate species were identified as having potential to occur in the Project area or be affected by the Project:

- Desert pupfish (*Cyprinodon macularius*) – federally endangered
- Western snowy plover (*Charadrius alexandrinus nivosus*) – federally threatened
- Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) – federally endangered
- Monarch butterfly (*Danaus plexippus*) – candidate

There is no designated critical habitat on the Project site.

An Endangered Species Act Section 7 biological assessment is being prepared to address potential Project impacts on the above-listed species. The draft biological assessment findings are summarized in the impact assessment discussion below. DOE will consult with USFWS; the outcomes of the consultation will be reflected in the final EA.

3.7.3.1 Desert Pupfish

Prior to 2010, occurrences of desert pupfish had been documented over multiple years approximately 0.03 mile from the Project site—specifically, at experimental ponds north of McDonald Road and between Davis Road and the Salton Sea. The experimental ponds were drained in 2010. The salvaged desert pupfish were relocated to surrounding agricultural drains, including the "O" lateral drain. Desert pupfish were last documented in 2012 where the drain meets the Salton Sea, approximately 0.42 mile from the Project site. Prior to 2012, desert pupfish were observed in other drainages; these were at least 1.45 miles away from the Project site.

During operations, the Project would use up to 3,400 afy of water. This represents 0.11 percent of the IID's total entitlement of 3.1 million afy. A 0.11 percent increase in water to the "N" lateral for Project operations would not have discernible effects on the desert pupfish. Furthermore, the Project would be

constructed so that off-site discharges would not occur. All water would be managed on-site. No changes in water volumes are anticipated downstream of the Project site. Therefore, there would be no effect on the desert pupfish as a result of water discharges (runoff).

3.7.3.2 Western Snowy Plover

The Pacific coast population of the western snowy plover is a listed entity and classified as a distinct population segment (DPS). The Pacific coast DPS is defined as those individuals that nest within 50 miles of the Pacific Ocean on the mainland coast, peninsulas, offshore islands, bays, estuaries, or rivers of the United States and Baja California, Mexico (USFWS 2007). The snowy plovers that occur around the Salton Sea are not the listed entity (USFWS 2024b pers. comm.; Appendix A). Therefore, there would be no effect on the listed western snowy plover DPS as a result of the Project.

3.7.3.3 Yuma Ridgway's Rail

Approximately 30 Yuma Ridgway's rail occurrences were documented within 1 mile of the Project site between 2006 and 2010. There were three occurrences, one from 2009 and two from 2010, with smaller accuracy buffers just south of the Project site on the west side of Davis Road at West Schrimpf Road (Olmas 2024a). USFWS provided DOE with updated occurrence data in 2023, showing species occurrences along West Schrimpf Road south of the Project site (USFWS 2024b pers. comm.; Appendix A).

Yuma Ridgway's rail has not been observed on the Project site in more than 10 years (Olmas 2024a). Furthermore, human-caused flooding ceased during that time; therefore, it is unlikely that Yuma Ridgway's rail would occupy the Project site during construction or operations because there is no marsh habitat present on-site for foraging or breeding. Because of the lack of habitat on the Project site, there would be no direct effect on Yuma Ridgway's rail as a result of dust, equipment/facility emissions, or site preparation activities. However, there is known habitat for Yuma Ridgway's rail in the Project vicinity. Project noise and dust therefore have the potential to affect the species.

Noise from construction traffic could affect nearby nesting, foraging, or molting birds. However, construction noise would be temporary. All work would occur in one phase, with approximately 90 percent of work occurring during daylight hours 5 or 6 days per week over an intermittent 24-month period. The remaining 10 percent of work would occur during nighttime hours to avoid extreme summer temperatures. If loud tasks are planned for night work, it would be contingent on a noise variance from the County.

Operation of the Project would include the use of machinery to separate and purify the minerals obtained from geothermal fluid management at the neighboring HR1 power plant. Most of the material processing activities would occur within structures and pipelines that would emit nominal noise. As provided in the EIR, operational activities would be less noise intensive than those that occur at the adjacent HR1 power plant or would occur at the proposed HR2 power plant (County 2021).

Both construction and operation of the Project would generate additional trips to the Project site. These additional trips made by workers' vehicles and by trucks would create additional roadway noise and dust in proximity to Yuma Ridgway's rail habitat. Therefore, noise and dust generated from the additional off-site traffic during construction and operations could affect nearby nesting, foraging, or molting birds. For both the construction and operations, the Project site would be accessed from McDonald Road. An emergency-only entrance to the Project site would be constructed off Davis Road. No site access and, therefore, no Project traffic is anticipated on West Schrimpf Road where recent Yuma Ridgway's rail occurrences have been documented. In addition to the Worker Environmental Awareness Program training described in Appendix C, suitable habitat adjacent to roads used for construction and operations would be inventoried within 5 days of the start of construction. If the species is observed within 500 feet of the roadway, the area would be marked and avoided and alternate routes would be used (refer to

Appendix C for complete details). With implementation of these measures, the Project may affect but is not likely to adversely affect Yuma Ridgway's rail.

3.7.3.4 Monarch Butterfly

No records of occurrence for Monarch butterfly were found from areas within 5 miles of the Project site in the California Natural Diversity Database managed by California Department of Fish and Wildlife (CDFW 2024) or the USFWS sensitive species database (USFWS 2024a). The Project site occurs within the Early Breeding Zone (USFWS 2022). However, there are no overwintering groves present on-site or large stances of suitable breeding or feeding habitat.

The ruderal habitat on the Project site does not include plants that attract or provide habitat for monarch butterflies. As a candidate species, a determination of effect and consultation with USFWS under Section 7 of the Endangered Species Act is not required. However, because the butterfly population is in rapid decline (USFWS 2020), USFWS has provided conservation recommendations to the Applicant for consideration in the Project's construction and operations.

Given the lack of suitable habitat on-site and recent occurrences proximate to the site, direct and indirect effects on this species are not anticipated.

3.7.3.5 Conclusion

Because of the existing industrial land use at the Project site; the lack of suitable habitat, including a connection to intact natural habitats; low potential for species occurrence; and protection measures identified in Appendix C, impacts on threatened and endangered species would not be significant.

3.8 Socioeconomics and Environmental Justice

3.8.1 Socioeconomics

The Project site is on private land within the Salton Sea KGRA, in an unincorporated area of Imperial County about 2.3 miles west-southwest of the town of Niland and directly adjacent to the existing HR1 geothermal power plant. The nearest residence is on the north side of Pound Road, just over 1 mile north of the Project site. The nearest hospital, Pioneers Memorial Healthcare District, is approximately 18 miles to the south in Brawley. The closest school is the Grace Smith Elementary School, which is approximately 4 miles to the northeast.

Beneficial socioeconomic impacts would occur from increased employment opportunities, tax revenue generation, and direct and indirect spending in the local economy. An average of 100 full-time-equivalent workers would commute to the Project site during the estimated 28-month construction phase. Project operations would require approximately 71 full-time employees during two shifts. The Applicant expects to use available workers from the local and regional area who would commute from surrounding communities. A need for new housing or infrastructure is not anticipated.

Given the jobs that would be created during construction and operation of Project and the availability of housing and public services in the Imperial Valley, no significant adverse socioeconomic impacts are expected.

3.8.2 Environmental Justice

LPO's review of environmental justice (EJ) issues focuses on Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations; the National-Scale Air Toxics Assessment (NATA) cancer risk and respiratory hazard index, as defined in EPA's EJ

screening tool; and on site-specific population centers (e.g., schools, day-care centers) near the Project site.

Executive Order 12898 directs federal agencies to address environmental and human health conditions in minority and low-income communities. The evaluation of EJ is dependent on determining if high and adverse impacts from the Project would disproportionately affect minority or low-income populations in the affected community.

In accordance with EPA's EJ guidelines, minority populations should be identified when either 1) the minority population of the affected area exceeds 50 percent or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

The ethnic composition and the racial composition of Calipatria, Imperial County, and the state are presented in Table 13. Minority populations are more than 50 percent of the population in the county and double the minority populations in the state. At the census block-group level where the Project is located, the people-of-color population is 89 percent (see Table 14).

The percentage of persons in poverty is 9 percent higher in the county (21.2 percent) than in the rest of the state (12.2 percent) (Table 13). In EPA's EJ screening tool (Table 14), the low-income population is 95 percent, which is higher than the state average of 28 percent (99th percentile) and 64 points higher than the U.S. average of 31 percent (99th percentile).

Table 13: Population, Ethnicity, and Poverty

	City of Calipatria	Imperial County	State
Total population (July 1, 2023)	6,100	179,057	38,965,193
Race/Ethnicity			
White	37.3%	90.1%	70.4%
Black or African American	12%	3.2%	6.5%
American Indian and Alaska Native	1.4%	2.7%	1.7%
Asian	0.7%	2.1%	16.5%
Native Hawaiian and other Pacific Islander	0.2%	0.2%	0.5%
Hispanic or Latino	78.0%	86.3%	40.4%
Poverty	28.6%	21.2%	12.2%

Note: All population and ethnicity data were gathered from the U.S. Census Bureau web page (https://www.census.gov/quickfacts/fact/table/CA,calipatriacitycalifornia,imperialcountycalifornia/PST045223) Accessed: June 27, 2024.

Table 14: EPA's EJ Screen Report

	Value	State Average	Percentile in State	U.S. Average	Percentile in U.S.
NATA* cancer risk (lifetime risk per million)	20	27	3	25	5
NATA* respiratory hazard index	0.2	0.34	2	0.31	4
People-of-color population	89%	61%	78	39%	88
Low-income population	95%	28%	99	31%	99

Notes: Selected Variables – Block Group: 0602501011021, Imperial County, EPA Region 9. Approximate population: 820 (EPA 2024)
**More information on the NATA can be found at https://www.epa.gov/national-air-toxics-assessment*

The NATA cancer risk and respiratory hazard indices are a way to see how local residents compare to everyone else in the state as well as the entire U.S. For the NATA respiratory hazard index and the NATA cancer risk index (lifetime risk per million), the Project is in an area that is in the 4th or 5th percentile in the U.S. These NATA percentiles are lower in comparison to the rest of the U.S. Permitted emission levels for criteria pollutants and hazardous air pollutants are considered to be protective of human health and the environment.

Air permits would be required from the ICAPCD. Therefore, in accordance with the relevant permits, measures and controls would be implemented during operation to minimize emissions and potential air quality impacts.

Given the jobs created during construction and the 71 full-time permanent jobs created, the Project would benefit the regional economy. There are no anticipated impacts that could give rise to disproportionate impacts on minority or low-income populations in the affected area; therefore, EJ impacts would not be significant.

3.9 Health and Safety

California's Secretary of Environmental Protection established a unified hazardous waste and hazardous materials management regulatory program, as required by Health and Safety Code Chapter 6.11. The statute requires all counties to apply to the California Environmental Protection Agency (CalEPA) for certification of a local unified program agency. The Department of Toxic Substance Control (DTSC) is the Certified Unified Program Agency (CUPA) for Imperial County.

During construction and operation of the Project, hazardous materials would be transported to and from the Project site and used and stored on-site for miscellaneous construction, general operations, and maintenance activities. Table 15 provides the chemicals/materials that would be transported to the site for use in Project processes and the quantities anticipated. Geothermal brine, the feedstock for the Project, would come to the site by pipeline from the adjacent HR1 power plant at a rate of approximately 4.0 million pounds per hour. As a feedstock, the brine is not included in Table 15. In addition, 20,000 gallons of propane and less than 500 gallons of gasoline and 500 gallons of diesel fuel would be kept on-site; these are not used directly in the processes and therefore are not included in Table 15. Li filter aid, canal filter aid, canal biocide, and Li anti-scalant may be needed during the life of the Project but are not intended for regular use at the Project site. As such, quantities for these chemicals are unknown and are not included in Table 15.

Table 15: Project Annual Chemical/Materials Usage

Chemical/Material	Total Use
Limestone (tons/day)	102.0
Quicklime (tons/day)	158.0
Flocculant (pounds/day)	2,256.0
HCl (tons/day)	208.4
Antifoam (pounds/day)	906.0
Sodium hydroxide (tons/year)	1,356.1
Soda ash (tons/year)	40,589.5
EDTA (tons/year)	0.8
Lithium coagulant (pounds/day)	549.0

Chemical/Material	Total Use
Canal coagulant (pounds/day)	10.0
Sodium bisulfite (tons/year)	2.8
Lithium biocide (pounds/day)	6.0
Sodium hypochlorite (tons/day)	0.2
Canal anti-scalant (pounds/year)	5,000.0
Lithium polymer (pounds/day)	25.00
Actiflo polymer (pounds/day)	14.0
Veolia lime (tons/year)	19,079.4
Cooling tower chemical (tons/year)	8.5
CO_2 (tons/year)	1,008.0

EDNA = ethylenediaminetetraacetic acid; CO_2 = carbon dioxide

Chemicals used in the Li extraction process would be delivered to the facility by truck. A variety of packaging methods would be used, including drums, supersacks, and pallets. The Applicant would develop and implement a SWPPP and a Hazardous Materials Business Plan (HMBP) that would include procedures for the following: hazardous materials handling, use, and storage; emergency response; the SPCC Plan; employee training; and reporting and recordkeeping (State Water Resources Control Board 2022; DTSC 2024). The HMBP is required to be certified annually. The facility would be inspected at least once every 3 years by the CUPA to verify compliance with the California Health and Safety Code and California Code of Regulations (DTSC 2024).

Standard BMPs and applicable federal, state, and local regulations and standards for construction and operation of the facility would be implemented to ensure the safety of workers and the public. This would include compliance with federal Occupational Safety and Health Administration (OSHA) regulations and state rules under the California Occupational Safety and Health Act.

The local fire department in Calipatria would be informed of potential hazards associated with the facility and provided construction and layout information to ensure that first responders and the public would be protected from an exposure to potentially hazardous situations (e.g., toxic smoke or vapors) in the event of a fire or industrial accident. The CUPA for Imperial County has provided fire departments with business plans and identified the businesses that handle and store hazardous materials and therefore present the greatest risk to emergency responders, as described in the Imperial County Operational Area Hazardous Material Area Plan (County 2016).

During construction and operation of the Project, hazardous materials would be stored in chemical storage containers. Secondary containment would be provided in all petroleum hydrocarbon and hazardous material storage areas. In general, all areas where hazardous materials would be stored would have concrete ponds, berms, or curbs to control accidental releases. Traffic barriers would protect piping and tanks on the Project site and the adjacent HR1 site from potential traffic hazards.

OSHA requires the development of comprehensive health and safety programs, including hazard communication, chemical safety, and emergency response procedures (29 CFR 1910.120). All personnel who would be working with chemicals would be trained to ensure proper handling and an appropriate emergency response to chemical spills or accidental releases. Adherence to the following applicable requirements would protect the workforce during construction and operation of the Project:

- RCRA: Ensure proper waste management, including disposal, storage, and treatment for Li-containing materials.

- Emergency Planning and Community Right-to-Know Act: Report hazardous chemical inventories and develop emergency response plans.
- California Accidental Release Prevention Program: Prepare and submit a Risk Management Plan, outlining accident prevention and emergency response measures per California Health and Safety Code Sections 25531–25543.3.
- California Occupational Safety and Health Regulations: Similar to the federal OSHA but with additional standards specific to California, including stringent requirements for hazardous chemical handling and worker safety training.
- Hazardous Materials Business Plan: Prepare and submit an HMBP to the local CUPA, detailing inventory, emergency response plans, and employee training programs per California Health and Safety Code Sections 25500–25519.

A job hazard analysis would be prepared for each job or task. Work areas would be equipped with safety showers and eyewash stations. A protective pipeline design and a detailed inspection routine (currently in development) would be implemented for Project construction and operation. These measures would ensure the proper storage and handling of hazardous materials and protect the workforce during construction and operation of the Project.

Because of the measures to address health and safety, including BMPs; federal, state, and local regulations and standards; and plans for preventing chemical spills and potential mishandling of hazardous materials, impacts on the health and safety of workers and the public from Project construction and operation would not be significant.

3.10 Waste Management

Up to approximately 1,588 tons of nonhazardous solid waste would be generated by Project construction. Nonhazardous wastes generated by Project construction would include construction and demolition debris, scrap metal, and domestic trash.

Annual waste volumes during operation are shown in Table 16.

Table 16: Project Waste Management

Waste Type	Total Annual Quantity	Disposal Method
Non-hazardous waste (tons)	18.1	Local waste management facility
Hazardous waste (filter cake) (tons)*	172,365	Disposed of at a certified waste facility
Used oil and oily rags (50-gallon drums)	12	Recycling facility
Sanitary waste (gallons)	2,100 (gallons per day)	Treated and recycled

** As noted in section 2.2.2 and 2.2.6, the Fe-SiO2 filter cake is not a hazardous waste under the RCRA but is considered a hazardous material under California state law.*

No on-site treatment of wastes would occur, except for sanitary waste. The solid wastes, to be disposed of locally, would be hauled to the Allied Imperial Landfill, Niland Solid Waste Site, or the Salton City Landfill, which have an approximate combined remaining capacity of 13,859,609 cubic yards (cy), as shown in Table 17. The Allied Imperial Landfill has approximately 12,384,000 cy of remaining capacity and is expected to remain in operation through 2040 (CalRecycle 2021a). Niland Solid Waste Site has approximately 211,439 cy of remaining capacity and is estimated to remain in operation through 2046 (CalRecycle 2021b). The Salton City Landfill had a remaining capacity of 1,264,170 cy as of 2018 and is

expected to have adequate capacity for the foreseeable future (CalRecycle 2021c). The Project represents approximately 0.3 percent of the remaining capacity at the three landfills; therefore, Imperial County has ample landfill capacity for solid waste generated by the Project.

Table 17: County of Imperial Landfills in Vicinity of Project Site

Name of Landfill	Location	Permitted Capacity	Remaining Capacity	Class	Approximate Distance from Project Site
Niland Solid Waste Site	8450 Cuff Road, Niland, CA	318,673 cy	211,439 cy	III	4.5 miles northeast
Allied Imperial Landfill	104 East Robinson Road, Imperial, CA	19,514,700 cy	12,384,000 cy	III	23 miles south
Salton Sea Solid Waste Facility	935 West Highway 86, Salton City, CA	65,100,000 cy	1,264,170 cy	III	32 miles northwest

Source: CalRecycle 2021a–c

It is estimated that approximately 190,000 metric tonnes (wet weight) per year of Fe-SiO_2 material, in the form of filter cake, would be generated from Project operations at the full flow rate for the geothermal brine. The Fe-SiO_2 stream may be converted to a product stream after Project operations begin; however, a portion of the Fe-SiO_2 material would be managed as solid waste. The Fe-SiO_2 filter cake would be sampled and laboratory tested to ensure it is below the California Code of Regulations Section 66261.24(a)(2) soluble threshold limit concentration (STLC) and total threshold limit concentration (TTLC). If below regulatory levels, it would be trucked off-site and recycled for beneficial use. Filter cake that exceeds the California standards would be trucked to a waste management facility in Wellton, Arizona, approximately 96 miles southeast of the Project site. The design capacity of this landfill is 2.5 million tons.

Approximately every 3 years, the Project would be shut down for about 3 weeks to complete facility cleaning in conjunction with HR1 plant cleaning. This process would remove mineral scale from plant piping. The scale removed during this process could exceed STLC and TTLC standards for Arizona; in that case, the solid waste would be trucked to Nevada. However, that would be a rare occurrence; in the past 10 years, only two truckloads have needed to be transported to Nevada (from HR1).

The Project would not introduce new sources of sanitary wastewater during construction because construction workers would use existing restrooms at the HR1 site. This sewage would be stored and processed in the HR1 septic tank and wastewater treatment plant on-site, which has been permitted and designed to the meet the water and wastewater requirements of a future mineral processing plant like the Project.

Sanitary waste generated by Project operations would be collected in a self-contained sewer treatment plant that is completely underground, with only a surface control room. The effluent would be treated to “almost” tertiary level and discharged into the cooling tower. The sewer treatment plant has the capacity for 2,100 gallons per day and was designed to process 20 gallons per person per day. This is the only on-site waste treatment associated with the Proposed Action.

Spent brine fluid, which is brine from which the heat energy that has been removed, from the HR1 secondary clarifiers would be sent to the Project’s processing area through a brine delivery pipeline (a primary input to the Project). Once the brine has been processed by the Project, it would be returned to the HR1 facility through a brine return pipeline and injected directly into the injection wells to replenish the geothermal resource. Therefore, it is not classified as a waste product.

All wastes generated at the facility would be collected, categorized, and disposed of and/or recycled in accordance with all applicable federal, state, and local environmental regulations. Because solid waste facilities have adequate permitted capacity for the solid waste materials generated by the Project, impacts associated with waste generation would be below significant.

3.11 Cumulative Impacts

Cumulative impacts are effects on the environment that result from the incremental impact of the Project when added to other past, present, and reasonably foreseeable future actions undertaken by other agencies (federal or nonfederal) or persons (40 CFR Part 1508.1[i][3]). Projects were identified through a review of active project lists and planning documents from the County and the CEQAnet website.

- **Hudson Ranch Power I:** Currently in operation adjacent to the Project site on the east. This facility produces geothermal power.
- **Hell's Kitchen Geothermal Power and Lithium Extraction Project:** Hell's Kitchen PowerCo 1, LLC, is proposing Hell's Kitchen PowerCo 1 (HKP1), and Hell's Kitchen LithiumCo 1, LLC, is proposing the Hell's Kitchen LithiumCo 1 (HKL1). Both HKP1 and HKL1 are subsidiaries of Controlled Thermal Resources (US), Inc. (CTR). HKP1 involves the development of a geothermal power plant that would produce up to 49.9 MW net of geothermal power. HKL1 proposes to develop mineral extraction and processing facilities capable of producing Li hydroxide, silica, bulk sulfide, and polymetallic products for commercial sale. The development area for this project would be approximately 65 acres. This project is approximately 0.2 mile west of the Project site.
- **Morton Bay Geothermal Project (MBGP):** Located on 63 acres of a 160-acre parcel, MBGP would have a maximum continuous rating of approximately 157 MW (gross), with an expected net output of roughly 140 MW. The MBGP is approximately 0.6 mile southwest of the Project site.
- **Black Rock Geothermal Project (BRGP):** BRGP is proposed to be developed by Black Rock Geothermal, LLC, an indirect, wholly owned subsidiary of BHE Renewables, LLC (BHER). The project is on 55 acres of a 160-acre parcel. BRGP would have a maximum continuous rating of approximately 87 MW (gross), with an expected net output of roughly 77 MW. The BRGP is approximately 3.7 miles southwest of the Project site.
- **Elmore North Geothermal Project (ENGP):** The ENGP was developed by Elmore North Geothermal, LLC, an indirect, wholly owned subsidiary of BHER. The ENGP generating facility would be on 51 acres of a 140-acre parcel. The ENGP would have a maximum continuous rating of approximately 157 MW (gross), with an expected net output of roughly 140 MW. The ENGP is approximately 2.4 miles southwest of the Project site.
- **McDonald Road Improvements**: To support the Project, but separate from LPO's Proposed Action, improvements would constructed at the junction of McDonald Road and Highway 111 to meet the requirements of the County and Caltrans. Three primary driveways that would serve as access and egress points for the Project site would be constructed on McDonald Road (two driveways for ingress; three driveways for egress). The unpaved portion of McDonald Road between Highway 111 and English Road would be paved. This Project would occur within the Project site and be completed in the first couple of months of Project construction. An emergency entrance to the Project site off Davis Road would serve as an emergency-only access point. The installation of a northbound left-turn pocket and a southbound right-turn lane, prior to the Project's opening, would also occur.

LPO reviewed the identified projects in the region to determine the resources that may be subject to a cumulative impact. The review focused on the resources affected by the Project to identify those that may

be affected by both the Project and other projects in the region. Based on this review, the following resources were evaluated for cumulative impacts:

- Greenhouse gas emissions and climate change
- Socioeconomics and environmental justice
- Transportation
- Noise

The Project, when considered together with the identified projects in the region, would not have the potential to result in significant cumulative impacts on other resources evaluated in this EA because of the geographic location and separation of the projects, the disturbed nature of the project sites, and/or the lack of construction or operational overlap that could result in an incremental impact on a particular resource.

3.11.1 Greenhouse Gas Emissions and Climate Change

The magnitude of the potential annual reductions in gallons of petroleum used would depend on the number of vehicles using the Li produced by the Project, which would produce 20,000 tons per annum of Li at full capacity.

DOE estimates that the Project's Li output can support approximately 618,525 EVs per year. This number of vehicles yields an annual fuel savings amounting to approximately 220.6 million gallons of petroleum.

The annual avoided CO_2 is calculated from the Project's annual fuel consumption savings (220.6 million gallons) multiplied by the U.S. Energy Information Administration (USEIA) CO_2 emission coefficient of 18.73 pounds of CO2/gallon for gasoline (USEIA 2024). Therefore, production of batteries from the Li produced from the project and used in EVs would support a reduction of approximately 2.065 million tons (1.873 million metric tons) of CO_2 per year.

The Project would generate GHG emissions from construction and operations activities. DOE incorporates by reference the Project GHG emissions analysis from Section 4.6.5 of the CEQA Draft EIR (County 2021). The Draft EIR estimates Project construction emissions to be 268.11 metric tonnes/year (averaged over 30 years) and total Project emissions of 16,650.91 metric/tonnes year (construction and operations). Although the Project would produce 16,650 metric tonnes of GHG through its operation, the production of batteries from the Li produced from the project and used in EVs would support a reduction of approximately 2.065 million tons (1.873 million metric tons) of CO_2 per year, In general, the potential benefits associated with reducing CO_2 emissions would support a reduction in GHG concentrations and reduce the associated climate change impacts (e.g., increases in atmospheric temperature, changes in precipitation, increases in the frequency and intensity of extreme weather events, rising sea levels). Since the Project would support GHG emissions reductions, impacts to GHG emissions and climate change would be beneficial in the long-term.

3.11.2 Noise

Because of the localized nature of noise and the fact that the nearest sensitive receptor to the Project site is a single-family home located more than 1 mile to the north, cumulative noise impacts would be limited to off-site roadway noise impacts.

The Project's potential off-site noise impacts have been calculated by comparing two scenarios: existing year with cumulative projects and existing year with cumulative projects plus Project operations (Table 19).

Table 18: Cumulative Projects with Project Operational Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor[a]			Increase Threshold[b]
		Existing plus Cumulative Project Conditions	Existing Cumulative Project Conditions with Project Operations	Project Contribution	
Highway 111	North of Hazard Road	60.9	61.0	0.1	+2 dBA
Highway 111	South of McDonald Road	62.7	62.8	0.1	+2 dBA
Highway 111	South of Sinclair Road	64.9	65.0	0.1	+1 dBA

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108
a. Noise levels do not take into account existing noise barriers.
b. Increase Threshold obtained from the FTA's allowable noise impact exposures (FTA 2006).

When combined with the noise impacts of cumulative projects, the Project's permanent increase in noise at nearby homes from additional vehicular traffic during operation would not exceed the FTA's allowable increase thresholds. Therefore, operation of the Project would not result in a substantial permanent increase in ambient noise levels in the existing year with cumulative projects. Cumulative impacts would be less than significant.

3.11.3 Socioeconomics and Environmental Justice

Construction and operation of the Project, along with construction and operation of the identified projects in the region, would result in an increase in the number of temporary, or short-term, construction workers and long-term employment. The increase in both short- and long-term jobs in the region would result in a beneficial socioeconomic impact. The Applicant expects to use available workers from the local and regional area. The Project would not involve the development of any new roadways, new water systems, or sewers. Therefore, the Project would not facilitate additional development into outlying areas. Because the Project and the other projects in the region would be subject to regional planning and coordination with the County, the communities in the Imperial Valley, and Caltrans, significant cumulative impacts on existing infrastructure and services (e.g., roads, schools, fire department, police force) resulting from population migration to the area are not anticipated.

The minority-population and the poverty-level averages in the region, including Imperial County, are higher than the state averages. Although Li and mineral production would not occur near a residential community, the associated production work would provide job opportunities for local workers. Therefore, cumulative impacts would not disproportionally affect EJ communities in the Project area.

3.11.4 Transportation

To account for potential cumulative traffic increases, a 10 percent growth factor was applied to existing traffic volumes at study area intersections and along various segments. This 10 percent growth would conservatively represent the amount of traffic that may use the road system in the Project vicinity, given the future development projects that are being planned for Imperial County.

Table 20 summarizes intersection operations throughout the Project study area during the operational phase of the Project with the addition of traffic from cumulative growth. As shown, all intersections in the study area would continue to operate at LOS B or better during the AM and PM peak hours.

Table 19: Cumulative-plus-Project Intersection Operations

Intersection	Control Type[c]	Peak Hour	Cumulative Plus Project		Change Delay[b]	Impact Type
			Delay[a]	LOS		
1. Highway 111/Hazard Road	TWSC	AM	0.0	A	0.0	None
		PM	0.0	A	0.0	
2. Highway 111/McDonald Road	TWSC	AM	9.2	A	0.3	None
		PM	9.3	A	0.4	
3. English Road/McDonald Road	TWSC	AM	9.3	A	0.3	None
		PM	0.0	A	0.0	
4. English Road/Sinclair Road	TWSC	AM	0.7	A	0.0	None
		PM	1.0	A	0.0	
5. Highway 111/Sinclair Road	TWSC	AM	10.7	B	0.5	None
		PM	10.1	B	0.5	

Notes:
[a] Average delay expressed in seconds per vehicle
[b] Denotes an increase in delay due to Project
[c] Minor street with stop-controlled intersection; left-turn delay reported
TWSC = two-way stop-controlled intersection

Table 21 summarizes street segment operations throughout the Project study area during the operational phase of the Project with the addition of traffic from cumulative growth. This table shows that all street segments in the study area would continue to operate at LOS A on a daily basis.

The Project, in conjunction with the identified projects in the region, would lead to an incremental increase in overall traffic, especially during the road paving on McDonald Road, which could temporarily affect all users of McDonald Road in the vicinity of the Project. However, traffic controls or temporary detours would be in place, and emergency responders would be informed of traffic conditions as part of the Emergency Operations Plan required for the Project. Direct impacts on traffic would last for a maximum of 3 months. Because of the temporary nature of the anticipated cumulative impacts on McDonald Road, no significant adverse cumulative effects on the region's overall transportation network are anticipated.

Table 20: Cumulative-plus-Construction Street Segment Operations

Street Segment		Capacity (LOS E)[b]	Cumulative Plus Project			Impact Type
			ADT[c]	LOS[d]	V/C[e]	
Highway 111	North of Hazard Road	22,700	4,204	A	0.185	None
	Hazard Road to McDonald Road	22,700	4,204	A	0.185	None
	McDonald Road to Sinclair Road	22,700	4,330	A	0.191	None
	South of Sinclair Road	22,700	7,195	A	0.317	None
McDonald Road	Project Site to English Road	1,500	476	A	0.317	None
	English Road to Highway 111	1,500	416	A	0.277	None
Sinclair Road	English Road to Highway 111	1,500	357	A	0.238	None

Notes:
[a] County roadway classification
[b] Roadway capacity corresponding to LOS E from County Standard Street Classification, average daily vehicle trips table
[c] Average daily traffic volumes
[d] Level of service
[e] Volume/capacity ratio

4. DRAFT FINDING

Based on this EA, DOE has determined that providing a federal loan to ESM to construct and operate a commercial Li production facility in Calipatria, Imperial County, California, will not have a significant effect on the human environment. Preparation of an environmental impact statement is therefore not required, and DOE is issuing this Finding of No Significant Impact.

This Finding of No Significant Impact should not be construed as a final decision about issuance of a federal loan.

_____ _____

Todd Stribley Date
NEPA Compliance Officer
DOE Loan Programs Office

5. LIST OF AGENCIES CONTACTED

5.1 Federal Agencies

- U.S. Fish and Wildlife Service, Colorado Desert Division, Palm Springs Office
- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Bureau of Land Management, El Centro Field Office
- U.S. Marine Corps Air Station Yuma, Community Planning and Liaison Office
- Naval Air Facility

5.2 State Agencies

- California Air Resources Board
- California Department of Conservation, Geologic Energy Management Division
- California Highway Patrol
- California Office of Historic Preservation or State Historic Preservation Office
- California Regional Water Quality Control Board
- California Resources Agency
- California Department of Transportation, District 11, Planning Division
- California Department of Conservation, Division of Oil, Gas, and Geothermal
- California Department of Fish and Wildlife, Eastern Sierra Inland Desert Region Habitat Conservation
- California Department of Fish and Wildlife, Imperial Wildlife Area, Wister Unit
- Governor's Office of Planning and Research (State Clearinghouse)
- Native American Heritage Commission

5.3 Regional and Local Agencies

- Calipatria Unified School District
- City of Calipatria
- City of Westmorland
- Imperial County Air Pollution Control District
- Imperial County Environmental Health Services
- Imperial County Executive Office
- Imperial County Fire Department
- Imperial County Office of Education
- Imperial County Public Health
- Imperial County Public Works Department
- Imperial County Sheriff's Office

- Imperial Irrigation District Energy

5.4 Native American Tribes

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Barona Group of the Capitan Grande
- Campo Band of Mission Indians
- Chemehuevi Reservation
- Cocopah Indian Tribe
- Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California
- Ewiiaapaayp Band of Kumeyaay Indians, California
- Iipay Nation of Santa Ysabel
- Inaja-Cosmit Band of Indians
- Jamul Indian Village
- Kwaaymii Laguna Band of Indians (non-federally recognized)
- La Posta Band of Mission Indians
- Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation, California
- Mesa Grande Band of Diegueno Mission Indians
- Quechan Tribe of the Fort Yuma Indian Reservation, California and Arizona
- San Pasqual Band of Diegueno Mission Indians of California
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Sycuan Band of the Kumeyaay Nation
- Torres Martinez Desert Cahuilla Indians
- Twenty-Nine Palms Band of Mission Indians of California
- Viejas Band of Kumeyaay Indians

6. LIST OF PREPARERS

6.1 Department of Energy

Name	Project Role	Agency	Qualifications	Years of Experience
Molly Cobbs	NEPA Document Manager	U.S. DOE	B.S., Environmental Studies; B.A., Political Science	21
Anna Eskridge, Ph.D.	Deputy Director, Environmental Compliance	U.S. DOE	Ph.D., Policy Studies; M.A., Geography; B.S., Environmental and Natural Resources	16
Robert Lanza, P.E.	Reviewer, Chemical Engineer	U.S. DOE (contractor)	B.S., Chemical Engineering; M.Eng., Chemical Engineering	40

6.2 Applicant

Name	Project Role	Affiliation	Qualifications	Years of Experience
Thomas Strand	NEPA Project Manager	Chambers Group	M.S., Watershed Science; B.A., Geography	10
Christie Robinson	Project Planner	Chambers Group	B.A. Aquatic Biology	25
Jurg Heuberger	Permitting and Compliance	ESM		
Derek Benson	Chief Operating Officer	ESM		
Nathan Featherstone	Project Manager	ESM		
Carmen Rene	Chief Financing Officer	ESM		

7. REFERENCES

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7.2 Personal Communications

Linscott, Law & Greenspan. 2024—memorandum to Thomas Strand regarding Hudson Ranch Mineral Recovery. Imperial County, California.

Olmos, Erik. Chambers Group, Inc. April 5, 2024a—letter to Jurg Heuberger, EnergySource, regarding USFWS IPaC analysis letter report for the ATLiS project located in the city of Calipatria, California.

Olmos, Erik. Chambers Group, Inc. March 28, 2024b—letter to Jurg Heuberger, EnergySource, regarding summary of wetland determination for the duck ponds on the ATLiS project located in the city of Calipatria, California.

U.S. Fish and Wildlife Service (USFWS). May 30, 2024b—email to Molly Cobbs, DOE LPO, regarding species occurrence and avoidance and minimization measures for the ATLiS project.

APPENDIX A AGENCY AND TRIBAL CORRESPONDENCE

Copies of the items shown in bold in Tables A-1 and A-2 are included in this appendix.

Table A-1. Federal, State, County, and Local Agencies Contacted

Organization/Agency	Date and Summary of Contact
U.S. Fish and Wildlife Service, Colorado Desert Division, Palm Springs Office	03/22/2024: Official species list received 05/01/2024: LPO makes initial contact with USFWS 05/10/2024: Technical assistance call, LPO and USFWS 05/16/2024: LPO follow-up regarding additional data; biologist assigned 05/29/2024: LPO follow-up regarding additional data; biologist assigned 05/30/2024: USFWS response by email providing species occurrence map and confirmation that the listed western snowy plover is a distinct population segment, defined as individuals within 50 miles of the Pacific Ocean **11/05/2024: Official species list received (refreshed list to confirm no changes in species listing)**
U.S. Department of Agriculture, Natural Resources Conservation Service	03/08/2024: LPO contacts NRCS regarding Farmland Protection Policy Act review 03/29/2024: LPO submits initial portions of AD-1006 to NRCS 04/17/2024: LPO follow-up regarding AD-1006 submitted on 03/29/2024 04/18/2024: NRCS reviews AD-1006 and returns to LPO 4/17/2024: LPO returned completed AD-1006 to NRCS **09/23/2024: LPO and NRCS confirmed minor correction to AD-1006**
U.S. Bureau of Land Management, El Centro Field Office	**03/29/2024: Interested Party NEPA initiation letter delivered by email**
Marine Corps Air Station Yuma, Community Planning and Liaison Office	03/29/2024: cc'ed on Interested Party notification letter
Naval Air Facility	03/29/2024: cc'ed on Interested Party notification letter
Governor's Office of Planning and Research (State Clearinghouse)	**04/08/2024: State initiation letter sent by email**
California Department of Conservation, Geologic Energy Management Division (CalGEM)	03/29/2024: cc'ed on Interested Party notification letter
California Air Resources Board	03/29/2024: cc'ed on Interested Party notification letter
California Highway Patrol	03/29/2024: cc'ed on Interested Party notification letter
California Regional Water Quality Control Board	03/29/2024: cc'ed on Interested Party notification letter
California Resources Agency	03/29/2024: cc'ed on Interested Party notification letter
California Department of Fish and Wildlife, Eastern Sierra Inland Desert Region Habitat Conservation	03/29/2024: cc'ed on Interested Party notification letter
Division of Oil, Gas, and Geothermal Resources, Southern District	03/29/2024: cc'ed on Interested Party notification letter
Imperial Wildlife Area, Wister Unit	03/29/2024: cc'ed on Interested Party notification letter
Native American Heritage Commission	04/08/2024: Initiation letter sent by email 04/16/2024: Sacred Lands File search and contact list requested 05/13/2024: LPO follow-up re: sacred lands and contact list request 05/22/2024: LPO follow-up re: sacred lands and contact list request 05/22/2024: NAHC response received

Organization/Agency	Date and Summary of Contact
California Office of Historic Preservation (OHP) or State Historic Preservation Office	05/23/2024: National Historic Preservation Act Section 106 consultation package submitted 06/05/2024: OHP coordination with LPO re: Section 106 submittal 06/10/2024: OHP coordination with LPO re: Section 106 submittal **06/11/2024: OHP Section 106 findings concurrence letter issued** 06/12/2024: LPO confirmed receipt of OHP response
Caltrans, District 11, Planning Division	03/29/2024: cc'ed on Interested Party notification letter
Air Pollution Control District (APCD)	03/29/2024: cc'ed on Interested Party notification letter
Calipatria Unified School District	03/29/2024: cc'ed on Interested Party notification letter
City of Calipatria	03/29/2024: cc'ed on Interested Party notification letter
City of Westmorland	03/29/2024: cc'ed on Interested Party notification letter
Imperial County Sheriff's Office	03/29/2024: cc'ed on Interested Party notification letter
Imperial County Environmental Health Services	03/29/2024: cc'ed on Interested Party notification letter
Imperial County Executive Office	03/29/2024: cc'ed on Interested Party notification letter
Imperial County Fire Department	03/29/2024: cc'ed on Interested Party notification letter
Imperial County Office of Education	03/29/2024: cc'ed on Interested Party notification letter
Imperial County Public Health	03/29/2024: cc'ed on Interested Party notification letter
Imperial Irrigation District Energy	03/29/2024: cc'ed on Interested Party notification letter
Public Works Department	03/29/2024: cc'ed on Interested Party notification letter

Table A-2. Native American Tribes Contacted

Tribal Government	Date and Summary of Contact
Agua Caliente Band of Cahuilla Indians	05/22/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt; left voicemail
Augustine Band of Cahuilla Mission Indians	**04/01/2024: Tribal initiation letter sent by email** 04/24/2024: LPO called to confirm receipt 05/03/2024: LPO called to confirm receipt
Barona Group of the Capitan Grande	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt
Campo Band of Mission Indians	04/05/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt
Chemehuevi Reservation	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt 04/25/2024: Comments received from tribe 06/04/2024: LPO sent Section 106 package to tribe 06/17/2024: LPO sent OHP concurrence letter to tribe
Cocopah Indian Tribe	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt 05/03/2024: LPO called to confirm receipt; left voicemail 05/09/2024: LPO called to confirm receipt; left voicemail

Tribal Government	Date and Summary of Contact
Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt; left voicemail 05/03/2024: LPO called to confirm receipt; tribe requested hardcopy 05/13/2024: LPO sent hardcopy by UPS 05/15/2024: Delivery confirmation
Ewiiaapaayp Band of Kumeyaay Indians, California	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt; voicemail box full 05/03/2024: LPO called to confirm receipt; voicemail box full 05/09/2024: LPO called to confirm receipt; voicemail box full
Iipay Nation of Santa Ysabel	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt; left voicemail
Inaja-Cosmit Band of Indians	05/22/2024: Tribe identified by NAHC; no email provided 05/23/2024: LPO called to request contact info; voicemail box full 05/29/2024: LPO called to request contact info; voicemail box full
Jamul Indian Village	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt; left voicemail
Kwaaymii Laguna Band of Indians (non-federally recognized)	05/23/2024: LPO called; left voicemail 05/29/2024: LPO called; left voicemail 06/13/2024: Interested party letter sent by USPS certified mail 06/17/2024: Mail receipt confirmed
La Posta Band of Mission Indians	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt; left message with secretary 05/03/2024: LPO called to confirm receipt; left voicemail 05/29/2024: Receipt confirmed
Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation, California	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt; left voicemail 05/03/2024: LPO called to confirm receipt; left voicemail 05/23/2024: LPO called to confirm receipt; left voicemail
Mesa Grande Band of Diegueno Mission Indians	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt 06/04/2024: LPO sent Section 106 submittal to tribe 06/17/2024: LPO sent OHP concurrence to tribe
Quechan Tribe of the Fort Yuma Indian Reservation, California and Arizona	04/01/2024: Tribal initiation letter sent by email 04/24/2024: LPO called to confirm receipt; line busy 05/03/2024: LPO called to confirm receipt; line busy 05/29/2024: LPO called to confirm receipt; line busy
San Pasqual Band of Diegueno Mission Indians of California	04/01/2024: Tribal initiation letter sent by email 04/26/2024: LPO called to confirm receipt; could not leave voicemail 05/03/2024: LPO called to confirm receipt; left voicemail 05/08/2024: Tribe called LPO to state no tribal comments or concerns 05/23/2024: LPO re-sent tribal initiation letter by email
Santa Rosa Band of Cahuilla Indians	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt; left voicemail
Soboba Band of Luiseno Indians	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt; left voicemail
Sycuan Band of the Kumeyaay Nation	04/09/2024: Tribal initiation letter sent by email 04/26/2024: LPO called to confirm receipt; left voicemail

Tribal Government	Date and Summary of Contact
	05/03/2024: LPO called to confirm receipt; unable to confirm—tribe requested call-back 05/23/2024: LPO called to confirm receipt; left voicemail
Torres Martinez Desert Cahuilla Indians	04/01/2024: Tribal initiation letter sent by email 04/26/2024: LPO called to confirm receipt 05/03/2024: LPO called to confirm receipt; left voicemail 05/23/2024: LPO called to confirm receipt; left voicemail
Twenty-Nine Palms Band of Mission Indians of California	04/01/2024: Tribal initiation letter sent by email 04/26/2024: LPO called to confirm receipt 05/03/2024: LPO called to confirm receipt; left voicemail 05/23/2024: LPO called to confirm receipt; tribe requested letter to be re-sent—LPO re-sent letter to tribe
Viejas Band of Kumeyaay Indians	05/23/2024: Tribal initiation letter sent by email 06/03/2024: LPO called to confirm receipt; left voicemail

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To: 11/05/2024 21:47:39 UTC
Project Code: 2024-0067080
Project Name: ATLiS

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

https://www.fws.gov/service/esa-section-7-consultation

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2024-0067080
Project Name: ATLiS
Project Type: Commercial Development
Project Description: Development and operation of a mineral extraction plant using geothermal brine

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.201986950000006,-115.57551203472096,14z

Counties: Imperial County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yuma Ridgway's Rail *Rallus obsoletus yumanensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3505	Endangered

FISHES

NAME	STATUS
Desert Pupfish *Cyprinodon macularius* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7003	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Erik Olmos
Address: 9620 Chesapeake Dr
Address Line 2: Suite 202
City: San Diego
State: CA
Zip: 92123
Email eolmos@chambersgroupinc.com
Phone: 8585412800

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Energy

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 03/29/2024	
Name of Project Project ATLiS (ESM)		Federal Agency Involved U.S. Dept of Energy	
Proposed Land Use Industrial		County and State Imperial County, California	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 3/29/2024	Person Completing Form: P. Fahnestock
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 456,089	Average Farm Size 1,317
Major Crop(s) Vegetables & Melon Crops, Livesto	Farmable Land In Govt. Jurisdiction Acres: 972,99% 33.5	Amount of Farmland As Defined in FPPA Acres: 940,33% 32.4	
Name of Land Evaluation System Used Storie	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 4/17/2024	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	70.8			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	70.8			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0			
B. Total Acres Statewide Important or Local Important Farmland	70.8			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0072			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	84			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	38			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	9			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	15			
6. Distance To Urban Support Services	(15)	15			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	0			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	54	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	38	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	54	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	92	0	0	0

Site Selected: A	Date Of Selection 05/07/2024	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

Project ATLiS is dependent on connection to the geothermal power plant adjacent to Site A. Site A does not exceed the 160-point threshold that would prompt for review of alternative sites.

Name of Federal agency representative completing this form: Department of Energy, LP-30	Date: 09/24/2024

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Department of Energy
Washington, DC 20585

March 29, 2024

SUBJECT: Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan to Energy Source Minerals LLC for Project ATLiS in Calipatria, California

Dear Interested Party,

Under Section 136 of the Energy Independence and Security Act of 2007 (Act), which established the Advanced Technology Vehicles Manufacturing Loan (ATVM) program, the U.S. Department of Energy (DOE) is evaluating whether to provide a Federal loan to Energy Source Minerals LLC (ESM) to support the construction and initial operations of a new manufacturing facility for lithium hydroxide monohydrate (LHM) from geothermal brine in Imperial County, California. Project ATLiS (Project) will increase domestic production of LHM for automotive applications like electric vehicles that reduce air emissions such as ozone precursors, particulate matter, and greenhouse gases.

The ATVM program was established to provide loans to automobile and automobile parts manufacturers for the cost of re-equipping, expanding, or establishing manufacturing facilities in the United States to produce advanced technology vehicles or qualified components. DOE has determined that the construction of an LHM manufacturing facility, as proposed by ESM, is consistent with the goals of the Act. DOE's financial support of ESM's Project would help bring approximately 20,000 metric tonnes per annum of battery quality LHM to market, thereby reducing overall national emissions of air pollutants and human-caused greenhouse gases, consistent with the primary goal of the ATVM program.

DOE is using the National Environmental Policy Act (NEPA) process to assist in determining whether to issue a loan to ESM to support the Project. A decision to prepare an EA was made in accordance with the requirements of NEPA, the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The Project includes the construction and operations of a new LHM from geothermal brine manufacturing facility at 477 McDonald Road, Calipatria, California 92233 (Imperial County, Attachments 1 and 2). The project site consists of 80 acres adjacent to the western and southern boundaries of the existing John L. Featherstone Geothermal Plant (Featherstone Plant). The Featherstone Plant will supply feedstock brine for the Project. The facility will consist of approximately 730,000 square feet of processing, operations, and warehouse buildings. With site roads (ingress/egress), parking, and ancillary facilities, the total development area is anticipated to be approximately 25 acres within the 80-acre site. Off-site construction activities will include installing water inlet piping and cistern for construction water off IID N-lateral, improvements to McDonald Road, and new turn lanes on California State Route 111.

The DOE NEPA regulations provide for the notification of host states of NEPA determinations and for the opportunity for host states to review EAs prior to DOE approval. This process is intended to improve coordination and to facilitate early and open communication. When it becomes available, DOE will provide the draft EA to the State of California Clearinghouse and other interested parties for review and comment.

On September 22, 2021, via Resolution No. 2021-0040, the Imperial County Planning Commission approved and certified the California Environmental Quality Act Final Environmental Impact Report (EIR) for the Project (SCH #2020120143).

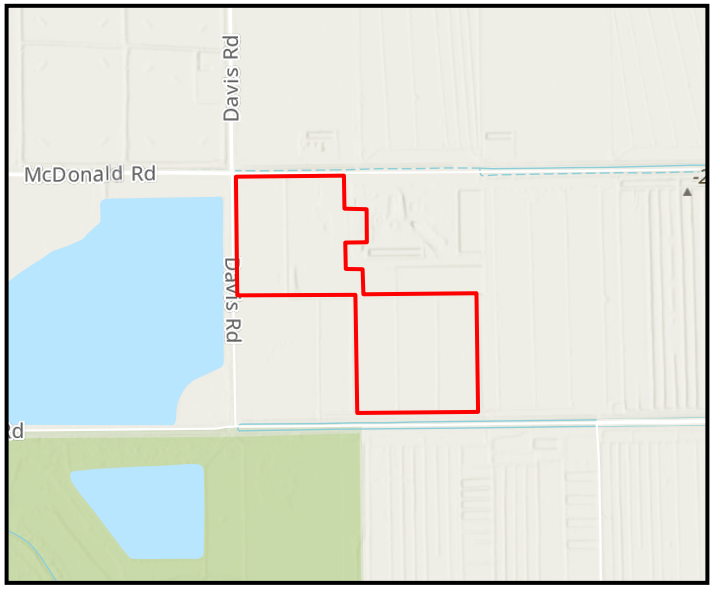
If you or your staff would like to receive further information concerning this project or DOE's NEPA process for ATVM loans, please contact me in the DOE Loan Programs Office by email at LPO_Environmental@hq.doe.gov.

Respectfully,

Molly R. Cobbs
NEPA Document Manager
Loan Programs Office

Attachments

Figure 1 Project Location and Vicinity Map
Figure 2 Project Site Map



Project Site Boundary

N

0 200 400 800

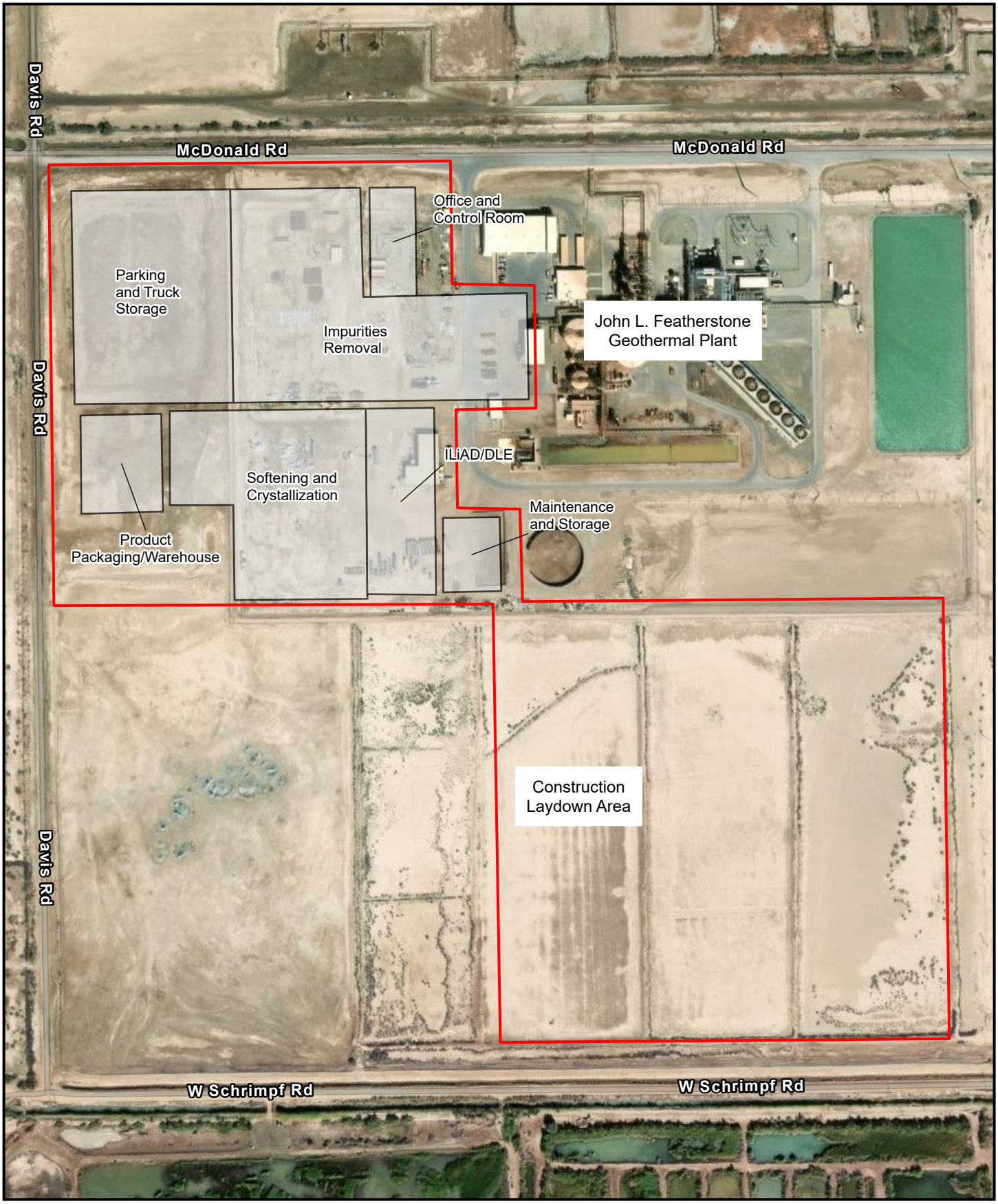
Feet

Imagery Date: 09/23/2022

Figure 1
ATLis NEPA
Project Location and Vicinity

Name: 21442 ATLis NEPA.Mxd
Print Date: 3/14/2024 10:16 AM Author: pcarlos

CHAMBERS GROUP



Project Site Boundary

Project Features

N

0 150 300 600

Feet

Imagery Date: 09/23/2022

Figure 2
ATLis NEPA
Project Site

Name: 21442 ATLis NEPA.Mxd
Print Date: 3/14/2024 10:10 AM Author: pcarlos

CHAMBERS GROUP

Department of Energy
Washington, DC 20585

March 29, 2024

Christine Asiata Rodriguez
Manager, California State Clearinghouse
Governor's Office of Planning and Research
1400 10th Street
Sacramento, CA 95814

SUBJECT: Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan to Energy Source Minerals LLC for Project ATLiS in Calipatria, California

Dear Christine Asiata Rodriguez,

Under Section 136 of the Energy Independence and Security Act of 2007 (Act), which established the Advanced Technology Vehicles Manufacturing Loan (ATVM) program, the U.S. Department of Energy (DOE) is evaluating whether to provide a Federal loan to Energy Source Minerals LLC (ESM) to support the construction and initial operations of a new manufacturing facility for lithium hydroxide monohydrate (LHM) from geothermal brine in Imperial County, California. Project ATLiS (Project) will increase domestic production of LHM for automotive applications like electric vehicles that reduce air emissions such as ozone precursors, particulate matter, and greenhouse gases.

The ATVM program was established to provide loans to automobile and automobile parts manufacturers for the cost of re-equipping, expanding, or establishing manufacturing facilities in the United States to produce advanced technology vehicles or qualified components. DOE has determined that the construction of an LHM manufacturing facility, as proposed by ESM, is consistent with the goals of the Act. DOE's financial support of ESM's Project would help bring approximately 20,000 metric tonnes per annum of battery quality LHM to market, thereby reducing overall national emissions of air pollutants and human-caused greenhouse gases, consistent with the primary goal of the ATVM program.

DOE is using the National Environmental Policy Act (NEPA) process to assist in determining whether to issue a loan to ESM to support the Project. A decision to prepare an EA was made in accordance with the requirements of NEPA, the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The Project includes the construction and operations of a new LHM from geothermal brine manufacturing facility at 477 McDonald Road, Calipatria, California 92233 (Imperial County, Attachments 1 and 2). The project site consists of 80 acres adjacent to the western and southern boundaries of the existing John L. Featherstone Geothermal Plant (Featherstone Plant). The

Featherstone Plant will supply feedstock brine for the Project. The facility will consist of approximately 730,000 square feet of processing, operations, and warehouse buildings. With site roads (ingress/egress), parking, and ancillary facilities, the total development area is anticipated to be approximately 25 acres within the 80-acre site. Off-site construction activities will include installing water inlet piping and cistern for construction water off IID N-lateral, improvements to McDonald Road, and new turn lanes on California State Route 111.

The DOE NEPA regulations provide for the notification of host states of NEPA determinations and for the opportunity for host states to review EAs prior to DOE approval. This process is intended to improve coordination and to facilitate early and open communication. DOE will provide the draft EA to you for your review and comment when it becomes available.

On September 22, 2021, via Resolution No. 2021-0040, the Imperial County Planning Commission approved and certified the California Environmental Quality Act Final Environmental Impact Report (EIR) for the Project (SCH #2020120143).

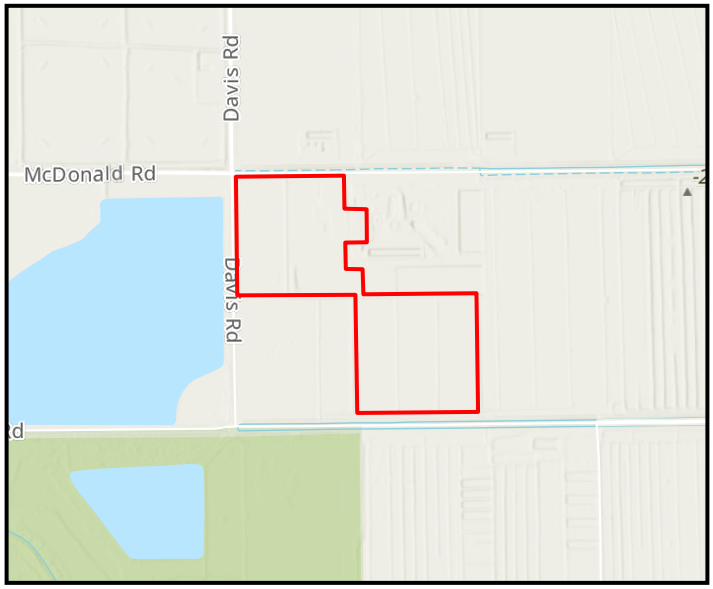
If you or your staff would like to receive further information concerning this project or DOE's NEPA process for ATVM loans, please contact me in the DOE Loan Programs Office by email at LPO_Environmental@hq.doe.gov.

Respectfully,

Molly R. Cobbs
NEPA Document Manager
Loan Programs Office

Attachments

Figure 1 Project Location and Vicinity Map
Figure 2 Project Site Map



Project Site Boundary

N

0 200 400 800

Feet

Imagery Date: 09/23/2022

Figure 1
ATLis NEPA
Project Location and Vicinity

Name: 21442 ATLis NEPA.Mxd
Print Date: 3/14/2024 10:16 AM Author: pcarlos

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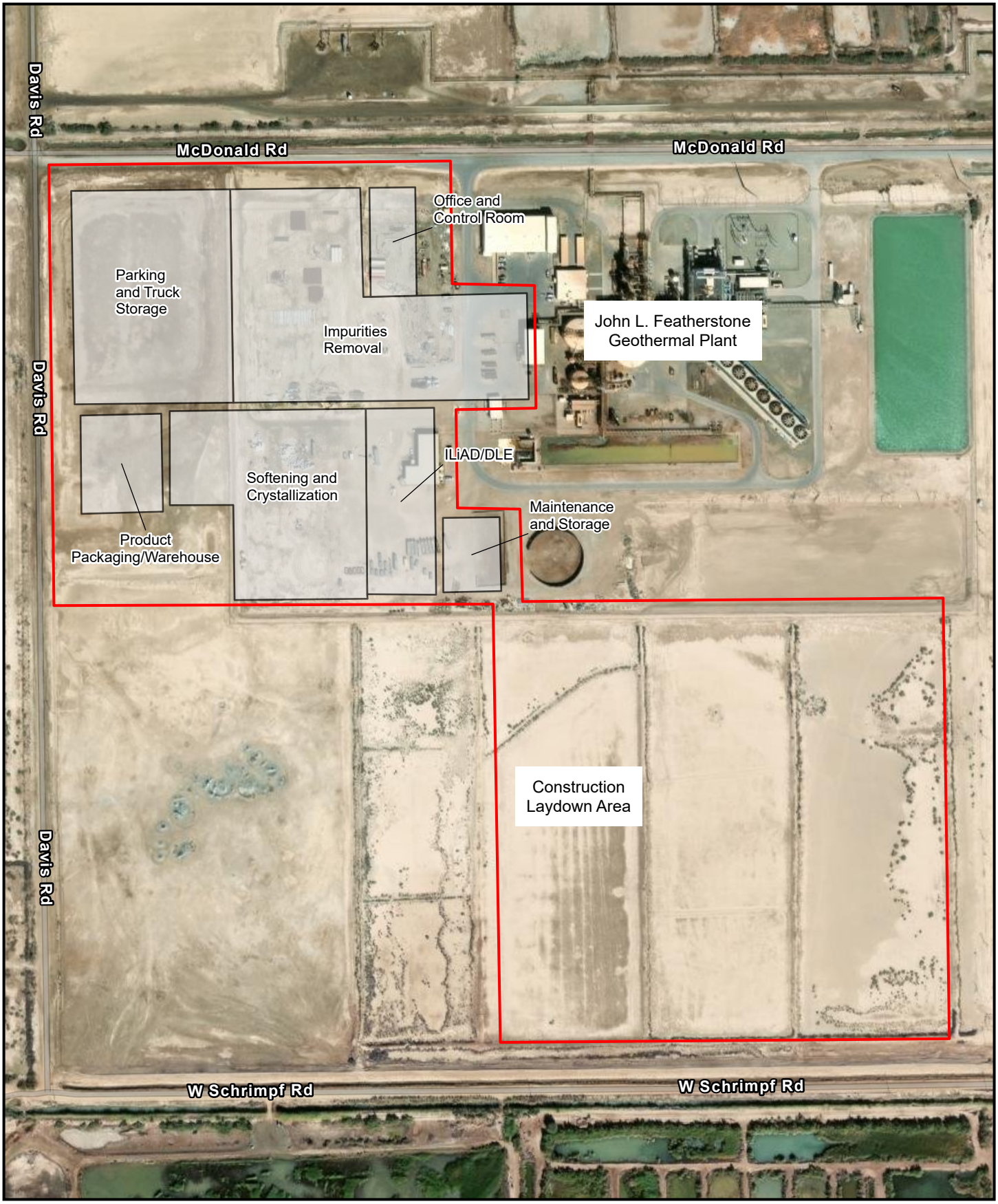

Project Site Boundary

Project Features

N

0 150 300 600

Feet

Imagery Date: 09/23/2022

Figure 2
ATLis NEPA
Project Site

Name: 21442 ATLis NEPA.Mxd
Print Date: 3/14/2024 10:10 AM Author: pcarlos

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State of California • Natural Resources Agency
Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Armando Quintero, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

June 11, 2024

Reply in Reference to: DOE_2024_0523_001

Molly Cobbs
NEPA Document Manager
Loan Programs Office
Department of Energy
Washington, DC 20585

VIA ELECTRONIC MAIL

Re: Section 106 Consultation for ATLiS Project, 477 West McDonald Road, Calipatria, Imperial County

Dear Ms. Cobbs:

The United States Department of Energy (DOE) is initiating consultation with the State Historic Preservation Officer (SHPO) regarding its effort to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR Part 800. Under Title XVII of the Energy Policy Act of 2005, the DOE Loan Programs Office "is evaluating whether to provide a Federal loan guarantee to Energy Source Minerals LLC."

The DOE are proposing to provide funding to "support the construction and initial operations of a new manufacturing facility for lithium hydroxide monohydrate . . . from geothermal brine." Project activities include construction and installation of extensive built environment infrastructure, storm water retention systems, fencing and laydown areas on a 71-acre parcel. A detailed project description may be found in the DOE's supporting documentation.

A pedestrian survey and records search of the approximately 1,115 acre APE resulted in the identification of CA-IMP-13448 (P-13-018705), an historic-period machine-made impoundment, CA-IMP-13449 (P-13-018706), an "historic-period trash scatter and four, north-south oriented, linear, earthen ponds, or freshwater impoundments that appear to have been constructed between 1968 and 1978," "continuations of previously recorded segments of O Lateral (P-13-014278) and N Drain (P-13-014279) that extend into the APE and P-13-003257 described as "Mud Volcanos."

The DOE received comments from the Chemehuevi Indian Tribe expressing interest in consulting with the DOE on this project and from the San Pasqual Band of Diegueño Mission Indians who stated they had no comments or concerns. DOE is actively consulting with all tribes identified by the NAHC and stated in their letter that for "the remainder of the NEPA and Section 106 processes, DOE will continue to notify Tribes of opportunities to engage and/or consult on this Project."

The DOE are requesting the SHPO's concurrence with their NRHP eligibility determinations and a finding of no historic properties affected. After reviewing the DOE's supporting documentation, the SHPO offers the following comments:

1. The SHPO has no objections to the APE definition provided in support of the undertaking.

2. The SHPO concurs that CA-IMP-13448 (P-13-018705), CA-IMP-13449 (P-13-018706), P-13-014278, P-13-014279 and P-13-003257 do not meet NRHP individual eligibility requirements.

3. The SHPO concurs that a finding of no historic properties affected is appropriate. Be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, the DOE may have future responsibilities for this undertaking under 36 CFR Part 800.

This letter is being sent in electronic format only. Please confirm receipt of this letter and notify Ed Carroll, Historian II, at Ed.Carroll@parks.ca.gov or (916) 503-8466 if there are any questions or to request a hard copy of this letter.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Department of Energy
Washington, DC 20585

April 1, 2024

Chairperson Amanda Augustine
Augustine Band of Cahuilla Mission Indians
84-0001 Avenue 54
Coachella, CA 92236

SUBJECT: U.S. Department of Energy's Proposed Federal Loan to Energy Source Minerals LLC for Project ATLiS in Calipatria, California; NEPA and NHPA Invitation to Consult

Dear Chairperson Augustine:

The U.S. Department of Energy (DOE) is preparing an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to determine whether to issue a Federal loan to Energy Source Minerals LLC (ESM) to support the construction and initial operations of a new manufacturing facility for lithium hydroxide monohydrate (LHM) from geothermal brine in Imperial County, California. DOE has determined that issuance of this loan constitutes an undertaking subject to Section 106 of the National Historic Preservation Act (NHPA). Therefore, as a part of the environmental review process, DOE is also conducting a historic resource review in compliance with Section 106 of the NHPA.

The Project includes the construction and operations of a new LHM from geothermal brine manufacturing facility at 477 McDonald Road, Calipatria, California 92233 (Imperial County, Attachments 1 and 2). The project site consists of 80 acres adjacent to the western and southern boundaries of the existing John L. Featherstone Geothermal Plant (Featherstone Plant). The Featherstone Plant will supply feedstock brine for the Project. The facility will consist of approximately 730,000 square feet of processing, operations, and warehouse buildings. With site roads (ingress/egress), parking, and ancillary facilities, the total development area is anticipated to be approximately 25 acres within the 80-acre site. Off-site construction activities will include installing water inlet piping and cistern for construction water off IID N-lateral, improvements to McDonald Road, and new turn lanes on California State Route 111.

This letter is intended to notify you of the proposed federal action/undertaking (a federal loan to ESM), identify if you have an interest in the proposed project site in Calipatria, California, and provide you with the opportunity to comment and/or engage DOE in government-to-government consultation on the proposed undertaking. Any comments or concerns you provide will help ensure that DOE considers Tribal interests and complies with its NEPA and NHPA Section 106 responsibilities.

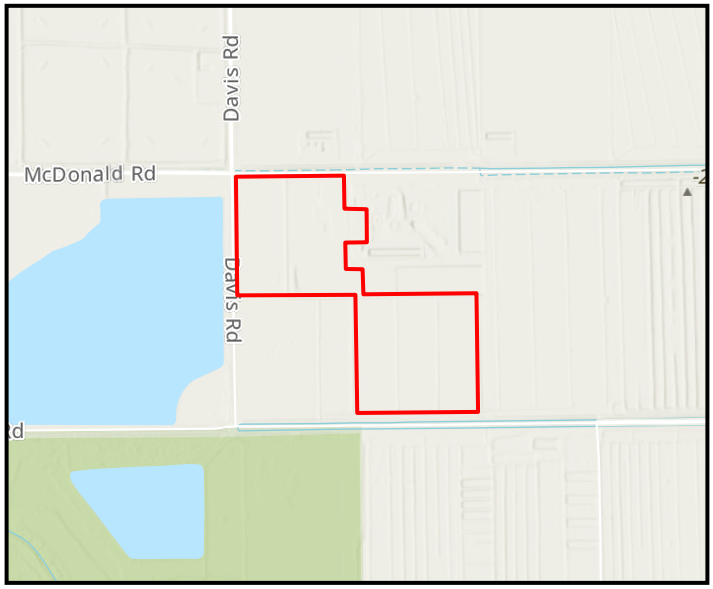
I would greatly appreciate notification if you do or do not have an interest in the project site, as well as any comments or concerns you may have within thirty (30) days of receipt of this letter. If you have an interest in the project site, I will provide you with additional information pursuant to NEPA and the NHPA as it becomes available. Please provide your notification of interest and any comments or concerns by email to LPO_environmental@hq.doe.gov. I can also be reached by telephone at 240-687-7266.

Respectfully,

Molly R. Cobbs
NEPA Document Manager
Loan Programs Office

Cc:
Karen Kupcha, Tribal Administrator

Attachments
Figure 1 Project Location and Vicinity Map
Figure 2 Project Site Map



Project Site Boundary

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Imagery Date: 09/23/2022

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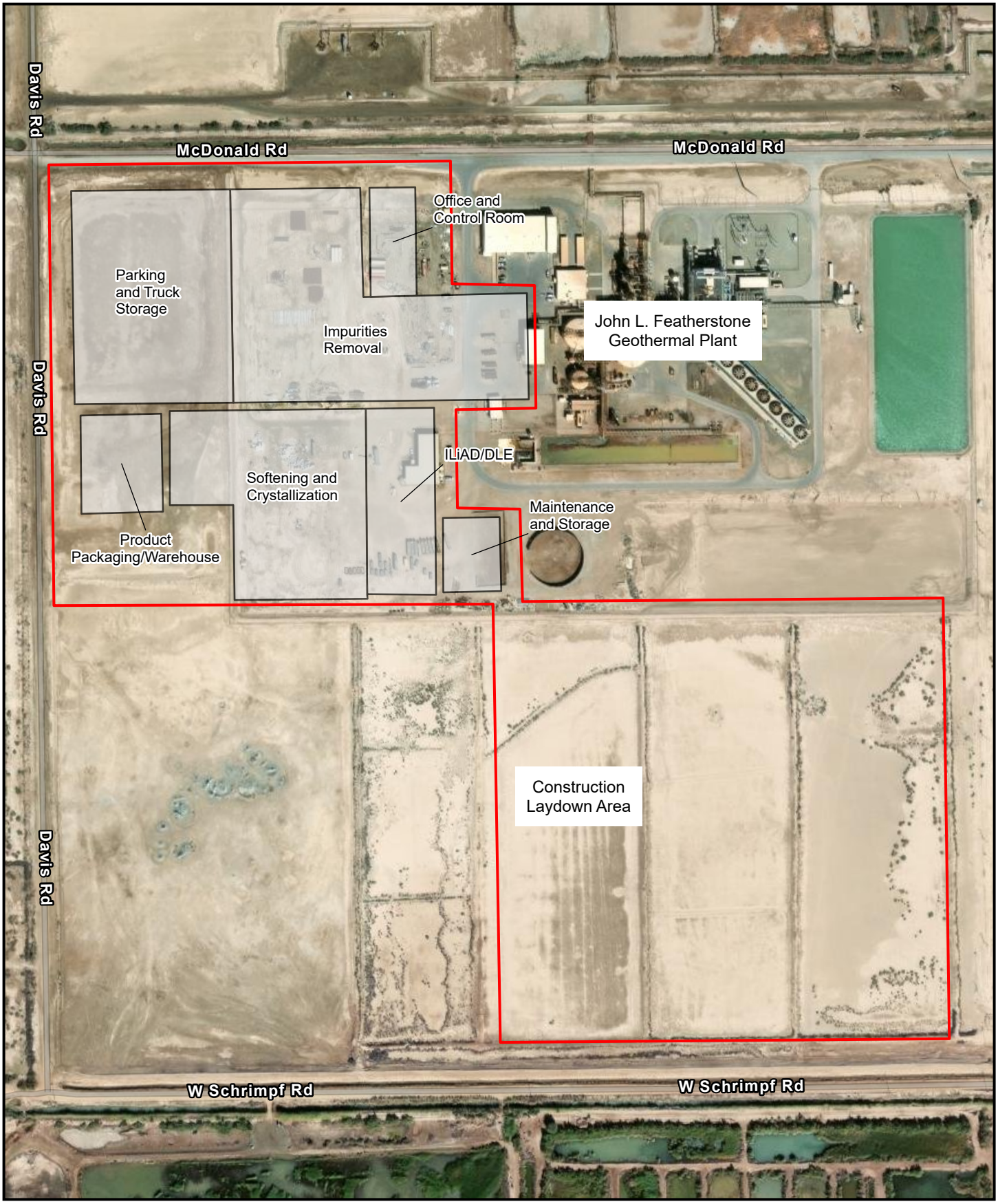

Project Site Boundary

Project Features

N

0 150 300 600

Feet

Imagery Date: 09/23/2022

Figure 2
ATLis NEPA
Project Site

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Print Date: 3/14/2024 10:10 AM Author: pcarlos

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APPENDIX B PERMITS AND APPROVALS

Required Permits and Approvals

Issuing Agency	Permit/Approval	Status	Status Date	Issue Date (Expected)	Notes
Imperial County Planning Department	Minor subdivision approval	Issued	9/30/2021	Unknown	Recording pending
Imperial County Planning Department	Water supply assessment	Issued	9/30/2021	9/30/2021	
Imperial County Planning Department	Conditional use permit (CUP)	Issued	9/30/2021	9/30/2021	
Imperial County Planning Department	Building permit	Pending	Q2	Q2 est.	
Imperial County Planning Department	Grading permit	Issued	12/1/2023	1/1/2024	
California Department of Toxic Substances Control	Hazardous materials permit	Issued	10/1/2021	10/1/2021	
Colorado River Regional Water Quality Control Board	Waste discharge order for brine pond	Application in progress	Q 4 (2025)	Q 1 (2026)	Used in overflow or clean-out situations; catches area sumps and rainwater
California Regional Water Quality Control Board, Colorado River Basin Region	Construction water permits	TBD if needed	TBD	TBD	To be secured by construction contractor, if needed, pending final construction design and methods
Imperial County Air Pollution Control District	Air permit to construct	Issued	1/27/2023	1/27/2023	
Imperial County Air Pollution Control District	Air permit to operate	Application in progress			On completion of plant construction; includes all system and process components (e.g., propane generator)
Imperial County Environmental Health Services	Water treatment plant	pending	Q 3 (2024)	Q 2 (2025)	

APPENDIX C ENVIRONMENTAL COMPLIANCE MEASURES SUMMARY

CEQA EIR Mitigation Monitoring and Reporting Plan

The Final Mitigation Monitoring and Reporting Program (FMMRP), as outlined in the table below, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in the California Environmental Quality Act (CEQA) Final Environmental Impact Report (EIR). The County of Imperial (County) will be the primary agency—but not the only agency—responsible for ensuring implementation of the mitigation measures. The County will monitor the mitigation measures required to be implemented during the operation of the Project.

The FMMRP is presented in Table C-1. The components of the FMMRP are described briefly below.

- **Mitigation Measures**: The mitigation measures are taken from the Draft EIR in the same order that they appear in the Draft EIR. No revisions to mitigation measures or new mitigation measures were necessitated as part of a response to comments.
- **Mitigation Timing**: Identifies at which stage of the Project mitigation must be completed.
- **Monitoring Responsibility**: Identifies the party responsible for mitigation monitoring (i.e., County, Project Applicant, consultant).
- **Compliance Verification Responsibility**: Identifies the department of the County or the state agency responsible for verifying compliance with the mitigation. In some cases, verification will include contact with responsible state and federal agencies.

Table C-1. CEQA Final Mitigation Monitoring and Reporting Program

MM #	Mitigation Measure	Monitoring Responsibility	Timing
Biological Resources			
BIO-1	The Applicant shall ensure that prior to and during construction, onsite occupied burrows shall be avoided during nesting season (February 1 through August 31).	Imperial County Planning and Development Services (ICPDS)/Applicant	Prior to and during construction
BIO-2	The Applicant shall conduct a preconstruction survey within 30 days of groundbreaking activities to identify any burrowing owls on site.	ICPDS/Applicant	Prior to construction; within 30 days of groundbreaking activities
BIO-3	If burrowing owls are found within the Project site, a Burrowing Owl Mitigation Plan must be prepared by a qualified biologist and approved by CDFW prior to any ground-disturbing activities.	ICPDS/Applicant	Prior to ground disturbance
BIO-4	The construction or site manager shall ensure that no construction occurs within 250 feet of the artificial burrows or other active or occupied burrows unless active or occupied burrows are sheltered with hay bales and monitored by a qualified biologist; if this is done, work may occur within 20 feet of active or occupied burrows. If qualified biologists observe burrowing owls' agitation, work in the vicinity will stop. Additional shelter materials can be added until burrowing owls remain calm during construction activities.	ICPDS/Applicant	During construction

MM #	Mitigation Measure	Monitoring Responsibility	Timing
BIO-5	If passive relocation is required, it shall be done by a qualified biologist from September 1 to January 31 and will follow the CDFW Staff Report on Burrowing Owl Mitigation Guidelines (CDFW 2012).	ICPDS/Applicant	During construction
Geology and Soils			
GEO-1	All grading operations and construction shall be conducted in conformance with the recommendations included in the Preliminary Geotechnical Report on the Project site that has been prepared by LandMark Geo-Engineers and Geologists (LandMark) in August 2020. Design, grading, and construction shall be performed in accordance with the recommendations of the project geotechnical consultant as summarized in a final written report, subject to review by the County, prior to commencement of grading activities. A full description of recommendations in the Preliminary Geotechnical Investigation is provided in Section 4: Design Criteria of Appendix E of the Draft EIR.	ICPDS/Applicant	During construction
Paleontological Resources			
PALEO-1	Developer shall retain the services of a qualified paleontologist and require that all initial ground-disturbing work be monitored by someone trained in fossil identification in monitoring contexts. The consultant shall provide a supervising paleontological specialist and a paleontological monitor to be present at the Project construction phase kick-off meeting.	ICPDS/Applicant	Prior to and during ground disturbance
PALEO-2	On the first day of construction and thus prior to any ground disturbance in the Project site, the supervising cultural resources specialist and cultural resources monitor shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to paleontological resources and maintain environmental compliance and will be performed periodically for new personnel coming onto the Project as needed.	ICPDS/Applicant	Prior to ground disturbance
PALEO-3	The contractor shall provide the supervising paleontological resources specialist with a schedule of initial potential ground-disturbing activities. A minimum of 48 hours shall be provided to the consultant of commencement of any initial ground-	ICPDS/Applicant	Prior to and during construction

MM #	Mitigation Measure	Monitoring Responsibility	Timing
	disturbing activities such as vegetation grubbing or clearing, grading, trenching, or mass excavation. A paleontological monitor shall be present on site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the supervising paleontologist, shall observe initial ground-disturbing activities and, as they proceed, make adjustments to the number of monitors as needed to provide adequate observation and oversight. All monitors shall have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor shall maintain a daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project. The supervising paleontologist, paleontological monitor, and the lead contractor and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground-disturbing activities in advance in order to provide appropriate oversight.		
PALEO-4	If paleontological resources are discovered, construction shall be halted within 50 feet of any paleontological finds and shall not resume until a qualified paleontologist can determine the significance of the find and/or the find has been fully investigated, documented, and cleared.	ICPDS/Applicant	During construction
PALEO-5	At the completion of all ground-disturbing activities, the consultant shall prepare a Paleontological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the SCIC, as required.	ICPDS/Applicant	After construction
Transportation			
TRA-1	A Commute Trip Reduction (CTR) program shall be implemented to discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The CTR program could include features such as carpooling encouragement, ride-matching assistance, preferential carpool parking, half-time transportation coordinator, vanpool assistance, and bicycle end-trip facilities (parking, showers, and lockers) and provide employees with assistance in using alternative modes of travel.	ICPDS/Applicant	During operations
TRA-2	The Highway 111/McDonald Road intersection shall be improved to Caltrans' satisfaction prior to the Project's certificate of occupation, including the installation of a northbound left-turn pocket	ICPDS/Applicant	Prior to operations

MM #	Mitigation Measure	Monitoring Responsibility	Timing
	prior to the Project's opening, utilizing one of the four intersection control methods (existing two-way stop, all-way stop, signal, roundabout) which was analyzed in an Intersection Control Evaluation (ICE) analysis.		
Utilities and Service Systems			
UTIL-1	If the IID does not receive its annual 3.1 MAF water apportionment according to the QSA obligations of Colorado River water during the Project's 30-year lifespan, the Applicant shall work with IID to ensure any reduction in water availability can be managed by the Project.	ICPDS/Applicant	During operations

Voluntary Measures

Pre-Construction

Pre-construction measures have been established to minimize impacts on wildlife and air quality. Only the evaluation of the bird collision risk would be completed before construction.

1. Worker Environmental Awareness Program Training: A Worker Environmental Awareness Program will be implemented for construction crews prior to the commencement of Project activities. Training materials and briefings will include, but not be limited to, discussion of the federal and state statutes protecting nesting birds and threatened and endangered species, the consequence of noncompliance with these statutes, identification of the values of wildlife and natural plant communities, hazardous substance spill prevention and containment measures, and review of all required mitigation measures.
2. To avoid the destruction of active nests and protect the reproductive success of birds protected under the Migratory Bird Treaty Act (MBTA), construction activities should take place outside nesting season (typically February 1 to August 31) to the greatest extent practicable. If construction activities occur during nesting season, a preconstruction nesting bird survey should be conducted within the Project area and the selected staging area(s), including a 500-foot buffer, within 7 days prior to the start of construction or staging (including any clearing, grubbing, or grading) or according to the survey timing in Project permits. If an active nest is identified, a minimum avoidance buffer around the active nest should be determined and implemented by a qualified biologist to avoid impacts on the active nest. The buffer should be maintained during physical ground-disturbing activities. Once the qualified biologist has determined that nesting has ceased and the nestlings have fledged and are no longer using the nest, the buffer may be removed. Biological monitoring should be conducted as needed during the nesting season to monitor the status of any active nests, survey for any new nests, and refresh nesting bird surveys after any periods of construction inactivity.
3. Inventory current Yuma Ridgway's rail habitat adjacent to roads used for construction and operations. If rails are within 500 feet of the roadway, the areas will need to be avoided. The biologists will mark the area of no disturbance.
4. If Yuma Ridgway's rail are observed within 500 feet of the Project site or along access roads during the pre-construction surveys or during a construction day, the biological monitor will implement an appropriate buffer around the observed individual(s) and remain in close communication with the construction and management teams until the rails have left the area. The buffer will be clearly

identified and highly visible using stakes and bright flagging. The buffer should be maintained during physical ground-disturbing activities. Once the rails are no longer within 500 feet of the Project site, the avoidance buffer will be removed.

5. Alternate routes would need to be used for travel to the Project site if habitat has been determined present within 500 feet of any route and occupied by Yuma Ridgway's rails.
6. Develop Dust Control Plan per Imperial County Air Pollution Control District (ICAPCD) requirements in Regulation VIII, Fugitive Dust Requirements.

Construction and Operations

Cultural Resources Unanticipated Discovery

If cultural resources, such as human remains, lithics, pottery, or remnants of older construction, are discovered during Project activities, work would cease in the vicinity of the discovery, and the State Historic Preservation Office (SHPO), Office of the State Archaeologist, and all tribes with vested interest in the area would be notified. A qualified archaeologist or a designated representative of the SHPO, Office of the State Archaeologist, or Tribal Historic Preservation Office (THPO) would evaluate any such discovery and, in consultation with the SHPO, implement the appropriate measures before construction activities would resume This measure is relevant during operations if ground disturbance is required.

Fugitive Dust Control Measures

- The Project would follow the requirements of all applicable rules under ICAPCD Regulations VIII, Fugitive Dust Requirements, including, but not limited to:
- Implement Dust Control Plan
- Limit visual dust emissions (VDE) to 20 percent opacity
- Implement temporary stabilization during periods of inactivity
- Mitigate track out/carry out of bulk materials at the site in compliance with Rule 803.
- Ensure unpaved roads and unpaved traffic areas at the site comply with Rule 805.
- Ensure bulk material handling operations at the site comply with Rule 802.
- Ensure transport of bulk material to, from, or around the site complies with Rule 802.
- Ensure haul trucks transporting bulk material to, from, or around the site comply with Rule 802.

Stormwater Pollution Prevention Plan (SWPPP)

The purpose of the SWPPP is to provide general guidelines and identify reasonably expected sources of pollution that may affect the quality of stormwater discharges from the construction site. Guidance is provided for:

- Identification of potential sources of pollution
- Erosion and sediment control measures
- Housekeeping measures
- Post-construction stabilization

Spill Prevention Control and Countermeasures Plan (SPCC)

The purpose of the SPCC Plan is to provide general guidelines that outline procedures for spill prevention and the containment of hazardous materials. The SPCC Plan is included in the Hazardous Materials Business Plan (HMBP) included below. A site-specific SPCC Plan will be developed and provided by the construction contractor. Guidance is provided for:

- Storage and transfer of hazardous materials
- Spill prevention measures and controls
- Storage inspections and personnel training
- Requirements for reporting certain spills

Hazardous Materials Business Plan

The purpose of the HMBP to prevent or minimize damage to public health, safety, and the environment from a release or threatened release of a hazardous material. The HMBP will include procedures for the following:

- Hazardous materials handling, use, and storage
- Emergency response
- SPCC Plan
- Employee training
- Reporting and recordkeeping