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ENVIRONMENTAL ASSESSMENT FOR OAT PIT AGGREGATE
SURFACE MINE AND PROCESSING FACILITY

Imperial County, California

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CHAPTER 1 - Purpose and Need

Introduction

In August 2007 the El Centro Field Office of the Bureau of Land Management (BLM) offered 850,000 tons of sand and gravel from the Oat Pit for sale by competitive bid under the Materials Act of 1946 (530 USC 601, *et seq*). Superior Ready Mix was the winning bidder. Case file CACA-49293 was established for this action.

In the August 2007 bid announcement the criteria for the contract was specified:

Parcel 4. A site (Oat pit) contains 850,000 tons of sand described as 240 acres in the SE ¼ of Section 14 and the NE ¼ of Section 23, T.14 S., R. 16 E., SBBM. A minimum acceptable bid for sand is \$1.25 per ton.

The contract would be for the severance and removal of 850,000 tons of sand and gravel from the subject site for a contract term of 10 years beginning when all required assessments and approvals have been obtained. In addition, the announcement required that the successful bidder provide various review and study documents to the BLM:

A BLM mine and reclamation plan, environmental document and approved California Surface Mine and Reclamation Act reclamation plan are required prior to actual mining of any individual site for the ... Oat mine site[s]. ... Successful bidders will be required to fund any studies necessary to comply with environmental laws and regulations, including agency time and materials.

Superior would be required to obtain all necessary permits and authorizations before being allowed to proceed with the 10-year mining operation to process the 850,000 tons of material, in accordance with the terms and conditions of their contract. Based on field work conducted on the property in support of this environmental assessment of the proposed Oat Pit operations, limitations in access to and availability of material have narrowed the scope of operations to a total of 43.8 acres. Mining operations would be conducted in 7 phases through the term of the contract or until all material has been severed and removed. There is no limit on the rate of production.

Based on past practice when conducting environmental assessments of aggregate operations within the East Highland aggregate area, the following environmental studies and consultation may need to be completed before the BLM would authorize the project:

- National Environmental Policy Act of 1969 (NEPA)
- Cultural Surveys and National Historic Preservation Act (NHPA) compliance
- Native American Consultation
- Endangered Species Act review

The project would need to be coordinated closely with the appropriate local, county, and state agencies/organizations, and Native American Tribes throughout the environmental review process. The Oat Pit is in the process of being permitted through the County of Imperial Planning and Development Department (County of Imperial Conditional Use Plan (CUP)/Reclamation Plan) and would have a designated CA mine identification number upon approval of the reclamation plan by the state lead SMARA agency.

Purpose and Need for Action

Superior Ready Mix's purpose for this project is to produce mineral materials in Imperial County in order to meet infrastructure and commercial needs for aggregate in the market area. The proposed Oat Pit operation would mine a remaining terrace deposit of sand and gravel, avoiding sensitive areas having known cultural and biological resources. Mining this mineral material would supplement the dwindling supply of aggregate in Imperial County. Based on the most recent document available, the 1986 Conservation Plan, the area available for mineral extraction in Imperial County is largely depleted, leaving the region with a questionable aggregate mining future. Encumbrances for non-mineral uses, on both public and private lands in Imperial County, limit access and availability to adequate construction materials necessary to meet local and regional needs.

The need for this action is established by FLPMA in accordance with Mining and Minerals Policy Act of 1970. This purpose of this action is to identify and analyze any new impacts associated with continued activity within the East Highland Canal-Whitlock Road aggregate mining area to consider approval of the manner in which Superior Ready Mix may extract up to 850,000 tons of sand and gravel from the Oat Pit competitive bid area. In evaluating the manner in which extraction may occur, BLM would consider the following objectives:

- Allow extraction of the material in a method and process that reduces potential environmental effects to resources such as air, species, cultural resources, and water.
- Allows the areas that are already mined to return to other uses, such as habitat for species, as soon as possible by concurrent mine site reclamation.
- Comply with Imperial County requirements including the development of a State of California Surface Mine and Reclamation Plan (SMARA) for the site for approval by Imperial County Planning and Development Department.
- Provide access to mineral materials located on public land. It is expected that the Oat Pit site may meet part of the requirements for local highway and county roads departments which utilize approximately 350,000 tons of finished mineral material annually. Rock, sand and gravel are needed for road maintenance and construction projects by the Imperial County Public Works Department. This area provides a unique source of rock, sand and gravel to the local community.

- Maintain public safety. The operator would be expected to conform to truck speed limits on state and county roads and obey safety rules.

Background

The Oat Pit is located in south central Imperial County, approximately eight miles east of Holtville California, and is legally described as the southeast ¼ of section 14, and northeast ¼ of section 23, all within township 14 south, range 16 east, SBBM (see Map 1 for general location). The mine site is within an area along the East Highland Canal area that has been a source of sand and gravel for various commercial operators, Imperial County Public Works Department and the California Department of Transportation (Caltrans) for more than 50 years. Therefore, surface disturbance at the existing mine site is extensive as a result of historic activity in the area.

This aggregate from the East Highland Canal area along the Whitlock Road area provides sand and gravel aggregates to Imperial County. Construction aggregates are utilized in virtually every aspect of construction, including infrastructure (roads, bridges), residential, commercial construction, fabrication of agricultural irrigation structures, health and safety facilities. Environmental projects, including erosion control/slope protection, water filtration, wastewater filtration and water conservation would benefit from the availability of aggregate products from the Oat Pit.

Conformance with Existing Land Use Plans

Proposed operations at the Oat Pit site conform to land use plan terms and conditions (as required at 43 CFR 1610.5). This project is within the planning prescriptions of the California Desert Conservation Area (CDCA) land use plan. Lands involved in this proposal are within Multiple Use Class L (MUC L) under the CDCA Plan, 1980, as amended (Map 2). MUC L requires a controlled balance between higher intensity use such as mining and protection of public lands. This class provides that continuation of existing sand and gravel extractions are allowed subject to BLM permits as required in the regulations Title 43 Code of Federal Regulations (CFR), Part 3600. MUC L management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause.

According to the CDCA Plan Page 19 (1980, as amended) all multiple use class guidelines, with a few exceptions, allow for the authorization of new material sales locations, including sand and gravel sites, within MUC L areas of the CDCA. However, all authorizations require the completion of an environmental assessment.

The project is in flat-tailed horned lizard (FTHL) habitat and partially within the FTHL Management Area identified in the Flat-tailed Horned Lizard Rangeland Management Strategy (RMS; refer to Map 1). The U.S. Fish and Wildlife Service (Service) has determined that the listing of the flat-tailed horned lizard (*Phrynosoma mcallii*) as a threatened species under the Endangered Species Act of 1973, as amended (Act), is not warranted (76 Federal Register 14210). Under the RMS, projects disturbing FTHL

habitat require compensation at a 6:1 or 1:1 ratio depending on the location of the disturbance. Projects within the Management Areas (MA) generally require compensation at a 6:1 ratio and those outside of the MA are at a 1:1 ratio. There are exemptions for specific existing operations on public lands.

This project is not within a Desert Tortoise Habitat Category I or II area as illustrated on Map 1A of the 1980 CDCA Plan, as consolidated and amended in March 1999. It is not within the Area of Critical Environmental Concern for Lake Cahuilla (A) or (B) (CDCA Plan Map 1A and Map 2 herein). It is in an area of Economic Mineral Resources (CDCA Plan Map 11), Leasable Minerals (CDCA Plan Map 12), Area of Saleable Minerals (CDCA Plan Map 14), and Potential for Energy Geo-Resources (CDCA Plan Map 15).

The Oat Pit project is located near a proposed joint use planning corridor two miles wide for both Energy Production and Utility Corridor (CDCA Plan Map 16), but it does not conflict with that corridor, nor would the proposed action diminish the effectiveness of the corridor to respond to the need for future energy and utility-related linear facilities, e.g., transmission lines, pipelines, etc. It is adjacent to the east boundary of agricultural production in Imperial County.

The Oat Pit project area is within the Open Space/Recreation/Preservation category of the Imperial County General Plan (August 2008). From the general plan, this category recognizes the unique recreational character of Imperial County and includes desert, mountain, and waterfront areas with the potential for development as public or private parks and recreation facilities in appropriate areas. Primarily, however, areas designated Open Space/Recreation/Preservation are characterized by a low intensity of human utilization and include mountain areas, sand dunes, desert lands and other open lands that are essentially unimproved and not predominantly used for agriculture. The majority of the land in this category is public land administered by the U.S. Bureau of Land Management (BLM) and owned by either BLM or the U.S. Bureau of Reclamation.

Relationships to Statutes and Regulations

The Oat Pit contract is issued pursuant to the Materials Act of July 31, 1947 (Materials Act 61 Stat. 681 as amended by the Act of July 23, 1955; 30 USC 601-604) which authorizes the Secretary of Interior to dispose of sand and gravel from public lands if such disposal is not otherwise expressly authorized by another law, is not expressly prohibited by laws of the United States, and would not be detrimental to the public interest.

This EA has been prepared to comply with the National Environmental Policy Act of 1969 (NEPA) which addresses undertakings on federal lands. BLM would consider the impact from proposed mining, processing, reclamation and ancillary uses on public lands and resources from the proposed action and alternatives. Any decision would assure that the action is in the public interest, that there are no hazards to public health and safety, and that the action minimizes and mitigates environmental damage (43 CFR Part 3600 (3601.04 – 3601.44)). All activity would be in compliance with appropriate

local, state, and federal laws and in cooperation with all appropriate federal, state, and local agencies. BLM would assure that activities are coordinated through Imperial County. The State of California requires under the Surface Mining and Reclamation Act (SMARA) that a reclamation plan be developed and approved, with appropriate bonding, for any active mine in the State of California that is above the one acre or 10,000 cubic yard threshold.

Mining and reclamation operations are subject to Federal laws and regulations including BLM regulations, the Mine Safety and Health Act, and MSHA regulations. The mining operation would also adhere to all air quality laws and regulations regulated by the County of Imperial and the State of California.

Under Federal Law, review and approval of the Oat Pit Mining and Reclamation Plan (43 CFR 3601.40) by BLM is required before operations can proceed under the contract.

Under the Surface Mining and Reclamation Act of 1975 (SMARA), review and approval of a reclamation plan pursuant to the California Surface Mining and Reclamation Act of 1975 by the County of Imperial Planning Department (County) is also required. The County is the lead agency for the SMARA, as amended, and the State Office of Mine Reclamation (OMR) provides additional review and comment on the document. The County is also the lead agency for the California Environmental Quality Act (CEQA) portion of the proposed AGO project. Based on the results of the CEQA Initial Study Checklist, a Negative Declaration under CEQA is in preparation. The County indicated that public noticing of the CEQA process is not required for this project. The County would use the CEQA document in its review of the Reclamation Plan.

A Reclamation Plan has been submitted to Imperial County. A Mining Plan has been submitted to BLM in compliance with 43 CFR Part 3600. The Reclamation Plan was prepared in compliance with the requirements of SMARA and BLM's regulations at 43 CFR 3600.

The development of mineral resources is encouraged and is consistent with the Mining and Mineral Policy Act of 1970 as well as the Federal Land Policy and Management Act of 1976. BLM issues mineral materials sales contracts and oversees mining activities in the project area.

On January 22, 2008, the U. S. Army Corps of Engineers (USACE) issued an exemption from the Army Corps Section 404/Regional Water Quality Control Board Section 401 permit and waste discharge requirements under Nationwide Permit 14 which covers the transportation element of the project area. Nationwide Permit 44 covers mining activities and was effective March 18, 2002. Permit 44 covers mine operations within navigable waters of the United States, and the acreage loss of navigable waters of the United States resulting from supported activities, cannot exceed ½ acre. Proposed operations would not affect navigable waters of the United States, and the Nationwide Permit 44 would not apply to operations at the Oat Pit site.

CHAPTER 2 - ALTERNATIVES

This chapter describes the alternatives considered in this Environmental Assessment (EA). Additionally, this chapter defines any differences in the proposed action and the alternatives.

Alternative A - Proposed Action

Sand and Gravel Mining Operations

A mine and reclamation plan for the proposed Oat Pit operations is attached at Appendix 1 of this EA.

The proposed activity at the Oat Pit site would extract and remove mineral materials (mainly sand with minor but associated gravel) from public lands. Mining of sand and gravel resources would involve excavation equipment such as a tracked dozer and front-end loader (FEL). The dozer is utilized for the excavating and pushing of the materials, stockpiling, road construction, and minor reclamation. The dozer pushes materials by peeling away gravel in 18 inch deep layers to assist in breakdown of the consolidated material. The dozer pushes material down slope a maximum distance of 200 feet (averaging 100 feet), maintaining all cut slopes at a minimum of 4 horizontal to 1 vertical (25 percent slope), the final slope profile at the end of mining operations. All excavation operations would be conducted in such a manner that maintains the surface expression of the each phase operation at topographic profiles required for reclamation. No explosives are required in the conduct of mine operations. Material would be moved to the processing facility by front-end loader.

There are no fixed improvements located or proposed to be placed on the Oat Pit contract area.

Table 1 List of mining and excavation equipment that will be used on the site.

Quantity Needed	Equipment
1	Grader
2	Loaders
1	water truck
1	Bulldozer
1	Fuel Truck

Excavation depth will stay at least four feet above any encountered water table and will also be no lower than the elevation of Whitlock Road.

Operations would be conducted in 7 phases over the 10 year life of the contract. Mining is expected to be 375 tons of salable material, producing up to 375 tons of waste material (mostly fine sand) from 750 tons of excavated material a day.

The following table shows the estimated resources available in each phase.

Table 2 Mine phases at the Oat Pit aggregate site.

PHASE	TONS IN PHASE	CUMMULATIVE TONS	ESTIMATED RECOVERY (50%)
1	107,000	107,000	53,500
2	126,000	233,000	63,000
3	113,000	346,000	56,500
4	148,000	494,000	74,000
5	138,000	632,000	69,000
6	145,000	777,000	72,500
7	151,000	928,000	75,500
Totals (est.)	928,000	3,517,000	464,000

Actively mined and occupied phase areas, at the discretion of the BLM, may be enclosed with FTHL barrier fencing to prevent lizards from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing would be installed after a biologist clears the phase area of FTHL's. Fencing is to be in compliance with the 2003 Flat-tailed Horned Lizard Rangelwide Management Strategy (FTHL RMS).

Table 3 Phase acres with attendant FTHL Management Area encumbrances.

Mine Phase	Total Acres	ACRES Within East Mesa FTHL Management Area	ACRES Not Within East Mesa FTHL Management Area	Percent ACRES Within East Mesa FTHL Management Area
Phase 1	5.31	3.08	2.23	58%
Phase 2	5.69	1.85	3.84	33%
Phase 3	5.17	0.14	5.03	3%
Phase 4	6.37	2.95	3.42	46%
Phase 5	6.11	0.85	5.26	14%
Phase 6	6.58	1.28	5.30	19%
Phase 7	8.57	8.57		100%
Total Surface Disturbance	43.80	18.72	25.08	43%

Processing Operations

Raw material excavated from the deposit would be moved and deposited into a material feeder where it is conveyed into the screening plant. The first screen (grizzly) excludes rocks larger than 6 inches. Larger rocks are removed from the feeder grate and stockpiled with the loader to an on-site stockpile for commercial sale as rip-rap or armor. The conveyor then moves the screened material to a second set of screens where the material is sized and conveyed to graded stockpiles. A diesel-operated electric generator powers the screening plant. Stockpiles at the site would not exceed 15 feet in height. All stockpiles would be placed within the active phase area.

The mine and plant, when in production, are operated one-eight to ten hour shift per day, five days a week. No nighttime operations are anticipated.

Table 4 List of processing equipment that will be used on the site.

One portable screening plant
(consisting of):

- 1) 4" grizzly & hopper.
- 2) 36" feeder belt.
- 3) Vibrating screens.
- 4) 36" x 35-foot tailings belt.

Table 5 List of on-site personnel at the Oat Pit site

Number Needed	Position
1 ea	Bulldozer/Grader Operator
1 ea	Foreman
2 ea	Screening Plant Operators

The proposed oat pit project is planned as a "pack-it-in, pack-it-out" project with no permanent on-site waste disposal facilities. Temporary sanitary facilities would be provided as rented portable toilets suitable in number to support crews operating on site. Trash receptacles will also be placed at strategic locations on site during active operations.

Various commercial grades of sand and gravel are produced from the mined material and placed by process conveyors to various stockpiles. From the stockpiles the salable material is loaded onto on-road haul trucks with the loaders and sent to various markets within Imperial County. Up to 7 haul trucks would be utilized for a maximum of 15 truck transits per day from the site (at 375 tons per day or up to 75,000 tons per year). Travel from the active phase stockpile area would be along a north-south access road to the intersection with Whitlock Road. Transportation of the material with the on-road haul trucks would travel south on Whitlock Road (county maintained dirt) to Boyd Road (county maintained dirt for 2 miles then paved secondary road for 6 miles) to State Highway 115.

All dirt surfaced and unimproved mine access and haul roads would be watered on a daily basis (or as needed) to minimize dust from truck transits. Watering would be done before daily operations begin and at 12:00 pm to 2:00 pm.

No buildings or other structures would be constructed as part of this mining operation. No fuel storage is authorized. All fueling would be done with a fuel and lubrication truck.

Mining and processing operations are expected to be limited to daylight hours, generally from 6:00 am to 6:00 pm (and possibly to 9:00 pm during summer months to avoid the heat). No nighttime operations are proposed. Equipment would be stored on site during periods of non-operation. All equipment would be removed from the site during periods of non-operation exceeding 60 consecutive days. Site reclamation would begin after a period of non-operation exceeding 1 year (365 days).

Concurrent Reclamation

A maximum of 50 acres of surface disturbance would ultimately occur during the next 10 years. All excavation would be conducted above 28 feet above sea level, and no water table is expected to be encountered at this excavation grade within the minable portion of the contract area.

As mining progresses waste sand would be dozed or hauled into those phase areas where mining has been completed. Grading of non-mining areas would be done concurrently with mining (such as removal of old abandoned stockpiles), and reclamation work would occur at the earliest time possible for all areas, beginning with those areas identified on the phase maps at Appendix 1. As soon as one area is mined and equipment is moved to the next location, reclamation would begin. The objective of concurrent reclamation is to minimize the final amount of reclamation that would be left outstanding at any time during the life of operations, required at the end of the mine's life, and to reclaim the maximum surface area during the time mining is in progress.

All equipment would be removed from the site within 60 days following the termination of mining activities.

Monitoring

The success of the site reclamation would be monitored by the BLM, Imperial County and/or the State of California for 3 years or until all approved performance standards are met. Remedial measures would be implemented as necessary to achieve the performance standards. An active and valid bond would be retained until all compliance and reclamation is complete.

If required by Imperial County, a reclamation plan under the California Surface Mining and Reclamation Act of 1975 (SMARA) would be completed and approved by Imperial County before operations would be allowed to proceed. BLM and Imperial County Planning and Development Services would evaluate the progress of concurrent reclamation on a yearly basis.

Alternative B - On Site Mining with Off-Site Processing

Alternative B allows mining without associated processing of rock and waste material at the Oat Pit site. This alternative would require that all processing operations be moved to another area of the county, away from Oat Pit site.

Activity associated with mining would be no different than under the proposed action. All mined material, rock and waste material, from excavations on the Oat Pit would be loaded into highway haul trucks for transport to off-site processing facilities away from the site. The anticipated 17 truckloads of material identified under the proposed action would increase to at least 34 trucks per day because waste would be removed along with salable material.

Loading activity would require an approximate 1-acre staging area with an associated stockpile area (less than 1-acre) to allow efficient loading of highway haul trucks. This facility may be located on each of the phased areas during phased operations or dedicated to a location on previously mined areas within the northern part of the contract area.

Activity associated with processing material at an alternative processing site would be the same as under the proposed action. Disposal of waste material would not be replaced into the current waste rock area of the Oat Pit project area. Waste material from processing would be moved to a disposal site at or near the alternative off-site processing area.

Alternative C - FTHL Management Area Avoidance

All operation activity intensity and phase scheduling addressed in **Alternative A – Proposed Action** would occur in the same manner in **Alternative C**. However, the contract life would be shorter than 10 year as less mineral material would be available. Overall, an estimated 850,000 tons of material would be available under the proposed action. By eliminating material within the FTHL MA, available material (resources) would drop to an estimated 530,000 tons. Overall, 320,000 tons of material would not be made available to extractive resource operations at the Oat Pit site.

FTHL Management Area, as shown on Map 1, would be avoided and the contract stipulated with a no surface occupation of these areas. From Table 3, approximately 43 percent of the Phase areas are within the FTHL Management Area.

No Action Alternative

The No Action Alternative is included here as required by NEPA. No action means that the BLM would deny the proposed AGO mine and reclamation plan in the project application and proposed reclamation of historic waste stockpiles within the greater Oat Pit area would not be reclaimed. This alternative would apply if mining and processing at the site would cause undue or unnecessary degradation to public lands and resources, if it is determined that the action is not in the public interest, that there are hazards to public health and safety, or that the action cannot minimize or mitigate environmental damage.

CHAPTER 3 - AFFECTED ENVIRONMENT

The proposed Oat Pit site is located entirely on public land, approximately four miles east of Holtville, California, on the west side of the East Mesa (Map 1). The active mine would ultimately encompass a maximum of 50 acres.

Geology and Minerals

The contract area includes a Paleo- lacustrine beach deposit that lies approximately 5 to 15 feet above wind eroded lands which comprise the east ½ of the area. The deposit is principally an elongate north-south trending terrace, exposed in the area as a ridge and plateau. This terrace deposit consists of sand with lag gravel zones intercalated within the sand deposit trending north-south within the western portion of the contracts area (Figure 1). Sand zones are relatively clean and range from fine to coarse sand size clasts (0.0025 to 0.079-inch particle diameter). Clay and silt size particles (less than 0.0025 inch) represent less than 2 percent of the deposit (estimated from previously samples areas of the Oat pit site). Gravely zones range in thickness from a few inches to 2 feet. And are estimated at 20 to 30 percent of the deposit (refer to Figure 2).

The aggregate zones consist of rounded to well rounded gravel and rock, typically not greater than 3 inches in diameter. The eastern area is a deflated and eroded area, a source of sand for dune systems east of the terrace gravel-sand zone. Estimates of waste to salable material has not been measured; however, sampling done by the Contractor and BLM in October 2008 indicate that waste to rock may be as high as 50 percent waste to 50 percent salable material.

All sand and gravel are proposed to be severed; but only salable sand and gravel would be removed for sale under the Oat Pit contract.



Figure 1 Photograph showing the thin zones of aggregate (less than 4 inch clasts) intercalated with sand lenses at the Oat pit deposit.

No mining claims, mineral leases, or applications for such exist within the proposed Oat Pit area of operation. The Oat Pit is not valuable, prospectively or otherwise, for any metallic, industrial or energy mineral resources. The parcel has a high potential with a high level of confidence for sand and gravel (aggregate) resources based on the classification criteria pursuant to the BLM Manual 3031 (1984, Appendix 3) .

Air Quality

Existing air quality at a given location can be described by the concentrations of various pollutants in the atmosphere. Pollutants are defined as two general types: 1) criteria pollutants and 2) toxic compounds. Criteria pollutants have national and/or state ambient air quality standards. The EPA establishes the National Ambient Air Quality Standards (NAAQS), while the California Air Resources Board (ARB) establishes the state standards, termed the California Ambient Air Quality Standards (CAAQS). The NAAQS represent maximum acceptable concentrations that generally may not be exceeded more than once per year, except the annual standards, which may never be exceeded. The CAAQS represent state maximum acceptable pollutant concentrations that are not to be equaled or exceeded. The national and state ambient air quality standards are shown in Table 6.

Table 6 Federal and California ambient air quality standards.

Pollutant	Averaging Time	California Standards	NATIONAL STANDARDS ^a	
			Primary b,c	Secondary b,d
O ₃	1-hour	0.09 ppm (180 µg/m ³)	—	—
	8-hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)	Same as primary
CO	8-hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	—
	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	—
NO ₂	Annual	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as primary
	1-hour	0.18 ppm (339 µg/m ³)	0.10 ppm (188 µg/m ³)	—
SO ₂	3-hour	—	—	0.5 ppm (1,300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	0.075 ppm (105 µg/m ³)	—
PM ₁₀	Annual	20 µg/m ³	—	—
	24-hour	50 µg/m ³	150 µg/m ³	Same as primary
PM _{2.5}	Annual	12 µg/m ³	15 µg/m ³	
	24-hour	—	35 µg/m ³	
Lead	Rolling 3-month average	—	0.15 µg/m ³	Same as primary
	Quarterly Average	—	1.5 µg/m ³	Same as primary
	30-day average	1.5 µg/m ³	—	—

a) Standards other than the 1-hour O₃, 24-hour PM₁₀, 24-hour PM_{2.5}, and those based on annual averages are not to be exceeded more than once a year.

b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the EPA.

d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. µg/m³ = micrograms per cubic meter; CO = carbon monoxide; mg/m³ = milligrams per cubic meter; NO₂ = nitrogen dioxide; O₃ = ozone; PM_{2.5} = particulate matter less than 2.5 microns in diameter; PM₁₀ = particulate matter less than 10 microns in diameter; SO₂ = sulfur dioxide

Source: ARB 2010a.

Federal, state, and local agencies participate in attaining air quality in compliance with national ambient air quality standards (NMOS). A principal function of the EPA is to enforce federal air quality laws, set NMOS, and promulgate new regulations based on the scientific evidence of the health and environmental effects of pollutants. In addition, the EPA establishes national emission limits for major sources of air pollution such as emissions from locomotives, aircraft, and other mobile sources most effectively controlled at the national level. EPA is authorized to require states to prepare implementation plans to attain the NMOS. The California Air Resources Control Board (CARB) is the state agency responsible for the coordination and administration of both

state and federal air pollution control programs in California. The CARB sets state ambient air quality standards as well as emission standards for motor vehicles. The Imperial County Air Pollution Control District (ICAPCD) shares responsibility with the CARB for ensuring that all state and federal ambient air quality standards are achieved and maintained within the county. The District is responsible for monitoring ambient air quality and has authority to regulate stationary sources and some area sources of emissions. The District is responsible for developing the overall attainment strategy for Imperial County and is responsible for planning activities involving the development of emission inventories, modeling of air pollution, and quantification and comparison of emission reduction strategies.

The general area in and around the Oat Pit contract area, and east from the East Highline Canal is largely undeveloped and uninhabited. Approximately ¼ mile west from the Oat Pit area is heavily developed, large scale agricultural activity. Major air quality issues in this area are particulate matter (PM₁₀) and ozone resulting from off-road recreation activity along unpaved Whitlock road and dirt open access roads within the East Mesa, agricultural activity in the central Imperial County area, and aggregate mining and processing activities in and around the Oat Pit area.

Particulate matter (PM) standards pertain to the size of the particulates and are generally evaluated by their ability to be inhaled (e.g., PM₁₀¹). The project area is located in a part of the Imperial Valley that is designated as an “unclassifiable attainment area” (any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant) for particulate matter by the U. S. Environmental Protection Agency (EPA 2004). This is principally due to agricultural operations within a large part of Imperial County, and immediate to the Oat Pit site. The California Air Resources Board (2007) indicated that the entire Imperial County is a State nonattainment area for PM₁₀ and unclassified for PM_{2.5} under the California Health and Safety Code Section 39608.

CO_x is a generic term for the mono-carbon oxides CO and CO₂ (carbon monoxide and carbon dioxide) produced from the reaction of fuels and oxygen gases in the air during combustion. Carbon dioxide is suspected as a contributor to the so-called “greenhouse gas” effect related to global climate change.

NO_x is a generic term for the mono-nitrogen oxides NO and NO₂ (nitric oxide and nitrogen dioxide) produced from the reaction of nitrogen and oxygen gases in the air during combustion. NO_x gases are typically released into the atmosphere from high temperature combustions in air, typically associated with internal combustion engines.

EPA found that Imperial County failed to attain the 8-hour ozone national ambient air

¹ PM 10 is measure of particles in the atmosphere with a diameter of less than ten or equal to a nominal 10 micrometers. (Terms of Environment: Glossary, Abbreviations, and Acronyms, Revised December 1997, United States Environmental Protection Agency (EPA) 175-8-97-001).

quality standard that was required to be reached in June 2007, and has proposed that Imperial County be reclassified as a moderate 8-hour ozone nonattainment area (EPA 2007).

Noise / Noise Quality

Acoustic Noise

Noise is measured at the source as well as from an observation point. Noise effects to solitude can occur from a number of attributes such as intermittence, beat frequency or shrillness, and intensity and duration. Most noise emanating from mine sites occurs as low frequency vibrations. The unit of measure is the decibel².

Decibel units are measured in a logarithmic scale; however, most standards recognize the “doubling effect” based on a 3 decibel increment. This means that an increase of 3 decibels means that the sound pressure doubled. The following are examples of noise thresholds measured in decibels:

Table 7 Sound pressure in decibel units from various environmental conditions.

Environmental Condition	Sound Pressure/ Decibel Rating
Threshold of Hearing.....	0 dBA
Quiet Room.....	45 dBA
Conversation.....	55 dBA
Car (50 mph at 50 ft).....	65 dBA
End Loader (In Good Cab).....	75 dBA
Haul Truck (In Good Cab).....	85 dBA
Crusher.....	95 dBA
Old Dozer (No Cab).....	105 dBA
Air Track Drill (No Controls).....	115 dBA

The human ear measures the pressure of a sound wave; however, it does not respond equally to all frequencies. For example, the human ear is much more sensitive to sounds in the frequency range about 1 kHz to 4 kHz (1000 to 4000 vibrations per second) than to very low or high frequency sounds.

The following table shows the point source decibel (dBI) from common construction equipment that can be expected at the Oat site. Most of these sources are within a frequency range of 100 to 3,000 cycles per second (hertz):

2 The decibel is a measure of how "loud" a sound is. Decibels are used to measure sound pressure level (SPL) as compared to a reference pressure, typically referred to as overpressure.

Table 8 Common decibel ratings for various equipment expected to be used in aggregate mining operations.

Equipment	Decibel Rating
Bulldozer	93 - 96 dBA
Demolition	up to 117 dBA
Front-end loader	86 - 94 dBA

Decibel ratings from multiple sources affect the noise frequency more than the amplitude or “loudness” of the noise. For example, one bulldozer having a decibel rating of 96 will be nearly the same in amplitude whether two or more dozers operate in the same area. However, the frequency range affecting the sensitivity of the noise to the human or biologic observer will be increased.

Many planning ordinance limit exposure to those as shown in the following example table:

Table 9 Exposure limits based on frequency of sound

Frequency (Cycles per Second)	Maximum Sound Level above Zero Decibels Permitted (Reference: .0002 dynes/cm)
0 to 74	74
75 to 149	59
150 to 299	52
300 to 599	46
600 to 1199	42
1200 to 2399	39
2400 to 4799	36
4800 and above	33

Seismic Noise

Seismic noises are energy waves propagated through the earth. These include compression, shear, and longitudinal waves. Typical earthmoving equipment and

rolling stock induce vibrations into the earth; however, the attenuation of the amplitude of these waves diminishes significantly away from the source and is not expected to be a significant source of concern except within the Oat Pit area.

There are currently no Federal, State, or local noise control regulations that apply to off-site noise.

Cultural Resources

Prehistoric Setting

This project is located on a low-profile ridge that marks the shoreline of ancient Lake Cahuilla, formed in the early Holocene, about 10,000 years ago. Ancient Lake Cahuilla provided an abundance of natural resources, such as fish and a species of freshwater mollusk, while the marshy areas sustained migratory waterfowl, cattail, reeds, and other vegetation that would have been useful to people in the area. Mesquite groves also thrived in the surrounding desert fringe, providing seed pods that were a highly nutritious staple. Mesquite groves also thrived in the surrounding desert fringe, providing seed pods that were a highly nutritious staple.

Prehistoric archaeological site types on the shorelines of ancient Lake Cahuilla range from fairly large and complex habitation sites to small temporary camps and specialized fish camps. The larger sites tend to be located on the west and north side of Lake Cahuilla near sand spits, coves, embayments, marshlands, or where major seasonal washes empty into the lake. Sites are also associated with seasonal pans and mesquite bosques. Sites are smaller, less complex, and more diffuse on the eastern shoreline where the shoreline is distant from other population centers and the abundant resources of the Colorado River Valley.

Ethnographic Background

The prehistoric occupants of the project area most likely included the ancestors of the Yuman people of the Lower Colorado River. Exploitation of riverine subsistence resources encouraged a varied way of life for the river Yumans; small-scale agricultural practices supplemented foods procured by seasonal rounds of hunting, fishing, and gathering. Although extensive population movement along the Colorado River during prehistoric times makes determining specific ethnographic affiliation of an exact area difficult, the Cocopah, Quechan and the Mohave Indians were established occupants of the region encompassing the project area; descendants of these tribes maintain cultural affiliation with the region and the project area.

Historic Setting

The history of the Imperial Valley is tied to the construction of irrigation canals to divert potable water from the Colorado River to the extremely arid region, with the earliest

historic settlements centered around the valley's limited natural water resources (e.g., Blue Lake, Cameron Lake, and the New River). Prior to the construction of the irrigation canals, farming of the Imperial Valley would not have been possible, and Euro-American settlement in the project vicinity, which contains no natural water resources during low stands of Lake Cahuilla, would be unlikely. Construction of the East Highline Canal, located less than 200 m east of the Gibson project area, and its associated lateral turnouts was completed in 1914, providing service to about 110,000 acres on the east side of Imperial Valley. The opening of the canal would have allowed increased agricultural utilization in the project vicinity, while the construction of the canal itself may have brought some of the earliest Euro-Americans to the project area.

Historic sites in the region range from small scatters of trash, such as household and domestic items (e.g., bottles, cans, etc.) associated with early exploration and settlement, to large sites that are part of the built environment, such as canals, associated with the development of permanent settlements and infrastructure.

Known Cultural Resources

ASM Affiliates, Inc. conducted background research, followed by a field survey, to determine the types and extent of cultural resources in the project area (ASM Affiliates, Inc. 2007). Background research included a review of site records and reports on file with the California Historic Resources Information System Southeastern Information Center at San Diego State University. The field survey was conducted in compliance with the stipulations of BLM Cultural Resources Use Permit Fieldwork Authorization which required surveyors to walk the project site to identify cultural resources evident on the ground surface. No artifacts were collected during the survey.

As a result of background research and the field survey, 12 archaeological sites were identified in the project area immediately north and adjacent to the project. Chapter 4, Environmental Effects, provides a description of each site along with a summary of eligibility recommendations for inclusion in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR).

Native American Consultation

There is no indication that ASM contacted the NAHC or contacted any interested parties-- BLM is requesting ASM indicate if they made any such contact.

BLM has conducted informal consultation with the Quechan and Cocopah Tribal Cultural Resource Departments. No concerns have been shared with the BLM to date. The BLM will continue to conduct informal consultation with the Tribes about this project.

Lands and Access

The project is located on public land managed by the BLM. Whitlock Road, an existing county maintained unpaved road, is within the western area of the Oat Pit contract area. Whitlock road provides legal access to the proposed sand and gravel operations as well as public access to recreational users in the general area. The road is approximately 40 feet wide and allows for two lanes of travel. The route was recognized in the Western Colorado plan as a route of travel. There are at least two aggregate operations that use Whitlock Road for site access as well as a transportation route to various Imperial County aggregate markets. While a transportation study has not been completed for the Oat Pit operations, the mine plan supports a total of 15 truck movements daily on Whitlock Road and associated routes of transport.

Recreation

The California desert is a regional recreation resource, attractive to not only local residents, but visitors from an area encompassing all of southern California, and to a lesser degree, other regions of the United States and Canada. The five main activities in the project area and on southern California BLM managed land in the year 2010 were:

- Driving for pleasure (6,367 visits)
- OHV use (143,852 visits)
- Rock hounding (12,734 visits)
- Hiking and walking (12,734 visits)
- Camping (60,615 visits)

While driving for pleasure or using an OHV accounts for most of the visits, campers spend the most time on public land. Other common activities were nature studies, photography, viewing wildlife and scenery, visiting interpretive displays, backpacking, target practice, hunting, and horseback riding.

Soils

Appendix 2 is a custom soil resource report for the Oat Pit area of Imperial County, California³. The report shows that the soil within the Oat Pit area is mapped as Rositas loamy sand, fine sand, and loamy silt, on slopes less than 20 percent. This sandy loam is loosely consolidated and has little cohesiveness.

Soils at the mine site are derived from the weathered remnants of an ancient beach, and the material, based on observation by the BLM, is characterized by shallow, stony

³ Custom soil resource report for Imperial County, California, Imperial Valley Area to include the Oat Pit project area generated by the United States Department of Agriculture, Natural Resources Conservation Service, April 2011.

and cobble soils on slopes varying in angle from flat to nearly flat. Included within this unit are areas of deeper soils consisting of loamy sand, fine sand, and silts. In a natural setting, these local soils are generally stable. However, the sandy soil can become loose and “powdery” when disturbed, especially in the dry late summer months. Dry, powdery soils become very susceptible to erosion by water and wind and create a significant amount of dust when the wind blows the soils off-site.

Soils in areas which were previously mined, but not subjected to continuous disturbance would form a compacted crust over the near surface. When soils are allowed to remain undisturbed and a crust has formed, soil erosion by wind under these conditions is significantly reduced.

Biologic Resources

Vegetation

The project area is characterized by a vegetative community of Desert Scrub of the Creosote-Bush-Mixed Shrub Series. The western area of the mining contract site has been previously disturbed by mining and processing activity occurring up to 25 years ago. Creosote dominates re-vegetation of these areas. Un-mined areas have been impacted by recreational access roads and off-highway vehicle use. Continual use by off-highway vehicles does not allow for natural re-vegetation of these areas.



Figure 2 View of ridgeline loamy sand and gravel area proposed for mineral development. Areas with dense vegetation are to be protected (refer to Map 1).

Historically from previously mined areas in the vicinity of the Oat Pit project area, surface disturbance from material extraction has encouraged the invasion of salt cedar (*Tamarix ramosissima*) (*Tamarisk*), an exotic species, which invades areas of recent soil disturbance. Such invasions generally reduce the biodiversity of an area, because the tamarisk is of little value to native insects and wildlife as food or cover. The tamarisk also readily displaces the native plant species which are preferred by native wildlife.

No sensitive plants are expected to occur in the desert scrub area.

Invasive/Non-Native Species

Invasive/non-native species in this area include Sahara mustard (*Brassica tournefortii*), Mediterranean grass (*Schismus* sp.) and tamarisk (*Tamarix* sp). Sahara mustard and Mediterranean grass are present throughout the project areas. These species are annuals that die each year and their seeds lie dormant for long periods of time in the soil. During wet periods these species erupt and cover much of this portion of the desert. These annuals pose a threat to the native community by increasing risk of wildfire by providing light transmission fuels. These species can also compete with native plants. Tamarisk is usually found in association with moisture, either in washes or riparian areas. It can pose a major threat to native plant life by depleting subsurface water and increasing soil salinity. With enough water available, tamarisk would grow in dense monoculture stands and provide little benefit to most wildlife.

Wildlife

Specific species known to inhabit the site are discussed in detail in **Special Status Species** section.

The species likely to occur in this general area are typical to the Colorado subsection of the Sonoran Desert and include the flat-tailed horned lizard (*Phrynosoma mcallii*), the western shovel-nosed snake (*Chionactis occipitalis*), side-winder (*Crotalus cerastes*), zebra-tail lizard (*Callisaurus draconoides*), round-tailed ground squirrel (*Spermophilus tereticaudus*), kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), and a multitude of bird species, including black-tailed gnat catcher, LeConte's thrasher, and loggerhead shrike.

The site is approximately 700 feet from the East Highline Canal. A canal of this size has fast moving waters that are not conducive to nesting. Additionally, construction related impacts to potential nesting aquatic bird species is not expected because the East Highline Canal is greater than 300 feet from project activities.

Mesquite bosques are common in this area and are an excellent shelter and nesting area for birds.

The area was surveyed by Marie Barrett, biologist, on May 24 and June 1, 2007. The

table below documents the results.

Existing information on biological resources were reviewed before fieldwork was conducted. Sources of existing information included the following: California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS), and Daniel Steward of the BLM EI Centro Field Office.

Quadrangles researched included: Holtville NE, East and Glamis NW, SW.

Table 10 California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS),

Plant Species	Status	Habitat	Observations
Astragalus magdaebae var oeursibuul var. perstrictus Pierson's milk vetch	CNPS IB Rare- threatened or endangered in CA BLM	Sand dunes	No habitat noted
Lupinus excubitus var. medius Mountain Springs bush lupine	1B	Desert dunes Sonoran (Colorado) desert; desert washes less than 1000 m. Blooms Mar- April (sw Imperial County)	No habitat, None observed
Nemacaulis denudata var. gracilis Slender woody- heads	2	Sandy dunes	No habitat, none observed.
Palafoxia arida var gigantean Giant Spanish needle	S1.2 CNPS: 1B.3	Sonoran (Colorado) desert; desert sand dunes under 100 m. Blooms Mar-May	No habitat; none observed
Croton wigginsii Wiggins' croton	State: S1.2 CNPS: 2.2	Sand dunes; Sonoran (Colorado) desert less than 100 m. Blooms Mar-May.	No sand dunes; none observed
Helianthus niveus ssp tephrodes Algodones Dunes sunflower	State: S1.2 CNPS: 1B.2	Sand dunes; Sonoran (Colorado) desert less than 100 m. Blooms Mar-May.	No habitat; none observed
Pholisma sonorae Sand food	State: S1.2 CNPS: 1B.2	Sand Dunes, Sonoran (Colorado) desert less than 200 m. Parasitic on Eriogonum, Tiquilia, Ambrosia, Pluchea Blooms Ap-May	No habitat; none observed

Animal Species	Status	Habitat	Observations
Phrynosoma mcallii Flat tailed horned lizard	Proposed for Listing by the Service as Threatened	Sonoran Desert, desert flatlands, mud hills	None observed, habitat exists, presence assumed. See note ¹
Gopherus agassizii Desert tortoise	Fed/CA threatened	Desert flats and bahadas	None observed, habitat exists, low quality.
Speotyto cunicularia Burrowing Owls	CDFG: Species of Special Concern	Grasslands, deserts, scrub, agricultural	None observed, habitat exists, disturbed habitat.
Toxostoma lecontei LeConte's thrasher	CDFG Species of Special Concern	Shrub	None observed.
Falco mexicanus Prairie falcon	unlisted	Dry open terrain	No nesting sites. May be an occasional visitor- none observed.
Vereo bellii pusillus Least Bell's vireo	Fed/CA endangered	Vicinity of water; dry; river beds; willows; mesquite.	No habitat.
Anomala carlsoni Carlson's dune beetle	State: S2	Creosote shrub in vicinity of Algodones Dunes	No beetles observed.
Lepismadora algodones Algodones sand jewel beetle	State: SH CDFG: Species of Concern, State: S1	Algodones dunes; frequents Tiquilia plicata	Tiquilia plicata in disturbed areas but no beetles observed.
Bufo alvarius Colorado river toad	CDFG endangered	Temporary pools and irrigation ditches	No habitat; none observed
Lasiurus xanthinus Western yellow bat	State: S3	Palm oasis/desert riparian/desert wash areas	Few trees; not favorable habitat. None observed

¹ Survey was done May 24 and June 1, 2007. 1 horned lizard scat found. Therefore even though scat was found, it cannot be determined if flat tailed or desert horned lizard are present. With the exception of the presence of horned lizard scat, no listed plants/animals were observed and no habitat was observed that would support them. This is in the MA so assume presence.

Table 11 California Bureau of Land Management, El Centro Office, Special Status Plants

Plant Species ¹	Status	Habitat	Observations
Astragalus magdalenae var. peirsonii Pierson's milk-vetch	BLM Special Status	Sand dunes; 50-250 m. Sonoran (Colorado) desert Blooms Dec-Apr.	No sand dunes; none expected
Chamaesyce	BLM Special Status	Sandy soil less than	No spurges of any

platysperma Flat-seeded splurge		100 m. Annual; prostrate. Not seen in Ca since 1914 Sonoran (Colorado) desert	type observed.
Croton wigginsii Wiggins' croton	BLM Special Status	Sand dunes; Sonoran (Colorado) desert less than 100 m. Blooms Mar-May.	No sand dunes; none observed
Fremontodendron mexicanum ² Mexican flannelbush	BLM Special Status Fed: Endangered	Tree like shrub found in chaparral and cypress woodland plant community	No habitat; none observed
Helianthus niveus ssp tephrodes Algodones Dunes sunflower	BLM Special Status Ca: Endangered	Sand dunes; Sonoran (Colorado) desert less than 100 m. Blooms Mar-May.	No habitat; none observed
Lupinus excubitus var. medius Mountain Springs bush lupine	BLM Special Status	Sonoran (Colorado) desert; desert washes less than 1000 m. Blooms Mar-April (sw Imperial County)	No habitat; none observed.
Machaeranthera asteroids var lagunensis Laguna Mtns. Aster	BLM Special Status	800-2400 m.	No habitat; none observed
Opuntia munzi Munz cholla	BLM Special Status	Sonoran (Colorado) desert; gravelly, sand soil of washes	No chollas observed
Palafoxia arida var gigantean Giant Spanish needle	BLM Special Status	Sonoran (Colorado) desert; desert sand dunes under 100 m.. Blooms Mar-May	No habitat; none observed
Xylorhiza orcuttii Orcutt's woody aster	BLM Special Status	Sonoran (Colorado) desert; arid canyons 20-300 m. Blooms from Mar- Apr.	No habitat; none observed

¹Baldwin, Bruce G., et al. Jepson Desert Manual, University of California Press, 2002

²California Department of Fish and Game Habitat Conservation Planning Branch web site

¹Status:

State:

S1: Less than 6 Element Occurrences (EO); less than 1000 individuals; less than 2000 acres

S1.1: Very threatened; S1.2: Threatened; S1.3: no current threats known

S2: 6-20 EO/1000-3000 individuals/2,000-10,000 acres S2.1-2.3 same as above

S3: 21-100 Eos/3,000-10,000 individuals/10,000-50,000 acres. S3.1-3.3 same as above

CNPS (California Native Plant Society):

1B = Rare, threatened, or endangered in California or elsewhere

Special Status Species

Special status species for which habitat is present within the project boundaries include: desert tortoise, flat-tailed horned lizard, burrowing owl, California leaf-nosed bat, Pallid bat and western yellow bat, Le Carte's thrasher, loggerhead shrike, and important habitat features that support wildlife such as Mesquite hummocks. For a complete list of special status species please refer to Table 10 and 11 above.

This project is located within the East Mesa Management Area in *Flat-Tailed Horned Lizard Rangewide Management Strategy, 2003 Revision*. Planning Action 2.2.3.1 (p.27) allows for development and production in existing mineral material extraction sites in accordance with local, state, and federal laws and land-use laws and subject to applicable mitigation and compensation. Refer to Map 1 and Map 2 showing the relationship of the contract area to the Management Area.

One horned lizard scat was found on site. As this is a long-term project in Management Areas (MAs), installation of flat-tailed horn lizard barrier fencing within each phase area and area of occupation within the MA as part of the proposed action. In addition, a pre-development survey by a qualified individual is also part of the proposed action.

Populations of flat-tailed horned lizards (*Phrynosoma mcallii*) may occur on-site. Known populations of FTHL occur in the management area. Some BLM permitted activities, such as mining, would alter habitat. The species is not currently federally listed, but it was previously proposed for listing as threatened in the past. Fish and Wildlife Service (FWS) decided not to list FTHL as threatened species in March of 2011. However, the BLM still manages FTHL under the Flat-tailed Horned Lizard Range-wide Management Strategy 2003 revision.

Although the effects of the proposed mining activity would continue for at least ten years, the mine site can be successfully reclaimed to provide habitat for Flat-tailed horned lizard at a later date. Other special status species are listed and discussed in the Impacts of Proposed Action/Vegetation and Wildlife Sections. Since the proponent is intending to mine, to reclaim the mine when mining is completed and no further mining is planned, no compensation is charged (*Flat-Tailed Horned Lizard Rangewide Management Strategy, 2003 Revision* p.63).

Elements Present and Analyzed But Not Affected By The Proposed Action

Wastes – Hazardous or Solid

There would be no hazardous or solid waste generated by production of sand and gravel aggregates. The proposed project is located on undeveloped land in the eastern area of Imperial County. While the site has had historical aggregate operations, field observations did not support that any waste fuels or lubricants in the soil or previously

occupied areas. The aggregate itself is relatively inert and typically does not contain any California Title 22, 17 metals (CAM 17) of concern regarding toxicity.

No chemicals are proposed to be used in mining or processing operations. No palliatives for dust control will be authorized.

Typical petroleum products will be used in equipment and the generator. These include: gasoline, diesel, motor oil, hydraulic oil. These fuels and lubricants would be used to power and service vehicles needed for extraction and transportation of sand and gravel aggregates. All fueling and lubrication will be conducted by service vehicles, either brought in for servicing, or contracted for servicing. Any used fuels and lubricants will be taken out of the Oat Pit area by the servicing vehicles. No on-site storage of fuels or lubricants is proposed in the mine plan.

Global Climate Change

On-going scientific research has identified the potential impacts of “greenhouse gas” (GHG) emissions (including carbon dioxide, CO₂; methane; nitrous oxide; water vapor; and several trace gasses) on global climate. Through complex interactions on a regional and global scale, these GHG emissions cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the Earth back into space. Although GHG levels have varied for millennia (along with corresponding variations in climatic conditions), recent industrialization and burning of fossil carbon sources have caused CO₂ concentrations to increase dramatically, and are likely to contribute to overall climatic changes, typically referred to as global warming. Increasing CO₂ concentrations also lead to preferential fertilization and growth of specific plant species.

Several activities occur within the planning area that may generate GHG emissions. Recreation, transportation, and mineral material production using combustion engines, can potentially generate CO₂ and methane. BLM recognizes the importance of climate change and the potential effects it may have on the natural environment. BLM land-use management practices are based on goals and objectives that are established for different geographical areas. These established land-uses are based on numerous criteria, including land cover and historical land uses.

The proposed action and all alternatives would result in use of combustion engines, but the levels of use would be such a small amount on a global scale that this activity would have no effect on climate change. Since this project would not affect climate change we will not discuss this element further.

Surface Water, Groundwater, and Water Quality

Surface water consists of intermittent drainages, such as American Girl Wash mentioned above. These drainages contain water only following major precipitation events. Sheet washing and flash flooding are common following heavy rainstorms. All

surface water issues would be addressed through the Storm Water Pollution Prevention Plan (SWPPP) and through the regular use of best management practices.

The Imperial Valley groundwater reservoir consists of Cenozoic-era valley fill deposits underlain by a basement complex of pre-Tertiary rock. Moderate to high groundwater yields have been obtained in the mid-part of the Imperial Valley by deep wells tapping into marginal alluvial deposits of the Colorado River. Regional groundwater recharge in Imperial Valley is controlled by the Colorado River, while underflow from tributary areas, direct precipitation, and local runoff are minor contributors to recharge. Flowing wells are common in the agricultural areas of Imperial Valley.

Water Resources

The Clean Water Act (CWA) of 1972 is the primary federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. The primary objective of the CWA is to restore and maintain the integrity of the nation's waters. Jurisdictional waters of the U.S. are regulated resources and are subject to federal authority under Section 404 of the CWA. Waters of the U.S. are broadly defined to include navigable waters (including intermittent streams), impoundments, tributary streams, and wetlands. Areas meeting the waters of the U.S. definition are under the jurisdiction of the Army Corps of Engineers (COE). Responsibility for the protection of water quality in California resides with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs).

The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The project site is located in the Colorado River Basin (Region 7) and therefore, subject to regulatory requirements of the Colorado River Basin RWQCB.

The Colorado River Basin RWQCB implements the *State Porter-Cologne Water Quality Control Act* (PCWQCA) and the federal CWA. The PCWQCA is the principal law governing water quality in California. The SWRCB and RWQCBs have permitting and enforcement authority to prevent and control waste discharges that could affect waters of the state through the issuance of National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements (WDR).

The East Highline canal is located approximately ½ mile west of the project area. The East Highline canal is a feeder canal to the All American canal which is sourced from the Colorado River. The East Highline canal supports agriculture in central Imperial County. The project does not propose to encroach on or near the canal.

Access to and from the pit area by haul trucks will cross the canal at the Boyd Road crossing, or north along Whitlock Road, crossing at Highway 78.

Navigable Streams and Waterways

The Oat Pit project area is not within, at, or adjacent to water courses or waterways, navigable or otherwise.

Groundwater

No water wells or other facilities accessing groundwater resources are proposed for the Oat Pit operations. Final pit profiles at reclamation will be at or above nominal surface elevations within the Oat Pit project area. No sub-ground level excavations are proposed.

Flood Plains

FEMA Map Panel 650 of 1175 (Imperial County unincorporated area) Community-panel Number 060065-0650 B indicates that the proposed site is located in Zone C, which is defined as areas of minimal flooding.

Wetlands/Riparian Zones

Wetlands have the following general diagnostic environmental characteristics⁴:

1. Vegetation. The prevalent vegetation consists of macrophytes⁵ that are typically adapted to areas having hydrologic and soil conditions described above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptations, have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.
2. Soil. Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions.
3. Hydrology. The area is inundated either permanently or periodically at mean water depths greater than 6.6 ft, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Elevations of the Oat Pit project area are above the level of potential water accumulation. The soils and geology of the area do not support hydric soils or

⁴ US Army Corps of Engineers Wetlands Delineation Manual, January 1987, Part II, Technical Guidelines.

⁵ Hydrophytic vegetation is the sum total of aquatic plants that grow in or near water and are either emergent, submergent, or floating in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.

characteristics of reducing conditions. There is no macrophyte vegetation conducive to hydrologic soil conditions found at the site and final pit reclamation elevations will not support permanent or temporary inundation where water depths will approach 6.6 feet.

Environmental Justice

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was signed by President Clinton in February, 1994. The EO directs Federal agencies to determine whether a disproportionate share of the project's adverse socioeconomic impacts are borne by minority and low income communities.

The city of El Centro is approximately 24 miles from the Oat Pit site. El Centro has a population of 41,241 (2009) with an estimated median household income of \$39,330 in 2009. Only about 57% of the population live and work in El Centro. However, there is an additional 3.7% day time population change due to commuting. The project is located in a very sparsely populated area 8 miles east of the City of Holtville, California. There are a small number of houses and farms near the project boundary. Nearby residential and commercial populations are economically and culturally diversified.

Title VI of the Civil Rights Act of 1964 and Presidential Executive Order 12898 address three major principles of environmental justice:

Avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.

Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

Prevent the demand of, reduction in or significant delay in the receipt of benefits by minority and/or low-income populations.

This mining contract would benefit the Counties of Imperial and San Diego by supplying a source of sand and gravel aggregates for construction of infrastructure, housing, agricultural/irrigation piping and canal lining. Without this source of materials, costs of all these beneficial usages and possible loss of jobs could adversely affect the minority and low-income populations of local communities.

Energy (Executive Orders 13211 and 13212)

Geothermal, solar and/or wind energy are proposed and may be developed around the Salton Sea area or east of Glamis. However, these projects are over 40 miles from the Oat Pit site. There are projects researching wind energy approximately 20 miles to the east of the Oat Pit site which would not be in conflict because of the distance to these potential energy development sites and the lack of a nexus between these potential

energy projects and the mining project.

Farmlands – Prime/Unique

The proposed action would not take place in any designated or proposed Prime or Unique Farmlands. This project would not affect water sources that are available for farming purposes. This element would not be considered further.

Wild and Scenic Rivers

There are no waterways designated under Federal Wild and Scenic Rivers Act 1968 near the proposed project.

Wilderness

There are no designated Wilderness Areas or Wilderness Study areas in, or near proximity to the proposed action.

Public Services, Utilities, and Service Systems

Because the area is largely uninhabited there are no schools, parks, or other public facilities in the project area. Fire protection is provided by the Imperial County Fire Department/Office of Emergency Services from Holtville. Police protection is provided by the Imperial County Sheriff's Department.

There are no existing utilities at the project site, including piping for water, wastewater, natural gas, or electrical power lines. All water and necessary supplies for operations, including human comfort will be brought in and taken out by the operator. This project would have no affect on utilities or public services as operations proposed are self contained in both energy requirements and water resources for infrastructure maintenance.

CHAPTER 4 - ENVIRONMENTAL EFFECTS

This chapter describes the anticipated direct, indirect, and cumulative impacts of the Proposed Action and Alternatives on the affected resources.

Table 12 Table of Affected Environment

Critical Element	Potentially Affected	
	Yes	No
Air Quality/ Health and Effects	x	
ACECs		x
Cultural Resources	x	
Farm Lands, Prime/Unique		x
Floodplains		x
Sensitive Species	x	
Lands (existing rights)		x
Geology and Mineral Resources	x	
Grazing		x
Nat. Amer. Rel. Concerns		x
Paleontology		x
Vegetation	x	
Recreation		x
Range		x
Soils	x	
Invasive/Non-native Species	x	
T & E Species		x
Visual Resource Management	x	
Wastes, Hazardous/Solids		x
Water Quality		x
Water Use		x
Wetlands and Riparian Waters of the US?		x
Wild and Scenic Rivers		x

Critical Element	Potentially Affected	
	Yes	No
Wildlife	x	
Wild Horse and Burro		x

Impacts of Alternative A (Proposed Action)

Air Quality

Mining activity will create particulate (dust) as a result of vehicle transit within each phase area of the Oat Pit project, as well as dozer and loader activities at the phase mine area and movements to on-site processing facilities. However, amount of dust emissions is difficult to quantify from vehicle movements and extractive and processing operations.

A 305 horsepower (hp) bulldozer can be expected to move 500 tons of material per hour. To excavate 750 tons of material per day (375 tons of salable product per day), it will require 1.3 hours of bulldozer time per day⁶. A 475 hp FEL will move 750 tons of material up to 200 feet to the processing facility in 1.6 hour. The FEL will load 375 tons of material into 17 trucks in 1.6 hours. The FEL will move up to 375 tons of sand waste 200 feet back to the pit area in 1.8 hours.

Processing operations will require a three deck screen and at least three conveyors, all requiring 35 kilowatts (kW) power. A 60 kW generator will meet the electrical needs of the screen and conveyor, operating 6 hours per day.

An average 25 ton capacity over-the-road haul truck consumes approximately 0.17 to 0.13 gallons per mile (6 to 7.5 miles per gallon) of diesel fuel, depending on idle times, tire type and pressure, load weight, and transport distances. The round-trip distance between the Oat Pit site and El Centro is 47 miles, requiring at least 6.25 gallons per 25-ton haul, or 107 gallons per day for 17 daily trips under this alternative.

Table 13 Fuel consumption associated with operations at the Oat Pit project area.

Equipment	Use Hours per Day	Fuel Consumption	Approximate Total Fuel per Day⁷
Bulldozer (305 hp)	1.3	10.4 gph	13.5 gallons
FEL (475 hp)	5	15.2 gph	76 gallons

⁶ Caterpillar Performance Handbook, 37th edition, page 1-44.

⁷ Mine and Mill Equipment Costs, An Estimator's Guide, 2010, *Published By: Infomine USA, Inc.*, 1120 North Mullan Road, Suite 100, Spokane Valley, Washington 99206 USA.

Generator	6	3.5 gph	21 gallons
Truck transport (to El Centro) @ 7.5 gpm)			98 gallons
Miscellaneous to include employee transportation			25 gallons (gasoline)
			233 gallons per day

Approximately 25 gallons of gasoline will emit 485 pounds of CO₂, and 208 gallons of diesel will emit 4,678 pounds of CO₂, for a total emission of 5,103 pounds of CO₂ per day⁸.

Dust is also emitted from material dumping into vibratory screens, onto stockpiles, and from loader operations moving and dumping stockpiled material into highway haul trucks, however, the actual quantity per unit of use (e.g., road or pit area) is not quantifiable. Watering (wet screening) can significantly reduce dust emissions from material processing operations

Transportation of salable sand and rock material from the Oat Pit site will contribute to particle and noxious gas emissions in central Imperial County. Movement of on-the-road haul trucks along unpaved roads will result in dust being emitted into the area in and around access roads. Dust will not be an issue along paved roads, or access roads that are watered or where a palliative is placed to stabilize particulates.

Both particle emissions from combustion of diesel fuels (PM₁₀ and PM_{2.5}) and noxious gas emissions (COx⁹, and NOx) will be released above current levels in central Imperial County.

The proposed action and all alternatives would result in use of combustion engines, but the levels of use would be such a small amount on a global scale that this activity would have no effect on climate change.

Generally, market needs dictate the amount of mineral materials required to meet local and regional demands. In Imperial County, demand is focused on county infrastructure such as roads and bridges (asphalt and Portland cement concrete aggregate, bases, and fills), commercial construction (fill, asphalt and Portland cement concrete aggregate, and plaster sands), and agricultural land leveling, earthen ditches, berms, and fill dams. Demand for mineral materials increases within a local or regional market only when there is an increase in projects requiring mineral materials. Because the

⁸ U. S. Environmental Protection Agency, Office of Transportation and Air Quality provides 19.4 pounds of CO₂ per gallon of gasoline and 22.2 pounds of CO₂ per gallon of diesel. These calculations and the supporting data have associated variation and uncertainty. EPA may use other values in certain circumstances, and in some cases it may be appropriate to use a range of values (<http://www.epa.gov/oms/climate/420f05001.htm#information>).

local demand is being met by other sources of materials, operations at the Oat Pit site are expected to displace other sources that are not proximal to local needs. As such, there is no anticipated increase on particulate or gaseous emissions in the Imperial County air basin. There would be an increase in local emissions associated with activity at the site.

Cultural Resources

Twelve archaeological sites were identified in the Gibson project area immediately north and adjacent to the project through archival research and during archaeological survey conducted by ASM Affiliates Inc. (2007). Each site was evaluated for its significance and eligibility for listing in the NRHP and the CRHR in accordance with the regulations set forth under Section 106 of the National Historic Preservation Act and the California Environmental Quality Act, respectively. Table 14 lists each of the sites identified in the project area, along with the NRHR and CRHR eligibility recommendations for each site.

Table 14 Cultural resources located at the project site.

Site number	Description of site	NRHP ¹ /CRHR ² eligibility recommendation
IMP-8464	This prehistoric site consists of a ceramic sherd scatter, possibly from a single vessel.	Not eligible
IMP-8465H	This historic site consists of a small historic trash scatter primarily containing household and domestic items.	Not eligible
IMP-4009	This prehistoric site originally consisted of a small ceramic sherd scatter with one chert flake when first recorded in 1979; however, only the chert flake was relocated during the 2007 survey. This site shows evidence of extensive ORV activity.	Not eligible
IMP-4840	This prehistoric site was originally recorded as a temporary camp with lithic (stone) artifacts and pottery sherds in 1982. The 2007 survey observed the site in a similar condition as recorded in 1982 but with fewer ceramic sherds.	Not eligible
IMP-4841	This prehistoric site consists of lithic artifacts. The site has been impacted by gravel extraction activities.	Not eligible
IMP-4842	This prehistoric site consists of a lithic artifact scatter.	Not eligible
IMP-4843	This prehistoric site was originally recorded in 1982 as a cluster of ceramic shard scatter with lithic artifacts; however, the 2007 identified a very sparse ceramic scatter with no lithic artifacts.	Eligible
IMP-4844	This prehistoric site is temporary campsite	Eligible

	containing ceramics, lithic tools, and fish bone associated with sparse charcoal.	
IMP-4850	This prehistoric site consists of two habitation areas connected by a small sparse lithic and ceramic scatter and includes cobble tools, charcoal, mammal and fish bone, and possibly a hearth. The site has been disturbed by gravel mining activity and possibly by other modern disturbance.	Eligible
IMP-4851	This prehistoric site consists of two habitation areas containing ceramics, cobble tools, lithic waste, charcoal, and fish remains. When the site was originally recorded in 1982 the remains of a possible roasting oven or earth oven was observed; however, this feature was not relocated during the 2007 survey.	Eligible
IMP-4852	This prehistoric site was originally recorded in 1982 as containing ceramic sherds, a possible millstone, and numerous silt stone fragments; however, gravel mining activity has completely destroyed any evidence of the site as confirmed during the 2007 survey.	Not eligible
IMP-4868	This prehistoric site originally consisted of a small ceramic sherd scatter first recorded in 1982; however, the site has been disturbed by gravel mining activity and only two sherds were identified during the 2007 survey.	Not eligible
<small>1 National Register of Historic Places (NRHP) 2 California Register of Historic Resources (CRHR)</small>		

IMP-4009, IMP-4841, and IMP-4852 have been greatly disturbed and no longer retain any characteristics that would allow the sites to qualify for inclusion in the NRHP or CRHR.

IMP-8464, IMP-8465H, IMP-4840, and IMP-4842 are recommended not eligible for the NRHP or CRHR due to the sites' limited potential to yield important information about the prehistory of the area and the low likelihood of the site to contain subsurface or buried cultural resources. Archaeological sites determined to have a low potential to contain subsurface or buried cultural resources are characterized by similar site-types excavated and analyzed in the region through archaeological testing (ASM Affiliates Inc. 2007).

IMP-4843, IMP-4844, IMP-4850, IMP-4851, and IMP-4868 are recommended eligible for the NRHP or CRHR due to the sites' potential to yield important information about the prehistory of the area.

The proposed action (alternative A) shall avoid all 12 archaeological sites listed in Table

14. Avoidance measures shall involve the designation of an area of exclusion for all project activities to provide protection of the archaeological sites. The exclusion area will include a minimum of a 40 meter buffer to be defined in coordination with the BLM. Protective fencing shall be erected along the perimeter of the area(s) of avoidance prior to any project activity, and all project workers shall be trained in complying with all avoidance measures. A BLM-permitted qualified archaeologist (QA) shall be required to coordinate with the BLM and oversee all avoidance measures and shall have the authority to halt project activities, such as the installation of avoidance fencing, that involve ground disturbance that could disturb cultural resources.

Recreation

The mine area is in a region that is used for off-highway vehicle use, hiking, target shooting, and hunting. While the proposed aggregate mining would limit public access to the mine site for safety reasons, the recreational values of the surrounding area would not be impacted. The proposed project and its action alternatives would have no effect on the recreational value of the area, it would not restrict access to any road, and the only destination that would be restricted is the actual area being mined, therefore this element will not be discussed further.

Noise / Noise Quality

Noise levels in the vicinity of the mine would increase above ambient levels as a result of proposed mining and processing activities. Noise levels resulting from mining and processing operations would be at levels above ambient levels for the area, and within 100 feet from operations would be above 90 decibels. Table 15 shows the exposure limits for noise levels by various agencies. Highlighted are the noise levels expected in the Oat pit operations area from a bulldozer. Similar levels would be associated with screening and FEL operations.

Table 5 Noise exposure levels identified by various regulating agencies.

	EPA and WHO		ANSI and NIOSH			OSHA	
dBA	hours	minutes	hours	minutes	seconds	hours	minutes
70	24						
73	12						
76	6						
79	3						
82	1	30					
85		45	8	0			
88		23	4	0			
90						8	

91		11	2	0			
92						6	
94		6	1	0			
95						4	
97		3		30	0	3	
100				15	0	2	
102						1	30
103				7	30		
105						1	
106				3	45		
109				1	53		
110							30
112					56		
115					28		15

Noise attenuation¹⁰ typically decreases 6 decibels as the distance from measuring point doubles. For example, a bulldozer with a 95 decibel rating 50 feet from the source will be 6 decibels less 100 feet from the source, and 12 decibels less 200 feet from the source. Typical nighttime comfort range is 40 decibels in a quiet town, and can be considerably less in a town like Holtville. Examining the bulldozer activity in relation to the town of Holtville, the following table illustrates the change in noise intensity:

Table 6 Decibel rating a distance from a noise source

Distance from Source (feet)	(meters)	Decrease in Decibel Rating	Decibel Rating at Source
50	15		95
100	30	6	89
200	61	12	83
400	122	18	77
800	244	24	71
1600	488	30	65
3200	975	36	59
6400	1,951	42	53
12800	3,901	48	47
25600	7,803	54	41

¹⁰ Reduction of noise strength during transmission through air, and is the opposite of amplification.

Based on table 6, there will not be an impact on noise levels above ambient levels at the town of Holtville (8 miles (42,000 feet)) from noise generating sources at the Oat Pit as it will blend with ambient noise levels typically experienced (refer to attached map). The nearest residences are west of the Oat Pit area, associated with large agricultural operations. These residences are 2 miles (10,400 feet) west from the Oat pit site west along Boyd Road. Based on Table 6, noise levels would be in an acceptable range for daytime mining and processing operations.

In deserts where the natural sound pressure levels are very low, ambient noise levels in natural deserts do not exceed 66 decibels, and no desert animal creates sounds above 56 decibels. Mechanized sounds increase the decibels in the desert above natural thresholds. Sources of noise from mining activities at the Oat Pit may include diesel-powered earth moving equipment and water trucks, trucks hauling material to market, and material screening activities. While noise generated from equipment will be intermittent, loader mining and screening and processing operations will be on during a sustained basis throughout a 12 hour day (6:00 am to 6:00 pm).

Geology and Mineral Resources

Mining and Mineral Material Extraction

Mining and mineral extraction activities cause habitat loss and degradation because of long-term loss of vegetation cover and removal of topsoil. Associated activities, such as truck and light vehicle traffic, can result in direct mortality within the project area as well as outside of the project site along access roads. Even though most mineral material sites (e.g., sand and gravel) are small, their cumulative effect can be significant. The acreage of mining and mineral sites within FTHL MAs has not been mapped and quantified.

Sand and gravel resources would be depleted. There are no active mining claims on-site. As mining progresses, overburden and waste rock would be dozed or hauled into those areas where mining has been completed.

Soils

Because of high velocity easterly winds, a surface expression of soils are absent from the area. Soils are limited to loamy sand and lag gravels (Appendix 2). All areas disturbed by mining activities and access roads or stockpiled waste material would be incorporated in post mining reclamation and would be mitigated using the latest approved ICAPCD methods to reduce susceptibility to wind and water erosion. This may include re-vegetation efforts or barrier features such as maintaining the ridge front and existing vegetation to block the reclaimed areas from wind erosion.

Visual Resources

The basic philosophy underlying visual quality of a landscape depends on the visual contrast between a project and the existing landscape. The contrast can be measured by comparing the project features with the major features in the landscape. The contrast rating is conducted from the most critical viewpoints. These are usually along commonly traveled routes or at other likely observation points. Relative to the proposed action, the key observation point occurs along Whitlock Road. Road alignment and terrain would limit the views and viewing time. The degree of contrast with the existing landscape at this site would not attract attention and would be consistent with VRM Class III objectives.

Under the Proposed Action there would be a temporary increase in visual impacts associated with equipment use and occupation of the surface. Surface disturbing activities would also create dust and particulate “clouds” during operations. Overall, however, operations would be obscured by the existing ridgeline while mining occurs. Concurrent mining and reclamation would be conducted in a manner that maintains a line and form that blends into the surrounding topography.

Vegetation

Natural re-vegetation of mined sites in the Oat Pit area that were completed within the last 15 to 20 years have vegetative cover of at least 80 percent of the density and 70 percent of the diversity that occurs in the area. Dense and diverse re-vegetation in arid lands is difficult. Low levels of rainfall, diurnal and seasonal temperature extremes, and minimal soil organic material content are significant naturally occurring constraints to arid land re-vegetation of mined sites. However, the sandy loam does create a water-holding capacity as evidenced by large, localized woody plant populations (creosote bush, tamarisk; refer to figure 1) in the ridge area containing sandy loam and gravel lenses.

The proposed action would result in the complete elimination of approximately 50 acres of plants. Exotic plant species such as tamarisk could exploit the disturbed area making reinvasion of native species less likely. After reclamation the site would be gradually re-colonized by pioneer species. These species would in turn modify the site so as to make it more acceptable to successional species such as creosote brush.

Proposed reclamation consists of lowering the mine slopes, developing structural diversity to enhance wildlife habitat, invasive species removal, preparing the area for seeding of native vegetation, and the actual seeding of the site.

The area was surveyed by Marie Barrett, biologist, on May 24 and June 1, 2007. No endangered or threatened species were observed on site.

Wildlife

Refer to the list of potential and observed species in Tables 10 and 11, Section 3.

Pedestrian surveys were conducted for avian and wildlife species within the project area. No transect or botanical species surveys were required at the date of the surveys. Those direct and indirect effects of the project discussed in the impact analysis in Section 3 could occur as a result of Alternative A. It is likely that some mortality of species of small mammals, reptiles/amphibians, and some birds may occur in the project area.

On-going impacts to wildlife would include noise disturbance from mining and traffic on the access road. Activities have been occurring at this site since the earlier 1980's. Impacts would not increase or differ from those that have already occurred.

Implementing conservation measures and mitigation stipulations such as biological monitors onsite during initial ground disturbing activities could minimize direct construction impacts to wildlife. Effects to avian species could be minimized if nesting surveys are conducted prior to disturbance. If mining is begun during nesting season (March-August) in previous undisturbed areas, a nesting bird survey should be conducted 3-7 days prior to disturbance.

Special Status Species

The majority of the habitat on site is previously impacted by mining and off-highway vehicle activities. Little new impacts to resident species are expected to occur as a result of the project if avoidance and minimization conservation measures are followed. Mining work within the Flat-Tailed Horned Lizard and East Mesa Management Area are grandfathered because of historic consumptive uses of the site. Construction, maintenance and operations of the mining operation can cause physical disturbances that may change soil structure, runoff, and plant and animal diversity. Approximately 48 acres of potential Flat-tailed lizard habitat could be destroyed or adversely impacted by direct effects of the mining contract. Mitigation other than avoidance and minimization will not be required. Indirect effects could include introduction of predators. Refer to the Special Status Species section for more details pertaining to flat-tailed horned lizard. Wildlife along the access road, especially basking reptiles such as the flat-tailed horned lizard or desert tortoise, could be crushed by project vehicles. No desert tortoise impacts are expected to occur since no evidence of tortoise was observed onsite and the habitat is sub-optimal and disturbed, however speed limits for vehicular traffic at the site would minimize the potential concerns. Wildlife observers present during initial ground disturbing activities would reduce the potential concern during incidental encounters with wildlife.

No endangered or threatened plant species were observed. The mesquite hummocks observed in the northeast boundary of the site are proposed to be marked and avoided so that no mining is conducted within 100 feet of these sensitive areas.

Resident birds, including mourning dove (*Zenaida macroura*), lesser nighthawk (*Chordeiles acutipennis*), and loggerhead shrikes (*Lanus ludovicianus*) were observed within the project boundaries. Observations of resident bird species within project boundaries would suggest that nesting of migratory birds species in spring and summer months is probable indicating seasonal construction window stipulations are necessary to ensure compliance with the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712). Bird species observed during pedestrian surveys conducted in 2007 did not include the burrowing owl (*Speotyto cunicularia*), a State species of special concern. If burrowing owl presence is documented during pre-construction surveys, avoidance and mitigation measures would become necessary to comply with regulations.

The project could affect bat fauna foraging areas, however most foraging in the area is confined to washes so only minor impacts are expected in suboptimal foraging habitat. Lighting, seismic energy waves and noise impacts should be limited or avoided after sunset to the extent possible.

Animals could be killed or injured during mining operations. They could also lose cover and burrowing sites. Fortunately, wildlife could be deterred from using the site as a result of the operation's noise and vibration.

Except where the project is completely fenced and cleared of FTHL's by a biologist, prior to beginning any occupation of the project area, an employee of Superior shall be identified and trained as a biological monitor. The Biological Monitor shall be present in each active phase area where surface occupation is occurring throughout the work day from initial clearing through habitat restoration. The Biological Monitor shall have the authority and responsibility to halt activities that are in violation of any terms and conditions of the contract and FTHL RMS.

Impacts of Alternative B (On Site Mining with Off-Site Processing)

Under this alternative, the manner and degree of impacts associated with mining would be consistent with those analyzed under the Alternative A. Processing operations would be removed to another site off the Oat Pit project area. Depending on location of the processing facility, there would be a greater amount of haul truck transports because both waste and rock would be moved, estimating a doubling of the truck hauls than are anticipated under the Proposed action.

Air Quality

Impacts to air quality associated with mining operations would be the same as the Proposed Action. Due to the fact that rock and waste material would be processed off-site, there would be no resultant impacts to air quality at the Oat Pit site associated with

material processing. However, air resource impacts, especially PM₁₀ emissions, would be displaced to the offsite facility in the same manner and degree as the proposed action. There would be an increase in PM₁₀ emissions associated with loading waste material along with the rock material to waiting trucks at the Oat Pit site. An increase in PM₁₀ emissions would also occur when off-loading waste with rock material at the off-site location. There would be a net increase in PM₁₀ emissions over the proposed action under this alternative.

Up to 50 percent of the existing material is waste. Therefore, twice as much mineral material must be trucked to the off-site facility. There would be more truck traffic on local roads between the Oat Pit mine site and off-site processing facility. Under the proposed action, 17 truck movements would be realized per day. The waste to salable material ration is approximately 1 to 1 and as a result the truck movements along the mine access road and primary routes of travel would double. This increase in truck usage on a per unit product basis would result in increases in NO_x and CO_x emissions associated with waste transport.

Increased fuel usage would be realized. An average 25 ton capacity over-the-road haul truck gets approximately 6 to 7.5 miles per gallon of diesel fuel, depending on idle times and transport distances. The round-trip distance between the Oat Pit site and El Centro is 47 miles, requiring at least 6.25 gallons per 25-ton haul or 213 gallons per day under this alternative. Both PM₁₀ and NO_x would double under this alternative.

Cultural Resources

The manner and degree of impacts associated with mining are consistent with those analyzed under Alternative A. Because all known archaeological sites would be avoided under the proposed action, no new impacts associated with off-site processing would be realized. However, off-site processing would require a cultural survey and review of potential conflicts with cultural resources if located on undisturbed public and/or private lands. If located in an existing facility, no new impacts to cultural and historic resources are anticipated.

Recreation

The manner and degree of impacts associated with mining are consistent with those analyzed under Alternative A. Impacts are not anticipated under the off-site processing Alternative C.

Noise / Noise Quality

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. Noise levels at the Oat Pit site would be reduced because of the removal of screening and related process operations to an off-site facility. However, off-site processing would have increased noise levels associated with screening and associated processing operations if located on undisturbed public and or

private lands. If located in an existing processing facility, increased levels of noise would not be likely.

Geology and Mineral Resources

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Mining and Mineral Material Extraction

No mining would occur in the FTHL MA, thus making approximately 320,000 tons of sand and gravel unavailable to local and or regional infrastructure, commercial and or agricultural uses.

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Soils

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Visual Resources

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Biologic Resources

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Vegetation

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Wildlife

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C.

Special Status Species

The manner and degree of impacts associated with mining are consistent with those analyzed under the Alternative A. No impacts are anticipated under the off-site processing Alternative C

Impacts of Alternative C (FTHL Management Area Avoidance)

The manner and degree of impacts associated with mining and processing operations are consistent with those analyzed under the Alternative A. The period of activity would be reduced because less material would be available to mine and process as a result of resources not made available within the FLHL MA.

Air Quality

Impacts to air quality would be consistent with the proposed action. The intensity of mining and processing activity (750 tons per day) and transport activity (375 tons per day) is not expected to change. However, the duration of the project would be shortened as a result of fewer sand and gravel resources available under the contract.

Cultural Resources

Impacts to cultural resources would be avoided under the proposed action and the area of allowable excavation would not change with regard to known cultural resources in the project area.

Recreation

Recreation activity that would be displaced as a result of Alternative C would be consistent with those under the proposed action. The intensity of mining and processing activity (750 tons per day) and transport activity (375 tons per day) is not expected to change. However, the duration of the project would be short as a result of fewer sand and gravel resources available under the contract.

Noise / Noise Quality

Noise and noise quality within the area would be consistent with the proposed action. The intensity of mining and processing activity (750 tons per day) and transport activity

(375 tons per day) is not expected to change. However, the duration of the project would be shortened as a result of fewer sand and gravel resources available under the contract.

Geology and Mineral Resources

Impacts to geologic resources would be consistent with the proposed action.

Mining and Mineral Material Extraction

Short term access to and availability of sand and gravel resources under this alternative would be consistent with Alternative A (proposed action) within the Holtville market (local) and El Centro market (regional). Long term access to and availability of sand and gravel resources in these local and regional markets would be impacted as a result of a lessening of overall available aggregate resources in the Oat Pit-Wheeler road aggregate area.

Soils

Impacts to soil resources would be consistent with the proposed action.

Visual Resources

Impacts to visual resources during short term mining and processing at the Oat Pit site would be consistent with the proposed action. The duration and period of operation would be shortened as a result of a reduction of available aggregate resources.

Biologic Resources

Vegetation

Areas known to contain established associations of vegetation are avoided under Alternative C.

Wildlife

Impact to Wildlife within the Oat Pit project area is consistent with the proposed action. The intensity of mining and processing activity (750 tons per day) and transport activity (375 tons per day) is not expected to change. However, the duration of the project would be shortened as a result of fewer sand and gravel resources available under the contract.

Special Status Species

Impact to Special Status Species within the Oat Pit project area is consistent with the proposed action. The intensity of mining and processing activity (750 tons per day) and transport activity (375 tons per day) is not expected to change. However, the duration of the project would be shortened as a result of fewer sand and gravel resources available under the contract. This alternative would also reduce the number of acres of FTHL habitat impacted.

Impacts of No Action Alternative

Air Quality

Under the No Action Alternative, there would be no new mining or processing operations and therefore no adverse impacts to air quality in the Oat Pit project area.

Cultural Resources

Cultural resources would not be disturbed under the No Action Alternative as no additional mining would occur within the Oat Pit project area.

Noise / Noise Quality

Under the No Action Alternative, there would be no new mining or processing operations and therefore no adverse impacts to air quality in the Oat Pit area.

Geology and Mineral Resources

Under the No Action Alternative, there would be no new mining or processing operations and therefore no adverse impacts to geologic features or mineral resources in the Oat Pit area.

Mining and Mineral Material Extraction

Approximately 850,000 tons of sand and aggregate material would not be available for local or regional infrastructure, commercial, and or agricultural use.

No concurrent reclamation of previously mined areas would occur under the No Action alternative. Stockpiled material abandoned within the contract area from previous mining activity would not be removed.

The No Action Alternation would not impact mining and mineral material extraction as additional mining and processing operations would not occur in the Oat Pit project area.

Recreation

Under No Action Alternative, recreational opportunities in the area would remain at current levels.

The No Action Alternation would not impact recreation as additional mining and processing operations would not occur in the Oat Pit project area.

Soils

Under No Action Alternative, no further soil disturbance would occur.

The No Action Alternation would not impact soils as additional mining and processing operations would not occur in the Oat Pit project area.

Visual Resources

The No Action Alternation would not further impact visual resources as additional mining and processing operations would not occur in the Oat Pit project area. Areas disturbed by previous mining activity would be allowed to reclaim naturally. Older stockpiles of gravel and screened mineral material would remain on site. The landscape character of form and line and the visual contrast of the existing landscape would not be altered.

Biologic Resources

The No Action Alternation would not impact biological resources as additional mining and processing operations would not occur in the Oat Pit project area. Areas disturbed by previous mining activity would be allowed to reclaim naturally. Older stockpiles of gravel and screened mineral material would remain on site.

Vegetation

The No Action Alternation would not impact vegetation as additional mining and processing operations would not occur in the Oat Pit project area.

Wildlife

The No Action Alternation would not impact wildlife as additional mining and processing operations would not occur in the Oat Pit project area.

Special Status Species

The No Action Alternation would not impact special status species as additional mining and processing operations would not occur in the Oat Pit project area. Under this alternative, previously mined areas within the Oat Pit site would be allowed to restore

naturally to habitat conditions that exist currently in non-mined areas between Whitlock road and the East Highline canal.

Cumulative Impacts of Proposed Action

Historically, the area around the Oat Pit project area has been used for purposes associated with camping, hunting, mining and off-highway vehicle uses. Today, these uses continue. The proposed project would not result in any substantial cumulative impacts to these uses. Following closure and reclamation of the mine, the area would be returned to a condition, as near as practicable, to that which existed before operations began.

There would be no cumulative effects on ACEC areas, Prime or Unique Farmland, Wild or Scenic Rivers or Wilderness areas because these elements do not occur in this project area. The analysis of effects of the proposed action on hazardous or solid wastes, floodplains, wetland/riparian zones, environmental justice, water quality (surface/ ground), and energy indicated that these elements would not be affected by the proposed action. As a result, implementation of the proposed project would have no cumulative effects on these elements.

The analysis of effects of the proposed action on air quality indicated a minor, negligible adverse effect. However, the proposed project is in an area designated as non-attainment for State and Federal ozone and PM₁₀ standards according to Imperial County Air Pollution Control District. The proposed project would follow ICAPCD guidelines and therefore this effect is very small and would be considered negligible and therefore insignificant.

Mitigation Measures

1. All rolling equipment that would be used in mining, processing, and transportation elements of the proposed action would conform to California emission standards.
2. Fugitive dust PM₁₀ resulting from mining and processing operations would be controlled by the latest approved ICAPCD methods and guidelines required by Imperial County and the State of California Air Resources Board.
3. The project proponent shall designate a qualified archeologist (QA) who would be responsible for overseeing compliance with protective stipulations (installation of protective fencing) for the cultural resources identified on site and for cooperation and compliance with all applicable laws, regulations, protocol, and agreements. A QA shall have the authority to halt all project activities that are in violation of the stipulations. The QA shall have a copy of all stipulations when work installing the fence is being conducted on the site. The QA shall be a BLM-permitted archeologist with appropriate experience. Employees shall be instructed to avoid fenced areas.

4. Prior to project initiation, an individual shall be designated as a biological field contact representative. The field contact representative shall have the authority to enforce compliance with protective measures for the FTHL and would be the primary agency contact for dealing with these measures. The field contact representative shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
5. All project work areas shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers shall restrict their activities and vehicles to areas that have been flagged to eliminate adverse impacts to the FTHL and its habitat. All workers shall be instructed that their activities are restricted to flagged and cleared areas.
6. Within FTHL habitat, the area of disturbance of vegetation and soils shall be the minimum required for the project. [If possible, specify a maximum disturbance allowable based on the specifics of the project.] Clearing of vegetation and grading shall be minimal. Wherever possible, rather than clearing vegetation and grading the ROW, equipment and vehicles shall use existing routes or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction to facilitate habitat restoration. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimal.
7. Existing roads shall be used for travel and equipment storage whenever possible.
8. A biological monitor shall be present in each area of active surface disturbance throughout the work day from initial clearing through habitat restoration. The exception being the areas completely fenced and cleared of FTHLs by a qualified biologist approved by BLM.
9. All employees of the project proponent who work on-site shall participate in a flat-tailed horned lizard education program prior to initiation of field activities. The project proponent is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees shall receive formal, approved training prior to working on-site. The employee education program must be received, reviewed and approved by the BLM El Centro Field Office at least 15 days prior to the presentation of the program. The program may consist of a class presented by a qualified biologist (BLM or contracted) or a video. Wallet sized cards or a one page handout with important FTHL information for workers to carry are recommended. The program shall cover the following flat tailed horned lizard topics at a minimum:
 - a) Distribution
 - b) General behavior and ecology,
 - c) Sensitivity to human activities,

- d) Legal protection,
 - e) Penalties for violations of State or Federal laws,
 - f) Reporting requirements, and
 - g) Project protective mitigation measures.
10. Upon locating a dead or injured flat tailed horned lizard, the project proponent or agent is to notify the USFW and BLM's EI Centro Field Office. The appropriate, established protocol shall be implemented for such an event.
 11. Except on county maintained roads, vehicle speeds shall not exceed 10 miles per hour through project area.
 12. No dogs shall be allowed at a work site.
 13. All trash and food items shall be properly contained within closed, raven proof containers. These shall be removed from the project site in a timely manner to reduce the attractiveness of the area to ravens and other predators. Port-a-potties would be serviced on a regular basis.
 14. Project proponents would conduct a nesting bird survey 3 to 7 days prior to disturbance for each phase of operation if opening a new phase during breeding bird season (that is between February 15 and September 1)
 15. If any phase of mining operation is initiated during nesting season (March-August) in previous undisturbed areas, a burrowing owl survey would be conducted prior to any new disturbance. If active burrows are found they would be avoided and consultation would be initiated to evaluate the potential for avoidance or mitigation of impacts in accordance with the California Department of Fish and Game Mitigation Guidelines.
 16. A qualified biologist (QB) with experience conducting education programs for flat-tailed horned lizards shall be approved by BLM for this project. The QB would also instruct the project foreman in visually identifying salt cedar, which would be removed, if found, on site.
 17. After mining is completed in one area, concurrent reclamation would be performed in accordance with guidelines found in the approved SMARA Reclamation Plan and the Imperial County Conditional Use Permit. BLM, EI Centro field office would be given a copy of the SMARA Reclamation Plan and appraised of reclamation activities as they occur. Reclamation would include invasive vegetation control measures.

CHAPTER 5 - CONSULTATION AND COORDINATION

Imperial County Air Pollution Control Board
Imperial County Planning and Development Department

List of Preparers

This EA was prepared by an interdisciplinary team of BLM El Centro Field Office Resource specialists.

NAME & TITLE	EA RESPONSIBILITY
Efe Erukanure Geologist	Team Coordinator, Minerals
Dallas Meeks Recreation Specialist	Recreation, Visual Resources
Daniel Steward Wildlife Biologist, Resource Branch Chief	Supervisor lands and Minerals
Jennifer Whyte , Realty Specialist	Lands, Realty Actions
Thomas Zale Associate Field Manager	Management Oversight
Christine McCollum Archaeologist	Cultural Resources
Andrew Trouette Natural Resource Specialist	Botany, Special Status Species
Sharon Tyson Wildlife Biologist	Wildlife
Nicollee Gaddis Planning & Environmental Coordinator	NEPA Compliance
Margaret L. Goodro Field Manager	Management Oversight

Other Federal Agencies

US Fish and Wildlife Service

Tribal Agencies

Native American Heritage Commission (NAHC): There is no indication that ASM contacted the NAHC or contacted any interested parties-- BLM is requesting that ASM indicate if they made any such contact.

BLM has conducted informal consultation with the Quechan and Cocopah Tribal Cultural Resource Departments. No concerns have been shared with the BLM to date. The BLM will continue to conduct informal consultation with the Tribes about this project.

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