LAND USE SERVICES DEPARTMENT
PLANNING COMMISSION STAFF REPORT

HEARING DATE: June 23, 2022 **AGENDA ITEM #3**

Project Description

APN:	Mine - 0643-041-09, -10, and -11 Mill - 0643-041-01, and -02
Applicant:	Iron Age Mine, LLC
Community:	Twentynine Palms
Location:	The site is located on both unpatented claims and patented lands approximately 18 miles east/southest of the City of Twentynine Palms. The site is in the historic Dale Mining District in the Northern Pinto Mountains
Project No:	PROJ-2021-00009
Staff:	Reuben Arceo
Rep:	Lilburn Corporation
Proposal:	Mining and Reclamation Plan to remove historical iron ore tailings on 71 acres of public (BLM) lands and 34 acres of patented (private) lands. The project will also reclaim and revegetate 70 acres of previously-disturbed land after tailings removal, and backfill 8 acres of the existing quarry.

Vicinity Map

Regional Vicinity

9 Hearing Notices Sent on : June 3, 2022

Report Prepared By: Reuben Arceo, Planner

SITE INFORMATION:

Project Size: 105 acres
Terrain: Open Pit Quarry and Rugged Mountain Terrain
Vegetation: Creosote bush series, brittlebush series, acacia series

SITE AND SURROUNDING LAND USES AND ZONING:

AREA	EXISTING LAND USE	LAND USE CATEGORY/ ZONING DESIGNATION
SITE	Open Space/Quarry	Resource Conservation
North	Open Space	Resource Conservation
South	Open Space	Resource Conservation
East	Open Space	Resource Conservation
West	Open Space	Resource Conservation

	Agency	Comment
City Sphere of Influence:	N/A	N/A
Water Service:	Onsite Wells	Presently Served
Sewer Service:	Portable Toilets	Presently Served

STAFF RECOMMMENDATION: That the Planning Commission **ADOPT** the proposed Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program; **ADOPT** the Findings as contained in the staff report; **APPROVE** the Iron Age Quarry Mining and Reclamation Plan 2022M-01; and, **DIRECT** staff to file the Notice of Determination. [1]

[1] In accordance with Section 86.08.010 of the Development Code, the Planning Commission action may be appealed to the Board of Supervisors

Figure 1 –
Regional Location Map
Iron Age Mine

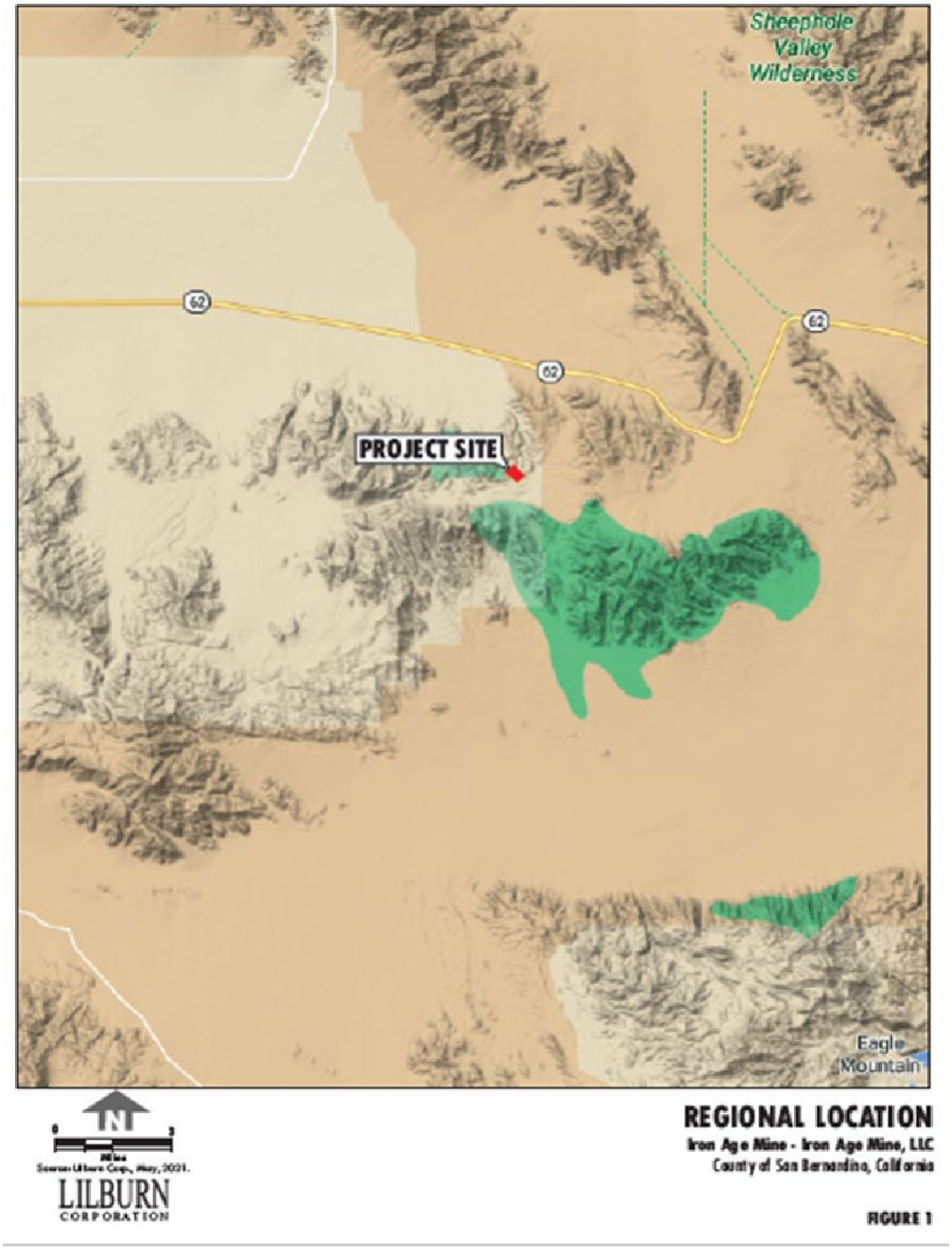


Figure 2
Project Location Map
Iron Age Mine

Figure 3
Vicinity Map
Iron Age Site

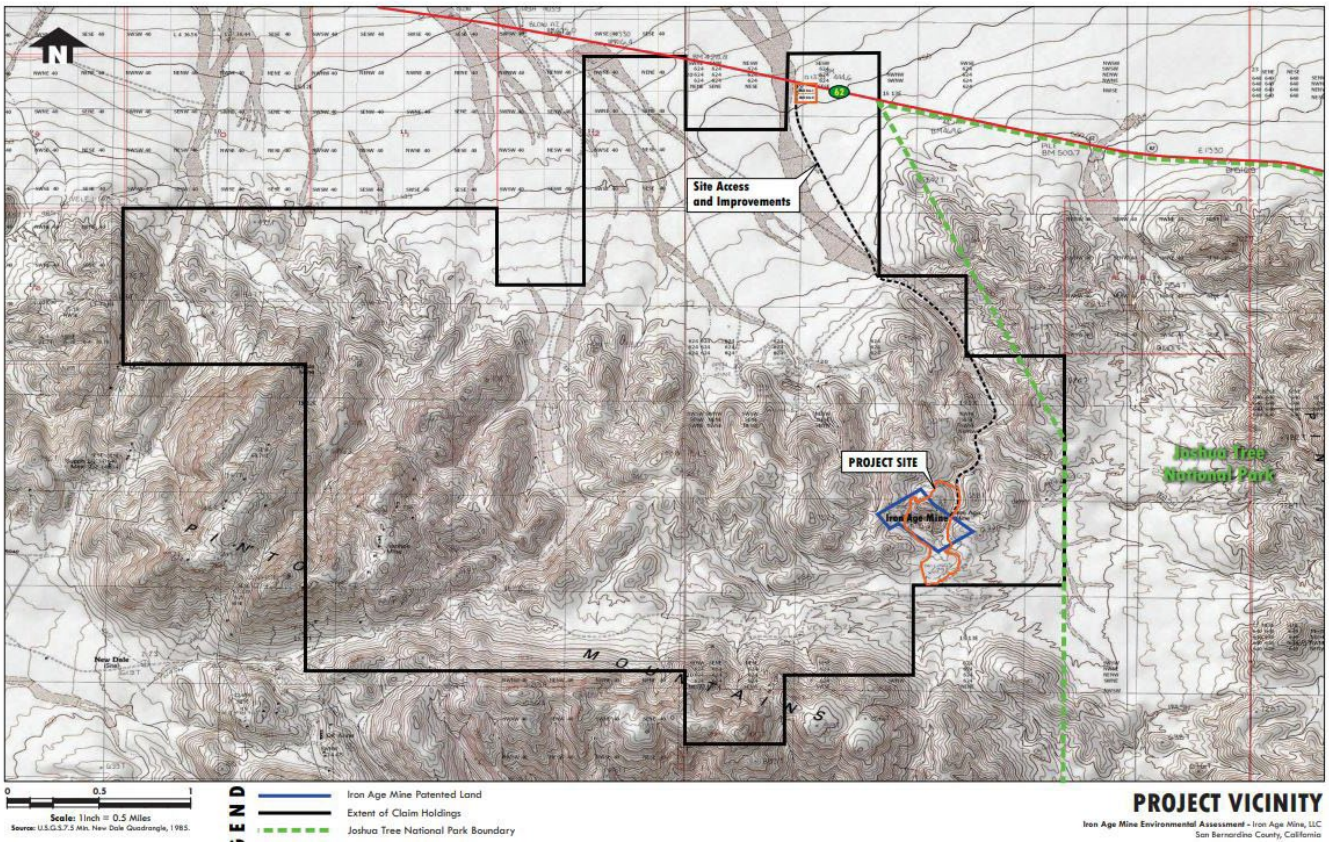
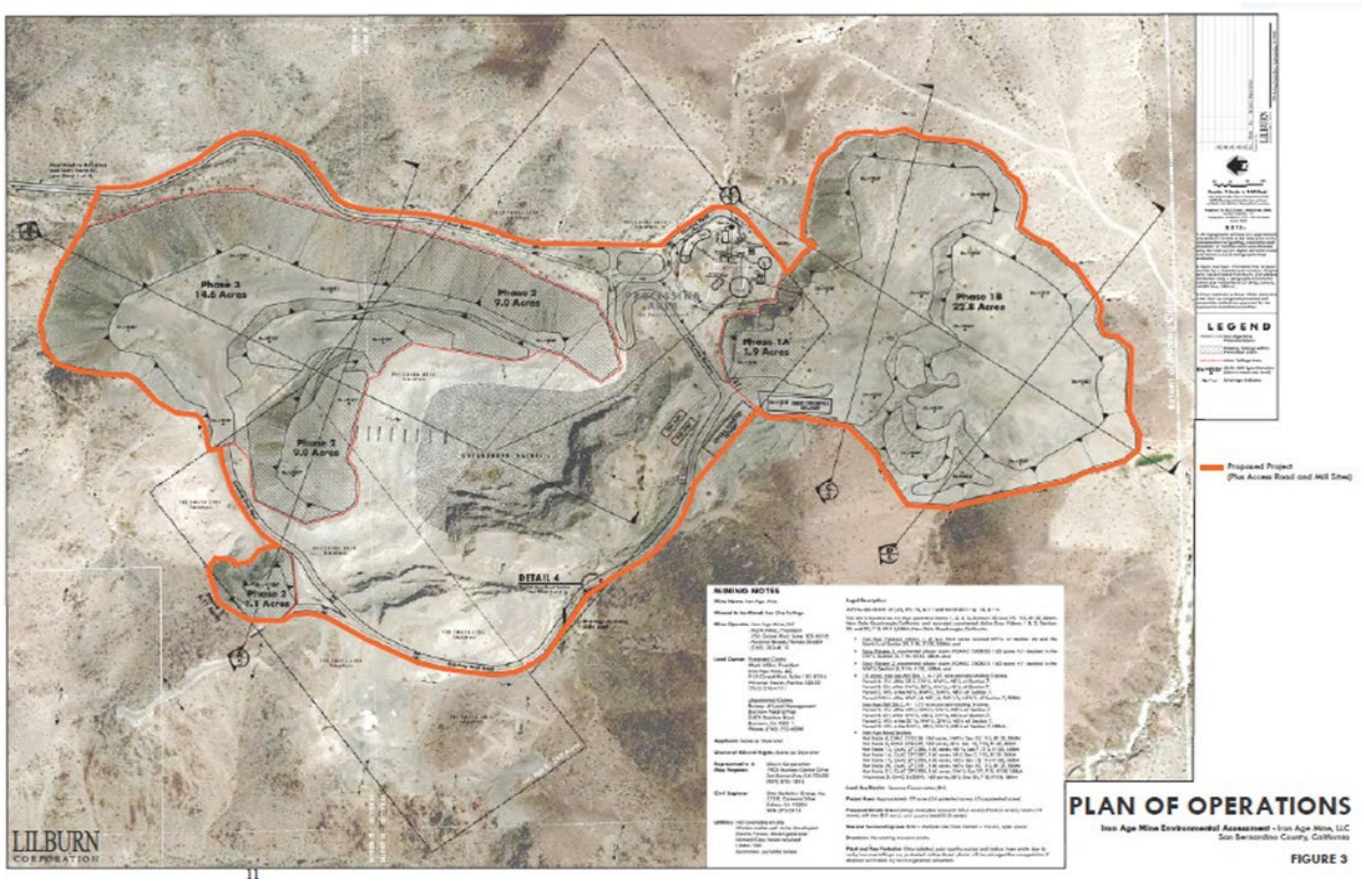


Figure 4
Iron Age
Iron ore tailings Mound

Figure 5
Iron Age Tailings
Mound Sites

Figure 6
Tailings Vegetation

Figure 7
Iron Age Mine Tailings



PROJECT DESCRIPTION AND BACKGROUND:

The applicant, Iron Age Mine, LLC has submitted a Mining and Reclamation Plan application to remove historical iron ore tailings on 71 acres of public (BLM) lands and 34 acres of patented (private) lands (Project) as noted in Figure 7. The Project will reclaim and revegetate 70 acres of prior disturbed land after tailings removal and backfill 8 acres of the existing quarry. The Iron Age Mine Mining/Reclamation Plan approval shall be effective from the time of approval for 15 years until December 31, 2037. At the conclusion of all mining activities the site will be reclaimed by December 31, 2042 for open space.

The Iron Age Mine is an iron ore deposit that was claimed prior to 1900, patented in 1904 and explored and mined intermittently prior to the enactment of the Surface Mining and Reclamation Act of 1975 ("SMARA"). The Mine has been inactive and un-reclaimed for the past 50 years. The site was patented by the applicant through a series of exploration and mining operations up to the present time. The mine operator has no intent of ever abandoning the resource and requests the approval of the Mining and Reclamation Plan pursuant to the provisions of SMARA and the County Development Code.

The Iron Age Mine is located to the west of the Joshua Tree National Park, to the north of the Pinto Mountains, approximately 18 miles east/southeast of the City of Twenty-nine Palms, and approximately 3.4 miles south of State Route 62 (see also Figure 1 - Regional Map). The site is accessed from SR 62 east of Twentynine Palms via Iron Age Mine Road (see Figure 2 – Project Location Map).

Approximately 100 acres of the site have been previously disturbed from previous mining activities conducted before 1965, as shown in Figure 5. The mine exhibits a moderate level of natural revegetation. The Project site vegetation is characterized as Creosote Bush and Brittlebush series habitat types. The tailings and quarry area are mostly barren with scattered vegetation as noted in Figure 6. Surrounding land uses predominately consist of historic mines, BLM designated roads, and vacant public lands administered by the BLM and designated for open space uses, which allows cross-country off-highway vehicle usage. There are no structures nor human habitation in the area.

Project Objectives

The overall intent of the Project is to allow the applicant's operations to take place on two tailings disposal areas that extend to the south and north of the historic mine quarry. The operations will begin in the south tailings area on the patented property then extend further south to the adjacent unpatented claims. The next phase will extend to the north patented property then onto the unpatented claims.

The proposed Mining and Reclamation Plan was prepared with the following objectives:

- To remove an existing historic iron ore resource of stockpiled tailings that meets the Federal regulations and the State's and County's SMARA requirements;
- To provide adequate crushed iron ore reserves from a closer source to meet the increasing demand for high grade iron ore for overseas and cement manufacturing market needs;
- To reduce the distance traveled for hauling of the iron ore to market, resulting in decreased truck mileage and related diesel fuel consumption and air pollutant emissions;

- To provide reclamation and revegetation to impacted mining sites to mitigate historic visual, biological, safety, and hydrological impacts;
- To partially backfill the existing quarry with waste rock to the extent feasible; and
- To reclaim the site for an end use that will support open space and wildlife habitat.

PLAN OF OPERATIONS:

The proposed Project is divided into three (3) phases (see Table 1). The Project will remove, crush, and transport the iron ore tailings deposited prior to the enactment of SMARA offsite, and then reclaim areas disturbed by the removal activities. There will be no new mining. The iron ore tailings are a lower grade iron previously stockpiled as an overburden or waste material that is now economical to utilize.

The Iron Age Mine project totals 105 acres, of which 76 acres are currently disturbed. Approximately 71 acres of the site is U.S. Bureau of Land Management (BLM) unpatented (public) lands and 34 acres is patented (private) land. The BLM lands consist of approximately 37.5 acres of recoverable tailings piles, 25 acres of re-construction and re-alignment of the existing roadways (Iron Age Mine Road) on BLM designated routes, and 8.5 acres of the 10-acre mill site claims. Approximately 34 of the 60.6 patented acres will be impacted by tailings removal, quarry backfill, a plant site, and access roads).

Table 1
Iron Age Mine
Operations Phasing, Areas and Approximate Schedule

Operational Phases	Unpatented Acres	Patented Acres	Total Acres (approx.)	Tons Removed (Millions)	Approx. Years
1A	33.5	7.0	40.5	0.5	1
1B	22.8	8.0	30.8	5.5	7
2	0	19.0	19.0	2.4	3
3	14.7	0	14.7	3.6	4
Phase 4 Final Reclamation[1]			---	---	16 – 20[1]
Total	**71.0**	**34.0**	**105.0[2]**	**12**	**15 (operations) 5 (reclamation)[1]**

Areas and tons are rounded and approximate.
[1] Active reclamation for approximately 5 years and monitoring and remediation as necessary until revegetation success criteria achieved.
[2] 84 acres currently disturbed; 78 acres to be reclaimed, approximately 27 acres of roads will be left in place per BLM direction as these are BLM designated routes and to maintain access to site for monitoring.

BLM has approved the Plan of Operations (POO) (Exhibit A) for the project and selected an alternative route that maintains the access entirely on BLM designated routes. The removal of the tailings will provide a marketable product and subsequently reclaim a heavily disturbed area back to open space and wildlife habitat. Based on an aerial photo reconnaissance and sampling of existing tailings stockpiles, the site has an estimated reserve of 12 million tons of iron ore with an average concentration of 62 percent iron.

Mining Operations and Activities

The site will be mined at a maximum average production rate of 920,000 tons annually, which is expected to provide reserves for up to 13 years (through year 2027). Crushed iron ore concentrate will primarily be shipped by haul truck to the Long Beach/San Pedro port for overseas shipment as well as other markets. At the maximum proposed production rate of 2.3 million tons per year, the mine would be operated for approximately 8 years taking into account a construction and start-up period for two years. To account for variable production rates dependent on market demand, an operating life of 15 years, through 2037, is estimated. Concurrent and final reclamation is anticipated to conclude by December 31, 2042.

The mining operation would consist of excavating, drilling, and occasional blasting of the tailings faces and loading the broken iron rock into a feeder, screen sorter, and magnetic separator designed to increase iron concentration to exceed 60% iron. Upon separation, off-road haul trucks will transport the iron ore, via the mine access road, to a proposed mill site facility located south of SR 62. The mill site would be located approximately 3.4 miles north of the tailings area; iron ore transported from the tailings area to the mill site would be stockpiled and ultimately transferred to market. Waste rock and low-quality iron ore will be backfilled into the existing quarry. The tailings area will be graded back to the original surface and revegetated per the Reclamation Plan.

Operations will take place on two tailings disposal areas that extend to the south and north of the historic mine quarry and occupy approximately 54 acres. The operations will begin in the south tailings area on the patented property then extend further south to the adjacent unpatented claims. The next phase will extend to the north patented property then onto the unpatented claims.

Operation and Transit Work Periods

Total available iron tailings are estimated at approximately 12 million tons. Iron Age is requesting a 15-year operation period through December 31, 2037 due to variable production rates based on demand. The site would operate year-round approximately 6 days/week, 312 days/year. Loading and trucking may occur 24 hours/day, six days/week (not including holidays), and removal operations would be daytime hours only. Iron Age has located two 5-acre mill site claims at the junction of Iron Age Mine Road and SR 62; off-road mine haul trucks would deposit ore at the mill sites for transfer to licensed highway haul trucks or shipping containers for shipment to market or transfer to rail. Each truck would hold approximately 25 tons. A maximum of 920,000 tons of product suitable for market would be mined per year and this equates to approximately 120-truck round trips per day or about 24 one-way truck trips for both ingress and egress to the site, per hour, based on a 10-hour operational timeframe. Note that loading of material may occur 24 hours/day. The Project is not anticipated to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of SR 62 (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ration on roads, or congestion at intersections), or exceed, either individually or cumulatively, a level of service standard.

Blasting

Blasting is not anticipated at this site but may become necessary if tailings are severely compacted. Should blasting operations be required they will involve drilling along the mining face, placement of charges, and detonation of the charges by a blaster licensed through the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF&E) for handling explosives. In compliance with County regulations, blasting shall only be conducted by a licensed blaster upon issuance of

a site-specific blasting permit. No explosives will be stored onsite. Blasting activities shall take place between the hours of 10:00 a.m. and 6:00 p.m. Monday through Friday. No blasting shall be allowed after sunset. One or two blasts may be conducted monthly.

Mine Road and Mill Access

BLM designated routes to access the Iron Age Mine, BLM Modification will use three designated travel and transportation management system routes including JT1957, JT1959 and JT1967 to access the mine. Although this route network is approximately 1.5 miles longer than the Alternative A access, it will require less improvements due to the condition of the routes. This selected alternative route adds approximately 8 acres to the project area though these roads are all BLM designated routes which will be left in-place following completion of the project activities.

To protect public safety on the road, Iron Age will implement the following safety features as part of the project design: 1) The mill site and its equipment and stockpiles will be fenced with a 6-foot high chain link fence with locking gates and warning signs; 2) Signs will be posted at SH 62 that mine haul truck traffic utilizes the road; 3) Mine haul trucks will be restricted to a speed limit of 15 MPH; 4) All drivers and employees will be trained to be aware that the access road is open to public vehicles; 5) Perimeter signs around the approved surface mine boundary shall be installed as shown on the plan sheets and shall read in English and Spanish "Danger, Keep Out" "Surface Mining Operation"; 6) The existing quarry is currently fenced, and the fencing will be extended to include the access and processing area to prevent access by the public. Fencing will be posted "No Trespassing"; and 7) To limit the exposure of visitors to mining activities in the recreation areas adjacent to the project area, truck traffic would not occur on Sundays and holidays.

Mill Operations

The operations will consist of the removal, processing, and transportation of the existing iron tailings stockpiles. The stockpiles will be scraped by a scraper and deposited near the feeder. Initial ore processing will begin with a 500 ton per hour (tph) processing plant expanding with an addition 1,000 tph plant at maximum production as needed to meet demand. At maximum production capacity, these plants will have a total throughput of approximately 192,000 tons per month or 2.3 million tons per year. Concentrated ore production for off-site shipping will be approximately 40% of this total; a maximum of 76,600 tons per month or 920,000 tons per year of product. The remaining 60% will be backfilled into the old quarry. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.

Mine Waste/Production Water

The processing plant will produce ¾ inch minus material from the quarried ore. Smaller diameter material will be processed through a 3-deck wet screening cycle. Waste rock, defined as iron ore below marketable quality, is expected to reach up to 60% (up to 1.4 million tons per year) of throughput depending on production and quality of tailings on site. Most of the waste rock will be conveyed to the historic quarry for deposition which will partially fill the lower floor and amendment in reclamation. Waste rock may also be used for road surface or repair as necessary. The height of a typical waste rock stockpile will range from 25 feet to 50 feet.

The Proposed Project is not within the service area of a water supplier, a State Water Project contractor, or a regional groundwater management agency, nor is it within an adjudicated groundwater basin. The Project Site is located within the Dale Lake Watershed (HUC 1810010024) in the Southern Mojave sub-basin. The Dale Lake watershed is approximately 135

square miles. The watershed captures hydrologic flow from the Pinto Mountains. Surface water in the vicinity is limited to storm flows as sheet flow and ephemeral drainages. There are no surface waters that provide a source of supply. There are no springs, seeps, perennial drainages, wetlands, or riparian areas within or adjacent to the Project Site. The mining process uses water for dust control measures and ore processing in both the wet and dry cycles. Process water will be directed to a holding pond for recycling.

Water for operations would be obtained from a well to be drilled onsite. Approximately 60% of the water used for the wet cycle processing will be recycled. Process water will be lost by evaporation and ore retention and will require recharge from the well. Water will be used for ore processing and dust control measures. Water will be utilized in the wet plant cycle for washing and in sprayers at material transfer points for dust control. The estimated water usage will be approximately 4,000 gallons per hour for processing with a loss of up to 40 percent to product retention and evaporation or 1,600 gallons per hour make-up water or approximately 12,800 gallons per 8-hour workday. Approximately 60% of the water used for the wet cycle processing will be recycled through a lined settling pond. Water used for dust control will evaporate. The project will not produce any run-off water. Total annual water usage is approximately 3.6 million gallons or 11 acre-feet. This water usage is approximately equal to that of 11 single-family residences. Water will be stored in 10,000-gallon above-ground tanks at both the plant site and at the mill site and also used for on-site fire emergencies

RECLAMATION:

Due to the lack of fine surface material and low rainfall (less than 4 inches/year) the site has little potential for erosion and sedimentation. During the removal of the tailings, drainage will not be altered from existing conditions. The tailings are porous and heavy and are not susceptible to erosion. Erosion and sediment will be controlled at the plant and along access roads with the development of diversion ditches and catch basins as needed to collect sheet flow from exposed working areas. These will be constructed and modified as operations progress through the tailing field. The processing area and the mill area will be partially covered by crushed iron ore and rock. The mine and the tailings area are completely disturbed lands having been mined prior to the 1970s. An existing but partially eroded haul road connected the site to SR 62 and this road will be rebuilt utilizing the existing disturbed alignment as much as feasible. The 10-acre mill sites are generally undisturbed with SR 62 and the old existing road crossing these mill sites.

Reclamation will be concurrent with phased mining and completed as the tailings piles are depleted. Removed stockpile areas will be ripped and revegetated. At the completion of operations and within one year, all equipment and stockpiles will be removed and any remaining refuse will be disposed of at an appropriate offsite disposal site. Compacted surface material in the processing area, roads, and the former stockpile areas will be loosened and ripped to a depth of 18 to 36 inches by mechanical means and seeded with native plant species. The surface material will be re-graded to approximate natural contours. On BLM lands, approximately 46 acres of former tailings piles and the mill sites will be reclaimed and revegetated. The access road (25 acres) and the onsite roads (2 acres) will remain in place. In total, on both BLM and patented lands, approximately 78 acres will be reclaimed of which approximately 70 acres will be revegetated. Approximately 8 acres of existing quarries on patented land will be backfilled with waste rock not conducive for revegetation because of lack of available topsoil.

With implementation of the reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, approximately 50 acres will be returned to desert vegetation. Upon final reclamation, the planned onsite well will be closed or destroyed in accordance with the California Department of Water Resources and the County Division of Environmental Health (DEHS) regulations in such a manner that will no longer be a hazard to the health and safety of people and wildlife. The reclaimed end use will be open space habitat.

Revegetation

Following the completion of phased activities, the tailings, plant, mill, and miscellaneous areas consisting of approximately 70 acres will be contoured to their final grade and slope, the surface will be ripped where possible to a depth of 18 to 36 inches to break up compacted areas and left in a textured or rough condition with shallow rills and furrows to create optimal conditions for revegetation with a native seed mix. Any available soils and fines will be deposited in random “islands” up to one-foot thick and the revegetation areas will be seeded with a certified weed free seed mix of pure live seed using a broadcast method. Following seeding, the area will be raked in order to cover the seeds and protect them from desiccation and predation.

Successful revegetation of the site would be achieved when a self-sustaining native plant cover is established in the areas disturbed by the proposed mining activities. The revegetated site must resemble and blend into the natural surrounding environment. Based on the results of the baseline, a site-specific seed mix was created for each of the vegetation communities to be impacted by the proposed project. Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control. By providing short-term erosion control, more favorable growing conditions will be created for climax species that will provide long-term erosion control.

SMARA requires mine operators to test revegetation strategies on test plots prior to implementing revegetation more widely through the mine areas. Test plots are planned to experiment with replacement soil composed mostly of crusher fines, and plots to test climax species establishment. The Revegetation Plan may be modified based on the results of these test plots.

Reclamation and revegetation in any given part of the authorized areas would commence when mining would no longer affect the area. This would allow vegetation recovery within some parts of the project site before completion of mining.

Monitoring is intended to (1) verify correct implementation of the revegetation plan; (2) evaluate the degree of success in terms of the specified objectives; and (3) determine if maintenance or remediation are needed. Monitoring will include both site monitoring to assess control, trash dumping and other forms of human disturbances, as well as biological monitoring of revegetation progress. Site monitoring of human use (access, trash dumping and off-road vehicle use) includes monthly inspection by CEMEX personal to check access control and signs and to schedule removal of illegal dumping. Biological monitoring will be conducted to qualitatively and quantitatively evaluate overall conditions of the revegetated site with respect to native plant conditions and weed growth and control effectiveness.

SMARA requires annual reporting of Mining and Reclamation activities. The reports are filed by the County mine inspectors with the State Division of Mine Reclamation. Revegetated areas will be monitored over a 5-year period or until success criteria is achieved following initial seeding

and/or planting. Data on plant species diversity, cover, survival and vigor will be collected on revegetated sites and compared to baseline data from undisturbed sites to evaluate project success and documented in an annual report. Monitoring and maintenance of reclamation is an ongoing responsibility of CEMEX. The project site will be inspected annually by the County. The reclamation assurance shall be reviewed by the BLM and County annually. San Bernardino County is the lead agency for SMARA compliance and will review the Reclamation Assurance and inspect the mine site annually. A Financial Assurance Cost Estimate (FACE) will be in place prior to any earthwork.

Post-Reclamation and Future Mining

The reclaimed site will not affect vested rights or restrict future exploration and development of the remaining reserves located on both the patented and unpatented claims. Under this proposal, the reclaimed site will not preclude or necessitate any future mining activities or surface modification.

PROJECT ANALYSIS:

Purpose and Need for the Project

Iron Ore Resource: The Department of Conservation, California Geological Survey (formerly the Division of Mines and Geology) has not included the Iron Age ore deposit within the Mineral Lands Classification System (MLCS). However, mine patents and surrounding mining claims have been maintained to access the iron ore deposit. The Proposed Project would supply iron ore to the region. Therefore, the Proposed Project would not result in the loss of availability but would provide a mineral resource that would be of value to the region and the residents of the State.

Long-term cumulative economic benefits of iron ore extraction have added to the County economy, including tax payments and jobs. The mining industry provides stable high paying jobs and professional careers for many people. Total available iron tailings are estimated at approximately 12 million tons. Iron Age is requesting a 15-year operation period through 2027 due to variable production rates based on demand. The Project would allow continued mining of the resource and provide long-term employment for many employees.

Mining helps support federal, state and local governments and schools through payment of property taxes, excise, fuel and other taxes for the long term. Mining extraction and processing supports local economies through direct purchases of equipment, materials, supplies, and services, and indirect turnover of these expenditures in the economy. The Project will help maintain the economic vitality within the vicinity.

MINING AND ENVIRONMENTAL ANALYSIS:

Division of Mine Reclamation (DMR)

The project mine/reclamation plan (Exhibit B) was reviewed by DMR after County staff submitted project mining documents and reports on August 27, 2021. DMR notified the County on September 30, 2021, that the August 26, 2021, submittal was deemed incomplete, and no further review proceeded until obtaining the County's response on October 28, 2021. DMR notified the

County on February 16, 2022, that DMR had no further comments regarding the October 28, 2021, response from the County.

California Environmental Quality Act

An Initial Study/Mitigated Negative Declaration (IS/MND) has been completed in compliance with the California Environmental Quality Act (CEQA) (Exhibit C). The IS concludes that the Project will not have a significant adverse impact on the environment with the implementation of recommended mitigation measures contained in the Initial Study, which have been incorporated in the Conditions of Approval (Exhibit D). In addition, the environmental analysis and associated mitigation measures evaluated in the initial study address the impacts of all three project phases, Iron Age LLC will be responsible for implementing all mitigation contained in the Mitigation Monitoring and Reporting Program (Exhibit E) for all three (3) phases of the Mine's operation.

A Notice of Availability/Notice of Intent (NOA/NOI) to adopt a Mitigated Negative Declaration (MND) was advertised on the County Environmental Documents website and distributed to initiate a 30-day public comment period, which concluded on August 23, 2021. No comment letters to the NOA/NOI have been received by Staff.

National Environmental Policy Act

As required by BLM, the applicant had submitted a Plan of Operations (POO) for the proposed use on Federal lands. On January 7, 2021, the POO was approved by the BLM Barstow field office, and a Decision Record, Environmental Assessment (EA), and Finding of No Significant Impact (FONSI) were issued.

Based on the National Environmental Policy Act (NEPA) analysis of potential environmental impacts contained in the BLM's EA for the POO for Removal of Existing Iron Ore Stockpiles at the Iron Age Mine, it was concluded that the proposed use would not have a significant effect on the human environment and therefore does not require preparation of an Environmental Impact Statement (EIS). In its Decision Record and FONSI, BLM determined that the proposed project is consistent with the California Desert Conservation Act (CDCA) Plan (1980), as amended by the 2016 Desert Renewable Energy Conservation Plan (DRECP) and 2019 West Mojave Route Network Project. Moreover, the Selected Alternative complies with the CDCA Plan's Conservation and Management Actions to the extent allowable under the mining laws and the BLM's 43 CFR 3809 mining regulations.

Iron Age Water Supply Assessment

A Water Supply Assessment (WSA) was conducted by Lilburn Corporation, dated April 2014, (Exhibit F), a WSA is required because the Proposed Iron age Project occupies more than 40 acres of land (Water Code Section 10912; SB 610). SB 610 requires a WSA in connection with the CEQA review of, among other things, any "processing plant" on more than 40 acres of land. The Proposed Project is also within the region of the County for which Ordinance No. 3872 relating to groundwater management in the unincorporated, unadjudicated desert region of the County applies. The County Standard Procedure No. 8-11 requires a Hydrogeologic Report for all projects that contemplate the extraction of underlying groundwater at a total rate equal to or greater than ten (10) acre feet per year. The County Geologist may apply a lesser threshold to projects within impaired or very limited groundwater basins.

It is estimated that at maximum production, the dust control, product screening, and road dust

suppression average daily water demand is approximately 29,000 gallons for operations with 60% of that demand being met by recycled process water. Process water will be recycled through a lined holding pond on-site. Therefore, an estimated 11 acre-feet of groundwater will be pumped annually (40% of 29,000 x 312 operating days) after the supply of recycled water is initially established. The water demand estimate for the first year's development and operations is 19 acre-feet. The mine would operate 6 days/week, 312 days/year. The WSA document examines the current condition of the groundwater supply which underlies the proposed Mill Site property and finds that the Dale Valley Groundwater basin (aquifer) and its sources of supply are adequate to supply the Proposed Project for a 20-year period.

Iron Age Biological Resource Assessment

A Biological Resource Assessment (BRA) was prepared by Lilburn Corporation dated February 2013 and revised May 2014. The BRA report assesses the potential effects of the Proposed Action on the desert tortoise (Gopherus agassizii) and the designated Pinto Mountains Critical Habitat Unit managed for the conservation and recovery of desert tortoise. This species is listed as threatened in the Federal Endangered Species Act (Act) (final listing rule April 2, 1990). The BRA report concluded that with implementation of the reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, approximately 50 acres will be returned to desert vegetation and suitable desert tortoise habitat. Thus, the long-term effects of the proposed Project on the Pinto Mountains Critical Habitat Unit may be beneficial. Moreover, mitigation measures cited in the report and listed within the project's Initial Study that will be incorporated into the project's Conditions of Approval to minimize impacts both to fauna and the desert tortoise, are intended to reduce environmental impacts to a Less than Significant Impact.

Tribal Consultation

A cultural resources report for the Iron Age Mine was prepared. McKenna et al. completed a Class III cultural resources investigation for the BLM Barstow Field Office, San Bernardino County, California. The study was completed under Field Authorization No. CA-680-13-22 (BLM State Permit No. CA-10-26), by Jeanette A. McKenna, M.A. and R.P.A., Principal Investigator for McKenna et al. The studies were initiated in February 2013 and completed in June 2013. The field survey was conducted between March 20 and March 24, 2013, also by Jeanette A. McKenna.

The cultural resources investigation included: 1) an archeological records search through the San Bernardino County Museum, Archaeological Information Center, Redlands and supplementary research through the BLM Barstow Field Office, 2) Native American Consultation, 3) historic background research of the general area and the potential for identifying prehistoric and/or historic cultural resources, 4) a paleontological overview from the Natural History Museum of Los Angeles County, and 5) field studies.

As a result of the recent studies, Mitigation Measures are required to protect and avoid unknown and possible buried prehistoric and historic archaeological sites that could be uncovered during operations. The Proposed Project will be removing iron tailings stockpiles and the surficial nature of the disturbance would minimize potential impacts to paleontological resources. The area is also not considered sensitive for paleontological resources and no impacts to paleontological resources are anticipated.

On January 29, 2021, the County of San Bernardino mailed notifications pursuant to Assembly Bill 52 (AB-52) to the following Tribes:
• Fort Mohave Tribe
• San Gabriel Band of Mission Indians
• Colorado River Indian Tribes
• Twenty-Nine Palms Band of Mission Indians
• Morongo Band of Mission Indians
• San Manuel Band of Mission Indians
• Soboba Band of Luiseno Indians
• Gabrieleno Band of Mission Indians - Kizh Nation

The San Manuel Band of Mission Indians (SMBMI) responded via email to the County on February 1, 2021 stating that "the proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates."

According to the Initial Study, the Project Site is not located on or near a known cemetery, and no human remains are anticipated to be disturbed during mining operations. However, the potential exists that human remains may be unearthed during implementation of the proposed Project. Therefore, Mitigation Measure CR-1 / CR-2 shall be implemented to ensure that less than significant impacts regarding human remains occur.

Public Comments:
Project notices were sent to surrounding property owners within 1300 feet of the Project site as required by Development Code Section 85.03.080. No public comments have been received.

RECOMMENDATION: That the Planning Commission:

1. **ADOPT** the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program (MMRP), including the approval of the Water Supply Assessment (Exhibits C, E and F);

2. **ADOPT** the Findings as contained in the Staff Report (Exhibit G);

3. **APPROVE** Iron Age Mining/Reclamation Plan (Exhibit B) for the Iron Age operation to remove historical iron ore tailings on 71 acres of public (BLM) lands and 34 acres of patented (private) lands, subject to the Conditions of Approval (Exhibit D);

4. **DIRECT** Staff to file the Notice of Determination.

ATTACHMENTS:

EXHIBIT A: Plan of Operation
EXHIBIT B: Mining/Reclamation Plan
EXHIBIT C: Initial Study/Mitigated Negative Declaration
EXHIBIT D: Conditions of Approval
EXHIBIT E: Mitigation Monitoring and Reporting Program (MMRP)
EXHIBIT F: Water Supply Assessment
EXHIBIT G: Findings

EXHIBIT A

Plan of Operation

PLAN OF OPERATIONS
AND
MINE RECLAMATION PLAN
FOR
IRON AGE MINE

Prepared For:
Iron Age Mine, LLC
755 Grand Blvd. Suite B105 #316
Miramar Beach, Florida 32550

Submitted To:
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311

and

County of San Bernardino
Planning Department
385 North Arrowhead Avenue
San Bernardino, California 92415

Prepared By:
Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408

September 2012
Updated July 2014

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Attachments

MAP SHEETS (attached)

PLAN OF OERATIONS
IRON AGE MINE

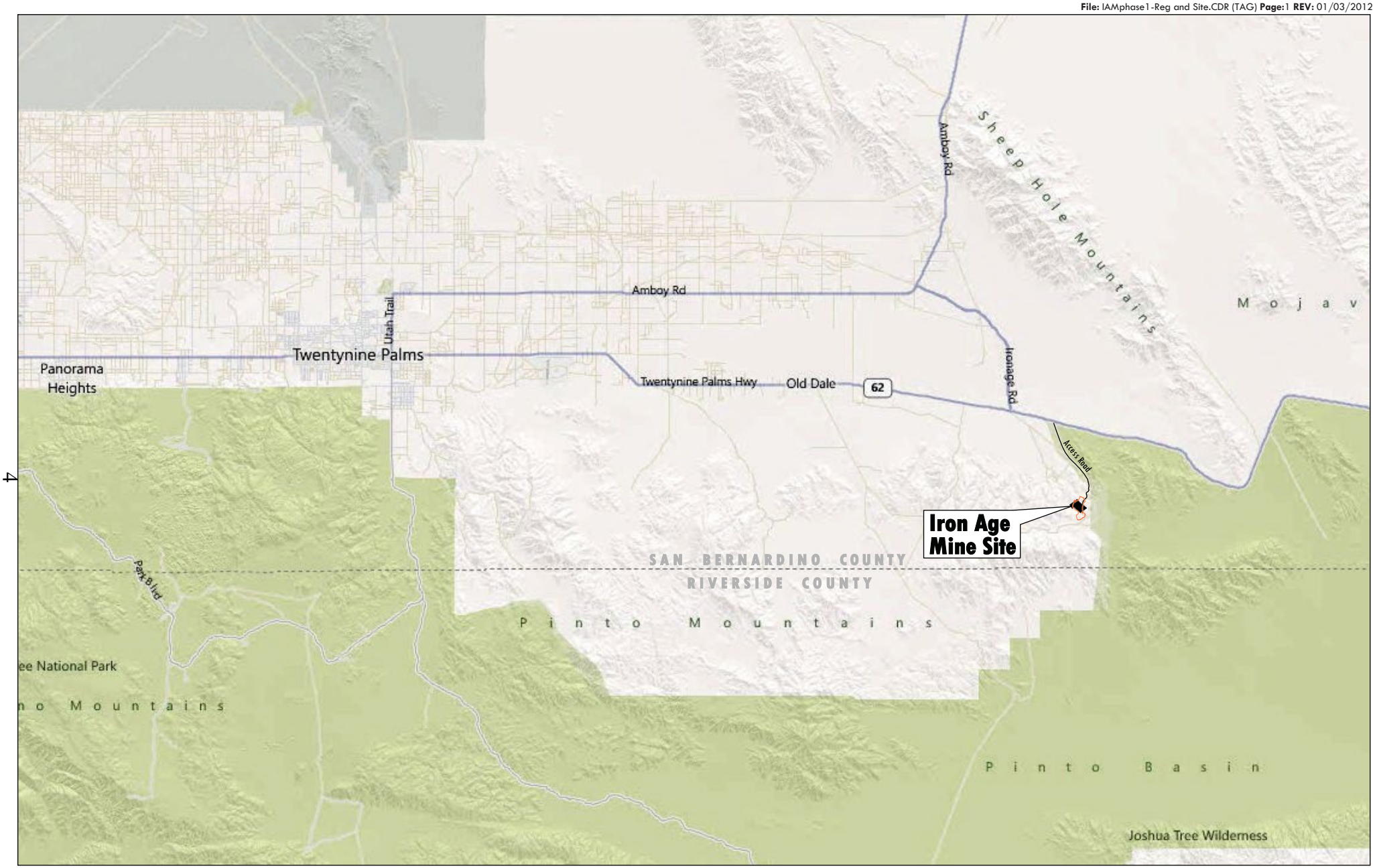
43 CFR 3809.401
(a) Introduction:

Iron Age Mine LLC (Iron Age) is submitting a Plan of Operations (POO) per 43 Code of Federal Regulations 3809 as outlined under §3809.401for the removal of the existing iron ore stockpiles at the Iron Age Mine on both unpatented claims and patented lands. It is located approximately 18 miles east/southeast of the City of Twentynine Palms, California and 3.4 miles south of State Route (SR) 62 in San Bernardino County (see Figure 1) in the Dale Mining District in the northern Pinto Mountains. The mine is within Sections 7, 17, 18, 20 and 29, Township 1 South, Range 13 East, San Bernardino Base and Meridian (SBBM). The site is accessed from SR 62 east of Twentynine Palms via Iron Age Mine Road (unpaved road, 3.4 miles) (see Figure 2).

No new mining or excavation of the existing quarry is proposed at this time, only the removal, screening and transporting of stockpiled iron material from the site. The operation will consist of an ore processing plant located on patented properties, removal of historic existing mine tailings from patented properties and two unpatented placer mine claims (Easy Pickens 1 and 2) and the reconstruction and maintenance of the Iron Age access road. In addition to the existing mine properties, two mill sites are being established at the intersection of the Iron Age mine road and SR 62. These mill sites will be used for ore stockpile storage, loading and shipping to market. The Mill Site(s) consist of two adjacent 5-acre parcels. Refer to Attachment 1 for recorded Mill Site information. A Reclamation Plan has been prepared for the County of San Bernardino as the designated lead agency for the patented and unpatented properties in compliance with the California Surface Mining and Reclamation Act of 1975 (SMARA). The Reclamation Plan is designed in accordance with the SMARA, Public Resources Code 2770 et seq and San Bernardino County requirements for implementing SMARA. It will also serve as the Reclamation Plan for consideration by the BLM in compliance with 43 CFR 3809.11. Refer to Attachment 2, Mine Reclamation Plan.

The Proposed POO would include 63 acres on BLM lands; 37.5 acres of recoverable tailings piles and 17 acres of connecting roadway (Iron Age Mine Road) on unpatented claims and 8.5 acres of the 10-acre mill site claims. In addition, approximately 34 of the 60.6 patented acres (private land) will be utilized (see Table 1 and Sheets 1 & 2). The total disturbance area is approximately 97 acres including the existing and planned roadway of which approximately 76 acres are currently disturbed.

Total available iron tailings at the mine are estimated at approximately 12 million tons. Maximum material throughput at the plant will be approximately 2.3 million tons per year; 920,000 tons of product and approximately 1.4 million tons per year of waste rock and low grade ore that does not meet product requirements. At the maximum proposed production of 2.3 million tons per year, the mine would be operated for up to approximately 8 years taking into account a construction and start-up period of up to two years. Iron Age is requesting a 15-year period through 2029 for operations as annual production rates may be highly variable depending on product demand plus five years for implementation of reclamation (2034).

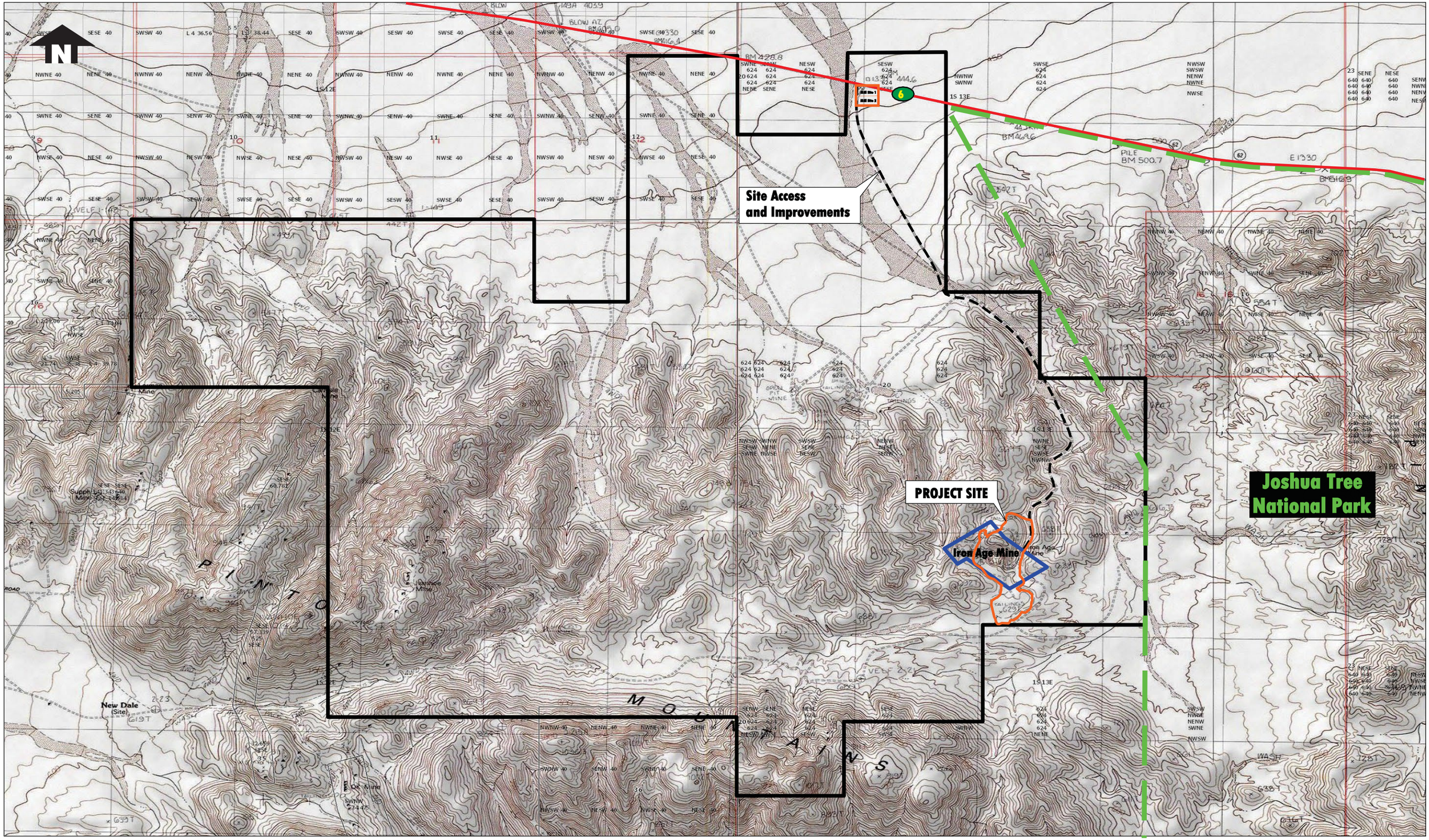


REGIONAL LOCATION

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 1

LILBURN CORPORATION



0 0.5 1

Scale: 1Inch = 0.5 Miles

Source: U.S.G.S.7.5 Min. New Dale Quadrangle, 1985.

LILBURN CORPORATION

LEGEND

- Iron Age Mine Patented Land
- Extent of Claim Holdings
- Joshua Tree National Park Boundary
- Proposed Project (Plus Access Road and Mill Sites)

PROJECT VICINITY

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 2

Table 1
Operations Plan, Phasing Areas, and Schedule

Operational Phases	Unpatented Acres	Patented Acres	Total Acres[2] (approx.)	Tons Removed (Millions)	Approx. Years
1A	25.5	7.0	32.5	0.5	1 (Yr. 1)
1B	22.8	8.0	30.8	5.5	7 (Yrs. 2-8)
2	0	19.0	19.0	2.4	3 (Yrs. 9-11)
3	14.7	0	14.7	3.6	4 (Yrs. 12-15)
Phase 4 Final Reclamation[1]			---	---	5 (Yrs. 16 – 20)[1]
Total	**63.0**	**34.0**	**97.0[2]**	**12**	**15 (operations) 5 (reclamation)[1]**

Areas and tons rounded and approximate.

[1] Active reclamation for approx. 5 years and monitoring and remediation as necessary until revegetation success criteria achieved.

[2] 76 acres currently disturbed; 78 acres to be reclaimed, approximately 19 acres of roads will be left in place per BLM direction and to maintain access to site for monitoring.

(b) (1) Operator Information:

Iron Age Mine, LLC is the owner/operator of the patented and unpatented mining claims that comprise the Iron Age iron mine. The Principal contact for purposes of operation and compliance is:

Mark Miller, President
Iron Age Mine, LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
765-210-4111
California business license: 2D1115910227

The Iron Age Mine, LLC's authorized agent for purposes of mine permitting and reclamation is:

Martin R. Derus, President
Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
909-890-1818

Legal Description as follows:

The mine is a historic mine with large stockpiles of previously mined iron ore. The mine is located on both patented and unpatented claims. The mine is accessed via a mine road that has fallen into disrepair from lack of maintenance and surface erosion. The applicant proposes to repair the road to its approximate alignment and condition for purposes of operating the mine to remove iron ore and ship to market. The mine is located on Iron Age patented claims 1, 2, & 3,

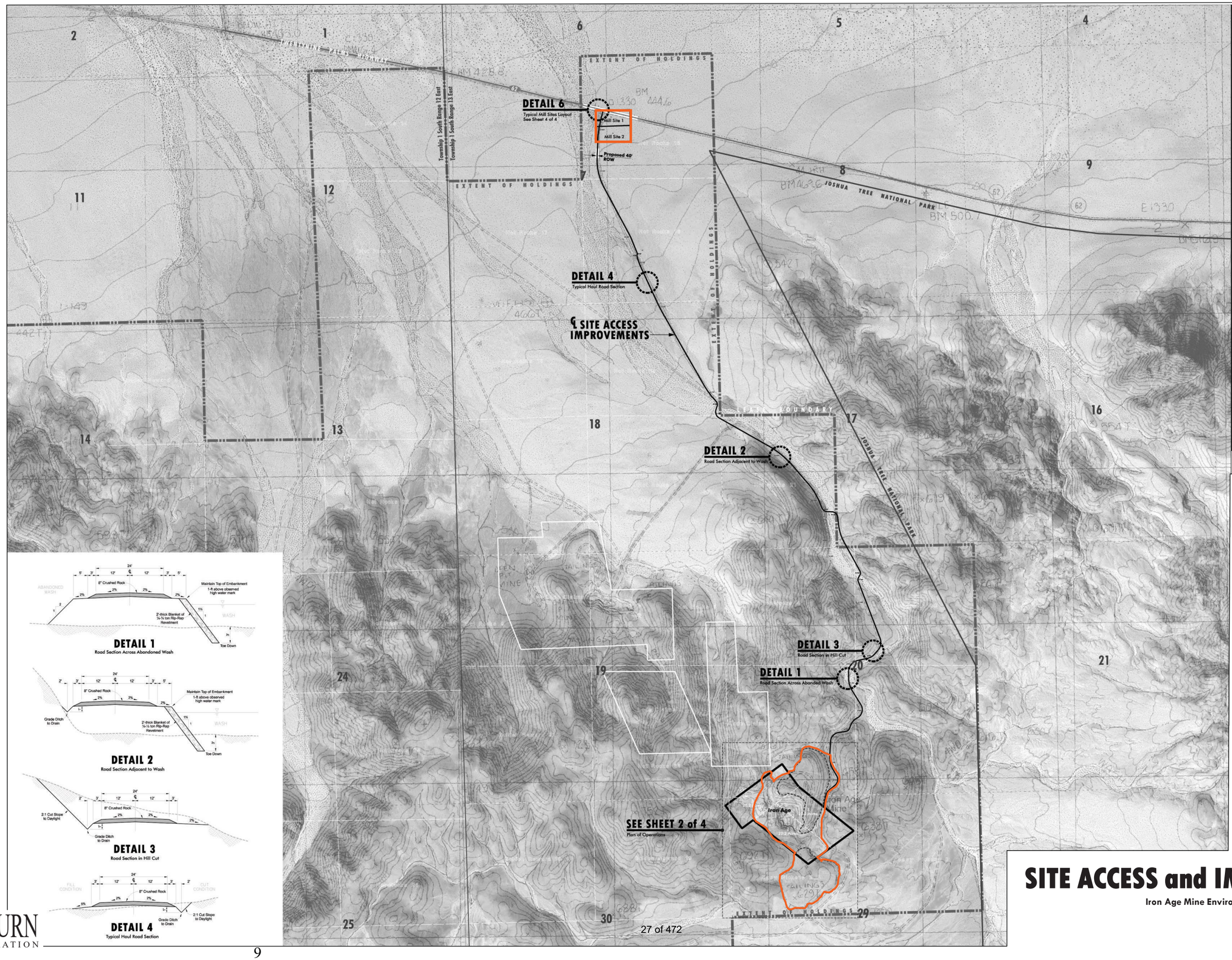
Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California and recorded claims Easy Pickens 1 (CMAC 26083) and Easy Pickens 2 (CMAC 260831), Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

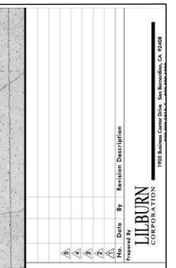
- Iron Age Patented Claims: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, Township 1 North, Range 13 East, San Bernardino Base and Meridian l (See Sheet 1); and
- Easy Pickens 1, unpatented placer claim #CMAC 260830: 160 acres +/- located in the SW¼ Section 20, Township 1North, Range 13 East, San Bernardino Baseline and Meridian (Sheet 1; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831: 160 acres +/- located in the NW¼ Section 29, Township 1 North, Range 13 East, San Bernardino Baseline and Meridian (Sheet 1); and
- 10 acres: Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7.
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7.
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.

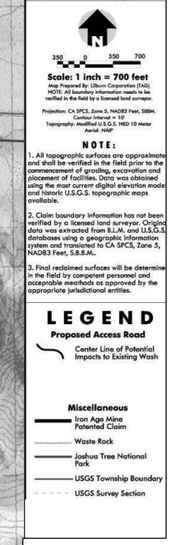
  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7.
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
  (See Notice of Location and Proposed Mill Sites Sheet 1 and Figure 3)
- Iron Age Road Sections (See Sheet 1 and Figure 3)
  Hot Rocks 4, CMAC 272328, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

(b) (2) Description of Operations

The mine operations will consist of removing, sorting, concentrating, and shipping raw iron ore via 50-ton haul trucks or equivalent to a stockpile and shipping area located south of SR 62 approximately 18 miles east of Twentynine Palms, California. The removal of tailings and processing activities will occur on the historic Iron Age Mine. The mine hosts approximately 12 million tons of iron tailings on both patented land and unpatented mine claims. It is these stockpiled mine tailings that will be sorted, concentrated and removed from the site. No new mining will occur within the historic quarry or surrounding area. The mine will be accessed via a 3.4 mile roadway that connects the mine to SR 62 to the north. At the junction of the Iron Age Mine Road and SR 62, the operator has located two 5-acre mill site claims within which haul trucks will deposit ore for transfer to licensed highway haul trucks or shipping containers for shipment to market or transfer to rail. See Sheet 1 and Figure 3.







NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most currant digital elevation model and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and transitioned to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M..

3. Final reclaimed surfaces will be determine in the field by competent personnel and acceptable meathods as approved by the appropriate jurisdictional entities.

LEGEND

Proposed Access Road

Center Line of Potential Impacts to Existing Wash

Miscellaneous

- Iron Age Mine Patented Claim
- Waste Rock
- Joshua Tree National Park
- USGS Township Boundary
- USGS Survey Section

Proposed Project
(Plus Access Road and Mill Sites)

SITE ACCESS and IMPROVEMENTS

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 3

LILBURN CORPORATION

(b)(2)(i) Maps

The Plan of Operations, reclamation plan, and cross section are shown on Sheets 1 through 4 included in full size sheets attached at the back of this report.

Sheet 1	Iron Age Mine Site Access Improvements
Sheet 2	Iron Age Mine Plan of Operations
Sheet 3	Iron Age Mine Reclamation Plan
Sheet 4	Iron Age Mine Cross Sections and Details

(ii) Operations

The operation is a simple removal of iron ore tailings from the surface of the existing tailings piles down to approximately original grade (see Sheets 2 and 4; Figures 4 and 5). The removal will begin on patented claims adjacent to the process plant area then continue onto unpatented claims. The procedure generally includes:

- The iron tailings stockpiles will be ripped or loosened as necessary by a dozer with or without a ripper/scarifier and then material will be scraped by a scraper at various lift heights or loaded onto mine trucks for deposit at the crushing/screening plant feeder depending on material size.
- A plant site will be established on approximately 3 acres of patented land consisting of a series of one to three circuits (depending on production needs); a three-deck screen and cone crusher powered by a generator set. Processed material to ¾ inch minus will then move to magnetic separators and through a wet plant to further screen and concentrate the ore to a stockpile. The material is screened to achieve the size and magnetically concentrated to achieve the desired iron exceeding 60% Fe. Ore below grade will be conveyed to the old quarry on patented land for backfill. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.
- A front-end loader or dozer pushes material into a feeder into a primary screen/crusher circuits from where it is screened to achieve the desired size and magnetically concentrated to achieve the desired iron concentration. A wet plant cycle of screening and crushing is available with water application. Production throughput will begin with a 500 tons per hour (tph) plant and expand with an additional 1,000 tph plant. Total throughput may ultimately reach 2.3 million tons per year with ore production of 920,000 tpy and 1.4 million tons of waste material for reclamation.
- A loader or conveyor is used to load the iron into 50-ton off road haul trucks for transport to the loading/shipping facility on two mill sites 3.4 miles north via the mine road;
- At the loading/shipping facility, the iron is stockpiled and transferred to street legal haul trucks or containers for shipment to market.

There is no defined soil development at the surface of the tailing piles and only sparse vegetative growth. The surface iron material stockpiled onsite is the usable product. Blasting operations are not proposed but are described in the mine reclamation plan. Blasting could be utilized in the event of excessive tailings compaction. Should blasting operations be required they will involve drilling along the mining face, placement of charges, and detonation of the charges by a blaster

Haul Road to Mill Sites and State Route 62 (see Sheet 1 of 4)

SECTION 20 / SECTION 29

SECTION 21 / SECTION 28

Haul Road

Existing Haul Road

PRE-SMARA AREA
To be Left as is

Phase 3
14.6 Acres

Phase 2
9.0 Acres

Phase 2
1.1 Acres

Phase 3
0.11 Acres

PROCESSING AREA
See Detail 3 - Sheet 4

Phase 1A
1.9 Acres

Phase 1B
22.8 Acres

Existing Haul Road

OVERBURDEN BACKFILL

TEST PIT

TEST PIT

TOPSOIL STOCKPILE 50'x200'

Elv.=2038' FINES STOCKPILE 50'x200'

Elv.=2130'

Iron Age 2 - 20.2 Acres

Iron Age 3 - 20.9 Acres

Drainage Crossing
2'x4' CMP

DETAIL 4
Typical Haul Road Section
See Sheet 1 of 4

Extent of Mining Claims

Proposed Project
(Plus Access Road and Mill Sites)

Scale: 1 inch = 100 feet

Map Prepared By: Lilburn Corporation (1/05)
NOTE: Boundary information has not been verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, SBBM.
Contour Interval = 10'
Topography: Modified U.S.G.S. HED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most current digital elevation model and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and translated to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M..

3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable methods as approved by the appropriate jurisdictional entities.

LEGEND

- Iron Age Mine Patented Claim
- Existing Tailings within Patented Claim
- Mine Tailings Area
- Elv.=2035' 2012 GPS Spot Elevation (above mean sea level)
- Drainage Indicator

MINING NOTES

Mine Name: Iron Age Mine

Mineral to be Mined: Iron Ore Tailings

Mine Operator: Iron Age Mine, LLC
Mark Miller, President
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Land Owner: Patented Claims
Mark Miller, President
Iron Age Mine, LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Unpatented Claims
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
Phone: (760) 252-6000

Applicant: Same as Operator

Owner of Mineral Rights: Same as Operator

Representative & Map Preparer: Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-1818

Civil Engineer: Otte-Berkeley Group, Inc.
575 E. Carreon Drive
Colton, CA 92324
909-370-0911

Utilities: Not available on site
Water: onsite well to be developed
Electric Power: diesel generator
Natural Gas: None required
Phone: Cell
Sanitation: portable toilets

Legal Description:

A.P.N.s: 0643-041-01, 02, 09, 10, & 11 and 0643-031-12, 13, & 14.

The site is located on Iron Age patented claims 1, 2, & 3, Sections 20 and 29, T1S, R13E, SBBM. New Dale Quadrangle, California and recorded unpatented claims Easy Pickens 1 & 2, Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

- Iron Age Patented Claims 1, 2, &3: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, T1N, R13E, SBBM; and
- Easy Pickens 1, unpatented placer claim #CMAC 260830: 160 acres +/- located in the SW½ Section 20, T1N, R13E, SBBM; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831: 160 acres +/- located in the NW¼ Section 29, T1N, R13E, SBBM; and
- 10 acres: Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7.
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7.
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.
  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7.
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
- Iron Age Road Sections
  Hot Rocks 4, CMAC 272328, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

Land Use District: Resource Conservation (RN)

Project Area: Approximately 97 acres (34 patented acres; 63 unpatented acres)

Proposed Onsite Uses: Tailings stockpiles removed (58.5 acres); Plant (3 acres); roads (19 acres), mill site (8.5 acres), and quarry backfill (8 acres)

Site and Surrounding Uses: BLM – Multiple Use Class Limited – Vacant, open space

Structures: No existing structures onsite.

Plant and Tree Protection: Only isolated, poor quality yuccas and Joshua trees onsite due to rocky iron ore tailings. Any protected native desert plants will be salvaged for revegetation if deemed survivable by the revegetation consultant.

No.	Date	By	Revision Description

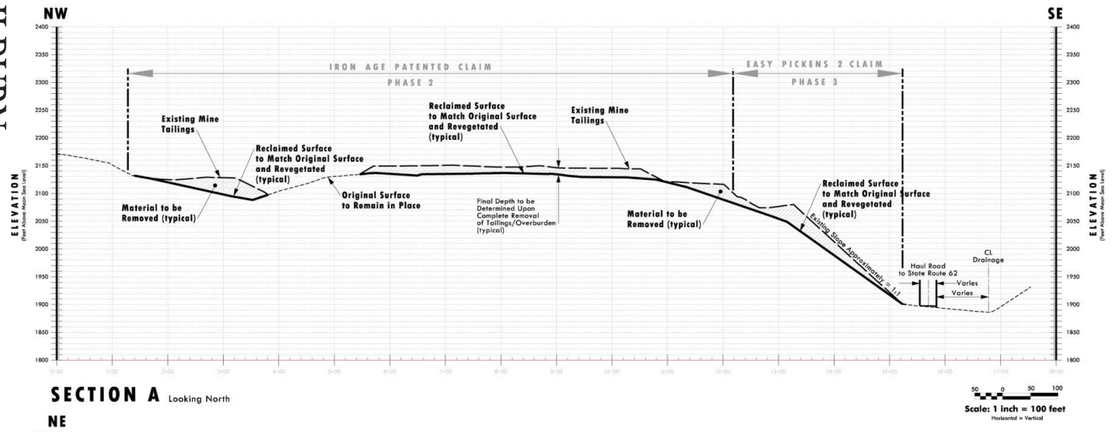
Prepared by: LILBURN CORPORATION
1905 Business Center Drive, San Bernardino, CA 92408

PLAN of OPERATIONS

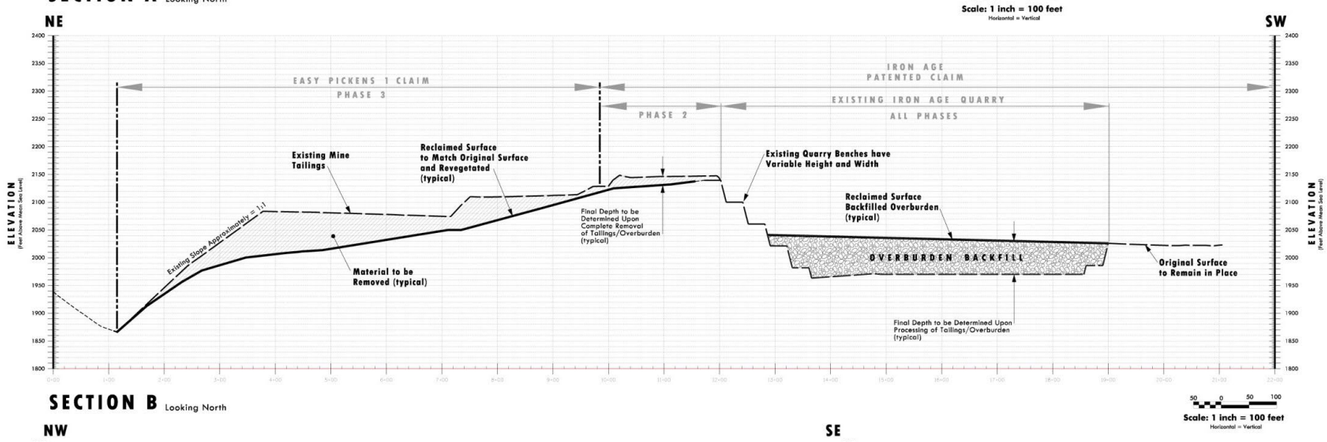
Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 4

LILBURN CORPORATION



SECTION A Looking North



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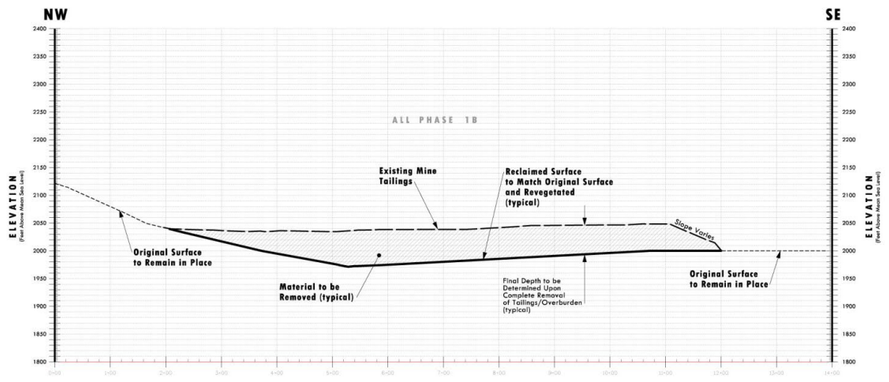
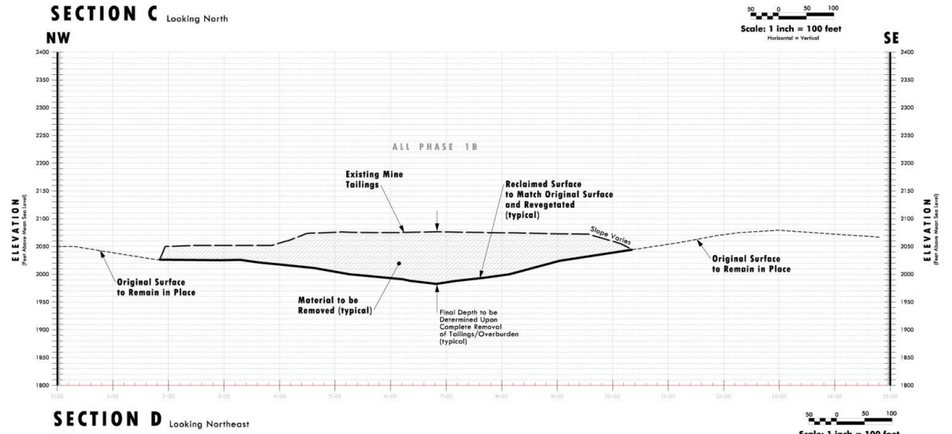
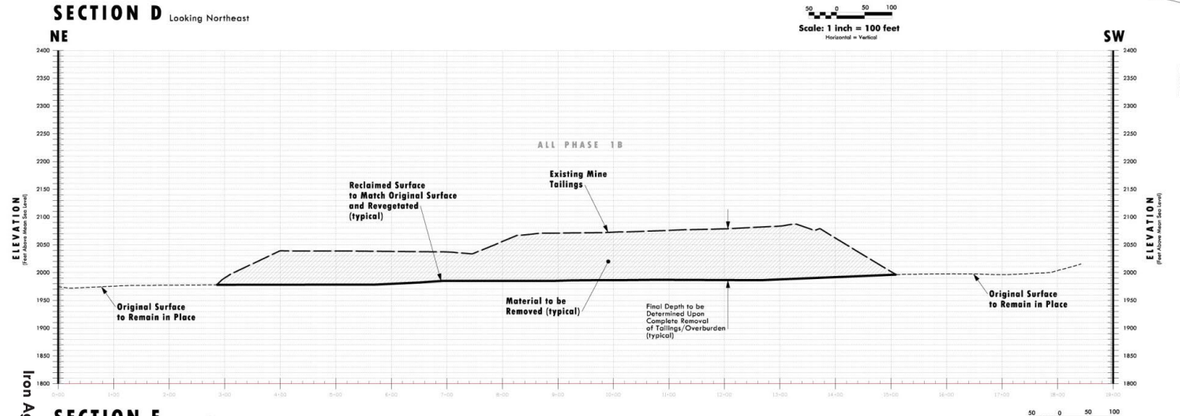


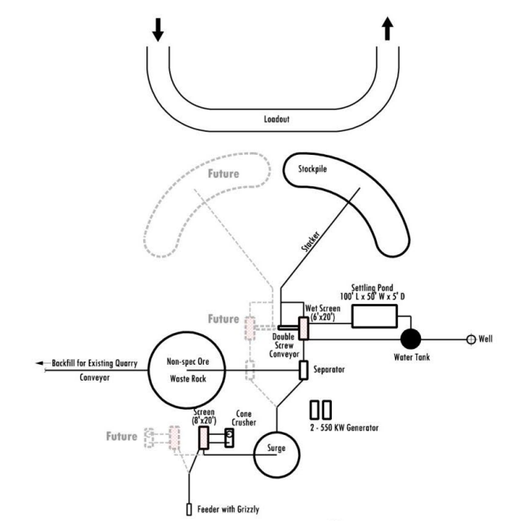
SECTION C Looking North



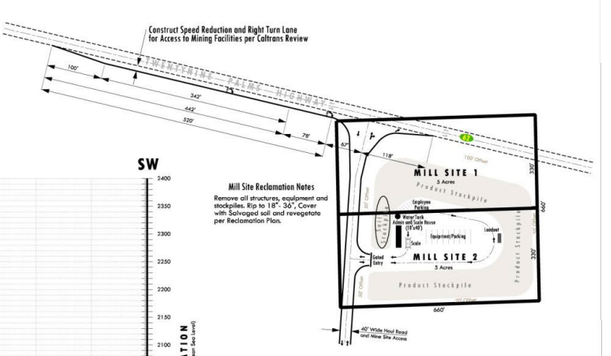
SECTION D Looking Northeast



SECTION E Looking Southeast



DETAIL 5
Typical Processing Plant
See Sheet 2 of 4 for Location
Not to Scale



DETAIL 6
Typical Mill Sites Layout
See Sheet 1 of 4 for Location
Not to Scale

CROSS SECTIONS

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 5

licensed through the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF&E) for handling explosives. All explosives and detonators shall be transported and handled in accordance with all federal, State, and local regulations and permitted under the San Bernardino County Fire Department pursuant to Uniform Fire Code adopted by the Department and notification to the County Sheriff's Department. In compliance with County regulations, blasting shall only be conducted by a licensed blaster upon issuance of a site-specific blasting permit. No explosives will be stored onsite. The licensed blaster shall also submit a certificate of insurance evidencing that he or she has obtained a general liability insurance policy of not less than $1,000,000 for each occurrence. Blasting activities shall take place between the hours of 10:00 a.m. and 6:00 p.m. Monday through Friday. No blasting shall be allowed after sunset. One or two blasts may be conducted monthly.

Table 2 shows a typical equipment list. Note that similar equipment may be used during the life of the project. The site will operate with approximately 6 to 8 employees. The site will operate year round approximately 6 days/week, 312 days annually. Loading and trucking may occur 24 hours/day, six days per week (not including holidays), and removal operations will be daytime only hours.

Table 2
Typical Equipment List

Number	Description
1	6 yard bucket loader
1	4 yard bucket loader
3	Haul Trucks, 50 tons or similar
1	Komastsu 155AX Dozer
1	Caterpillar 637D Scraper
1	Drill and Compressor
1	Water Truck
1	Shop Van
1	Service Truck
1	Mobile Trailer (12' x 70' or similar)
1	10,000 gallon fuel tank, above-ground
1	500- 1,000 gallon gasoline tank
1 - 2	10,000 gallon water tank, above-ground
1	Jaw Crusher
1	Feeder 4' x 16'
1	Cone Crusher 46"
3	3 Deck Screen 8' x 20'
3	Magnetic Separator
5	Stacker 120'
±1000 LF	Conveyors
2	Generators 550 kW or equivalent

Note that similar equipment may be used during the life of the project.

Production

Maximum material throughput will be 2.3 million tons per year; 920,000 tons of product and approximately 1.4 million tons per year of waste rock and low grade ore that does not meet product requirements. Note that this waste generation could reach 60 percent of throughput and

would be used for quarry backfill with some fines used as revegetation/reclamation topsoil. Maximum monthly production would be approximately 76,600 tons. Total available iron tailings at the mine are estimated at 12 million tons. At the maximum proposed production, the mine would be operated for up to approximately 8 years taking into account a construction and start-up period of up to two years. Iron Age is requesting a 15-year period through 2029 for operations as annual production rates may be highly variable depending on demand plus five years for implementation of reclamation (2034).

Dust Control and Production Water

Operations are required to comply with MDAQMD Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requires requirements for controlling fugitive dust). To minimize dust while processing the material, the screening plant will be outfitted with water spray nozzles to wet the finished material as it comes off the conveyer belt. The wet plant will produce moist material not susceptible to dust production.

Dust control on the haul and access roads, plant site, and transfer shipping area will be controlled by constructing the roads and more active areas with an approximate 6-inch layer of crushed rock and waste ore. Dust will be reduced by establishing a speed limit of 20 MPH for trucks, with speed limit signs at the plant area and mill site and approximately every 1/2 mile along the road. Roads and the operations areas will be watered every morning. A dust palliative may be applied to reduce daily water demand for dust control.

Water for the mining operations will be provided by groundwater; a well is proposed to be drilled on Iron Age's property at the mine site or mill site. Water demand is estimated at approximately 29,000 gallons for operations with 60% of that demand being met by recycled process water. Process water will be recycled through a lined holding pond on-site. Therefore, an estimated 11 acre-feet of groundwater will be pumped annually (40% of 29,000 x 312 operating days). A water storage tank of 10,000 gallons will be placed at both plant site and at the mill site. Water will be used for product screening, dust control, and road dust suppression.

Domestic water for drinking will be imported for employees. Domestic wastewater and septage will be collected via portable facilities.

No wastewater will be generated as a result of excavation or plant operations. Process water will be recycled through a lined settling pond. To protect soils and groundwater from potential contamination from run-off, fueling and maintenance areas shall be covered with impervious materials and equipped with berms and catch basins to capture accidental spills and insure that run-on and run-off from this area is not contaminated.

Site Access

The Mine Site will be accessed from the Iron Age Mine Road which extends from SR 62 approximately 3.4 miles south to the mine. The roadway will be reconstructed on a 40-foot right-of-way and developed at a 24-foot surface width. The alignment and typical cross sections are illustrated on Sheets 1 and 2.

Round trips will vary between 30 and 60 haul trucks per day plus employee and service vehicles.

Equipment Maintenance

Regular maintenance will be performed on site using a portable lube truck. All oil and grease will be stored and dispensed using a lube truck. The lube-fuel service truck and the mine foreman's pickup truck are all outfitted with appropriate diesel fuel tanks to transport fuel from bulk storage and fuel equipment at the mine site. Per the County of San Bernardino, the mine is required to submit a business plan, spill prevention control and counter measure plan (SPCC) with Best Management Practices (BMPs) to insure that on site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above-ground fuel containers. The diesel fuel and gasoline tanks will be placed within concrete or lined containment pads to contain the contents of the tank and a 100-year rainfall event as required. Fuel will be transferred to the site by tanker trucks.

(iii) Water Management Plans

Operation water will be provided by an onsite well to be drilled at the mine or mill site. Process water will be recycled through a lined holding pond. Approximately 60% of the water used for the wet cycle processing will be recycled through a lined settling pond. A 10,000-gallon water tank will be placed at the plant and/or at the mill site. A water truck will be available for mobile use. Water will be used for product screening dust control and road dust suppression. Onsite surface flow will be subject to surface sheet wash from rain and subsequent percolation. Roadway drainage will flow from the road crown to the perimeter. Dip crossings will be utilized to maintain storm water flow in the existing drainages. Storm water flow is limited due to low rainfall averaging less than 4 inches annually. Rain events are typically summer monsoonal storms.

(iv) Rock Characterization and Handling Plans

The tailings removal will focus on existing, exposed, un-reclaimed historic stockpiles of iron ore tailings. These tailings vary in quality up to approximately 58% Fe. Tailings will be removed, sorted, crushed and magnetically concentrated to achieve marketable concentrations. Waste rock, estimated at approximately 60 percent, will be separated and conveyed to the historic quarry for backfill for planned reclamation. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.

(v) Quality Assurance Plans

A Quality Assurance Plan will be developed as tailings are recovered and concentration processing is refined in the plant. Iron ore sales are based on guaranteed quality specifications. Iron Age Mine currently targets 62% Fe as its guaranteed shipping goal.

(vi) Spill Contingency Plan

A Business Emergency/Contingency Plan and a Storm Water Pollution Protection Plan (SWPPP) will be required as conditions of approval per the County of San Bernardino.

(vii) Schedule of Operations from Start through Closure

Iron Age Mine will begin project development following authorization to proceed from BLM, San Bernardino County and appropriate responsible agencies. The phasing and timeframes are listed in Table 1.

Phase 1A – Initial Development

Access road development
Mill site development
Water well placement
Plant installation and operation
Ore processing within southwest patented property
Duration: one year

Phases 1B, 2, and 3 - Operations

Operations and ore processing
Ore Stockpiling
Shipping
Transfer to Market
Backfilling of quarry with waste rock concurrently
Duration: 6 to 14 years

Concurrent Reclamation during Phases 1B, 2, and 3

Backfilling of quarry with waste rock concurrently
Reclamation and revegetation of areas where material has been removed to original surfaces
Duration: Concurrent as tailings are removed to grade by phase. Reclamation should begin following the completion of each phase.

Phase 4 – Final Reclamation after Operations

Removal of all equipment, structures, tanks and debris
Reclamation and revegetation monitoring
Duration: annually following completion of reclamation until success criteria has been met and certified culminating approximately December 31, 2032.

(viii) Plans for Roads and Services

Access road improvements are identified in Description of Operations and Sheets 1 and 2 of this POO. The applicant proposes to leave the pre-existing but improved roadway in place following mining unless otherwise directed by responsible agencies. The road access would be gated and blocked and posted at the mine entrance (see Sheet 1).

Water supply will be from on-site well either at the plant site or at the mill site. The well will be removed upon completion and the well head will be sealed and closed per State, County and DEHS requirements. The subsurface well would remain in place. No commercial or public water service or infrastructure is available at the site.

Power will be supplied by onsite generators. No commercial power or infrastructure is available at the site.

Sewage will be contained in mobile restrooms. These will be serviced by a commercial provider and removed upon closure. No utility service or infrastructure is available at the site.

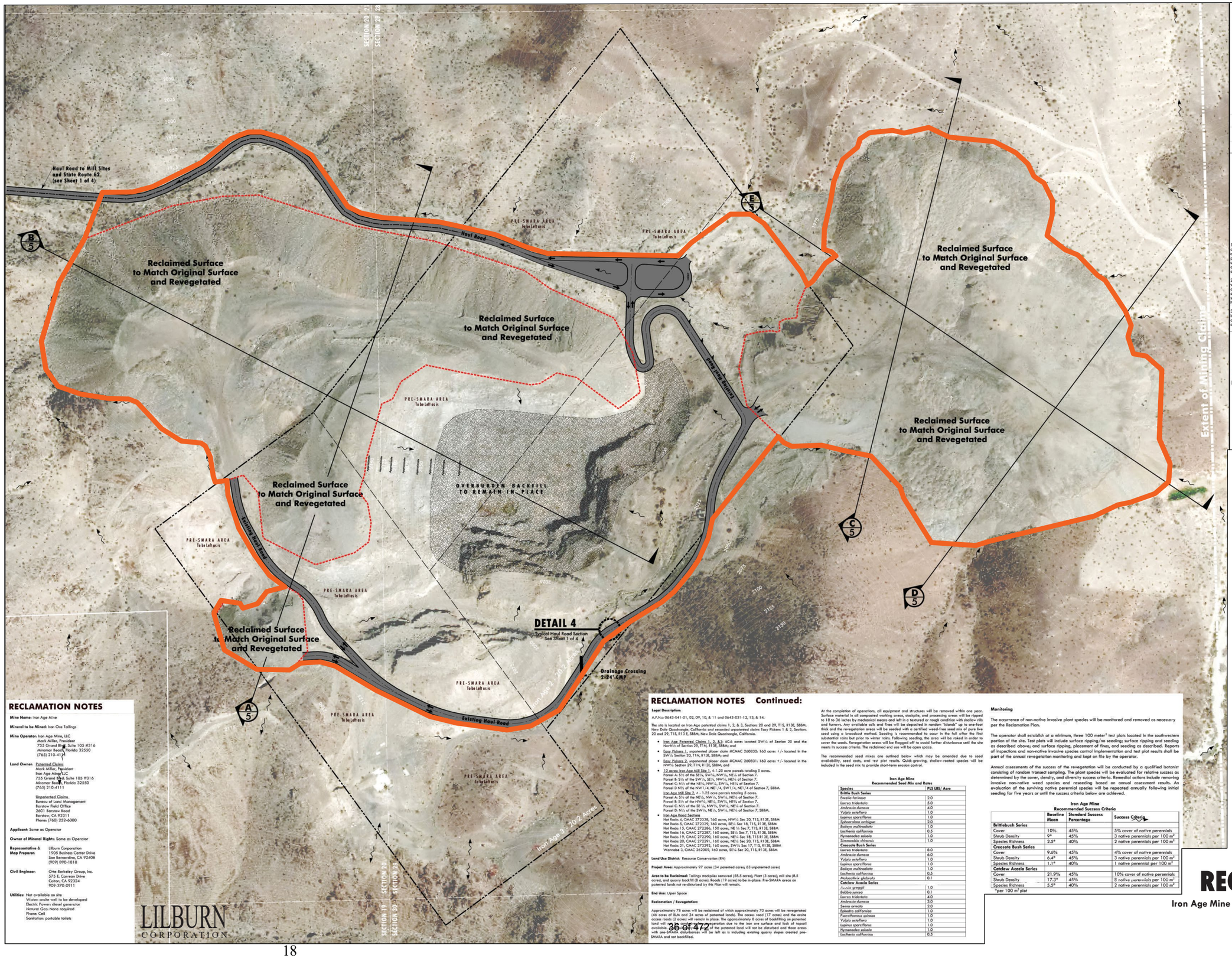
(3) Reclamation

Reclamation will be phased concurrently at phase completion as tailing piles are depleted. Removed ore stockpile areas will be ripped and revegetated. At the completion of removal, processing and loading/shipping operations, within one year, all equipment and stockpiles will be removed and any remaining refuse will be disposed of at an appropriate off-site disposal site. The surface material will be re-graded to approximate natural contours. On BLM lands, approximately 46 acres of former tailings piles and the mill sites will be reclaimed and revegetated (see Sheet 3 and Figure 6). The access road (17 acres) and the onsite access roads (2 acres) will remain in place. In total on both BLM and patented lands, approximately 78 acres will be reclaimed of which approximately70 acres will be revegetated. The approximately 8 acres of backfilling on patented land will not be conducive for revegetation due to the iron ore surface and lack of topsoil available. The plant and former stockpile areas will be scarified and seeded with BLM/County approved seed mix. The reclaimed end use will be open space. A mine reclamation plan in compliance with the California SMARA appears in Attachment 2 of the Plan of Operations (POO). This includes a revegetation plan as Appendix C. Site reclamation will include the following:

(i) Drill Hole Plugging: A drilling program is not included in this plan of operation. Should drilling occur holes will be backfilled and compacted. Upon final reclamation, the planned on-site well will be closed or destroyed in accordance with the California Department of Water Resources Bulletin 74-81 as revised and the County Department of Environmental Health (DEHS) regulations and in such a manner that will no longer be a hazard to the health and safety of people and wildlife.

(ii) Regrading and Reshaping: Existing and developed operation equipment will be removed including foundations. Stockpiles will be removed approximately to historic grade. Contours will be created to approximate historic topography. Surface drainages will be reconstructed. Surfaces scarified to accommodate revegetation. Any remaining tailings slopes will be retained at approximately 2:1 or less.

(iii) Mine Reclamation: The tailings areas will be removed to the original grades, ripped, and revegetated. The existing quarry (on patented land) will not be mined by the applicant but will be partially backfilled with waste material which will reduce its volume. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock. Placement of the waste material into the existing quarry will eliminate creating a remnant waste rock stockpile. Upon site closure, revegetation as proposed in the Reclamation Plan will be conducted on the removed stockpile surfaces and plant and mill sites. Upon final stockpile reclamation, the historic quarry will be secured with fencing where there is any safety issue and signage to limit trespass.



Proposed Project
(Plus Access Road and Mill Sites)

No.	Date	By	Revision Description

Prepared By:
LILBURN CORPORATION
1905 Business Center Drive, San Bernardino, CA 92408
909.890.1818 Fax 909.890.1915

Scale: 1 inch = 100 feet

Map Prepared By: Lilburn Corporation (1/05)
NOTE: Boundary information has not been verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, SBBM.
Contour Interval = 10'
Topography: Modified U.S.G.S. MED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most current digital elevation models and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and translated to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M.

3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable methods as approved by the appropriate jurisdictional entities.

LEGEND

- Iron Age Mine Patented Claim
- Mine Tailings Area Reclamation Area
- Elv.=2035' 2012 GPS Spot Elevation (above mean sea level)
- Drainage Indicator
- Roads to Remain In-place

RECLAMATION NOTES

Mine Name: Iron Age Mine

Mineral to be Mined: Iron Ore Tailings

Mine Operator: Iron Age Mine, LLC
Mark Miller, President
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Land Owner: Patented Claims
Mark Miller, President
Iron Age Mine LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Unpatented Claims
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
Phone: (760) 252-6000

Applicant: Same as Operator

Owner of Mineral Rights: Same as Operator

Representative & Map Preparer: Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-1818

Civil Engineer: Orte-Berkeley Group, Inc.
375 E. Carnegie Drive
Colton, CA 92324
909-370-0911

Utilities: Not available on site
Water: onsite well to be developed
Electric Power: diesel generator
Natural Gas: None required
Phone: Cell
Sanitation: portable toilets

RECLAMATION NOTES Continued:

Legal Description:

A.P.Nos 0643-041-01, 02, 09, 10, & 11 and 0643-031-12, 13, & 14.

The site is located on Iron Age patented claims 1, 2, & 3, Sections 20 and 29, T1S, R13E, SBBM, New Dale Quadrangle, California and recorded unpatented claims Easy Pickens 1 & 2, Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

- Iron Age Patented Claims 1, 2, &3: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, T1N, R13E, SBBM; and
- Easy Pickens 1, unpatented placer claim #CMAC 260830. 160 acres +/- located in the SW¼ Section 20, T1N, R13E, SBBM; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831. 160 acres +/- located in the NW¼ Section 29, T1N, R13E, SBBM; and
- 10 access Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7,
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7,
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7,
  Parcel D: N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.
  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7,
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7,
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7,
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
- Iron Age Road Sections
  Hot Rocks 4, CMAC 272330, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

Land Use District: Resource Conservation (RN)

Project Area: Approximately 97 acres (34 patented acres; 63 unpatented acres)

Area to be Reclaimed: Tailings stockpiles removed (58.5 acres); Plant (3 acres); mill site (8.5 acres), and quarry backfill (8 acres). Roads (19 acres) to be in-place. Pre-SMARA areas on patented lands not re-disturbed by this Plan will remain.

End Use: Open Space

Reclamation / Revegetation:

Approximately 78 acres will be reclaimed of which approximately 70 acres will be revegetated (46 acres of BLM and 24 acres of patented lands). The access road (17 acres) and the onsite access roads (2 acres) will remain in place. The approximately 8 acres of backfilling on patented land will not require revegetation due to the iron ore surface and lack of topsoil available. Approximately 2 acres of the patented land will not be disturbed and those areas with pre-SMARA disturbances will be left as is including existing quarry slopes created pre-SMARA and not backfilled.

At the completion of operations, all equipment and structures will be removed within one year. Surface material in all compacted working areas, stockpile, and processing areas will be ripped to 18 to 36 inches by mechanical means and left in a textured or rough condition with shallow rills and furrows. Any available soils and fines will be deposited in random "Islands" up to one-foot thick and the revegetation areas will be seeded with a certified weed-free seed mix of pure live seed using a broadcast method. Seeding is recommended to occur in the fall after the first substantial rains but prior to winter rains. Following seeding, the area will be raked in order to cover the seeds. Revegetation areas will be flagged off to avoid further disturbance until the site meets its success criteria. The reclaimed end use will be open space.

The recommended seed mixes are outlined below which may be amended due to seed availability, seed costs, and test plot results. Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control.

Iron Age Mine
Recommended Seed Mix and Rates

Species	PLS LBS/ Acre
Brittle Bush Series	
Encelia farinosa	2.0
Larrea tridentata	5.0
Ambrosia dumosa	4.0
Vulpia octoflora	1.0
Lupinus sparciflorus	1.0
Sphaeralcea ambigua	2.0
Baileya multiradiata	1.0
Lasthenia californica	0.5
Hymenoclea salsola	1.0
Simmondsia chinensis	1.0
Creosote Bush Series	
Larrea tridentata	8.0
Ambrosia dumosa	6.0
Vulpia octoflora	1.0
Lupinus sparciflorus	1.0
Baileya multiradiata	1.0
Lasthenia californica	0.5
Malacothrix glabrata	0.1
Catclaw Acacia Series	
Acacia greggii	1.0
Bebbia juncea	0.1
Larrea tridentata	4.0
Ambrosia dumosa	3.0
Senna armata	2.0
Ephedra californica	1.0
Pararthrotmma spinosa	1.0
Vulpia octoflora	1.0
Lupinus sparciflorus	1.0
Hymenoclea salsola	1.0
Lasthenia californica	0.5

Monitoring

The occurrence of non-native invasive plant species will be monitored and removed as necessary per the Reclamation Plan.

The operator shall establish at a minimum, three 100 meter^2 test plots located in the southwestern portion of the site. Test plots will include surface ripping/no seeding; surface ripping and seeding as described above; and surface ripping, placement of fines, and seeding as described. Reports of inspections and non-native invasive species control implementation and test plot results shall be part of the annual revegetation monitoring and kept on file by the operator.

Annual assessments of the success of the revegetation will be conducted by a qualified botanist consisting of random transect sampling. The plant species will be evaluated for relative success as determined by the cover, density, and diversity success criteria. Remedial actions include removing invasive non-native weed species and reseeding based on annual assessment results. An evaluation of the surviving native perennial species will be repeated annually following initial seeding for five years or until the success criteria below are achieved.

Iron Age Mine
Recommended Success Criteria

	Baseline Mean	Standard Success Percentage	Success Criteria
Brittlebush Series			
Cover	10%	45%	5% cover of native perennials
Shrub Density	9*	45%	3 native perennials per 100 m^2
Species Richness	2.5*	40%	2 native perennials per 100 m^2
Creosote Bush Series			
Cover	9.6%	45%	4% cover of native perennials
Shrub Density	6.4*	45%	3 native perennials per 100 m^2
Species Richness	1.1*	40%	1 native perennial per 100 m^2
Catclaw Acacia Series			
Cover	21.9%	45%	10% cover of native perennials
Shrub Density	17.3*	45%	8 native perennials per 100 m^2
Species Richness	5.5*	40%	2 native perennials per 100 m^2

*per 100 m^2 plot

RECLAMATION PLAN

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 6

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(iv) Riparian Mitigation: There are no riparian areas onsite. Existing drainages will be avoided where possible. The access road will be elevated above the existing wash wherever possible with crossing limited to areas restricted by topography. Portions of the access will require vegetation removal. Pre-construction biologic surveys will be conducted. The mine site has been significantly altered from its natural condition including surface drainage and native vegetation. The tailings surface has only slightly revegetated since placement by the previous mine activity. A biological assessment of the site and access road appears in Attachment 3 of the POO. A Revegetation Plan is included in Attachment 2, Reclamation Plan.

(v) Wildlife Habitat Rehabilitation: See (iv) Riparian above. Wildlife does occur on-site although reduced due to lack of habitat restoration from historic mining. The site will be revegetated to re-establish a native vegetative condition based on vegetative surveys conducted on adjacent properties. Revegetation will attempt to establish both density and diversity of pre-mining conditions. Wildlife should be supported according to successful reclamation. A biological assessment is included in Attachment 2, Reclamation Plan, Appendix B.

(vi) Topsoil Handling: No topsoil exists within the targeted tailings piles. Sorting of tailings and ore concentration will result in the creation of some fines. These will be stockpiled and will be applied to surfaces upon reclamation. Placement would be in random "island" patterns over the removed tailings areas.

(vii) Revegetation: A revegetation plan is included in the reclamation plan attached. (Attachment 2, Reclamation Plan, Appendix D). In summary, the tailings areas and the plant and mill sites (approximately 46 acres of BLM lands and 24 acres of patented lands) will be ripped and seeded with native species per the attached Reclamation Plan and associated revegetation plan.

(viii) Isolation and control of acid forming, toxic or deleterious materials: Acid mine drainage is extremely limited at this site due to the extremely arid conditions. Chemically toxic materials on-site would be limited to petroleum products and lubricants. All materials would be subject to materials safety compliance standards.

(ix) Removal or Stabilization of Structures: All equipment and support structures associated with the mine operations will be removed upon reclamation at both the mine and mill sites. The well will be closed per State, County and DEHS requirements. No construction is planned for the unpatented mine claims beyond temporary placement of operating equipment. Fencing will remain upon closure. The applicant proposes to leave the improved mine access road in place following reclamation.

(x) Post-Closure Management: Mine reclamation/revegetation will be monitored following final reclamation and revegetation will be monitored annually until success criteria are met. Remediation of revegetated areas such as weeding and reseeding with different seed mixes will be conducted as necessary. This will result in formal closure and release of reclamation bonds. See Phase V, Attachment 2, Reclamation Plan.

(4) Monitoring Plan

The following operation reviews and reclamation monitoring procedures are conditions of project approval in compliance with local, state and federal laws and regulations authorizing operation. The following monitoring procedures apply:

Reclamation and revegetation: The operator must comply with phasing, species diversity, density and compliance with stipulated success ratios and goals. These conditions are inspected annually for compliance. Reclamation bonds are released upon restoration and reclamation compliance by the BLM and the County, the SMARA lead agency.

Air Quality: The site's processing equipment will be operated under a permit to construct and operate issued by the Mojave Desert Air Quality Management District (MDAQMD). Operations and permits are inspected and renewed annually. Haul trucks and diesel equipment must meet requirements of the California Air Resources Board's off-road diesel vehicles regulations to reduce diesel pollutants. Operations are required to comply with MDAQMD Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requirements for controlling fugitive dust).

Surface Water Protection: All operations on-site must comply with a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with industrial activities and employ storm water Best Management Practices (BMPs) during construction, operations, and temporary cessation of operations. A Storm Water Pollution Prevention Plan (SWPPP) will be required as a condition of approval per the County of San Bernardino.

Hazardous Materials: Per the County of San Bernardino, the mine is required to submit a business plan and a spill prevention control and counter measure plan (SPCC) to insure that on-site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above ground fuel containers.

Financial Assurance: An estimate of the cost of mine closure and reclamation is required in compliance with SMARA. It is subject to annual review, site inspection for compliance and recalculated to consider cost variances. The owner/operator is compelled to issue the bond as assurance of compliance. The bond insures responsible agencies as appropriate are also insured.

(5) Interim Management Plan

An Interim Management Plan is provided in Attachment 3 of this POO.

EXHIBIT B

Mining/Reclamation Plan

MINE RECLAMATION PLAN
FOR THE
IRON AGE MINE

Prepared For:
Iron Age Mine, LLC
755 Grand Blvd. Suite B105 #316
Miramar Beach, Florida 32550

Submitted To:
County of San Bernardino
Planning Department
385 North Arrowhead Avenue
San Bernardino, California 92415

and

Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311

DOI-BLM-CA-D080-2020-0031-EA: January 7th, 2021

Prepared By:
Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408

June 2012
Updated July 2014
Finalized August 2021

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MAP SHEETS (attached)

1.0 OPERATIONS PLAN

Introduction

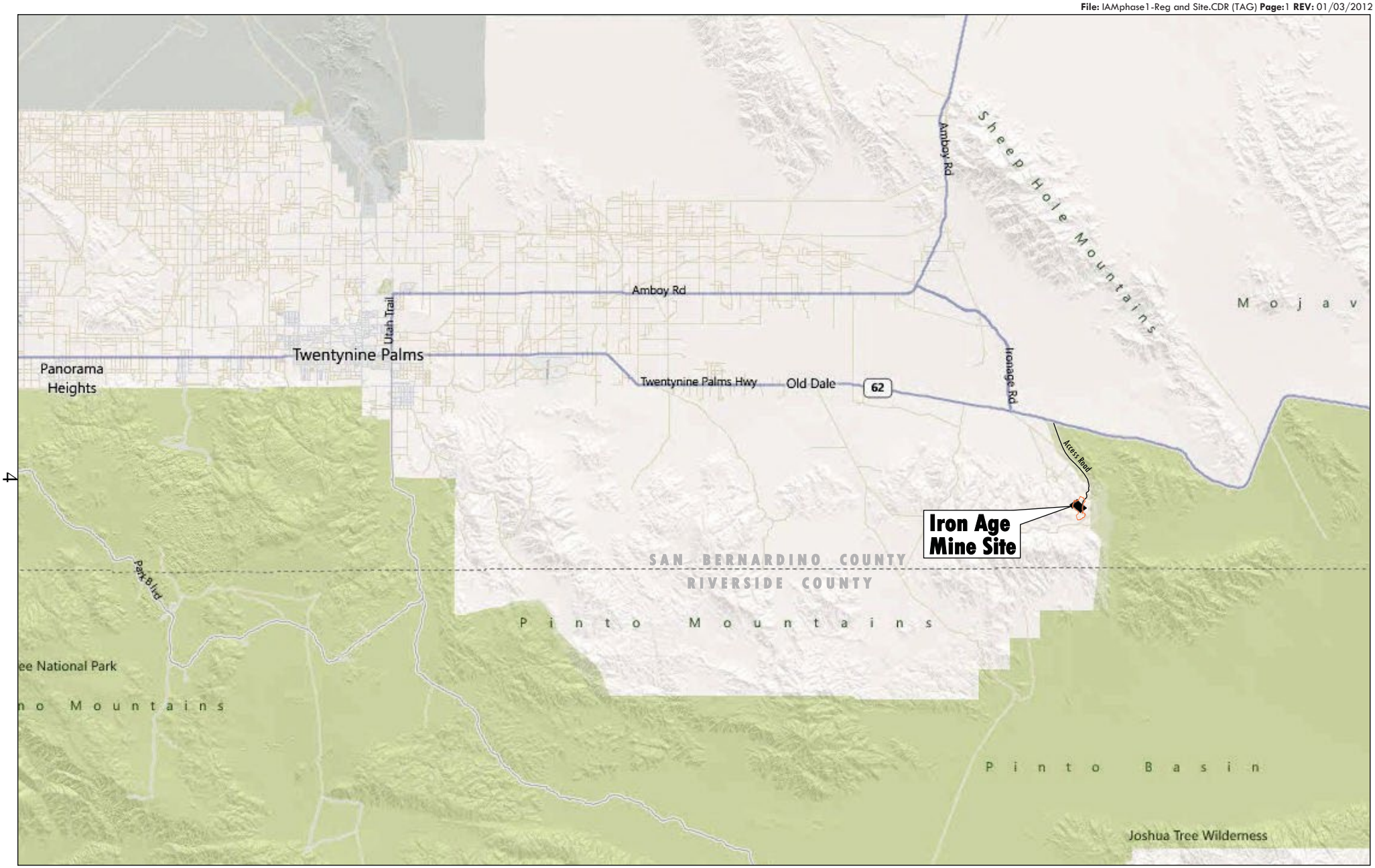
Iron Age Mine, LLC (Iron Age) is submitting this application for a Mine Reclamation Plan (Plan) for the Iron Age Mine. The Iron Age Mine is an iron ore deposit that has been explored and extensively mined prior to the enactment of the California Surface Mining and Reclamation Act (SMARA) and has been inoperable and un-reclaimed for a number of years. It is located approximately 18 miles east/southeast of the City of Twentynine Palms, California and approximately 3.4 miles south of State Route (SR) 62 in San Bernardino County (see Figure 1) in the Dale Mining District in the northern Pinto Mountains. The mine is within Sections 20 and 29, the mill sites within Section 7, and the access road within Sections 7, 17, 18, 20 and 29, Township 1 South, Range 13 East San Bernardino Base and Meridian (SBBM). The site is accessed from SR 62 east of Twentynine Palms via Iron Age Mine Road (unpaved road, 3.4 miles) (see Figure 2).

Unlike most reclamation plans which reclaim areas planned for mining, this Mine Reclamation Plan will reclaim approximately 58 acres covered with iron ore tailings deposited historically prior to the enactment of SMARA and another 8 acres of quarry backfill and 12 acres of the mill and plant sites. The removal of the tailings will provide a marketable product and a heavily disturbed area will subsequently be reclaimed back to open space. The tailings are stockpiled up to about 50 feet in depth and contain an estimated 12 million tons of tailings. US Iron will utilize scrapers and loaders/trucks to remove the tailings, crush, screen, and separate the tailings and transport the material to a loading area near SR 62 of two mill sites on 10 acres. Waste rock and low-quality iron ore will be backfilled into the existing Iron Age Mine. The tailings area will be graded back to the original surface and revegetated.

The Iron Age Mine holdings relevant to this Plan consist of patented claims (private land) and unpatented claims on public lands managed by the Bureau of Land Management (BLM Barstow office) owned by US Iron. As such, Iron Age submitted a Plan of Operations (September 2012) to the BLM (see Appendix A). The extent of the claims includes approximately 60.6 acres of patented claims (private land) within portions of Sections 20 and 29, and 330 acres of unpatented claims (public land) within portions of Sections 7, 17, 18, 20 and 29 including two 5-acre mill site claims in Section 7. The mine road alignment extends into additional unpatented placer claims within Sections 7, 17, 18 and 20. The Plan was approved on January 7th, 2021; DOI-BLM-CA-D080-2020-0031-EA (see Appendix A).

The proposed Iron Age Mine is planned to include 34 of the 60.6 patented acres, 37.5 acres of the unpatented claims, 8.5 acres of the 10-acre mill site claims and approximately 17 acres of connecting roadway (Iron Age Mine Road) (see Table 1 and Figure 3). The total disturbance area is approximately 97 acres of which approximately 76 acres are currently disturbed including the existing and planned roadway. Surrounding land uses predominately consist of mines or vacant public lands administered be the BLM and designated for open uses, which allows cross-country off-highway vehicle usage. There are no structures or human habitation in the area.

Elevation at the site ranges from 1,975 to 2,250 feet above mean sea level (amsl), a 275-foot change. Approximately 100 acres of the area have been disturbed due to previous mining



REGIONAL LOCATION

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 1

Mile 0 4

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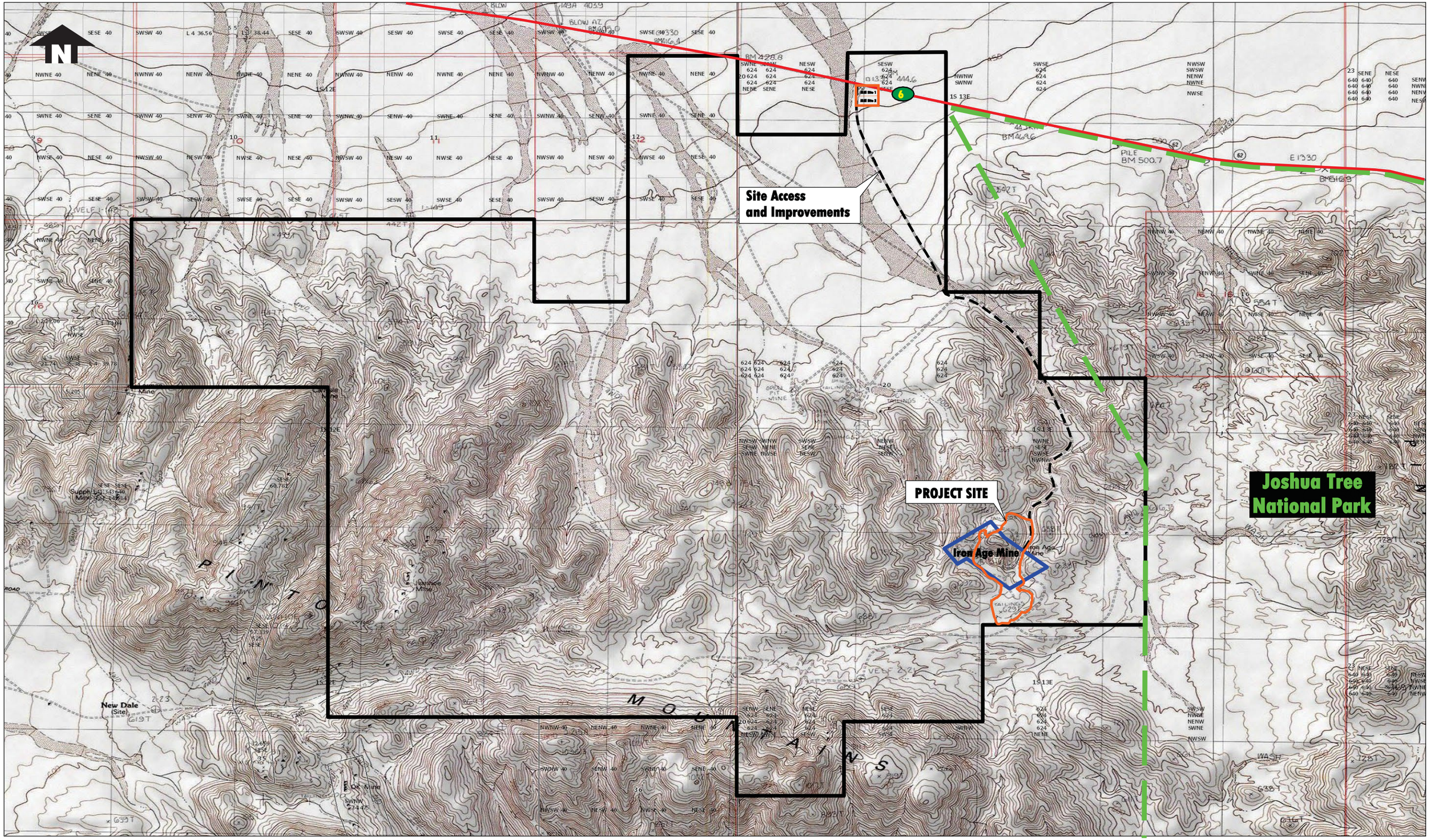

0 0.5 1

Scale: 1Inch = 0.5 Miles

Source: U.S.G.S.7.5 Min. New Dale Quadrangle, 1985.

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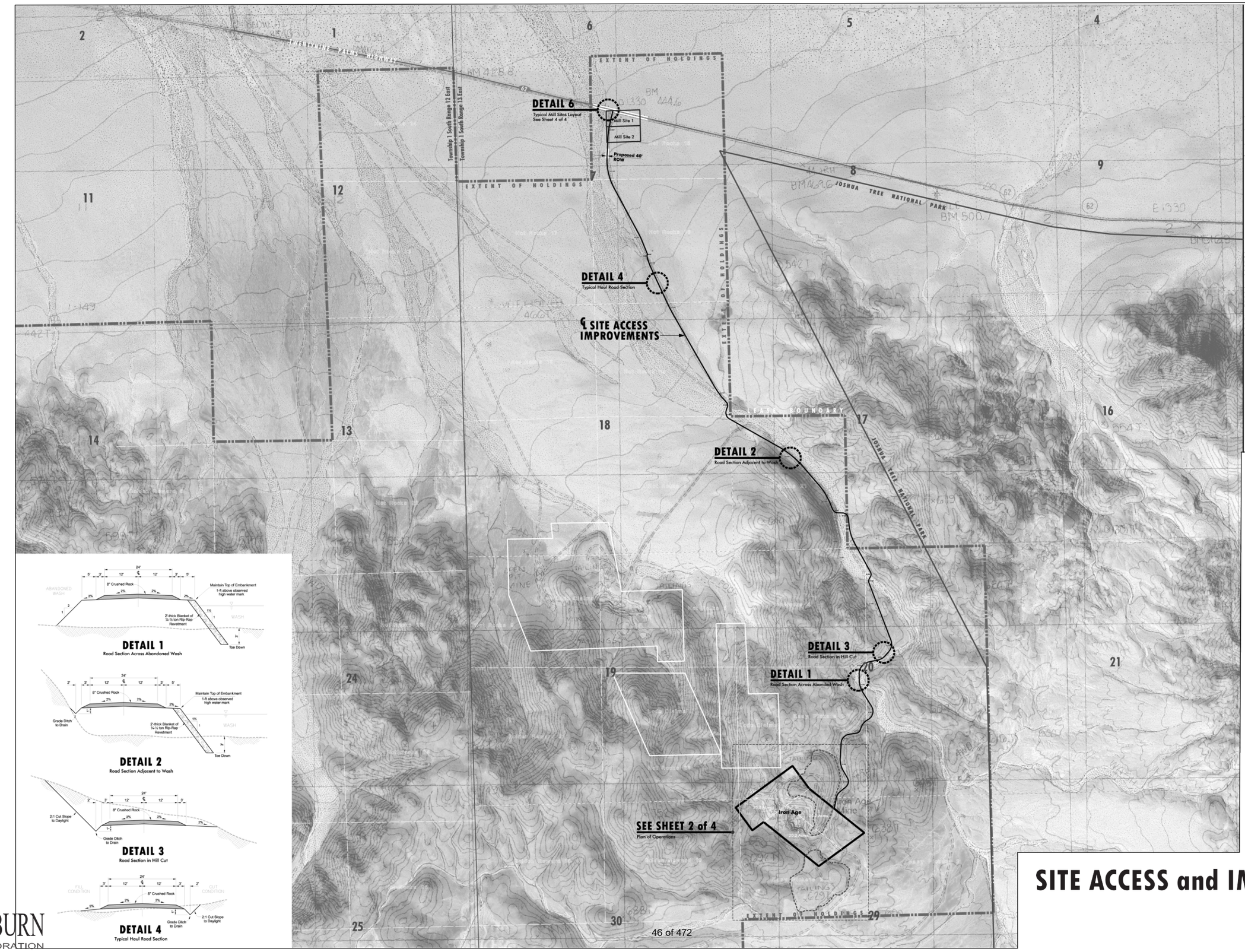
LEGEND

- Iron Age Mine Patented Land
- Extent of Claim Holdings
- Joshua Tree National Park Boundary
- Proposed Project (Plus Access Road and Mill Sites)

PROJECT VICINITY

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 2



No. | Date | By | Revision Description

Prepared by LILBURN CORPORATION
1905 Business Center Drive San Bernardino, CA 92408

Scale: 1 inch = 700 feet

Map Prepared By: Lilburn Corporation (GIS). NOTE: All boundary information needs to be verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, 5388m
Contour Interval = 10'
Topography: Modified U.S.G.S. NED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most current digital elevation model and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and translated to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M..

3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable methods as approved by the appropriate jurisdictional entities.
Final alignments will be determined by BLM.

LEGEND

Proposed Access Road

Center Line of Potential Impacts to Existing Wash

Miscellaneous

- Iron Age Mine Patented Claim
- Waste Rock
- Joshua Tree National Park
- USGS Township Boundary
- USGS Survey Section

SITE ACCESS and IMPROVEMENTS

Iron Age Mine - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 3

LILBURN CORPORATION

activities conducted until about 1965. The mine was not reclaimed but has experienced a moderate level of natural revegetation. The project site vegetation is characterized as Creosote Bush and brittlebrush series habitat types.

Based on aerial photo reconnaissance of the existing tailings stockpiles, the site has estimated reserves of 12 million tons of iron ore with an average concentration of 62 percent iron. The site will be mined at a maximum production rate of 920,000 tons of product annually which will provide reserves for up to 8 years At the maximum proposed production, the mine would be operated for up to approximately 8 years taking into account a construction and start-up period of up to two years. Iron Age is requesting a 15-year period through 2029 for operations as annual production rates may be highly variable depending on demand plus five years for implementation of reclamation (2034). Crushed concentrated iron ore will be shipped by haul truck to the Long Beach/San Pedro port area for overseas shipment to industrial steel manufactures or to other customers.

The Plan proposes operations to take place on two tailings disposal areas that extend to the south and north of the historic mine quarry. The operations will begin in the south tailings area on the patented property then extend further south to the adjacent unpatented claims. The next phase will extend to the north patented property then onto the unpatented claims. The phased operations, the processing area and reclamation with phased slopes and contours are depicted on the attached Mine Reclamation Plan sheets. This proposed Plan was prepared with the following objectives:

- To remove an existing historic iron ore resource of stockpiled tailings that meets the Federal regulations and the State's and County's SMARA requirements;
- To provide adequate crushed iron ore reserves from a closer source to meet the increasing demand for high grade iron ore for overseas and cement manufacturing market needs;
- To reduce the distance traveled for hauling of the iron ore to market resulting in decreased truck mileage and related diesel fuel consumption and air pollutant emissions;
- To provide reclamation and revegetation to impacted mining sites to reduce visual, biological, safety, and hydrological impacts;
- To partially backfill the existing quarry with waste rock to the extent feasible; and
- To reclaim the site for an open space end use.

Operator: Iron Age Mine, LLC
755 Grand Blvd, Suite B, #316
Miramar Beach, Florida 32550
(765) 210-4111

Representative: Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408
909/890-1818

General Plan Designation: Resource Conservation (RC)
Estimate Operating Life: 15 years or until ore reserves are depleted (approximately until December 31, 2029)

Estimated Operations Termination Date: December 31, 2029

Estimated Reclamation Completion: December 31, 2034

Reclaimed End Use: Open space habitat

1.1 OPERATIONS

Prior to actual ore extraction, roads, operations limits, and planned facilities will be surveyed and marked in the field and any available soils will be stockpiled in separate identified stockpiles as shown on the mine sheets for use as a seed bank and seedbed during reclamation. Soil stockpiles will be clearly marked and covered with larger material to limit wind and water erosion.

Initial ore processing will begin with a 500 ton per hour (tph) processing plant expanding with an addition 1,000 tph plant at maximum production as needed to meet demand. At maximum production capacity, these plants will have a total throughput of approximately 192,000 tons per month or 2.3 million tons per year. Concentrated ore production for off-site shipping will be approximately 40% of this total; a maximum of 76,600 tons per month or 920,000 tons per year of product. The remaining 60% will be backfilled into the old quarry. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.

Operations will be conducted in three phases followed by a final reclamation phase. Initial mining operations will begin in the southwestern portion of the site's patented property and at the mill site claims. Phase 1A will establish the processing plant area and on-site access roads (5 acres) including a waste stockpile area, topsoil stockpile areas, minor runoff control facilities and connection with the off-site access road and internal haul roads in the west portion of the site; tailings processing on the south tailings hillside (1.9 acres); development of the mill site claims for ore containment and transfer (8.5 of 10 acres); and road improvements on 3.4 miles of Iron Age Mine road (17 acres). Phase 1B mining will continue the ore processing on the south tailing's hillside extending onto the unpatented claims on approximately 22.8 acres.

Iron ore waste material (iron ore not meeting product specifications) following processing may reach 60 percent or approximately 1.4 million tons per year. Backfilling into approximately 8 acres within the quarry on patented land would also be initiated during this Phase 1B. This non-marketable waste ore will be conveyed to the existing quarry for backfilling. This will occur continuously through the processing operation in Phases 1B, 2 and 3 and completed during Phase 4. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock. Table 1 lists the phasing and parameters of the phased mining plan.

Phase 2 (19 acres - patented) will excavate the tailings hillside on the north side of the historic quarry similar in design as Phase 1A.
Phase 3 (14.7 acres - unpatented) will include the removal of the tailings on the unpatented claims directly north and east of Phase 2.

Phase 4 is final reclamation the site including removal of all equipment, structures, and debris, reclamation of slopes as needed, construction of erosion control measures, and revegetation.

Table 1
Operations Plan, Phasing Areas, and Schedule

Operational Phases	Unpatented Acres	Patented Acres	Total Acres[2] (approx.)	Tons Removed (Millions)	Approx. Years
1A	25.5	7.0	32.5	0.5	1 (Yr. 1)
1B	22.8	8.0	30.8	5.5	7 (Yrs. 2-8)
2	0	19.0	19.0	2.4	3 (Yrs. 9-11)
3	14.7	0	14.7	3.6	4 (Yrs. 12-15)
Phase 4 Final Reclamation[1]			---	---	5 (Yrs. 16 – 20)[1]
Total	**63.0**	**34.0**	**97.0[2]**	**12**	**15 (operations) 5 (reclamation)[1]**

Areas and tons are rounded and approximate.

[1] Active reclamation for approx. 5 years and monitoring and remediation as necessary until revegetation success criteria achieved.

[2] 76 acres currently disturbed; 78 acres to be reclaimed, approximately 19 acres of roads will be left in place per BLM direction and to maintain access to site for monitoring.

The operations will consist of the removal, processing, and transportation of the iron tailings stockpiles. The stockpiles will be ripped or loosened as necessary by a dozer with or without a ripper/scarifier and will be scraped by a scraper at various lift heights depending on the material and deposited near the feeder or loaded onto mine trucks for deposit at the crushing/screening plant feeder depending on material size. A front-end loader pushes/loads material into a feeder that transfers the ore to a series of three deck screens and cone crusher circuits powered by a generator set. Processed material to ¾ inch minus will then move to magnetic separators and through a wet plant to further screen and concentrate the ore to a stockpile. The material is screened to achieve the size and magnetically concentrated to achieve the desired iron exceeding 60% Fe.

The washed and concentrated iron ore will then be loaded or conveyed onto 50-ton off-road haul trucks. The trucks will take the iron ore via a mine haul road to the ore stockpile and transfer facility on two mill sites located on Highway 62, 3.4 miles north of the mine. Round trips will vary between 30 and 60 haul trucks per day based on production plus employee and service vehicles. The mill site will consist of a product stockpile area, 100-foot-long platform scale, administration/scale house trailer and equipment yard. The entire area outside of the road of about 8.5 acres will be fenced for public safety and tortoise protection. Iron ore will be stockpiled at the mill site for transfer. Iron ore product is loaded at the mill site into street-legal 25-ton haul trucks or shipment containers for delivery to the market. Refer to Table 2 for a Typically Equipment List. All stationary equipment and the generator listed below will comply with Mojave Desert Air Quality Management District (MDAQMD) rules and regulations and all necessary permits will be obtained prior to operation. Haul trucks and diesel equipment meet requirements of the California Air Resources Board's off-road diesel vehicles regulations to

reduce diesel pollutants. Operations are required to comply with MDAQMD Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requires requirements for controlling fugitive dust).

Table 2
Equipment List (Typical)

Number	Description
1	6-yard bucket loader
1	4-yard bucket loader
3	Haul Trucks, 50 tons or similar
1	Komastsu 155AX Dozer
1	Caterpillar 637D Scraper
1	Drill and Compressor
1	Water Truck (4,000 gal)
1	Shop Van (40')
1	Service Truck
1	Mobile Home/Trailer (12' x 70')
1	10,000-gallon fuel tank, above-ground
1	Mobile administration trailer (8' x 24')
1	500- 1,000-gallon gasoline tank
1-2	10,000-gallon water tank, above-ground
1	Jaw Crusher
1	Feeder 4' x 16'
3	Cone Crusher 46"
3	3 Deck Screen 8' x 20'
3	Magnetic Separator
5	Stacker 120'
±1000 LF	Conveyors
2	Generators 550 kW or equivalent
1	Platform scale 100'

Note that similar equipment may be used during the life of the project.

Most equipment will run on diesel fuel and electricity. Power will be produced by diesel fuel generator(s). Generators will be MDAQMD emissions compliant. Diesel fuel will be stored in a 10,000-gallon above-ground tank. The tank will be approximately 8 feet in diameter and 32 feet long (typical). A small portable gasoline tank will also be used onsite (approximately 1,000-gallon tank). The diesel fuel and gasoline tanks will be placed within concrete or lined containment pads to contain the contents of the tank and a 100-year rainfall event as required. Fuel will be transferred to the site by tanker trucks. Best Management Practices (BMPs) for storage and fueling and a Spill Prevention, Control, and Counter-Measure Plan (SPCC) will be implemented.

Water will be stored in one or two 10,000-gallon above-ground tanks and process water recycled through a lined settling pond. Water will be necessary for product screening and dust control via

one onsite water well to be constructed at the mine or mill site. Production capacity for a well is unknown at this time.

1.2 MINE WASTE

The processing plant will produce ¾ inch minus material from the quarried ore. Smaller diameter material will be processed through a 3-deck wet screening cycle. Waste rock, defined as iron ore below marketable quality, is expected to reach up to 60% (up to 1.4 million tons per year) of throughput depending on production and quality of tailings on site. Most of the waste rock will be conveyed to the historic quarry for deposition which will partially fill the lower floor and elevations of the quarry. A percentage of the waste fines will be stockpiled for use as topsoil amendment in reclamation. Waste rock may also be used for road surface or repair as necessary. The height of a typical waste rock stockpile will range from 25 feet to 50 feet. Refer to Sheet 1 for waste stockpile location.

The mining process uses water for dust control measures and ore processing in both the wet and dry cycles. Process water will be directed to a holding pond for recycling. Approximately 60% of the water used for the wet cycle processing will be recycled. Process water will be lost by evaporation and ore retention and will require recharge from the well.

Equipment maintenance will be done onsite. Waste oil, lubricants and solvents will be removed from the site and disposed of at permitted facilities. Per the County of San Bernardino, the mine is required to submit a business plan, SPCC to insure that on site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above ground fuel containers.

All refuse will be kept in closed containers and removed from the site to permitted facilities as needed. No trash will be allowed to collect on the site.

1.3 ORE PROCESSING

The operations will consist of the removal, processing, and transportation of the existing iron tailings stockpiles. The stockpiles will be scraped by a scraper and deposited near the feeder. A front-end loader pushes material into a feeder that transfers the ore to a series of one to three circuits (depending on production needs) consisting of a three-deck screen and cone crusher powered by electricity from a generator set. Processed material to ¾ inch minus will then move to magnetic separators and through a wet plant to further screen and concentrate the ore to a stockpile. The material is screened to achieve the size and magnetically concentrated to achieve the desired iron exceed 60% Fe.

The listed equipment and facilities are typical (see Table 2 above). Actual plant equipment, manufacturers, and configurations may vary. The plant and generator will be permitted through MDAQMD and will comply with District rules and regulations.

1.4 PRODUCTION WATER

Water will be used for ore processing and dust control measures. Water will be utilized in the wet plant cycle for washing and in sprayers at material transfer points for dust control. Water will be available at the site from a well to be developed at the mine or mill site. The estimated water usage will be approximately 4,000 gallons per hour for processing with a loss of up to 40 percent to product retention and evaporation or 1,600 gallons per hour make-up water or approximately 12,800 gallons per 8-hour workday. Approximately 60% of the water used for the wet cycle processing will be recycled through a lined settling pond. Water used for dust control will evaporate. The project will not produce any run-off water. Total annual water usage is approximately 3.6 million gallons or 11 acre-feet. This water usage is approximately equal to that of 11 single-family residences. Water will be stored in 10,000-gallon above-ground tanks at both the plant site and at the mill site and also used for on-site fire emergencies. There is no surface water at the site, and one well is planned for the project site. Refer to Section 4.0 for additional information. Upon final reclamation, the planned onsite well will be closed or destroyed in accordance with the California Department of Water Resources Bulletin 74-91 as revised in 1988 or the latest revision and the County Department of Environmental Health (DEHS) regulations and in such a manner that will no longer be a hazard to the health and safety of people and wildlife.

1.5 EROSION AND SEDIMENTATION CONTROL

Due to the lack of fine surface material and low rainfall (less than 4 inches/year) the site has little potential for erosion and sedimentation. During the removal of the tailings, drainage will not be altered from existing conditions. The tailings are porous and heavy and are not susceptible to erosion. Erosion and sediment will be controlled at the plant and along access roads with the development of diversion ditches and catch basins as needed to collect sheet flow from exposed working areas. These will be constructed and modified as operations progress through the tailing field. The processing area and the mill area will be partially covered by crushed iron ore and rock. The processing area slopes gently 2-3 percent to the north.

Reconstruction of the mine road access will require routing outside the existing wash where possible and in some cases construction of dip crossings within the wash. Iron Age has attempted to utilize and improve the historic alignment where possible. It will be located on the wash terrace to prevent undue erosion from seasonal flash flooding. Dip crossing will be employed to accommodate seasonal flooding without restriction on natural flow. These will be replaced as necessary. Alignment designs where developed on site with Otte-Berkeley Engineers and appear on Sheets 1 and 2 as typical cross-sections. Refer to Sheet 1 of the Mine Plan for additional information. Final alignments will be determined by BLM.

1.6 BLASTING

Blasting is not anticipated at this site but may become necessary if tailings are severely compacted. Should blasting operations be required they will involve drilling along the mining face, placement of charges, and detonation of the charges by a blaster licensed through the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF&E) for handling explosives. All

explosives and detonators shall be transported and handled in accordance with all federal, State, and local regulations and permitted under the San Bernardino County Fire Department pursuant to Uniform Fire Code adopted by the Department and notification to the County Sheriff's Department. In compliance with County regulations, blasting shall only be conducted by a licensed blaster upon issuance of a site-specific blasting permit. No explosives will be stored onsite. The licensed blaster shall also submit a certificate of insurance evidencing that he or she has obtained a general liability insurance policy of not less than $1,000,000 for each occurrence. Refer to Section 2.13, Public Safety for additional information on safety methods.

Blasting activities shall take place between the hours of 10:00 a.m. and 6:00 p.m. Monday through Friday. No blasting shall be allowed after sunset. One or two blasts may be conducted monthly.

A number of safety measures specific to the project site will be required including: blast site inspection and possible removal of unstable boulders; employee safety meetings; site security; limiting the amount of explosives used; proper loading and back-filling of holes; delay timing of shot; warning signals; and post-blast inspection. Blasting records of all blasts shall be completed and maintained on-site.

2.0 RECLAMATION PLAN

2.1 LAND USE

The site is located in a remote area of south-central San Bernardino County, within the Dale Mining District in the northern Pinto Mountains. The site is located on patented and unpatented claims. The County land use designation for the site is RC – Resource Conservation. The surrounding lands are primarily public and administered by BLM or are patented mining claims (privately held).

The surrounding lands are vacant with operating or historic mines to the north and west. The California Desert Conservation Area Plan (CDCAP) identifies the site as open to motorized vehicles with access on federal lands restricted to existing routes. The federal lands are identified in the CDCAP as Multiple Use Area Class M-Moderate and as an Economic Mineral Resource Area. which is based upon a controlled balance between higher intensity use and protection of public lands. This class provides for a wide variety of present and future uses such as mining, livestock grazing, recreation, energy, and utility development. Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause. Joshua Tree National Park surrounds the public lands to the east and south on the eastern boundary of Sections 20 and 29.

The mine and the tailings area are completely disturbed lands having been mined prior to the 1970s. An existing but partially eroded haul road connected the site to SR 62 and this road will be rebuilt utilizing the existing disturbed alignment as much as feasible. The 10-acre mill sites are generally undisturbed with SR 62 and the old existing road crossing these mill sites.

2.2 VISIBILITY

The site is not viewed by significant numbers of viewers or visible from any prominent viewpoints within the public BLM lands or from Joshua Tree National Park. The site is not part of a scenic view shed or visible from a scenic highway. The eventual removal and reclamation of the historic iron tailings piles will visually blend the site more with the surrounding areas.

2.3 VEGETATION

A total of six vegetation communities were identified to occur within the project survey area including: brittlebush (*Encelia ridenta*) series, big galleta (*Hilaria rigida*) series, creosote bush (*Larrea ridentate*) series, catclaw acacia (*Acacia greggi*) series, disturbed habitat, and unvegetated streambed. The proposed project footprint was identified to occur within the brittlebush series, creosote bush series, and catclaw acacia series vegetation (Saweyer 1995).

No federally or state listed plant occurrences were identified through the California Natural Diversity Data Base within or in the vicinity of the project site. No federally or State listed flora species were observed at the time of field surveys. A Biological Resource Assessment is included in Appendix B of this plan.

2.4 WILDLIFE

The project site is located in the vicinity of Joshua Tree National Park to the east and south, to the Humbug Mountains to the west, and the Pinto Mountains to the southwest. Sensitive species identified in the biological resources assessment to have a potential to occur at the site include: desert tortoise (*Gopherus agassizii*), pallid bat (*Antrozous pallidus*), California leaf-nosed bat (*Macrotus californicus*), American badger (*Taxidea taxus*), Le Conte's thrasher (*Toxostoma lecontei*), prairie falcon (*Falco mexicanus*), Nelson's big horn sheep (*Ovis Canadensis nelson*), coast horned lizard (*Phrynosoma blainvillii*), Mojave fringe-toed lizard (*Uma scorparia*), burrowing owl (*Athene cunicularia*). A Biological Resource Assessment appears in Appendix B of this plan.

A portion of the proposed project occurs within the Pinto Mountains critical habitat for the desert tortoise as designated by the United States Fish and Wildlife Service (FWS). Protocol presence/absence studies of the project survey area were conducted following the guidelines established in the FWS *Pre-project Field Survey Protocol for Potential Desert Tortoise Habitats* (FWS 2010).

Desert tortoise protocol presence/absence surveys were conducted in the tailing's areas out to approximately 600 meters, at the proposed mill site location, and along the approximately 3.4-mile proposed haul road. Surveys were conducted by walking transects 10 meters (30 feet) apart within the proposed mining area, and proposed mill site. The length of the haul road alignment was surveyed and additional transects parallel to the alignment were surveyed at 200, 400, and 600 meters on either side. All tortoise sign (live tortoises, shells, bones, scutes, limbs, scats, burrows, pallets, tracks, eggshell fragments, courtship rings, drinking sites, mineral licks, etc.) observed during the pedestrian surveys were mapped using Global Position Systems (GPS).

No live desert tortoise or desert tortoise sign were observed at the proposed mill site location or along the proposed haul road alignment. Two burrows were observed in the vicinity of the proposed mining area. Per the USFWS protocol survey guidelines, sunlight was directed into the burrow openings to locate desert tortoise sign; no sign was identified in either burrow. Recommendations to avoid impacts to desert tortoise were made in the *Desert Tortoise Presence/Absence Pre-Project Survey for the U.S. Iron Age Mine San Bernardino County, California* report (Lilburn 2012) in Appendix C of this Plan. Mitigation measures compensation listed in the Initial Study/Mitigated Negative Declaration and the Biological Opinion from the USFWS will be required.

2.5 RECLAMATION

The Reclamation Plan is shown on Sheet 3 and Figure 4 which includes an aerial with elevation contours and details of the reclamation of the site. Reclamation will include the removal of all equipment, structures, tanks, and debris from the site. Compacted surface material in the processing area, roads to be closed, and the former stockpile areas will be loosened and ripped to depth of 18 to 36 inches by mechanical means and seeded with native plant species. The proposed site is 34 acres of patented lands, 37.5 acres of unpatented claims with tailings, 8.5 acres of Mill sites, and the mine access road of 17 acres on unpatented claims. Approximately 78 acres will be reclaimed of which approximately 70 acres will be revegetated

Haul Road to Mill Sites and State Route 62 (see Sheet 1 of 4)

SECTION 20 / SECTION 29

SECTION 21 / SECTION 28

Haul Road

Existing Haul Road

Phase 3
14.6 Acres

Phase 2
9.0 Acres

Phase 2
1.1 Acres

Phase 3
0.11 Acres

Phase 1A
1.9 Acres

Phase 1B
22.8 Acres

PROCESSING AREA
See Detail 3 - Sheet 4

PRE-SMARA AREA
To be Left as is

OVERBURDEN BACKFILL

TEST PIT

TOPSOIL STOCKPILE 50'x200'

Elv.=2038' FINES STOCKPILE 50'x200'

DETAIL 4
Typical Haul Road Section
See Sheet 1 of 4

Drainage Crossing
2'x4' CMP

Iron Age 2 - 20.2 Acres

Iron Age 3 - 20.4 Acres

Extent of Mining Claims

Proposed Project
(Plus Access Road and Mill Sites)

MINING NOTES

Mine Name: Iron Age Mine

Mineral to be Mined: Iron Ore Tailings

Mine Operator: Iron Age Mine, LLC
Mark Miller, President
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Land Owner: Patented Claims
Mark Miller, President
Iron Age Mine, LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Unpatented Claims
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
Phone: (760) 252-6000

Applicant: Same as Operator

Owner of Mineral Rights: Same as Operator

Representative & Map Preparer: Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-1818

Civil Engineer: Otte-Berkeley Group, Inc.
575 E. Carreon Drive
Colton, CA 92324
909-370-0911

Utilities: Not available on site
Water: onsite well to be developed
Electric Power: diesel generator
Natural Gas: None required
Phone: Cell
Sanitation: portable toilets

Legal Description:

A.P.N.s: 0643-041-01, 02, 09, 10, & 11 and 0643-031-12, 13, & 14.

The site is located on Iron Age patented claims 1, 2, & 3, Sections 20 and 29, T1S, R13E, SBBM. New Dale Quadrangle, California and recorded unpatented claims Easy Pickens 1 & 2, Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

- Iron Age Patented Claims 1, 2, &3: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, T1N, R13E, SBBM; and
- Easy Pickens 1, unpatented placer claim #CMAC 260830: 160 acres +/- located in the SW½ Section 20, T1N, R13E, SBBM; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831: 160 acres +/- located in the NW¼ Section 29, T1N, R13E, SBBM; and
- 10 acres: Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7.
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7.
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.
  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7.
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
- Iron Age Road Sections
  Hot Rocks 4, CMAC 272328, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

Land Use District: Resource Conservation (RN)

Project Area: Approximately 97 acres (34 patented acres; 63 unpatented acres)

Proposed Onsite Uses: Tailings stockpiles removed (58.5 acres); Plant (3 acres); roads (19 acres), mill site (8.5 acres), and quarry backfill (8 acres)

Site and Surrounding Uses: BLM – Multiple Use Class Limited – Vacant, open space

Structures: No existing structures onsite.

Plant and Tree Protection: Only isolated, poor quality yuccas and Joshua trees onsite due to rocky iron ore tailings. Any protected native desert plants will be salvaged for revegetation if deemed survivable by the revegetation consultant.

Scale: 1 inch = 100 feet

Map Prepared By: Lilburn Corporation (1905)
NOTE: Boundary information has not been verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, SBBM.
Contour Interval = 10'
Topography: Modified U.S.G.S. NED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most current digital elevation model and historic U.S.G.S. topographic maps available.

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3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable methods as approved by the appropriate jurisdictional entities.

LEGEND

- Iron Age Mine Patented Claim
- Existing Tailings within Patented Claim
- Mine Tailings Area
- Elv.=2035' 2012 GPS Spot Elevation (above mean sea level)
- Drainage Indicator

No.	Date	By	Revision Description

Prepared By: LILBURN CORPORATION
1905 Business Center Drive, San Bernardino, CA 92408

PLAN of OPERATIONS

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 4

LILBURN CORPORATION

(46 acres of BLM and 24 acres of patented lands). The access road (17 acres) and the onsite access roads (2 acres) will remain in place. The approximately 8 acres of backfilling on patented land will not be conducive for revegetation due to the iron ore surface and lack of topsoil available. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock. Approximately 26 acres of the patented land will not be disturbed and those areas with pre-SMARA disturbances will be left as is including existing quarry slopes created pre-SMARA and not backfilled.

Revegetation of re-disturbed areas will take place upon completion of tailings removal by phase and on the plant site and mill site after termination of operations. The processing area will be reclaimed upon removal of all equipment and recontouring the surface. The quarry backfill area is being reclaimed but the tailings surface of the backfill will not be conducive for revegetation as seen by the existing piles. Refer to Sheet 3 of the Reclamation Plan for additional information.

Upon final reclamation, the planned onsite well will be closed or destroyed in accordance with the California Department of Water Resources and the County Department of Environmental Health (DEHS) regulations and in such a manner that will no longer be a hazard to the health and safety of people and wildlife.

2.6 REVEGETATION

Lilburn Corporation has prepared a "Revegetation Plan for the Iron Age Mine" which is included in Appendix D. Portions of the Revegetation Plan are summarized below.

Existing Conditions

The existing vegetative conditions of the site were documented by a biological survey conducted on April 11-13, 2012, by Lilburn Corporation. Proposed project activities would result in impacts to four vegetation communities: brittle bush series, creosote bush series, catclaw acacia series, and streambed.

Baseline Vegetation

Baseline inventory of flora was conducted on May 1, 2012, by Lilburn Corporation (see Appendix D for details). Three homogeneous vegetation communities within the project impact areas were surveyed for shrub cover, density, and species richness. A total of ten 50-meter transects and ten 100-square meter plots were surveyed in each of the vegetative communities. Random reference sites were surveyed within each vegetative community and transect endpoint locations were recorded on a handheld GPS. To evaluate cover, a vertical point was projected at each 0.5-meter interval along the transect, any plant, stem, or canopy intercepting the point was recorded. Shrub density and species were recorded in 100-square meter plots located along the edge of the 50-meter transects and extending two meters out from its edge; all shrubs rooted in the plots and the number of different shrub species were recorded.

Brittlebush Series Results - Average absolute shrub cover measured a mean of 10%; average shrub density measured 9 shrubs per 100 m^2 plot; and an average of 3 species was observed to occur per 100 m^2 plot.

Creosote Bush Series Results - Average absolute shrub cover was measured at 10%; average species richness measured 6.4 shrubs per 100 m^2 plot; and an average of 1 species was observed to occur per 100 m^2 plot.

Catclaw Acacia Series Results - Average absolute shrub cover was measured at 22%; average shrub density measured 17 shrubs per 100 m^2 plot; and an average of 6 species was observed to occur per 100 m^2 plot.

Revegetation

The proposed activities would remove the existing iron ore tailings at the site which have no soil cover. Prior to ore extraction, any available soils onsite from the mill site, plant area, and other on-site areas will be stockpiled in separate identified stockpiles for use as a seed bank during revegetation. Soil stockpiles will be located in the southwestern portion of the patented lands and along the southern and eastern portion of the mill sites, clearly marked and covered to limit wind and water erosion. In addition, fines from the tailings processing will be assessed for use as soil augmentation and stockpiled in the northwestern portion of Phase 1B.

Following the completion of phased activities, the tailings, plant, mill, and miscellaneous areas consisting of approximately 70 acres will be contoured to their final grade and slope, the surface will be ripped where possible to a depth of 18 to 36 inches to break up compacted areas and left in a textured or rough condition with shallow rills and furrows to create optimal conditions for revegetation with a native seed mix. Any available soils and fines will be deposited in random "islands" up to one-foot thick and the revegetation areas will be seeded with a certified weed-free seed mix of pure live seed using a broadcast method. Following seeding, the area will be raked in order to cover the seeds and protect them from desiccation and predation.

Successful revegetation of the site would be achieved when a self-sustaining native plant cover is established in the areas disturbed by the proposed mining activities. The revegetated site must resemble and blend into the natural surrounding environment. Based on the results of the baseline, a site-specific seed mix was created for each of the vegetation communities to be impacted by the proposed project. The recommended seed mixes are outlined in Table 3 which may be amended due to seed availability, seed costs, and test plot results. Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control. By providing short-term erosion control, more favorable growing conditions will be created for climax species that will provide long-term erosion control.

Irrigation

The plant palette proposed for the mine site consists of primarily drought-tolerant plants species that should perform well without additional water. The average precipitation in the area should be sufficient for seed germination and root establishment of native species.

Table 3
Iron Age Mine
Recommended Seed Mix and Rates

Species	PLS LBS/ Acre
Brittle Bush Series	
Encelia farinose (Brittlebush)	2
Larrea tridentate (creosote bush)	5
Ambrosia dumosa (white bursage)	4
Vulpia octoflora (six-weeks fescue)	1
Lupinus sparciflorus (Mojave lupine)	1
Sphaeralcea ambigua (Desert globemallow)	2
Baileya multiradiata (Desert marigold)	1
Lasthenia californica (California goldfields)	0.5
Ambrosia or Hymenoclea salsola (chessebush)	1
Simmondsia chinensis (coffeeberry)	1
Creosote Bush Series	
Larrea tridentate (creosote bush)	8
Ambrosia dumosa (white bursage)	6
Vulpia octoflora (six-weeks fescue)	1
Lupinus sparciflorus (Mojave lupine)	1
Baileya multiradiata (Desert marigold)	1
Lasthenia californica (California goldfields)	0.5
Malacothrix glabrata (desert dandelion)	0.1
Catclaw Acacia Series	
Acacia greggii (catclaw acacia)	1.
Bebbia juncea (sweet bush)	0.1
Larrea tridentate (creosote bush)	4
Ambrosia dumosa (white bursage)	3
Senna armata (spiny senna)	2
Ephedra californica (California jointfir)	1
Psorothamnus spinosa (smoketree)	1
Vulpia octoflora (six-weeks fescue)	1
Lupinus sparciflorus (Mojave lupine)	1
Hymenoclea salsola (chessebush)	1
Lasthenia californica (California goldfields)	0.5

Planting in the fall prior to the winter rains will suffice for seed germination and root establishment and reduce weed growth that is typically associated with supplemental irrigation. Scarification of the soil and the creation of surface rills and furrows will allow for maximized collection of water from rain events and run-off.

Fertilization

No fertilization of the site is recommended. All revegetation will utilize native seeds tolerant to existing soil conditions.

Per OMR comments in November 2012, the following successional species and grasses will be added to the seed mix at a rate of 1 to 2 pounds of pure live seed/acre: big galleta, six-weeks grama, six weeks three awn, strigose lotus, black-banded rabbitbrush, and wire lettuce.

Schedule for Revegetation

Seeding of the revegetation area shall occur at the appropriate time of the year and at an application rate for optimum seed sprouting and growth. Seeding is recommended to occur in the fall after the first substantial rains but prior to winter rains.

Operations will be conducted in three phases and reclamation/revegetation will begin at the completion of the active portion of each phase. Phase 1A will establish the processing plant area (4 acres) and road connection with the off-site access road and internal haul roads in the west portion of the site; tailings removal on the south tailing's hillside (1.9 acres); development of the mill site claims for ore containment and transfer (8.5 acres); road improvements on 3.4 miles of Iron Age Mine Road (17 acres). No reclamation will occur following Phase 1A operations.

Phase 1B operations will continue the ore processing on the south tailing's hillside extending onto the unpatented claims on approximately 22.8 acres. Following completion of Phase 1B reclamation will begin on the Phase 1A and the Phase 1B south tailings area on a total of approximately 25 acres.

Phase 2 operations (19 acres) will excavate the tailings hillside on the patented property on the north side of the historic quarry similar in design as Phase 1A. Reclamation on this area will occur following completion of Phase 2 operations.

Phase 3 operations (14.7 acres) will include the development of the tailings on the unpatented claims directly northeast of Phase 2. Reclamation of Phase 3 will begin with completion of Phase 3.

Note that the backfilling of the quarry with waste material will occur concurrently through the Phases 1B, 2 and 3. The area of disturbance within the quarry is estimated at approximately 8 acres. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.

Phase 4 (Final Reclamation) will consist of cleanup, reclamation activities such as final grading, erosion control and sloping, and revegetating the plant site (4 acres) and mill site (8.5 acres). A total of 12.5 acres will be reclaimed in Phase 4. Approximately 19 acres of onsite roads and the access road will be left in-place.

Non-Native Invasive Species (Weed) Control

The purpose of the weed control plan is to reduce or eliminate the occurrence of non-native invasive plant species that may invade the site where active and natural revegetation is taking place. Non-native invasive species (weeds) can compete with native plant species for available moisture and nutrients and consequently interfere with revegetation of the site.

The occurrence of non-native invasive species on-site shall be monitored by visual inspection. The goal is to prevent non-native invasive species from becoming established and depositing seeds in revegetated areas. No areas will be allowed to have more than 10 percent of the ground cover provided by non-native invasive species. If inspections reveal that non-native invasive species are becoming or have established on-site, then removal will be initiated. Inspections shall be made in conjunction with revegetation monitoring.

Non-native invasive species removal will be accomplished through manual, mechanical or chemical methods depending on the specific circumstances. For example, solitary or limited numbers of non-native invasive shrub species will be manually removed (chopped) and the stumps sprayed with an approved weed killer such as Round-Up. Smaller plants (wild oats and bromes) that cover more area may be sprayed, scraped with a tractor, or chopped by hand, depending upon the size of the area of infestation and the number of desired native plants in proximity or mixed in with the non-native invasive species.

Reports of inspections and non-native invasive species control implementation shall be part of the annual revegetation monitoring and kept on file by the operator.

Test Plots

The operator shall establish at a minimum, seven 100 meter^2 test plots representative of an area where the tailings are removed. The test plots will be located in the southwestern portion of the site where tailings will be removed within the first two years and within a drainage to be reclaimed for the catclaw seed mixture to be determined. Test plots will include surface ripping/no seeding (control plot); surface ripping and seeding as described above with each of the three seed mixtures; and surface ripping, placement of fines, and seeding as described with each of the three seed mixtures. Additional tests will be conducted if the initial tests and any active revegetation are not successful and may include various types and amounts of seeds and different surface/soil preparation.

Success Criteria

Acceptable performance standards for mine reclamation are based on a percentage of cover, density, and species richness when compared with the baseline. An acceptable standard at the Iron Age Mine would measure success at 45% of the baseline cover, 45% of the baseline density, and 40% of the baseline species richness five years after reclamation.

The permanence and sustainability of the revegetated plant communities will be determined annually after the initial seeding. Annual assessments of the reclamation area will be conducted by a qualified botanist to determine the success of the revegetation effort. Interim success standards may be used as thresholds for annual monitoring and to ensure the success of revegetation at the end of the 5-year period or until success criteria achieved.

The native perennials will be evaluated for relative success as determined by the cover, density, and species richness success criteria. Remedial actions may include removing invasive non-native weed species and reseeding with different species based on annual assessment results. An

evaluation of the surviving species will be repeated annually following initial seeding for five years or until the success criteria are achieved.

The revegetation success criterion for each of the impacted vegetation types is outlined in Table 4.

Table 4
Iron Age Mine
Recommended Success Criteria

	Baseline Mean	Standard Success Percentage	Success Criteria
Brittlebush Series			
Cover	10%	45%	5% cover of native perennials
Shrub Density	9*	45%	3 native perennials per 100 m^2
Species Richness	2.5*	40%	2 native perennials per 100 m^2
Creosote Bush Series			
Cover	9.6%	45%	4% cover of native perennials
Shrub Density	6.4*	45%	3 native perennials per 100 m^2
Species Richness	1.1*	40%	1 native perennial per 100 m^2
Catclaw Acacia Series			
Cover	21.9%	45%	10% cover of native perennials
Shrub Density	17.3*	45%	8 native perennials per 100 m^2
Species Richness	5.5*	40%	2 native perennials per 100 m^2

*per 100 m^2 plot

2.7 CLEANUP

At the completion of mining activities all equipment and structures will be removed within one year. Surface material in all compacted working areas, stockpile, and processing areas will be loosened by mechanical means. All debris will be removed and disposed at a permitted facility. Upon final reclamation, the planned onsite well will be closed or destroyed in accordance with the California Department of Water Resources Bulletin 74-81 as revised in 1988 or the latest revision and the County DEHS regulations and in such a manner that will no longer be a hazard to the health and safety of people and wildlife.

2.8 POST RECLAMATION AND FUTURE MINING

The reclaimed site will allow for future exploration and development of additional reserves located on both the patented and unpatented claims. The reclaimed site will not preclude or necessitate any future mining activities or surface modification.

2.9 SLOPE AND SLOPE TREATMENT

The tailings stockpiles will be removed up to a depth of 50 feet or higher from original grade depending on actual depths. Tailings in the South Tailings Area will be removed to original grade and no manufactured slopes will remain. The tailings on the North Tailings Area are

generally located on a 1.5:1 slope and will be removed leaving an estimate 1.5:1 natural slope. Again no manufactured slopes will remain; tailings will be removed to the natural slopes.

2.10 PONDS, WASTES

Water is used in ore processing and for dust control. Wastewater produced at the site processing wet cycle will be recycled though a lined pond system with makeup water from an onsite well. Upon completion of operations, the liner will be buried in-place and the pond filled and revegetated. Waste material not suitable as product will be backfilled into the historic quarry.

2.11 SOILS

A Custom Soil Resource Report for the Mojave Desert Area, West Central Part, California, U.S. Iron Age Mine Project Area was obtained from the United States Department of Agriculture Natural Resources Conservation Service (NRCS) database. The NRCS records show that official soil mapping for the area has not been completed.

The 2000 *Backcountry and Wilderness Management Plan* prepared by the National Park Service to amend the Joshua Tree National Park General Management Plan includes a general description of soils in the vicinity of the subject site. According to the report, consolidated rock terrain dominates the region; valleys in the region are characterized by poorly consolidated Quaternary surface deposits. The subject site is located near the eastern portion of the National Park. This region is described as mostly alluvial with no true soil structure. Granitic fill in the region ranges from boulders to ravel and coarse sand. Modern deposits of fan gravel and other alluvium are deposited by drainage system in the region.

The site consists primarily of historic onsite tailings piles overlaying natural topography. The tailings slopes exhibit moderate weathering and no soil profile development. Rock or soil types include alluvium, silty fine-coarse sand with little cohesion. The intermittent cut off wash that traverses the site to the east of the proposed plant does contain sandy soil grading into base rock. The drainage flows northerly along the access road. Most of the alluvium and soil mantle have been covered by tailings over much of the area.

2.12 DRAINAGE AND EROSION CONTROLS

Due to the lack of fine surface material and low rainfall (less than 4 inches/year) the site has little potential for erosion and sedimentation. The processing area slopes gently 2-3 percent to the east. The intermittent wash that borders the plant site will be bordered with the access road and lined with large rock along ± 280 feet of its length to protect the processing area from erosion. Drainage from operating benches and surfaces will be controlled with perimeter berms to contain sheet flow.

2.13 PUBLIC SAFETY

Access for mine traffic is extending south from SR 62 via Iron Age Mine Road to the mine (BLM Road). The public roadway will be posted with signs informing the public of the mine

traffic. Perimeter signs around the approved surface mine boundary shall be installed as shown on the plan sheets and shall read in English and Spanish “Danger, Keep Out” “Surface Mining Operation.” The historic quarry is currently fenced, and the fencing will be extended to include the access and processing area from access by the public. Fencing will be posted “No Trespass”. The mine road at its divergence from the wash in the Easy Pickens 1 claim will be signed “Mine Entrance, No Public Access, No Trespass”. The road will be gated at that point to prevent entry.

2.14 MONITORING AND MAINTENANCE

The operator will be required under SMARA (Public Resources Code §2207), to submit an annual status report on forms provided by the California Department of Conservation - Office of Mine Reclamation. SMARA (Section 2774(b)) requires the lead agency to conduct an inspection of the mining operation within six months of receipt of the required Annual Report.

Upon completion of the removal of tailings, reclamation and revegetation will be initiated and will be monitored annually for five years or until success criteria achieved to monitor and assess revegetated areas. A Monitoring Report submitted by the operator to the BLM and County.

The California Environmental Quality Act (CEQA, Section 21081.6) requires adoption of a reporting and monitoring program for the conditions of approval of a project that are intended to mitigate or avoid adverse environmental effects. The program is intended to ensure compliance with mitigation measures throughout the life of the project. The program will identify the conditions of approval that act as impact mitigation measures and for each measure, outline who is responsible for implementation and verification of the measure. The program will be flexible in order to accommodate changes that are necessary to provide effective mitigation monitoring. The monitoring program is approved by the Lead Agency, San Bernardino County.

2.15 RECLAMATION ASSURANCE

In addition to the monitoring through inspections and reporting, the operator is required to assure reclamation of the site in accordance with the approved Reclamation Plan in compliance with Section 2773.1 of SMARA. Iron Age Mine LLC shall post or cause to be posted reclamation assurance in an amount sufficient to pay for the cost of reclamation as outlined in Section 2. The financial assurances may be in the form of surety bonds, an irrevocable letter of credit, trust funds or other forms of financial assurances approved by and payable to the BLM, the County, and the Department of Conservation.

The reclamation assurance shall be reviewed by the BLM and County annually. San Bernardino County is the lead agency for SMARA compliance and will review the Reclamation Assurance and inspect the mine site annually. A Financial Assurance Cost Estimate (FACE) will be in place prior to any earthwork.

3.0 GEOLOGY

The following description is summarized from Harder et al, USGS Bulletin 430-E, 1909. The Iron Age iron-ore is located in the eastern part of a range of bare mountains extending east and west along the boundary line and of San Bernardino and Riverside Counties. It is connected to the Pinto Mountains in the southeast by an area of low hills. This range consists of intrusive dioritic, granitic, and syenitic rocks of varying texture- granitic, porphyritic and aphanitic. In the southern part of the Pinto Mountains metamorphosed sediments are associated with these rocks but elsewhere no sediments occur. The Iron Age iron-ores are largely hematite altered from magnetite in the form of veins cutting intrusive granite and granite porphyry. Metamorphic minerals, chiefly garnet and epidote, are locally associates with the ore and rocks. The principal iron ore veins occur over and area about half a mile square with the largest veins forming the summit of a large hill. Several small veins also occur. The ores are very pure and of high grade. This is essentially the location of the patented claims identified in this plan.

There are two fairly distinct rock types associated with this iron-ore deposit. One type is an augie-soda granite with feldspars entirely albite or albite-oligoclase and a texture in general granitic or coarsely porphyritic. The other, which is distinctly and characteristically porphyritic, may be called augite granite porphyry. There is a marked variation in texture within each of these two types, but the general structure of each type remains characteristic, and the characteristic feldspar remains constant. Quartz is present in both types in approximately the same proportions.

Granite: Rocks of the granitic type rich in soda are generally distributed on the east and south sides and top of the hill at the northern edge of the existing quarry. Cloudy white feldspars and ferromagnesian mineral of a light green are visible. Quartz and albite is very common and well developed and composes approximately one third of the rock mass. Accessory minerals also occur with abundant apatite and sphene, with a little calcite and considerable epidote.

Granite porphyry: The porphyritic rocks are abundant in the western part of the iron ore area and occur locally in the northern and southern parts. Large phenocrysts of pink feldspar embedded together with smaller phenocrysts of a clear or cloudy white feldspar and a ferromagnesian mineral occur. Accessory minerals of the porphyry are the same as the granites.

The iron ore veins composing the deposit prior to historic mining where fifty or more in number of which less than ten where as much as 10 feet thick. There were four large veins, the largest of which was about 425 feet long and 15 to 100 feet in width. The ore body was extremely irregular with several branches generally trending north and south. The veins occurred both in granite and granite porphyry. The ore was largely hematite, hard reddish black and crystalline. Magnetite was intermixed in many of the veins. Limonite and goethite occurred in negligible quantities. It is this magnetite that the prospective miner will attempt to extract via magnetic separation. The quarry is currently surrounded by large tailing piles of waste rock from the historic mining activity. The tailings stockpiles vary in depth and texture. Actual composition and density of the target material is unknown. The percentage of magnetite present in the remaining tailings is expected to be approximately 40 percent.

4.0 HYDROLOGY

The area being analyzed is located in the high desert area of southern San Bernardino County just east of Twentynine Palms. The mine is located in the Dale Lake watershed (HUC 1810010024) in the southern Mojave sub-basin. This watershed is approximately 135 square miles. The watershed consists primarily of the gradually sloping desert floor lined by steep, rugged, barren peaks containing various ore deposits. Many dozens of "blue line" streams are identified within this tributary area as depicted on maps prepared by the U.S. Geological Survey. The prominent geographical feature visible is a perennially dry wash bed conveying runoff from the Pinto Mountains north into Dale Lake. The mine drains northeast to an ephemeral stream bed which then drains north to Dale Lake. Flows to Dale Lade are discharged through both percolation and evaporation. The flows to this dry lakebed are discharged through both percolation and evaporation.

Groundwater

No wells exist on the site and groundwater well data is not available from standard monitoring sources for the immediate area. No exploratory boring has been conducted at the site. As shown on the mine plan, surface drainage from the mine is to the north via the access road.

Although there is no data to indicate that groundwater flows along the alluvium bedrock contact in the area of the proposed mining, if groundwater is encountered at the tailings/ground surface contact drainage ditches can be constructed to divert the water to the drainage diversion channel.

REFERENCES

California Department of Conservation, Division of Mine Reclamation. *Surface Mining and Reclamation Act of 1975* (SMARA, Public Resources Code, Sections 2710-2796).

California State Water Resources Control Board - GeoTracker website. https://geotracker.waterboards.ca.gov/

County of San Bernardino 2007 Development Code, amended Amendment Date August 21, 2014.

County of San Bernardino General Plan, October 27, 2020.

Iron Age Mine Plan of Operations; Lilburn Corporation, DOI-BLM-CA-D080-2020-0031-EA, Approved January 7th, 2021.

Biological Resource Assessment; Lilburn Corporation, May 2012; Updated July 2014

Desert Tortoise Presence/Absence Pre-Project Survey; Lilburn Corporation, February 2013

Revegetation Plan for Iron Age Mine; Lilburn Corporation – August 2012; Updated July 2014

The State Water Board GAMA Program;
https://www.waterboards.ca.gov/water_issues/programs/gama/online_tools.html

CROSS REFERENCE MATRIX

Iron Age Mine
Mine Reclamation Plan
Surface Mining and Reclamation Act of 1975 (SMARA) &
California Code of Regulations (CCR Title 14)

Prepared by Lilburn Corporation – August 2021

Including reference to:
ARTICLE 1. GENERAL PROVISIONS. SECTION 2710 et seq.
ARTICLE 2. DEFINITIONS. SECTION 2725 et seq.
ARTICLE 3. DISTRICT COMMITTEES. SECTION 2740 – 2741
ARTICLE 4. STATE POLICY FOR THE RECLAMATION OF MINED LANDS. SECTION 2755 et seq.
ARTICLE 5. RECLAMATION PLANS AND THE CONDUCT OF SURFACE MINING OPERATIONS. SECTION 2770 et seq., as amended
CCR TITLE 14 (REGISTER 85, No. 18-5-4-83)
CHAPTER 8. MINING AND GEOLOGY
SUBCHAPTER 1. STATE MINING AND GEOLOGY BOARD
ARTICLE 1. SURFACE MINING AND RECLAMATION PRACTIVE. SECTION 3500 et seq.
ARTICLE 9. RECLAMATION STANDARDS. SECTION 3700 et seq.

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
SMARA 2770.5	100-year flood, Caltrans contact	X		
SMARA 2772 (c) (1)	Name and Address of operator/agent.		5	1.0
SMARA 2772 (c) (2)	Quantity & type of minerals to be mined.		5	1.0, 1.1
SMARA 2772 (c) (3)	Initiation and termination date.		5	1.0
SMARA 2772 (c) (4)	Maximum anticipated depth of mining.		5, 20	1.1, 2.8, 2.9
SMARA 2772 (c) (5)	Description, including map with boundaries, topographic details, geology, streams, roads, utilities.		1 – 11 Sheets 2 & 3	1.0 - 1.6
SMARA 2772 (c) (6)	Mining plan and time schedule for reclamation (concurrent or phased reclamation).		1- 8, 13	1.0, 1.1, 2.5
SMARA 2772 (c) (7)	Proposed subsequent use.		20	2.8
SMARA 2772 (c) (8)	Description of reclamation measures adequate for proposed end use.		16-20	2.5 -2.7

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
SMARA 2772 (c) (8) (a)	Description of containment control and mine waste disposal.		9	1.2
SMARA 2772 (c) (8) (b)	Rehabilitation of stream banks/beds to minimize erosion	X	---	
SMARA 2772 (c) (9)	Impact of reclamation on future mining.		20	2.8
SMARA 2772 (c) (10)	Applicant statement accepting responsibility for reclamation per the reclamation plan.		To be supplied prior to public hearing	
SMARA 2773 (a)	Water quality monitoring plan specific to property.		10, 21 SWPPP to be prepared upon approval	1.5, 2.12
SMARA 2773 (a)	Sediment and erosion control monitoring plan specific to property.		10, 21 SWPPP to be prepared upon approval	1.5, 2.12
SMARA 2773 (a)	Revegetation plan specific to property. Monitoring Plan.		15	2.6
SMARA 2773.1	Performance (financial) assurances.		To be supplied prior to public hearing	
SMARA 2777	Amended reclamation plans required prior to substantial deviations to approved plans.	X	INFORMATIONAL	
CCR 3502 (b) (1)	Environmental setting and impact of reclamation on surrounding land uses. (Identify sensitive species, wildlife habitat, sensitive natural communities, e.g., wetlands, riparian zones, etc.).		12-13	2.1 – 2.5
CCR 3502 (b) (2)	Public health and safety (exposure).		21	2.13
CCR 3502 (b) (3)	Slopes: critical gradient, consider physical properties and landscaping.		6, 20	1.1, 2.9

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3502 (b) (4)	Fill materials in conformance with current engineering practice.	X	---	
CCR 3502 (b) (5)	Disposition of old equipment		20	2.7
CCR 3502 (b) (6)	Temporary stream and water diversions shown.	X	---	
CCR 3503 (a) (1)	Removal of vegetation and overburden preceding mining kept to a minimum.		13-15	2.5, 2.6
CCR 3503 (a) (2)	Overburden stockpiles managed to minimize water and wind erosion.	X	---	
CCR 3503 (a) (3)	Erosion control facilities (dikes, ditches, etc.) as necessary.		10, 21	1.5, 2.12
CCR 3503 (b) (1)	Settling ponds (sedimentation and water quality).	X		
CCR 3503 (b) (2)	Prevent siltation of groundwater recharge areas.	X		
CCR 3503 (c)	Protection of fish and wildlife habitat (all reasonable measures).		12-13	2.3, 2.4
CCR 3503 (d)	Disposal of mine waste and overburden (stable-no natural drainage restrictions without suitable provisions for diversion).	X	---	
CCR 3503 (e)	Erosion and drainage (grading to drain to natural courses or interior basins).		10, 21	1.5, 2.12
CCR 3503 (f)	Resoiling (fine material on top plus mulches).		15-21	2.6, 2.11
CCR 3503 (g)	Revegetation and plant survival (use available research).		15	2.6
CCR 3703 (a)	Sensitive species conserved or mitigated		12	2.3
CCR 3703 (b)	Wildlife habitat at least as good as pre-project, if approved end use is habitat.		15	2.6

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3703 (c)	Wetlands avoided or mitigated at 1:1 minimum	X		
CCR 3704 (a)	For urban use, fill compacted in accordance with UBC or local grading ordinance.	X		
CCR 3704 (b)	For resource conservation, compare to standard for that end use	X		
CCR 3704 (c)	Mine waste stockpiled to facilitate phased reclamation and separate from growth media.	X		
CCR 3704 (d)	Final reclamation fill slopes not exceed 2:1, except when engineering and revegetation analysis allow.	X		
CCR 3704 (e)	Final landforms or fills conform with surrounding topography or end use.		13, 20	2.5, 2.9
CCR 3704 (f)	Cut slopes have minimum factor of safety for end use and conform with surrounding topography.		13, 20	2.5, 2.9
CCR 3704 (g)	Piles or dumps not placed in wetlands without mitigation.	X		
CCR 3705 (a)	Vegetative cover, suitable to end use, self-sustaining. Baseline studies documenting cover, density and species richness.		15; Table 4	2.6; Appendix 1
CCR 3705 (b)	Test plots if success has not been proven previously		15	2.6
CCR 3705 (c)	Decompaction of site.		13-15	2.5, 2.6
CCR 3705 (d)	Roads stripped of road base materials, resoiled and revegetated, unless exempted.		13-15	2.5, 2.6
CCR 3705 (e)	Soil altered or other than native topsoil, required soil analysis. Amend if necessary.	X		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3705 (f)	Temporary access not bladed. Barriers installed.	X		
CCR 3705 (g)	Use native plant species, unless exotic species meet end use.		15	2.6
CCR 3705 (h)	Plant during correct season.		13-15	2.5, 2.6
CCR 3705 (i)	Erosion control and irrigation, when necessary.		10, 21	1.5, 2.12
CCR 3705 (j)	If irrigated, demonstrate self-sustaining without for two-year minimum.	X		
CCR 3705 (k)	Weeds managed.		15	2.6
CCR 3705 (l)	Plant protection measures, fencing, caging.	X		
CCR 3705 (m)	Success quantified by cover, density and species-richness. Standards proposed in plan. Sample method set forth in plan and sample size provides 80 percent confidence level, as minimum.		15; Table 4	2.6
CCR 3706 (a)	Mining and reclamation to protect downstream beneficial uses.	X		
CCR 3706 (b)	Water quality, recharge, and groundwater storage shall not be diminished, except as allowed by plan.	X		
CCR 3706 (c)	Erosion and sedimentation controlled during all phases as per RWQCB/SWRCB.		10, 21	1.5, 2.12
CCR 3706 (d)	Surface runoff and drainage controlled and methods designed for not less than 20 year/1 hour intensity storm event.		10, 21	1.5, 2.12
CCR 3706 (e)	Altered drainages shall not cause increased erosion or sedimentation.	X	---	

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3706 (f)	Stream diversions constructed in accordance with DFG 1603, EPA 404, Sec. 10 Rivers and Harbors.	X	---	
CCR 3706 (g)	All temporary diversions eventually removed.	X	---	
CCR 3707 (a)	Return prime ag to prime ag, unless exempted.	X	---	
CCR 3707 (b)	Segregate and replace topsoil by horizon.	X	---	
CCR 3707 (c)	Productivity rates equal pre-project or similar site for two consecutive years. Rates set forth in plan.	X	---	
CCR 3707 (d)	Fertilizers and amendments not contaminate water.	X	---	
CCR 3708	Other ag capable of sustaining crops of area.	X	---	
CCR 3709 (a)	Equipment stored in designated area and waste disposed of according to ordinance.		6	1.2
CCR 3709 (b)	Structures and equipment dismantled and removed.		20	2.7
CCR 3710 (a)	Surface and groundwater protected.		10, 21	1.5, 2.12
CCR 3710 (a)	Surface and groundwater projected in accordance with Porter Cologne and Clean Water Acts (RWQCB/SWRCB).		10, 21	1.5, 2.12
CCR 3710 (b)	In-stream in accordance with CFG 1600, EPA 404, and Sec. 10 Rivers and Harbors.	X		
CCR 3710 (c)	In-stream channel elevations and bank erosion evaluated annually using extraction quantities, cross-sections, and aerial photos.	X		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3710 (d)	In-stream mining activities shall not cause fish to become entrapped in pools or in off-channel pits. California Fish and Game Code section 1600.	X		
CCR 3711(a)	All salvageable topsoil removed. Topsoil and vegetation removal not proceed mining by more than one year.		21	2.11
CCR 3711 (b)	Topsoil resources mapped prior to stripping, location of stockpiles on map. Topsoil and growth media in separate stockpiles.		21	2.11
CCR 3711 (c)	Soil salvage and phases set forth in plan, minimize disturbance, designed to achieve revegetation success.		21	2.11
CCR 3711 (d)	Topsoiling phased ASAP. Stockpiles not to be disturbed until needed. Stockpiles clearly identified and planted with vegetation or otherwise protected.		21	2.11
CCR 3711 (e)	Topsoil redistributed in stable site and consistent thickness.		13,15,21	2.5, 2.6, 2.11
CCR 3712	Waste and tailings, and waste disposal governed by SWRCB (Article 7, Chapter 15, Title 23, CCR).		6	1.2
CCR 3713 (a)	Drill holes, water wells, monitoring wells abandoned in accordance with laws.	X	---	
CCR 3713 (b)	All portals, shafts, tunnels, or openings, gated or protected from public entry, but preserve access for wildlife.	X	---	

APPENDIX A
IRON AGE MINE PLAN OF OPERATIONS
BLM APPROVAL

United States Department of the Interior
Bureau of Land Management

Finding of No Significant Impact
and
Decision Record
Environmental Assessment
DOI-BLM-CA-D080-2020-0031-EA

January 7, 2021

Plan of Operations for Renioval of Existing Iron Ore Stockpiles at the Iron Age Mine

Locatio11: *Sections 7, 17, 18, 20 & 29 T.lS., R.13E.,* ***SBBM***

Applica11t/Address: *Iro11 Age Mi11e, LLC*
755 Grand Blvd, Ste B 105 #316
Mirimar Beach, FL 32550

Barstow Field Office
260I Barstow Road
Barstow, CA 92311
(760) 252-6000
(760) 252-6099

FINDING OF NO SIGNIFICANT IMPACT
Environmental Assessment
DOI-BLM-CA-D0B0-2020-0025-EA

Plan of Operation for Removal of Existing Iron Ore Stockpiles at the Iron Age Mine

INTRODUCTION:

The Bureau of Land Management (BLM) has conducted an environmental analysis (DOI-BLM-CA-D080-2020-0031-EA) for the Iron Age Mine project located approximately 18 miles east/southeast of the City of Twentynine Palms, California and approximately 3.4 miles south of State Highway (SH) 62 in San Bernardino County, California in the Dale Mining District in the northern Pinto Mountains. The site is accessed from SH 62 east of Twentynine Palms via BLM motorized routes JTl 957, JTl 959 and JTl 967. Mining is proposed on the Easy Pickens 1 CAMC 260830, Easy Pickens 2 CAMC 260831 located on BLM-administered lands, and two patented mining claims (private land). Additionally, at the junction of SH 62, two 5-acre mill site claims would be used to deposit ore for transfer to licensed highway haul trucks or shipping containers for shipment to market or transfer to rail.

The scope of BLM's action is to provide Iron Age Mine, LLC with legal access across public land and authorization to remove iron ore from existing stockpiles from a previous mining operation on lands managed by the BLM ensuring that the activity does not cause undue or unnecessary d*eg*radation of public lands. The need for this action is established by BLM's responsibility under the Federal Land Policy and Management Act (FLPMA), as promulgated through the Surface Management regulations found at 43 CFR 3809, to respond to mining operations proposed on mining claims staked under the 1872 Mining Law, as amended.

The Selected Alternative is Alternative C (BLM Modification) as described in Environmental Assessment (EA) DOI-BLM-CA-D080-2020-0031-EA. The Selected Alternative would approve the Iron Age Mine Plan of Operation with a modification to use existing BLM designated routes to access the Iron Age Mine. The EA is available at the Barstow Field Office and is incorporated by reference for this Finding of No Significant Impact (FONSI).

FINDING OF NO SIGNIFICANT IMPACT:

Based on the analysis of potential environmental impacts contained in EA, BLM-CA-D080-2020-0031-EA, for the Plan of Operation for Removal of Existing Iron Ore Stockpiles at the Iron Age Mine, I have determined the Selected Alternative will not have a significant effect on the human environment (40 CFR 1501.6[1]) and therefore does not require preparation of an environmental impact statement. Relevant information supporting this determination follows.

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[1] The regulations at 40 CFR 1500-1508 and 1515-1518 were updated through a Final Rule that took effect on September 14, 2020 (85 Federal Register (FRI 43304). Pursuant to 40 CFR 1501.3, in considering whether the effects of the proposed action are significant, agencies shall consider the potentially affected environment and the degree of the effects as appropriate to the specific action.

From around the 1940's through the 1960's an iron ore mining operation occurred at this project site. As a result ofthis mining, the operator left large piles ofwaste rock and an open pit. The Selected Alternative will re-work the material with advanced techniques to remove additional iron ore and backfill the existing pit with waste rock/low quality iron ore material.

This project is a site-specific action directly involving approximately 63 acres of BLM administered land and 34 acres of patented lands. Table 1 in the EA lists the resources and issues considered by the interdisciplinary team subject to requirements specified in statute, regulation, or executive order in addition to the National Environmental Policy Act (NEPA) considerations. None of the environmental effects discussed in detail in Chapter 4 ofthe EA and associated appendices are considered significant. The following is a summary ofthe effects on the human environment disclosed in the EA.

- Air Quality: The mining operation would not have adverse air quality impacts because activities would not generate impacts in excess of de minimus levels (EA, Chapter 4.1).
- Threatened, Endangered or Candidate Species: The project area was evaluated for the potential presence of threatened, endangered, or candidate species. The desert tortoise (Gopherus agasizzii) is the only Endangered Species Act listed species that is known to occur in the action area. Surveys conducted in 2012 and 2019 did not detect any live tortoises. The Selected Alternative will implement the avoidance and minimization measures, as well as the terms and conditions of the Biological Opinion (EA, Appendix C). The Selected Alternative will not have significant adverse effects on desert tortoise or its habitat (EA, Chapter 4.2).
- Cultural Resources: Cultural resource surveys were conducted, and it was determined that the undertaking would not have adverse effects on cultural resources (EA, Chapter 4.3).
- Visual Resources: The Selected Alternative would have visual effects, but with the implementation of design measures, the visual resource impacts will be consistent with the Visual Resource Management (VRM) classification for the area, VRM Class III (EA, Chapter 4.4).
- Hydrology: The Selected Alternative would not alter the existing drainage pattern of the project area or create additional sources of runoff. A Stormwater Pollution Prevention Plan (SWPPP) would be implemented to control runoff and sedimentation from the project disturbance. Operations will comply with a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges and employ storm water Best Management Practices (BMP) during construction, operations, and temporary cessation of operations. In addition, a Spill Prevention Control Plan (SPCC) will be implemented to prevent effects to ephemeral surface waters. Given the project design features, the Selected Alternative will not have significant adverse effects to surface water quality (EA, Chapter 4.5).
- Public Health and Safety: In order to protect public safety on the road, Iron Age Mine LLC will implement the following safety features as part of the project design: 1/ The mill site and its equipment and stockpiles will be fenced with a 6-foot high chain link fence with locking gates and warning signs; 2/ Signs will be posted at SH 62 that mine haul truck traffic utilizes the road; 3/ Mine haul trucks will be restricted to a speed limit of 15 MPH; 4/ All drivers and employees will be trained to be aware that the access road is open to public vehicles; 5/ Perimeter signs around the approved surface mine boundary shall be installed as shown on the plan sheets and shall read in English and Spanish

"Danger, Keep Out" "Surface Mining Operation"; 6/ The existing quarry is currently fenced, and the fencing will be extended to include the access and processing area to prevent access by the public. Fencing will be posted "No Trespassing"; and 7/ To limit the exposure of visitors to mining activities in the recreation areas adjacent to the project area, truck traffic would not occur on Sundays and holidays. Additionally, a SPCC with BMPs will be implemented to ensure that on-site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above ground fuel containers. The diesel fuel and gasoline tanks will be placed within concrete or lined containment pads to contain the contents of the tank and a 100-year rainfall event as required. With the implementation of the design measures above, effects to public health and safety would be minimized and are not considered significant.

- Federal, State, Tribal, or Local Law: The Selected Alternative does not violate any known federal, state, tribal or local law or requirement imposed for the protection of the environment. State, local, and Tribal interests were given the opportunity to participate in the environmental analysis process. The BLM has consulted and continues to consult with Tribes regarding this undertaking. In addition, the project is consistent with the California Desert Conservation Area (COCA) Plan (1980), as amended by the 2016 Desert Renewable Energy Conservation Plan (DRECP) and 2019 West Mojave Route Network Project. The Selected Alternative complies with the COCA Plan's Conservation and Management Actions to the extent allowable under the mining laws and the BLM's 43 CFR 3809 mining regulations.

AUTHORIZED OFFICIAL:

Katrina Symons
Barstow Field Manager

1/7/21
Date

DECISION RECORD
DOI-BLM-CA-D0B0-2020-0031-EA

Plan of Operations for Removal of Existing Iron Ore Stockpiles at the Iron Age Mine

DECISION:

It is my decision to select Alternative C (Selected Alternative) as described in Environmental Assessment (EA) DOI-BLM-CA-D080-2020-0031-EA. This decision approves the Iron Age Mine Plan of Operation (POO) with a modification to use existing BLM designated routes JT1957, JTI 959 and JTI 967 to access the Iron Age Mine. Iron ore will be removed from existing stockpiles from a previous mining operation on lands managed by the BLM in such a manner that the activity will not cause undue or unnecessary degradation of public lands.

COMPLIANCE AND MONITORING:

The approval of the POD is subject to the implementation of all the project design features, mitigation measures (EA, Chapter 4), and the Terms and Conditions of the Biological Opinion (EA, Appendix C) issued by the United State Fish and Wildlife Service.

Pursuant to 43 CFR 3809.600 the Bureau of Land Management (BLM) will inspect mining operations and take enforcement action as appropriate (43 CFR 3809.601) if the operation is not in compliance with the provisions of the approved POO.

PLAN CONFORMANCE AND CONSULTATION:

The POO was submitted to the BLM in accordance with the General Mining Act of 1872, as amended, and 43 Code of Federal Regulations (CFR) 3809 (Surface Management). Section 302 of the Federal Land Policy and Management Act (FLPMA) provides the authorized officer to manage public lands under the principle of multiple use in accordance with the applicable land use plan. Pursuant to 43 CFR 3809.420(a)(3), Operators must comply with land use plans only to the extent the land use planning provisions are consistent with the mining laws.

I have reviewed the POD, the EA with appendices, and have issued a Finding of No Significant Impact for the Plan of Operation for Removal of Existing Iron Ore Stockpiles at the Iron Age Mine. I have determined the Selected Alternative is consistent with the application of plans and policies of county, state, tribal, and federal agencies. The Selected Alternative is in conformance with FLPMA; the California Desert Conservation Area (COCA) Plan, as amended; the Endangered Species Act; the National Historic Preservation Act; the Clean Air Act, and the Clean Water Act.

ALTERNTATIVES CONSIDERED:

In addition to the Selected Alternative, the EA analyzed a no action alternative (Alternative B) and an action alternative (Alternative A).

Under Alternative B (No Action), the activities associated with the project would not occur. The No Action Alternative would not allow the claimant to exercise their statutory right provided under the 1872 Mining Law, as amended, to remove iron ore from the existing Iron Age Mine site on two BLM administered mining claims, Easy Pickens 1, CAMC 260830, Easy Pickens 2 CAMC 260831, or use the two mill site claims near SH 62.

Under Alternative A (Proposed Action), activities would be the same as the Selected Alternative with the exception of the reconstruction of 0.6 miles of a previously used Iron Age Mine access road not in the BLM designated travel and transportation management system.

PUBLIC INVOLVEMENT:

The EA was available for public comment on the BLM's ePlanning website starting on September 15, 2020. No comments on the EA have been received as of the date of this decision.

RATIONALE FOR DECISION:

The Selected Action meets the BLM's purpose of and need for the action, to respond to Iron Age Mine, LLC's request to remove and process existing iron ore stockpiles at the Iron Age Mine. The Selected Alternative includes project design features and mitigation measures to prevent undue and unnecessary degradation of public lands. The access route from SH 62 to the mine would be confined to the existing travel and transportation management system designated for motorized vehicle use, unlike Alternative A that adds 0.6 miles of road to the route network within the Pinto Mountain critical habitat unit. The Selected Alternative meets the goal of "no net gainn ofroad density consistent with the COCA Plan, as amended. Of the two action alternatives, the Selected Alternative has the least amount of environmental impact across BLM administered land as described in the EA.

I chose not to select the No Action Alternative as it would not meet the purpose and need for action. The No Action Alternative is inconsistent with the 1872 mining law and BLM regulation at 43 CFR 3809 in the Iron Age Mine, LLC would not be able to exercise their statutory right to use their mining claims.

ADMINISTRATIVE REMEDIES:

If you are adversely affected by this decision, you may request the BLM California State Director review this decision. If you request a State Director Review, the request must be received in the BLM California State Office at 2800 Cottage Way, Suite W-1623, Sacramento, CA 95825, no later than 30 days after you receive or have been notified of this decision.

The request for State Director review must be filed in accordance with the provisions at 43 CFR 3809.805. This decision will remain in effect while the State Director Review is pending unless a stay is granted by the State Director. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

If the State Director does not make a decision on your request for review of this decision within 21-days of receipt of the request, you should consider the request declined and you may appeal this decision to the Interior Board ofland Appeals (IBLA). You may contact the BLM California State Office to determine when the BLM received the request for State Director Review. You have 30 days from the end of the 21-day period in which to file your Notice of Appeal with this office at BLM Barstow Field Office, 2601 Barstow Road, Barstow, CA 92311, which we will forward to IBLA.

If you wish to bypass a State Director Review, this decision may be appealed directly to the IBLA in accordance with regulations at 43 CFR 3809.S0l(a)(l). Your Notice of Appeal must be filed in this office at BLM Barstow Field Office, 2601 Barstow Road, Barstow, CA 92311 within 30 days ofreceipt of this decision. Your written appeal must contain: your name and address and the BLM serial number (CACA 53897) of the plan of operation that is the subject of the appeal. You must submit a statement of your reasons for the appeal and any arguments you wish to present that would justify reversal or modification of the decision within 30 days after filing your appeal. As an appellant you have the burden of showing that the decision appealed from is in error.

This decision will remain in effect while the IBLA reviews the case unless a stay is granted by IBLA under 43 CFR 4.21. If you request a stay, you have the burden of proof that a stay should be granted. A petition for a stay of this decision must show sufficient justification based on the following:

I) The relative harm to the parties if the stay is granted or denied;
2) The likelihood of the appellant's success on the merits;
3) The likelihood of immediate and irreparable harm if the stay is not granted; and
4) Whether the public interest favors granting the stay.

CONTACT PERSON:

For additional information, contact: Jamie Livingood, Barstow Field Office Geologist, at 760-252-6000: jlivingo@blm.gov or me at 760-252-6000; ksymons@blm.gov.

AUTHORIZED OFFICIAL

Katrina Symons
Barstow Field Manager

Date 1/7/21

PLAN OF OPERATIONS
AND
MINE RECLAMATION PLAN
FOR
IRON AGE MINE

Prepared For:
Iron Age Mine, LLC
755 Grand Blvd. Suite B105 #316
Miramar Beach, Florida 32550

Submitted To:
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311

and

County of San Bernardino
Planning Department
385 North Arrowhead Avenue
San Bernardino, California 92415

Prepared By:
Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408

September 2012
Updated July 2014

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Attachments

MAP SHEETS (attached)

PLAN OF OERATIONS
IRON AGE MINE

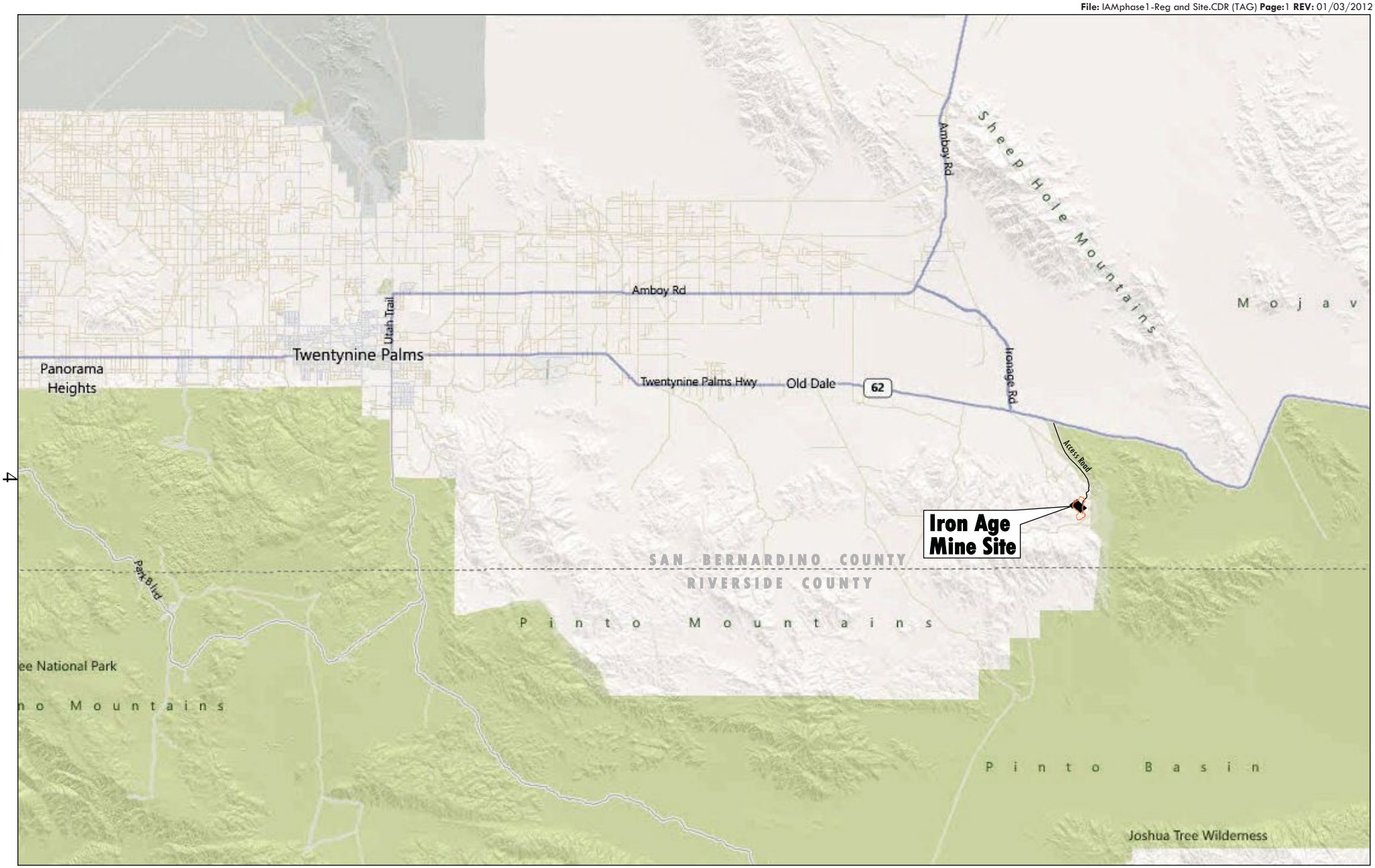
43 CFR 3809.401
(a) Introduction:

Iron Age Mine LLC (Iron Age) is submitting a Plan of Operations (POO) per 43 Code of Federal Regulations 3809 as outlined under §3809.401for the removal of the existing iron ore stockpiles at the Iron Age Mine on both unpatented claims and patented lands. It is located approximately 18 miles east/southeast of the City of Twentynine Palms, California and 3.4 miles south of State Route (SR) 62 in San Bernardino County (see Figure 1) in the Dale Mining District in the northern Pinto Mountains. The mine is within Sections 7, 17, 18, 20 and 29, Township 1 South, Range 13 East, San Bernardino Base and Meridian (SBBM). The site is accessed from SR 62 east of Twentynine Palms via Iron Age Mine Road (unpaved road, 3.4 miles) (see Figure 2).

No new mining or excavation of the existing quarry is proposed at this time, only the removal, screening and transporting of stockpiled iron material from the site. The operation will consist of an ore processing plant located on patented properties, removal of historic existing mine tailings from patented properties and two unpatented placer mine claims (Easy Pickens 1 and 2) and the reconstruction and maintenance of the Iron Age access road. In addition to the existing mine properties, two mill sites are being established at the intersection of the Iron Age mine road and SR 62. These mill sites will be used for ore stockpile storage, loading and shipping to market. The Mill Site(s) consist of two adjacent 5-acre parcels. Refer to Attachment 1 for recorded Mill Site information. A Reclamation Plan has been prepared for the County of San Bernardino as the designated lead agency for the patented and unpatented properties in compliance with the California Surface Mining and Reclamation Act of 1975 (SMARA). The Reclamation Plan is designed in accordance with the SMARA, Public Resources Code 2770 et seq and San Bernardino County requirements for implementing SMARA. It will also serve as the Reclamation Plan for consideration by the BLM in compliance with 43 CFR 3809.11. Refer to Attachment 2, Mine Reclamation Plan.

The Proposed POO would include 63 acres on BLM lands; 37.5 acres of recoverable tailings piles and 17 acres of connecting roadway (Iron Age Mine Road) on unpatented claims and 8.5 acres of the 10-acre mill site claims. In addition, approximately 34 of the 60.6 patented acres (private land) will be utilized (see Table 1 and Sheets 1 & 2). The total disturbance area is approximately 97 acres including the existing and planned roadway of which approximately 76 acres are currently disturbed.

Total available iron tailings at the mine are estimated at approximately 12 million tons. Maximum material throughput at the plant will be approximately 2.3 million tons per year; 920,000 tons of product and approximately 1.4 million tons per year of waste rock and low grade ore that does not meet product requirements. At the maximum proposed production of 2.3 million tons per year, the mine would be operated for up to approximately 8 years taking into account a construction and start-up period of up to two years. Iron Age is requesting a 15-year period through 2029 for operations as annual production rates may be highly variable depending on product demand plus five years for implementation of reclamation (2034).



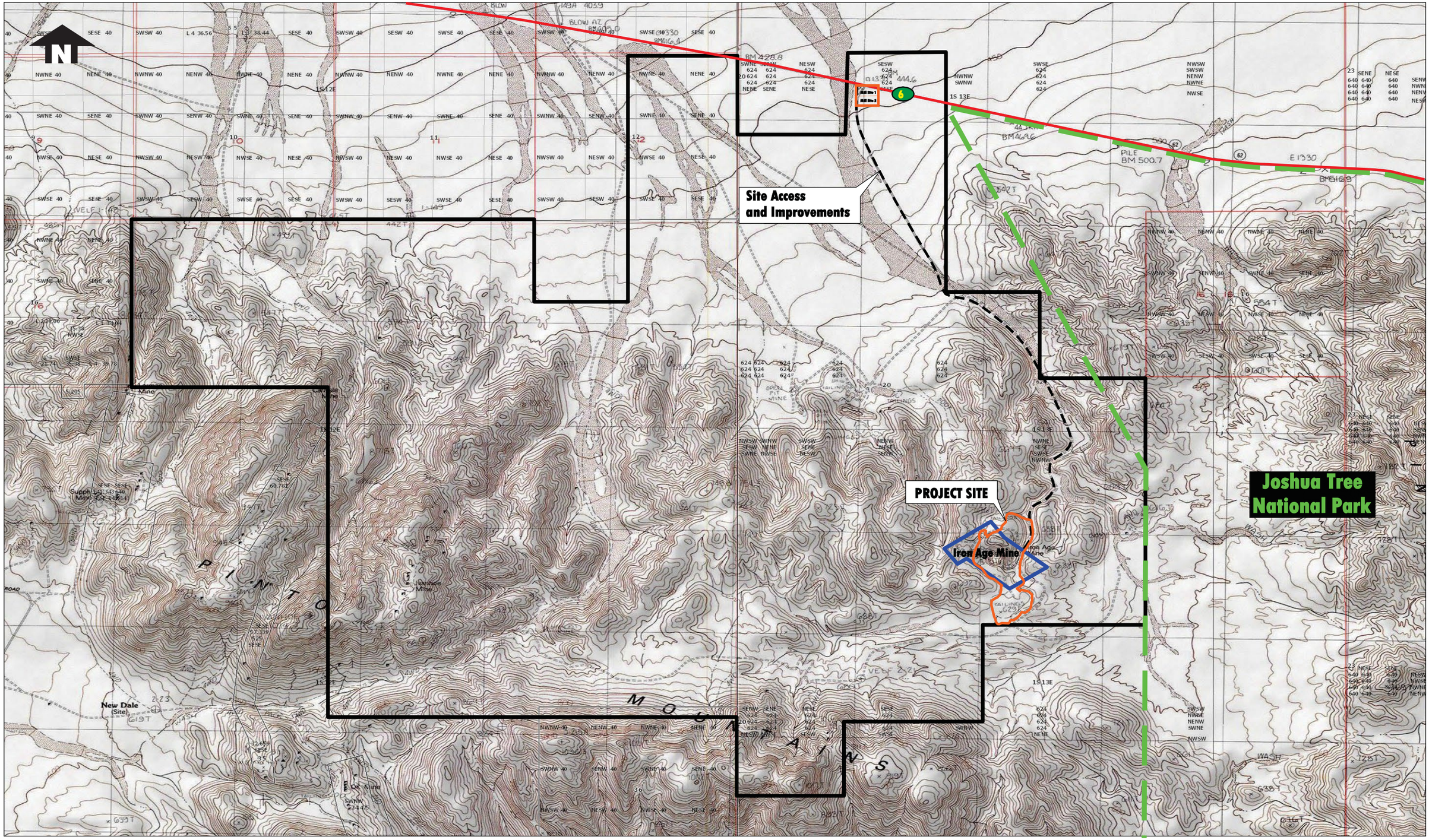
REGIONAL LOCATION

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 1

Mile 0 4

LILBURN CORPORATION



0 0.5 1

Scale: 1Inch = 0.5 Miles

Source: U.S.G.S.7.5 Min. New Dale Quadrangle, 1985.

LILBURN CORPORATION

LEGEND

- Iron Age Mine Patented Land
- Extent of Claim Holdings
- Joshua Tree National Park Boundary
- Proposed Project (Plus Access Road and Mill Sites)

PROJECT VICINITY

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 2

Table 1
Operations Plan, Phasing Areas, and Schedule

Operational Phases	Unpatented Acres	Patented Acres	Total Acres[2] (approx.)	Tons Removed (Millions)	Approx. Years
1A	25.5	7.0	32.5	0.5	1 (Yr. 1)
1B	22.8	8.0	30.8	5.5	7 (Yrs. 2-8)
2	0	19.0	19.0	2.4	3 (Yrs. 9-11)
3	14.7	0	14.7	3.6	4 (Yrs. 12-15)
Phase 4 Final Reclamation[1]			---	---	5 (Yrs. 16 – 20)[1]
Total	**63.0**	**34.0**	**97.0[2]**	**12**	**15 (operations) 5 (reclamation)[1]**

Areas and tons rounded and approximate.

[1] Active reclamation for approx. 5 years and monitoring and remediation as necessary until revegetation success criteria achieved.

[2] 76 acres currently disturbed; 78 acres to be reclaimed, approximately 19 acres of roads will be left in place per BLM direction and to maintain access to site for monitoring.

(b) (1) Operator Information:

Iron Age Mine, LLC is the owner/operator of the patented and unpatented mining claims that comprise the Iron Age iron mine. The Principal contact for purposes of operation and compliance is:

Mark Miller, President
Iron Age Mine, LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
765-210-4111
California business license: 2D1115910227

The Iron Age Mine, LLC's authorized agent for purposes of mine permitting and reclamation is:

Martin R. Derus, President
Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
909-890-1818

Legal Description as follows:

The mine is a historic mine with large stockpiles of previously mined iron ore. The mine is located on both patented and unpatented claims. The mine is accessed via a mine road that has fallen into disrepair from lack of maintenance and surface erosion. The applicant proposes to repair the road to its approximate alignment and condition for purposes of operating the mine to remove iron ore and ship to market. The mine is located on Iron Age patented claims 1, 2, & 3,

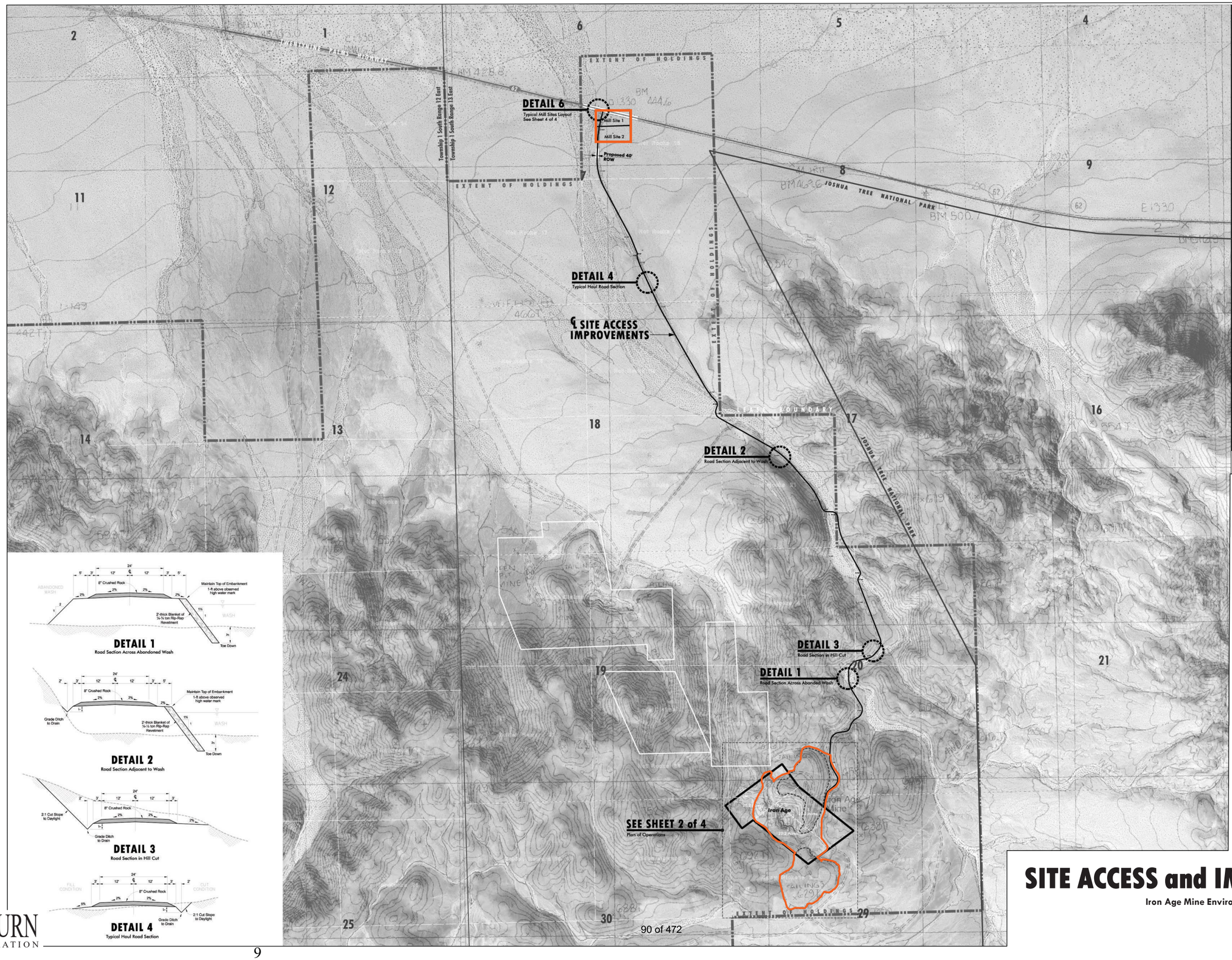
Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California and recorded claims Easy Pickens 1 (CMAC 26083) and Easy Pickens 2 (CMAC 260831), Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

- Iron Age Patented Claims: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, Township 1 North, Range 13 East, San Bernardino Base and Meridian l (See Sheet 1); and
- Easy Pickens 1, unpatented placer claim #CMAC 260830: 160 acres +/- located in the SW¼ Section 20, Township 1North, Range 13 East, San Bernardino Baseline and Meridian (Sheet 1; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831: 160 acres +/- located in the NW¼ Section 29, Township 1 North, Range 13 East, San Bernardino Baseline and Meridian (Sheet 1); and
- 10 acres: Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7.
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7.
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.

  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7.
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
  (See Notice of Location and Proposed Mill Sites Sheet 1 and Figure 3)
- Iron Age Road Sections (See Sheet 1 and Figure 3)
  Hot Rocks 4, CMAC 272328, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

(b) (2) Description of Operations

The mine operations will consist of removing, sorting, concentrating, and shipping raw iron ore via 50-ton haul trucks or equivalent to a stockpile and shipping area located south of SR 62 approximately 18 miles east of Twentynine Palms, California. The removal of tailings and processing activities will occur on the historic Iron Age Mine. The mine hosts approximately 12 million tons of iron tailings on both patented land and unpatented mine claims. It is these stockpiled mine tailings that will be sorted, concentrated and removed from the site. No new mining will occur within the historic quarry or surrounding area. The mine will be accessed via a 3.4 mile roadway that connects the mine to SR 62 to the north. At the junction of the Iron Age Mine Road and SR 62, the operator has located two 5-acre mill site claims within which haul trucks will deposit ore for transfer to licensed highway haul trucks or shipping containers for shipment to market or transfer to rail. See Sheet 1 and Figure 3.



LILBURN CORPORATION
1905 Business Center Drive San Bernardino, CA 92408

No.	Date	By	Revision Description

Prepared By LILBURN CORPORATION

N

350 0 350 700

Scale: 1 inch = 700 feet

Map Prepared By: Lilburn Corporation (FAS).
NOTE: All boundary information needs to be verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, SSRMs
Contour Interval = 10'
Topography: Modified U.S.G.S. NED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most currant digital elevation model and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and transitioned to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M..

3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable meathods as approved by the appropriate jurisdictional entities.

LEGEND

Proposed Access Road

Center Line of Potential Impacts to Existing Wash

Miscellaneous

- Iron Age Mine Patented Claim
- Waste Rock
- Joshua Tree National Park
- USGS Township Boundary
- USGS Survey Section

Proposed Project
(Plus Access Road and Mill Sites)

SITE ACCESS and IMPROVEMENTS

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 3

(b)(2)(i) Maps

The Plan of Operations, reclamation plan, and cross section are shown on Sheets 1 through 4 included in full size sheets attached at the back of this report.

Sheet 1	Iron Age Mine Site Access Improvements
Sheet 2	Iron Age Mine Plan of Operations
Sheet 3	Iron Age Mine Reclamation Plan
Sheet 4	Iron Age Mine Cross Sections and Details

(ii) Operations

The operation is a simple removal of iron ore tailings from the surface of the existing tailings piles down to approximately original grade (see Sheets 2 and 4; Figures 4 and 5). The removal will begin on patented claims adjacent to the process plant area then continue onto unpatented claims. The procedure generally includes:

- The iron tailings stockpiles will be ripped or loosened as necessary by a dozer with or without a ripper/scarifier and then material will be scraped by a scraper at various lift heights or loaded onto mine trucks for deposit at the crushing/screening plant feeder depending on material size.
- A plant site will be established on approximately 3 acres of patented land consisting of a series of one to three circuits (depending on production needs); a three-deck screen and cone crusher powered by a generator set. Processed material to ¾ inch minus will then move to magnetic separators and through a wet plant to further screen and concentrate the ore to a stockpile. The material is screened to achieve the size and magnetically concentrated to achieve the desired iron exceeding 60% Fe. Ore below grade will be conveyed to the old quarry on patented land for backfill. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.
- A front-end loader or dozer pushes material into a feeder into a primary screen/crusher circuits from where it is screened to achieve the desired size and magnetically concentrated to achieve the desired iron concentration. A wet plant cycle of screening and crushing is available with water application. Production throughput will begin with a 500 tons per hour (tph) plant and expand with an additional 1,000 tph plant. Total throughput may ultimately reach 2.3 million tons per year with ore production of 920,000 tpy and 1.4 million tons of waste material for reclamation.
- A loader or conveyor is used to load the iron into 50-ton off road haul trucks for transport to the loading/shipping facility on two mill sites 3.4 miles north via the mine road;
- At the loading/shipping facility, the iron is stockpiled and transferred to street legal haul trucks or containers for shipment to market.

There is no defined soil development at the surface of the tailing piles and only sparse vegetative growth. The surface iron material stockpiled onsite is the usable product. Blasting operations are not proposed but are described in the mine reclamation plan. Blasting could be utilized in the event of excessive tailings compaction. Should blasting operations be required they will involve drilling along the mining face, placement of charges, and detonation of the charges by a blaster

Haul Road to Mill Sites and State Route 62 (see Sheet 1 of 4)

SECTION 20 / SECTION 21

SECTION 29 / SECTION 28

Haul Road

Existing Haul Road

Phase 3
14.6 Acres

Phase 2
9.0 Acres

Phase 2
1.1 Acres

Phase 3
0.11 Acres

Phase 1A
1.9 Acres

Phase 1B
22.8 Acres

PROCESSING AREA
See Detail 3 - Sheet 4

PRE-SMARA AREA
To be Left as is

OVERBURDEN BACKFILL

TEST PIT

TOPSOIL STOCKPILE 50'x200'

Elv.=2038' FINES STOCKPILE 50'x200'

DETAIL 4
Typical Haul Road Section
See Sheet 1 of 4

Drainage Crossing
2'x4' CMP

Iron Age 2 - 20.2 Acres

Iron Age 3 - 20.9 Acres

Extent of Mining Claims

Proposed Project
(Plus Access Road and Mill Sites)

MINING NOTES

Mine Name: Iron Age Mine

Mineral to be Mined: Iron Ore Tailings

Mine Operator: Iron Age Mine, LLC
Mark Miller, President
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Land Owner: Patented Claims
Mark Miller, President
Iron Age Mine, LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Unpatented Claims
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
Phone: (760) 252-6000

Applicant: Same as Operator

Owner of Mineral Rights: Same as Operator

Representative & Map Preparer: Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-1818

Civil Engineer: Otte-Berkeley Group, Inc.
575 E. Carreon Drive
Colton, CA 92324
909-370-0911

Utilities: Not available on site
Water: onsite well to be developed
Electric Power: diesel generator
Natural Gas: None required
Phone: Cell
Sanitation: portable toilets

Legal Description:

A.P.N.s: 0643-041-01, 02, 09, 10, & 11 and 0643-031-12, 13, & 14.

The site is located on Iron Age patented claims 1, 2, & 3, Sections 20 and 29, T1S, R13E, SBBM. New Dale Quadrangle, California and recorded unpatented claims Easy Pickens 1 & 2, Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

- Iron Age Patented Claims 1, 2, &3: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, T1N, R13E, SBBM; and
- Easy Pickens 1, unpatented placer claim #CMAC 260830: 160 acres +/- located in the SW½ Section 20, T1N, R13E, SBBM; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831: 160 acres +/- located in the NW¼ Section 29, T1N, R13E, SBBM; and
- 10 acres: Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7.
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7.
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.
  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7.
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7.
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
- Iron Age Road Sections
  Hot Rocks 4, CMAC 272328, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

Land Use District: Resource Conservation (RN)

Project Area: Approximately 97 acres (34 patented acres; 63 unpatented acres)

Proposed Onsite Uses: Tailings stockpiles removed (58.5 acres); Plant (3 acres); roads (19 acres), mill site (8.5 acres), and quarry backfill (8 acres)

Site and Surrounding Uses: BLM – Multiple Use Class Limited – Vacant, open space

Structures: No existing structures onsite.

Plant and Tree Protection: Only isolated, poor quality yuccas and Joshua trees onsite due to rocky iron ore tailings. Any protected native desert plants will be salvaged for revegetation if deemed survivable by the revegetation consultant.

Scale: 1 inch = 100 feet

Map Prepared By: Lilburn Corporation (1905)
NOTE: Boundary information has not been verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, SBBM.
Contour Interval = 10'
Topography: Modified U.S.G.S. NED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most current digital elevation model and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and translated to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M..

3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable methods as approved by the appropriate jurisdictional entities.

LEGEND

- Iron Age Mine Patented Claim
- Existing Tailings within Patented Claim
- Mine Tailings Area
- Elv.=2035' 2012 GPS Spot Elevation (above mean sea level)
- Drainage Indicator

No.	Date	By	Revision Description

Prepared By: LILBURN CORPORATION
1905 Business Center Drive, San Bernardino, CA 92408

PLAN of OPERATIONS

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 4

LILBURN CORPORATION

LILBURN CORPORATION

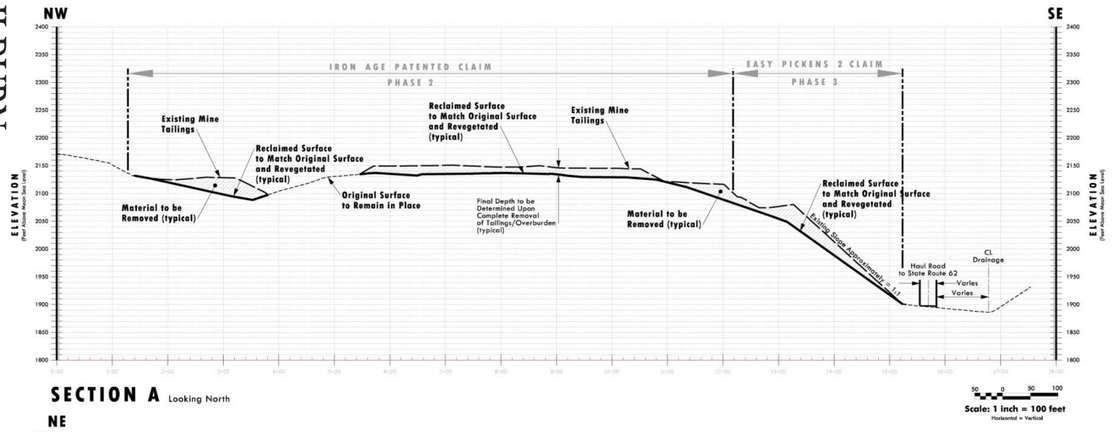
12

93 of 472

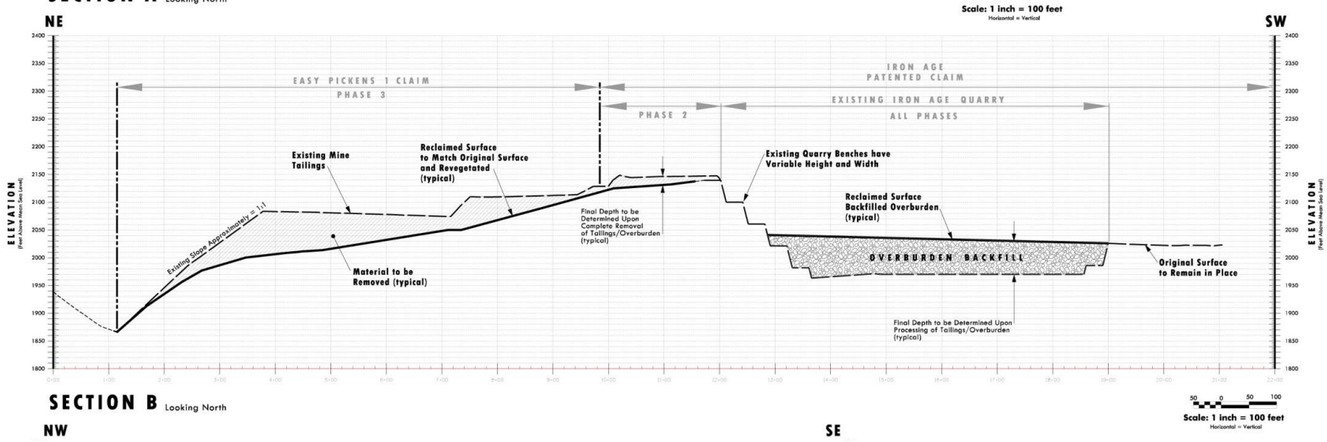
CROSS SECTIONS

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

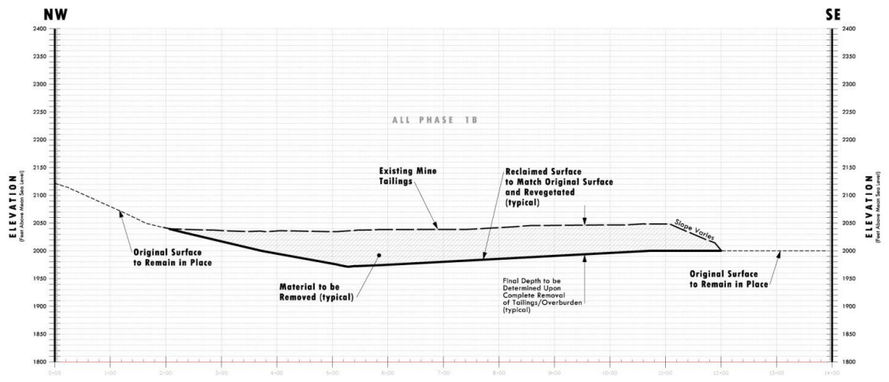
FIGURE 5



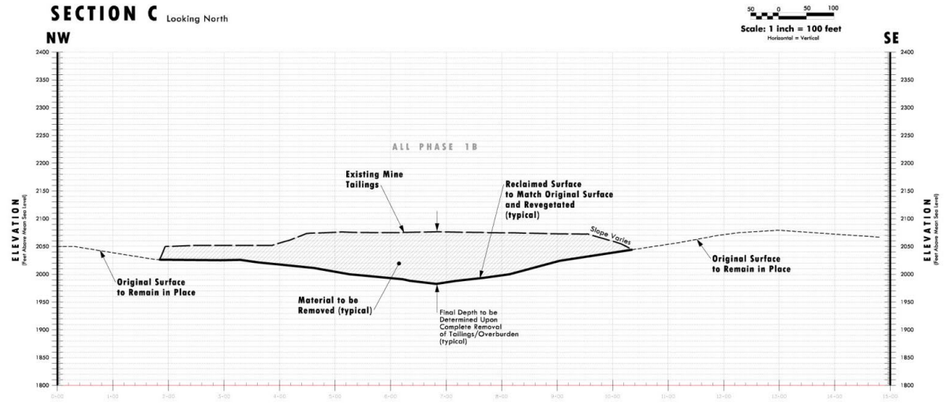
SECTION A Looking North



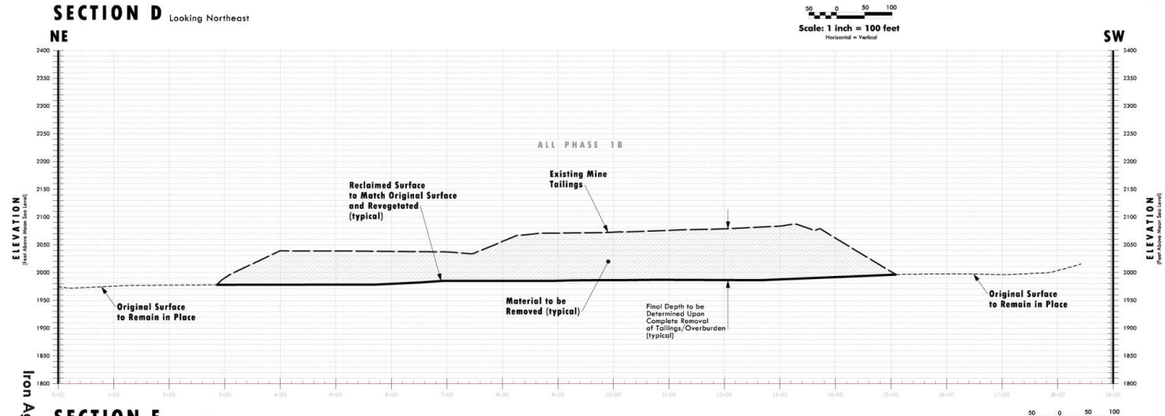
SECTION B Looking North



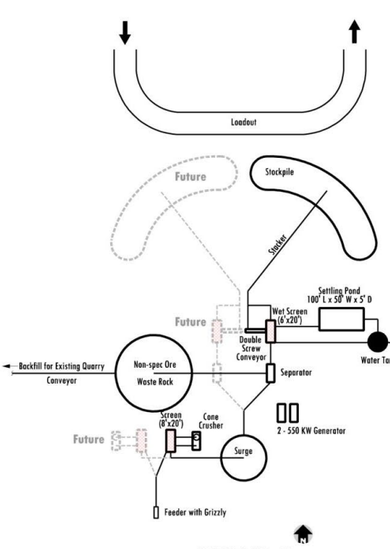
SECTION C Looking North



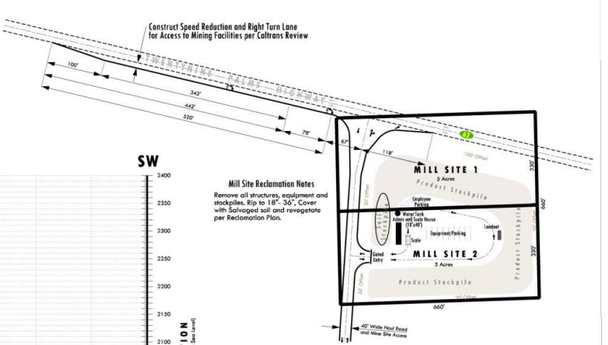
SECTION D Looking Northeast



SECTION E Looking Southeast



DETAIL 5
Typical Processing Plant
See Sheet 2 of 4 for Location
Not to Scale



DETAIL 6
Typical Mill Sites Layout
See Sheet 1 of 4 for Location
Not to Scale

licensed through the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF&E) for handling explosives. All explosives and detonators shall be transported and handled in accordance with all federal, State, and local regulations and permitted under the San Bernardino County Fire Department pursuant to Uniform Fire Code adopted by the Department and notification to the County Sheriff's Department. In compliance with County regulations, blasting shall only be conducted by a licensed blaster upon issuance of a site-specific blasting permit. No explosives will be stored onsite. The licensed blaster shall also submit a certificate of insurance evidencing that he or she has obtained a general liability insurance policy of not less than $1,000,000 for each occurrence. Blasting activities shall take place between the hours of 10:00 a.m. and 6:00 p.m. Monday through Friday. No blasting shall be allowed after sunset. One or two blasts may be conducted monthly.

Table 2 shows a typical equipment list. Note that similar equipment may be used during the life of the project. The site will operate with approximately 6 to 8 employees. The site will operate year round approximately 6 days/week, 312 days annually. Loading and trucking may occur 24 hours/day, six days per week (not including holidays), and removal operations will be daytime only hours.

Table 2
Typical Equipment List

Number	Description
1	6 yard bucket loader
1	4 yard bucket loader
3	Haul Trucks, 50 tons or similar
1	Komastsu 155AX Dozer
1	Caterpillar 637D Scraper
1	Drill and Compressor
1	Water Truck
1	Shop Van
1	Service Truck
1	Mobile Trailer (12' x 70' or similar)
1	10,000 gallon fuel tank, above-ground
1	500- 1,000 gallon gasoline tank
1 - 2	10,000 gallon water tank, above-ground
1	Jaw Crusher
1	Feeder 4' x 16'
1	Cone Crusher 46"
3	3 Deck Screen 8' x 20'
3	Magnetic Separator
5	Stacker 120'
±1000 LF	Conveyors
2	Generators 550 kW or equivalent

Note that similar equipment may be used during the life of the project.

Production

Maximum material throughput will be 2.3 million tons per year; 920,000 tons of product and approximately 1.4 million tons per year of waste rock and low grade ore that does not meet product requirements. Note that this waste generation could reach 60 percent of throughput and

would be used for quarry backfill with some fines used as revegetation/reclamation topsoil. Maximum monthly production would be approximately 76,600 tons. Total available iron tailings at the mine are estimated at 12 million tons. At the maximum proposed production, the mine would be operated for up to approximately 8 years taking into account a construction and start-up period of up to two years. Iron Age is requesting a 15-year period through 2029 for operations as annual production rates may be highly variable depending on demand plus five years for implementation of reclamation (2034).

Dust Control and Production Water

Operations are required to comply with MDAQMD Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requires requirements for controlling fugitive dust). To minimize dust while processing the material, the screening plant will be outfitted with water spray nozzles to wet the finished material as it comes off the conveyer belt. The wet plant will produce moist material not susceptible to dust production.

Dust control on the haul and access roads, plant site, and transfer shipping area will be controlled by constructing the roads and more active areas with an approximate 6-inch layer of crushed rock and waste ore. Dust will be reduced by establishing a speed limit of 20 MPH for trucks, with speed limit signs at the plant area and mill site and approximately every 1/2 mile along the road. Roads and the operations areas will be watered every morning. A dust palliative may be applied to reduce daily water demand for dust control.

Water for the mining operations will be provided by groundwater; a well is proposed to be drilled on Iron Age's property at the mine site or mill site. Water demand is estimated at approximately 29,000 gallons for operations with 60% of that demand being met by recycled process water. Process water will be recycled through a lined holding pond on-site. Therefore, an estimated 11 acre-feet of groundwater will be pumped annually (40% of 29,000 x 312 operating days). A water storage tank of 10,000 gallons will be placed at both plant site and at the mill site. Water will be used for product screening, dust control, and road dust suppression.

Domestic water for drinking will be imported for employees. Domestic wastewater and septage will be collected via portable facilities.

No wastewater will be generated as a result of excavation or plant operations. Process water will be recycled through a lined settling pond. To protect soils and groundwater from potential contamination from run-off, fueling and maintenance areas shall be covered with impervious materials and equipped with berms and catch basins to capture accidental spills and insure that run-on and run-off from this area is not contaminated.

Site Access

The Mine Site will be accessed from the Iron Age Mine Road which extends from SR 62 approximately 3.4 miles south to the mine. The roadway will be reconstructed on a 40-foot right-of-way and developed at a 24-foot surface width. The alignment and typical cross sections are illustrated on Sheets 1 and 2.

Round trips will vary between 30 and 60 haul trucks per day plus employee and service vehicles.

Equipment Maintenance

Regular maintenance will be performed on site using a portable lube truck. All oil and grease will be stored and dispensed using a lube truck. The lube-fuel service truck and the mine foreman's pickup truck are all outfitted with appropriate diesel fuel tanks to transport fuel from bulk storage and fuel equipment at the mine site. Per the County of San Bernardino, the mine is required to submit a business plan, spill prevention control and counter measure plan (SPCC) with Best Management Practices (BMPs) to insure that on site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above-ground fuel containers. The diesel fuel and gasoline tanks will be placed within concrete or lined containment pads to contain the contents of the tank and a 100-year rainfall event as required. Fuel will be transferred to the site by tanker trucks.

(iii) Water Management Plans

Operation water will be provided by an onsite well to be drilled at the mine or mill site. Process water will be recycled through a lined holding pond. Approximately 60% of the water used for the wet cycle processing will be recycled through a lined settling pond. A 10,000-gallon water tank will be placed at the plant and/or at the mill site. A water truck will be available for mobile use. Water will be used for product screening dust control and road dust suppression. Onsite surface flow will be subject to surface sheet wash from rain and subsequent percolation. Roadway drainage will flow from the road crown to the perimeter. Dip crossings will be utilized to maintain storm water flow in the existing drainages. Storm water flow is limited due to low rainfall averaging less than 4 inches annually. Rain events are typically summer monsoonal storms.

(iv) Rock Characterization and Handling Plans

The tailings removal will focus on existing, exposed, un-reclaimed historic stockpiles of iron ore tailings. These tailings vary in quality up to approximately 58% Fe. Tailings will be removed, sorted, crushed and magnetically concentrated to achieve marketable concentrations. Waste rock, estimated at approximately 60 percent, will be separated and conveyed to the historic quarry for backfill for planned reclamation. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock.

(v) Quality Assurance Plans

A Quality Assurance Plan will be developed as tailings are recovered and concentration processing is refined in the plant. Iron ore sales are based on guaranteed quality specifications. Iron Age Mine currently targets 62% Fe as its guaranteed shipping goal.

(vi) Spill Contingency Plan

A Business Emergency/Contingency Plan and a Storm Water Pollution Protection Plan (SWPPP) will be required as conditions of approval per the County of San Bernardino.

(vii) Schedule of Operations from Start through Closure

Iron Age Mine will begin project development following authorization to proceed from BLM, San Bernardino County and appropriate responsible agencies. The phasing and timeframes are listed in Table 1.

Phase 1A – Initial Development

Access road development
Mill site development
Water well placement
Plant installation and operation
Ore processing within southwest patented property
Duration: one year

Phases 1B, 2, and 3 - Operations

Operations and ore processing
Ore Stockpiling
Shipping
Transfer to Market
Backfilling of quarry with waste rock concurrently
Duration: 6 to 14 years

Concurrent Reclamation during Phases 1B, 2, and 3

Backfilling of quarry with waste rock concurrently
Reclamation and revegetation of areas where material has been removed to original surfaces
Duration: Concurrent as tailings are removed to grade by phase. Reclamation should begin following the completion of each phase.

Phase 4 – Final Reclamation after Operations

Removal of all equipment, structures, tanks and debris
Reclamation and revegetation monitoring
Duration: annually following completion of reclamation until success criteria has been met and certified culminating approximately December 31, 2032.

(viii) Plans for Roads and Services

Access road improvements are identified in Description of Operations and Sheets 1 and 2 of this POO. The applicant proposes to leave the pre-existing but improved roadway in place following mining unless otherwise directed by responsible agencies. The road access would be gated and blocked and posted at the mine entrance (see Sheet 1).

Water supply will be from on-site well either at the plant site or at the mill site. The well will be removed upon completion and the well head will be sealed and closed per State, County and DEHS requirements. The subsurface well would remain in place. No commercial or public water service or infrastructure is available at the site.

Power will be supplied by onsite generators. No commercial power or infrastructure is available at the site.

Sewage will be contained in mobile restrooms. These will be serviced by a commercial provider and removed upon closure. No utility service or infrastructure is available at the site.

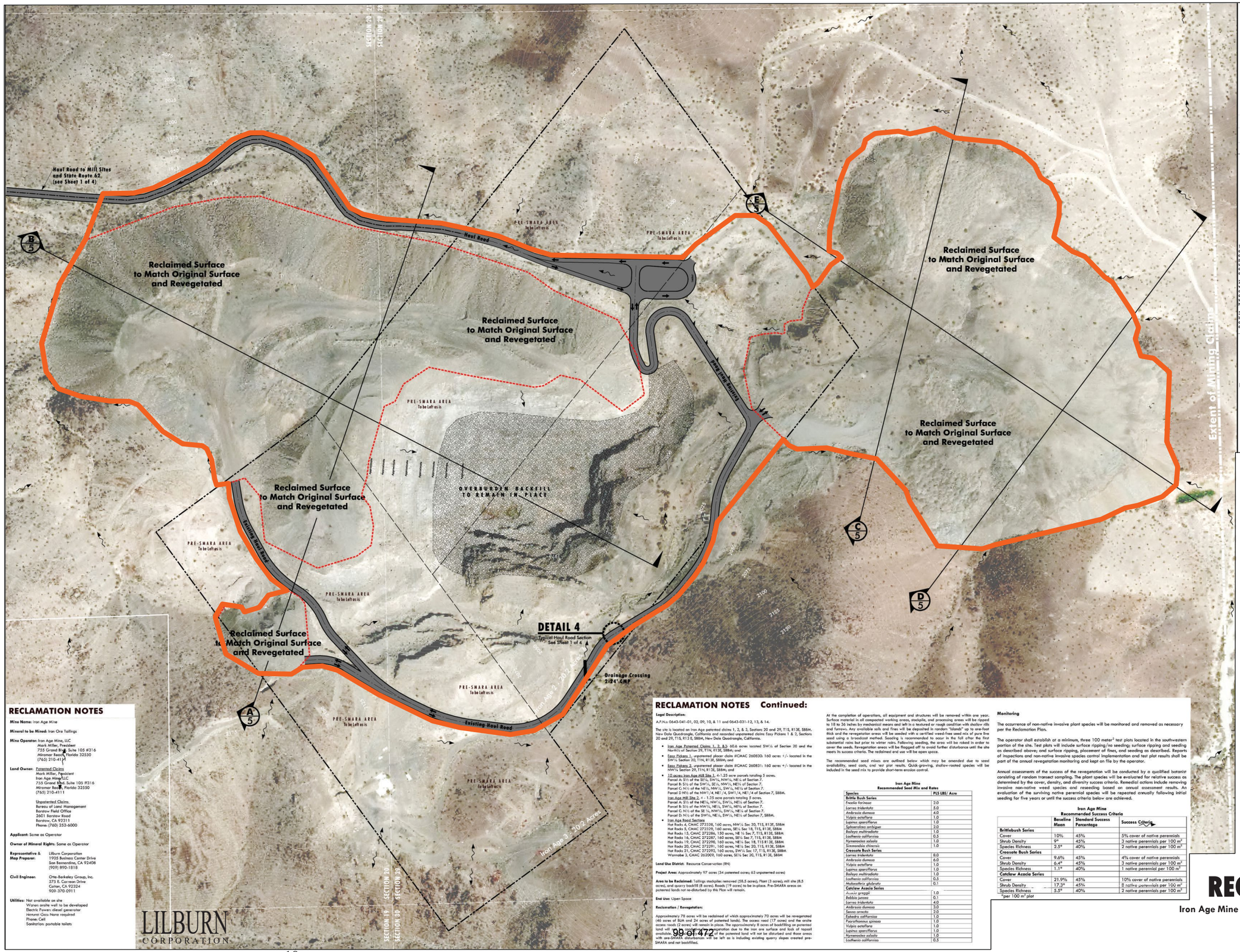
(3) Reclamation

Reclamation will be phased concurrently at phase completion as tailing piles are depleted. Removed ore stockpile areas will be ripped and revegetated. At the completion of removal, processing and loading/shipping operations, within one year, all equipment and stockpiles will be removed and any remaining refuse will be disposed of at an appropriate off-site disposal site. The surface material will be re-graded to approximate natural contours. On BLM lands, approximately 46 acres of former tailings piles and the mill sites will be reclaimed and revegetated (see Sheet 3 and Figure 6). The access road (17 acres) and the onsite access roads (2 acres) will remain in place. In total on both BLM and patented lands, approximately 78 acres will be reclaimed of which approximately70 acres will be revegetated. The approximately 8 acres of backfilling on patented land will not be conducive for revegetation due to the iron ore surface and lack of topsoil available. The plant and former stockpile areas will be scarified and seeded with BLM/County approved seed mix. The reclaimed end use will be open space. A mine reclamation plan in compliance with the California SMARA appears in Attachment 2 of the Plan of Operations (POO). This includes a revegetation plan as Appendix C. Site reclamation will include the following:

(i) Drill Hole Plugging: A drilling program is not included in this plan of operation. Should drilling occur holes will be backfilled and compacted. Upon final reclamation, the planned on-site well will be closed or destroyed in accordance with the California Department of Water Resources Bulletin 74-81 as revised and the County Department of Environmental Health (DEHS) regulations and in such a manner that will no longer be a hazard to the health and safety of people and wildlife.

(ii) Regrading and Reshaping: Existing and developed operation equipment will be removed including foundations. Stockpiles will be removed approximately to historic grade. Contours will be created to approximate historic topography. Surface drainages will be reconstructed. Surfaces scarified to accommodate revegetation. Any remaining tailings slopes will be retained at approximately 2:1 or less.

(iii) Mine Reclamation: The tailings areas will be removed to the original grades, ripped, and revegetated. The existing quarry (on patented land) will not be mined by the applicant but will be partially backfilled with waste material which will reduce its volume. There are no compaction or placement requirements for the backfilling of the lower portion of the old quarry with waste rock. Placement of the waste material into the existing quarry will eliminate creating a remnant waste rock stockpile. Upon site closure, revegetation as proposed in the Reclamation Plan will be conducted on the removed stockpile surfaces and plant and mill sites. Upon final stockpile reclamation, the historic quarry will be secured with fencing where there is any safety issue and signage to limit trespass.



RECLAMATION NOTES

Mine Name: Iron Age Mine

Mineral to be Mined: Iron Ore Tailings

Mine Operator: Iron Age Mine, LLC
Mark Miller, President
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Land Owner: Patented Claims
Mark Miller, President
Iron Age Mine LLC
755 Grand Blvd. Suite 105 #316
Miramar Beach, Florida 32550
(765) 210-4111

Unpatented Claims
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
Phone: (760) 252-6000

Applicant: Same as Operator

Owner of Mineral Rights: Same as Operator

Representative & Map Preparer: Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-1818

Civil Engineer: Orte-Berkeley Group, Inc.
375 E. Carnegie Drive
Colton, CA 92324
909-370-0911

Utilities: Not available on site
Water: onsite well to be developed
Electric Power: diesel generator
Natural Gas: None required
Phone: Cell
Sanitation: portable toilets

LILBURN CORPORATION

RECLAMATION NOTES Continued:

Legal Description:

A.P.Nos 0643-041-01, 02, 09, 10, & 11 and 0643-031-12, 13, & 14.

The site is located on Iron Age patented claims 1, 2, & 3, Sections 20 and 29, T1S, R13E, SBBM, New Dale Quadrangle, California and recorded unpatented claims Easy Pickens 1 & 2, Sections 20 and 29, T1S, R13 E, SBBM, New Dale Quadrangle, California.

- Iron Age Patented Claims 1, 2, &3: 60.6 acres located SW¼ of Section 20 and the North½ of Section 29, T1N, R13E, SBBM; and
- Easy Pickens 1, unpatented placer claim #CMAC 260830. 160 acres +/- located in the SW¼ Section 20, T1N, R13E, SBBM; and
- Easy Pickens 2, unpatented placer claim #CMAC 260831. 160 acres +/- located in the NW¼ Section 29, T1N, R13E, SBBM; and
- 10 acres Iron Age Mill Site 1, 4-1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the SE¼, SW¼, NW¼, NE¼ of Section 7,
  Parcel B: S½ of the SW¼, SE¼, NW¼, NE¼ of Section 7,
  Parcel C: N½ of the NE¼, NW¼, SW¼, NE¼ of Section 7,
  Parcel D: N½ of the NW1/4, NE1/4, SW1/4, NE1/4 of Section 7, SBBM.
  Iron Age Mill Site 2, 4 - 1.25 acre parcels totaling 5 acres.
  Parcel A: S½ of the NE¼, NW¼, SW¼, NE¼ of Section 7,
  Parcel B: S½ of the NW¼, NE¼, SW¼, NE¼ of Section 7,
  Parcel C: N½ of the SE ¼, NW¼, SW¼, NE¼ of Section 7,
  Parcel D: N½ of the SW¼, NE¼, SW¼, NE¼ of Section 7, SBBM.
- Iron Age Road Sections
  Hot Rocks 4, CMAC 272330, 160 acres, NW¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 5, CMAC 272329, 160 acres, SE¼ Sec 18, T1S, R13E, SBBM
  Hot Rocks 15, CMAC 272286, 150 acres, NE ¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 16, CMAC 272287, 160 acres, SE¼ Sec 7, T1S, R13E, SBBM
  Hot Rocks 19, CMAC 272290, 160 acres, NE¼ Sec 18, T1S R13E, SBBM
  Hot Rocks 20, CMAC 272291, 160 acres, NE¼ Sec 20, T1S, R13E, SBBM
  Hot Rocks 21, CMAC 272292, 160 acres, SW¼ Sec 17, T1S, R13E, SBBM
  Wannabe 3, CMAC 262009, 160 acres, SE¼ Sec 20, T1S, R13E, SBBM

Land Use District: Resource Conservation (RN)

Project Area: Approximately 97 acres (34 patented acres; 63 unpatented acres)

Area to be Reclaimed: Tailings stockpiles removed (58.5 acres); Plant (3 acres); mill site (8.5 acres), and quarry backfill (8 acres). Roads (19 acres) to be in-place. Pre-SMARA areas on patented lands not re-disturbed by this Plan will remain.

End Use: Open Space

Reclamation / Revegetation:

Approximately 78 acres will be reclaimed of which approximately 70 acres will be revegetated (46 acres of BLM and 24 acres of patented lands). The access road (17 acres) and the onsite access roads (2 acres) will remain in place. The approximately 8 acres of backfilling on patented land will not require revegetation due to the iron ore surface and lack of topsoil available. Portions of the patented land will not be disturbed and those areas with pre-SMARA disturbances will be left as is including existing quarry slopes created pre-SMARA and not backfilled.

At the completion of operations, all equipment and structures will be removed within one year. Surface material in all compacted working areas, stockpile, and processing areas will be ripped to 18 to 36 inches by mechanical means and left in a textured or rough condition with shallow rills and furrows. Any available soils and fines will be deposited in random "islands" up to one-foot thick and the revegetation areas will be seeded with a certified weed-free seed mix of pure live seed using a broadcast method. Seeding is recommended to occur in the fall after the first substantial rains but prior to winter rains. Following seeding, the area will be raked in order to cover the seeds. Revegetation areas will be flagged off to avoid further disturbance until the site meets its success criteria. The reclaimed and use will be open space.

The recommended seed mixes are outlined below which may be amended due to seed availability, seed costs, and test plot results. Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control.

Iron Age Mine
Recommended Seed Mix and Rates

Species	PLS LBS/ Acre
Brittle Bush Series	
Encelia farinosa	2.0
Larrea tridentata	5.0
Ambrosia dumosa	4.0
Vulpia octoflora	1.0
Lupinus sparsiflorus	1.0
Sphaeralcea ambigua	2.0
Baileya multiradiata	1.0
Lasthenia californica	0.5
Nymenoclea salsola	1.0
Simmondsia chinensis	1.0
Creosote Bush Series	
Larrea tridentata	8.0
Ambrosia dumosa	6.0
Vulpia octoflora	1.0
Lupinus sparsiflorus	1.0
Baileya multiradiata	1.0
Lasthenia californica	0.5
Malacothrix glabrata	0.1
Catclaw Acacia Series	
Acacia greggii	1.0
Bebbia juncea	0.1
Larrea tridentata	4.0
Ambrosia dumosa	3.0
Senna armata	2.0
Ephedra californica	1.0
Pararthrotmma spinosa	1.0
Vulpia octoflora	1.0
Lupinus sparsiflorus	1.0
Nymenoclea salsola	1.0
Lasthenia californica	0.5

Monitoring

The occurrence of non-native invasive plant species will be monitored and removed as necessary per the Reclamation Plan.

The operator shall establish at a minimum, three 100 meter^2 test plots located in the southwestern portion of the site. Test plots will include surface ripping/no seeding; surface ripping and seeding as described above; and surface ripping, placement of fines, and seeding as described. Reports of inspections and non-native invasive species control implementation and test plot results shall be part of the annual revegetation monitoring and kept on file by the operator.

Annual assessments of the success of the revegetation will be conducted by a qualified botanist consisting of random transect sampling. The plant species will be evaluated for relative success as determined by the cover, density, and diversity success criteria. Remedial actions include removing invasive non-native weed species and reseeding based on annual assessment results. An evaluation of the surviving native perennial species will be repeated annually following initial seeding for five years or until the success criteria below are achieved.

Iron Age Mine
Recommended Success Criteria

	Baseline Mean	Standard Success Percentage	Success Criteria
Brittlebush Series			
Cover	10%	45%	5% cover of native perennials
Shrub Density	9*	45%	3 native perennials per 100 m^2
Species Richness	2.5*	40%	2 native perennials per 100 m^2
Creosote Bush Series			
Cover	9.6%	45%	4% cover of native perennials
Shrub Density	6.4*	45%	3 native perennials per 100 m^2
Species Richness	1.1*	40%	1 native perennial per 100 m^2
Catclaw Acacia Series			
Cover	21.9%	45%	10% cover of native perennials
Shrub Density	17.3*	45%	8 native perennials per 100 m^2
Species Richness	5.5*	40%	2 native perennials per 100 m^2

*per 100 m^2 plot

Proposed Project
(Plus Access Road and Mill Sites)

No.	Date	By	Revision Description

Prepared By:
LILBURN CORPORATION
1905A Business Center Drive, San Bernardino, CA 92408
909.890.1818 ▪ Fax 909.890.1915

Scale: 1 inch = 100 feet

Map Prepared By: Lilburn Corporation (1/65)
NOTE: Boundary information has not been verified in the field by a licensed land surveyor.

Projection: CA SPCS, Zone 5, NAD83 Feet, SBBM.
Contour Interval = 10'
Topography: Modified U.S.G.S. MED 10 Meter
Aerial: NAIP

NOTE:

1. All topographic surfaces are approximate and shall be verified in the field prior to the commencement of grading, excavation and placement of facilities. Data was obtained using the most current digital elevation models and historic U.S.G.S. topographic maps available.

2. Claim boundary information has not been verified by a licensed land surveyor. Original data was extracted from B.L.M. and U.S.G.S. databases using a geographic information system and translated to CA SPCS, Zone 5, NAD83 Feet, S.B.B.M.

3. Final reclaimed surfaces will be determined in the field by competent personnel and acceptable methods as approved by the appropriate jurisdictional entities.

LEGEND

- Iron Age Mine Patented Claim
- Mine Tailings Area Reclamation Area
- Elv.=2035' 2012 GPS Spot Elevation (above mean sea level)
- Drainage Indicator
- Roads to Remain In-place

RECLAMATION PLAN

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 6

(iv) Riparian Mitigation: There are no riparian areas onsite. Existing drainages will be avoided where possible. The access road will be elevated above the existing wash wherever possible with crossing limited to areas restricted by topography. Portions of the access will require vegetation removal. Pre-construction biologic surveys will be conducted. The mine site has been significantly altered from its natural condition including surface drainage and native vegetation. The tailings surface has only slightly revegetated since placement by the previous mine activity. A biological assessment of the site and access road appears in Attachment 3 of the POO. A Revegetation Plan is included in Attachment 2, Reclamation Plan.

(v) Wildlife Habitat Rehabilitation: See (iv) Riparian above. Wildlife does occur on-site although reduced due to lack of habitat restoration from historic mining. The site will be revegetated to re-establish a native vegetative condition based on vegetative surveys conducted on adjacent properties. Revegetation will attempt to establish both density and diversity of pre-mining conditions. Wildlife should be supported according to successful reclamation. A biological assessment is included in Attachment 2, Reclamation Plan, Appendix B.

(vi) Topsoil Handling: No topsoil exists within the targeted tailings piles. Sorting of tailings and ore concentration will result in the creation of some fines. These will be stockpiled and will be applied to surfaces upon reclamation. Placement would be in random "island" patterns over the removed tailings areas.

(vii) Revegetation: A revegetation plan is included in the reclamation plan attached. (Attachment 2, Reclamation Plan, Appendix D). In summary, the tailings areas and the plant and mill sites (approximately 46 acres of BLM lands and 24 acres of patented lands) will be ripped and seeded with native species per the attached Reclamation Plan and associated revegetation plan.

(viii) Isolation and control of acid forming, toxic or deleterious materials: Acid mine drainage is extremely limited at this site due to the extremely arid conditions. Chemically toxic materials on-site would be limited to petroleum products and lubricants. All materials would be subject to materials safety compliance standards.

(ix) Removal or Stabilization of Structures: All equipment and support structures associated with the mine operations will be removed upon reclamation at both the mine and mill sites. The well will be closed per State, County and DEHS requirements. No construction is planned for the unpatented mine claims beyond temporary placement of operating equipment. Fencing will remain upon closure. The applicant proposes to leave the improved mine access road in place following reclamation.

(x) Post-Closure Management: Mine reclamation/revegetation will be monitored following final reclamation and revegetation will be monitored annually until success criteria are met. Remediation of revegetated areas such as weeding and reseeding with different seed mixes will be conducted as necessary. This will result in formal closure and release of reclamation bonds. See Phase V, Attachment 2, Reclamation Plan.

(4) Monitoring Plan

The following operation reviews and reclamation monitoring procedures are conditions of project approval in compliance with local, state and federal laws and regulations authorizing operation. The following monitoring procedures apply:

Reclamation and revegetation: The operator must comply with phasing, species diversity, density and compliance with stipulated success ratios and goals. These conditions are inspected annually for compliance. Reclamation bonds are released upon restoration and reclamation compliance by the BLM and the County, the SMARA lead agency.

Air Quality: The site's processing equipment will be operated under a permit to construct and operate issued by the Mojave Desert Air Quality Management District (MDAQMD). Operations and permits are inspected and renewed annually. Haul trucks and diesel equipment must meet requirements of the California Air Resources Board's off-road diesel vehicles regulations to reduce diesel pollutants. Operations are required to comply with MDAQMD Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requirements for controlling fugitive dust).

Surface Water Protection: All operations on-site must comply with a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges associated with industrial activities and employ storm water Best Management Practices (BMPs) during construction, operations, and temporary cessation of operations. A Storm Water Pollution Prevention Plan (SWPPP) will be required as a condition of approval per the County of San Bernardino.

Hazardous Materials: Per the County of San Bernardino, the mine is required to submit a business plan and a spill prevention control and counter measure plan (SPCC) to insure that on-site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above ground fuel containers.

Financial Assurance: An estimate of the cost of mine closure and reclamation is required in compliance with SMARA. It is subject to annual review, site inspection for compliance and recalculated to consider cost variances. The owner/operator is compelled to issue the bond as assurance of compliance. The bond insures responsible agencies as appropriate are also insured.

(5) Interim Management Plan

An Interim Management Plan is provided in Attachment 3 of this POO.

APPENDIX B
BIOLOGICAL RESOURCE ASSESSMENT, LILBURN CORPORATION

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE
IRON AGE MINE
SAN BERNARDINO COUNTY, CALIFORNIA

Prepared For:

Iron Age Mine, LLC
1755 Grand Boulevard Suite B105 # 316
Miramar Beach, FL 32550

Submitted To:
County of San Bernardino
Planning Department
385 North Arrowhead Avenue
San Bernardino, California 92415

and

Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311

Prepared By:

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April 2014

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EXECUTIVE SUMMARY

Iron Age Mine, LLC, a part of US Iron LLC, has submitted a Plan of Operations to the Bureau of Land Management (BLM) and a Mine Reclamation application to the County of San Bernardino (County) proposing to remove iron ore tailings left at the Iron Age Mine site by a previous mining operation. The Iron Age Mine site is located in the Dale Mining District in the Pinto Mountain Range, San Bernardino County, California, and is approximately 18 miles east/southeast of the city of Twentynine Palms and occurs in desert tortoise habitat. Approximately 97 acres will be impacted by tailings removal, a plant site, mill site, backfilling of the existing quarry, and access roads, of which approximately 76 acres have been previously impacted by historic mining activities. The site consists of 34 acres of patented (private) land and 63 acres of unpatented claims under the jurisdiction of the BLM.

A biological resources assessment of the project site was conducted to identify potentially occurring sensitive habitats and species within the project area. The assessment identified six vegetation habitats within the project area; these include: brittlebush series, big galleta series, creosote bush series, catclaw acacia series, streambed, and disturbed habitat. The desert tortoise, a federally and state listed threatened species, was identified to have a moderate probability of occurrence. Additional sensitive species with a potential to occur at the site include: pallid bat, California leaf-nosed bat, American badger, Le Conte's thrasher, prairie falcon, Nelson's big horn sheep, coast horned lizard, Mojave fringe-toed lizard, and burrowing owl. Recommendations and mitigation measures are provided herein to avoid and minimize potential impacts to sensitive habitats and species that may potentially occur in the area of impact of the proposed project.

1.0 INTRODUCTION

1.1 PROJECT LOCATION

The Iron Age Mine site is located in the Dale Mining District within the Pinto Mountain Range, San Bernardino County, California, and is approximately 18 miles east/southeast of the city of Twentynine Palms (see Figure 1). The mine is located south of State Route 62 (SR 62) and is accessible by an unnamed road approximately one and a half miles east of Iron Age Road (see Figure 2).

The Iron Age Mine holdings consist of 60.6 acres of patented land (private land) within portions of Sections 20 and 29, San Bernardino Base and Meridian (SBBM), USGS New Dale 7.5-minute quadrangle), and 330 acres of unpatented claims (public land) managed by the Bureau of Land Management (BLM Barstow office) within portions of Sections 7, 17, 18, 20 and 29, SBBM. As such, Iron Age Mine LLC has submitted a Plan of Operations to the BLM. The project also includes two 5-acre mill site claims in Section 7. The Proposed Project will occur on approximately 34 acres of patented land and 63 acres of unpatented land. The mine road re-alignment extends 3.4 miles (approximately 17 acres) into additional unpatented claims within Sections 7, 17, 18 and 20, SBBM. The site is located in an unincorporated area of San Bernardino County.

1.2 PROJECT DESCRIPTION

Existing conditions at the Iron Age Mine site include a pre-SMARA quarry area, access roads, and tailings disposal areas from historic mining of the site. The site was active until the mid-1960s. The proposed Iron Age Mine project is planned to include approximately 34 of the 60.6 patented acres, 37.5 acres of the unpatented claims, 8.5 acres of the 10-acre mill site claims and approximately 17 acres of roadway (Iron Age Mine Road) that connects the mine site to SR 62 over a distance of 3.4 miles.

The total disturbance area, of which 76 acres have been previously disturbed, is approximately 97 acres including the existing and planned roadway. Approximately 78 acres of the 97-acre project area will be reclaimed of which approximately 70 acres will be revegetated (46 acres of BLM and 24 acres of patented lands). The existing access road (17 acres), partly eroded away, will be re-constructed as part of the proposed project. The access road and the onsite access roads (2 acres) will remain in place. The approximately 8 acres of backfilling on patented land will not be conducive for revegetation due to the iron ore surface and lack of topsoil available. Approximately 26 acres of the patented land will not be disturbed by this Plan, much of which has been disturbed by pre-SMARA activities and left as is.

Proposed operations would occur in four phases; generally trending from the western limits of the tailings area to the northwest and eventually to the northeast. The operation would consist of excavating and loading the broken iron tailings into a feeder, screen, and magnetic separator. Upon separation, off-road haul trucks will transport the iron ore via a re-built mine haul road to a proposed mill site facility located on SR 62. The mill site would be located approximately 3.4 miles north of the tailings area; iron ore transported from the tailings area to the mill site would be stockpiled and

Regional Vicinity

Iron Age Mine Biological Resources Assessent
San Bernardino County, California

Figure 1

0 5
Approximate Miles

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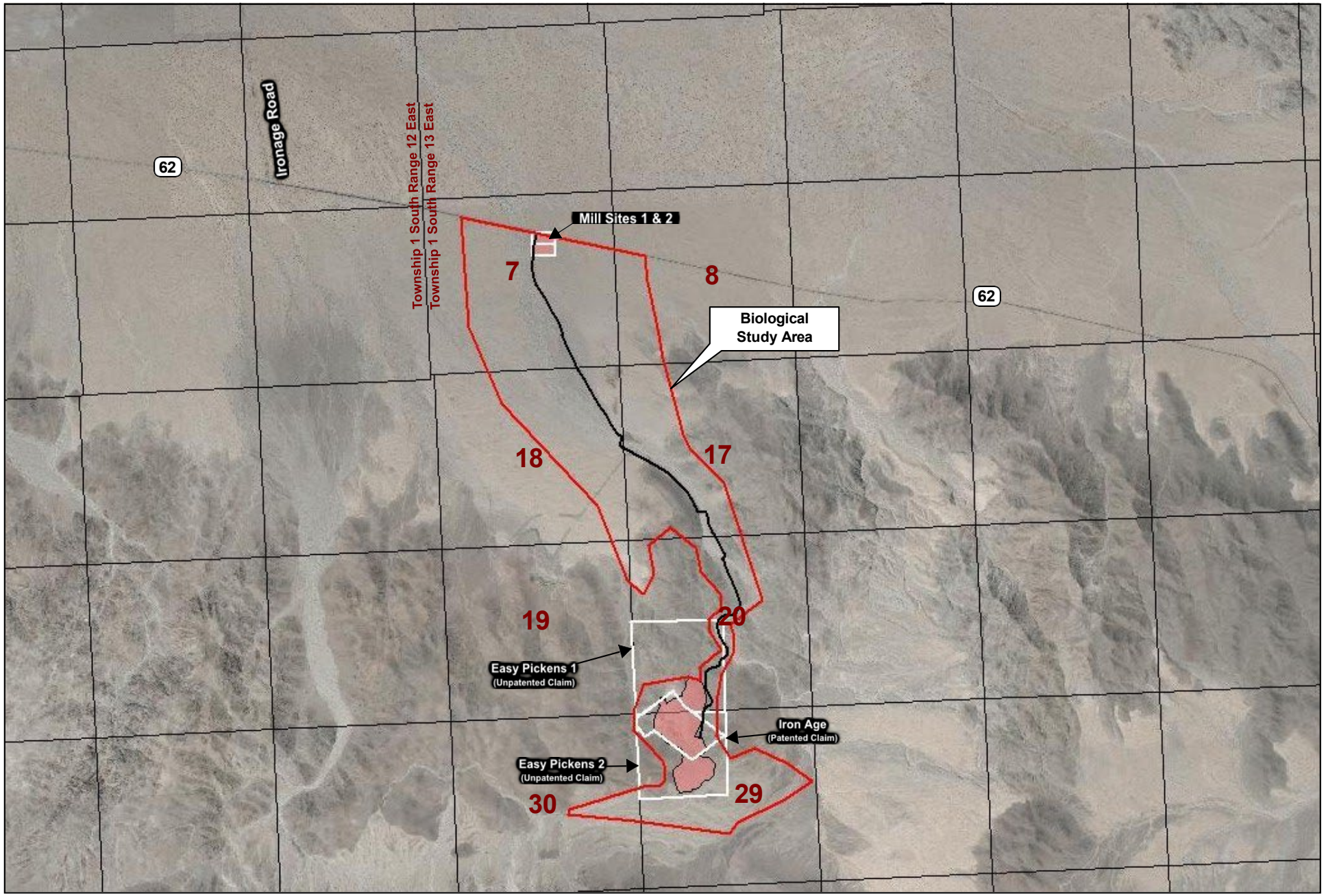


Project Location

Iron Age Mine Biological Resources Assessment
San Bernardino County, California
Figure 2

Project Area - 97.0 acres

Existing Access Road to be Partially Re-aligned

N

0 0.65

Approximate Miles

LILBURN CORPORATION

ultimately transferred to market. Based on reconnaissance analysis of the existing stockpile reserves, the site is anticipated to have an estimated operating life of 15 years.

1.3 PURPOSE OF BIOLOGICAL RESOURCES ASSESSMENT

The purpose of this Biological Resources Assessment (BRA) report is to:

- Identify sensitive habitats in the project area;
- Identify sensitive species in the project area;
- Identify if the planned project area is within a wildlife corridor; and
- Identify any Habitat Conservation Plans or Natural Community Conservation Plans that are associated with this project.

2.0 RARE, THREATENED, OR ENDANGERED SPECIES

This section discusses sensitive plant and animal species that may occur within the project area; these potentially occurring species were the focus of the survey conducted for this BRA. A probability of occurrence has been assigned to each of these species following consideration of available literature materials and field survey results. The probabilities of occurrence range from not present, to low, moderate, or high. Corresponding percentage equivalents for this range would be 0% for not present, less than 50% for low, 50-75% for moderate, and higher than 75% for high.

Sensitive species are those animals and plants which have a federal designation of Threatened or Endangered, or a State designation of Rare, Threatened, or Endangered. Additionally, in California, a plant may be designated as sensitive by the California Native Plant Society (CNPS) classification system. CNPS has created five "lists" in an effort to categorize degrees of concern. The CNPS lists are described as follows:

List 1A: Plants Presumed Extinct in California

The plants of List 1A (less than 30 taxa) are presumed extinct because they have not been seen or collected in the wild in California for many years. This list includes plants that are both presumed extinct in California, as well as those plants which are presumed extirpated in California. A plant is extinct in California if it no longer occurs in or outside of California. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

All of the plants constituting List 1A meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, it is mandatory that they be fully considered during preparation of environmental documents relating to the California Environmental Quality Act (CEQA).

List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

The plants of List 1B are rare throughout their range with the majority of them endemic to California. Most of the plants of List 1B have declined significantly over the last century. List 1B plants constitute the majority of the plants in CNPS' Inventory with more than 1,000 plants assigned to this category of rarity.

All of the plants constituting List 1B meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

Except for being common beyond the boundaries of California, the plants of List 2 would have appeared on List 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Endangered Species Act. Until 1979, a similar policy was followed in California. However, after the passage of the Native Plant Protection Act, plants were considered for protection without regard to their distribution outside the state.

With List 2, CNPS recognizes the importance of protecting the geographic range of widespread species. In this way, CNPS protects the diversity of the state's flora and helps maintain the evolutionary process and genetic diversity within species. All of the plants constituting List 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

List 3: Review List

The plants that comprise List 3 are united by one common theme - CNPS lack the necessary information to assign them to one of the other lists or to reject them. Nearly all of the plants remaining on List 3 are taxonomically problematic.

Some of the plants constituting List 3 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. The CNPS strongly recommends that List 3 plants be evaluated for consideration during preparation of environmental documents relating to CEQA.

List 4: Plants of Limited Distribution - A Watch List

The plants in this category are of limited distribution or infrequent throughout a broader area in California, and their vulnerability or susceptibility to threat appears relatively low at this time.

Very few of the plants constituting List 4 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and few, if any, are eligible for state listing.

2.1 LIST OF POTENTIALLY OCCURRING RARE, THREATENED OR ENDANGERED PLANT SPECIES

No records of Rare, Threatened, or Endangered plant species are reported at Iron Age Mine site or its vicinity in the California Natural Diversity Database (CNDDB) observation records or in the United States Fish and Wildlife Service (USFWS) San Bernardino County Species List.

Plant species which are considered sensitive under CNPS but not classified as Rare, Threatened or Endangered under the California Department of Fish and Wildlife (CDFW, formerly the California Department of Fish and Game) State and Federally Listed Endangered, Threatened, and Rare Plants of California List (May 2012) were evaluated during the field survey and are listed in the Species Probability List included in this report as Appendix A.

2.2 LIST OF POTENTIALLY OCCURRING SENSITIVE ANIMAL SPECIES

The following is a list of Rare, Threatened, or Endangered animal species that have the potential to occur at the Project Site or its surrounding vicinity. This species was identified as potentially occurring from CNDDB observation records and the USFWS San Bernardino County Species List. This BRA documents the probability of occurrence for this species through the existence of suitable habitat for the species.

Animal species which are considered Species of Special Concern under the CDFG January 2011 Special Animal List but not classified as Candidate, Threatened or Endangered under the State and Federal Endangered Species Acts were evaluated during the field survey and are listed in the Species Probability List included in this report as Appendix A.

Listed below are species under the protection of the State and Federal Endangered Species Acts or species that require special permits or consultation with State and Federal agencies.

Scientific Name	Common Name	Federal Listing	State Listing
Gopherus agassizii	desert tortoise	Threatened	Threatened

3.0 REGULATORY BACKGROUND

3.1 STATE AND FEDERAL SENSITIVE SPECIES REGULATIONS

3.1.1 Endangered Species Act

The Federal Endangered Species Act (Act) provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the U.S. or elsewhere. The Act makes

provisions for listing species, as well as for recovery plans and for the designation of critical habitat of listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, and contains exceptions and exemptions.

Congress found that various species of fish, wildlife and plants in the U.S. have been rendered extinct while others have been depleted to the point of being in danger of or threatened with extinction. Congress declared that depleted species are of aesthetic, ecological, educational, historical, recreational, and scientific value. As a result, the U.S. has pledged to conserve various species facing extinction pursuant to several international treaties and agreements. To encourage conservation, federal financial assistance and a system of incentives has been put in place so that states and other interested parties may develop conservation programs that meet national and international standards and safeguard the nation's heritage in fish, wildlife and plants.

The purposes of the Act are to: provide a means of conserving the ecosystems upon which endangered and threatened species depend; provide a program for conserving those species; and take steps necessary to achieve the purposes of the international treaties and conventions. The policy of Congress is that federal agencies must seek to conserve endangered and threatened species and use their authorities in to further the Act's purposes.

Under provisions of section 7(a)(2) of the Act, a Federal agency that carries out, permits, licenses, funds, or otherwise authorizes activities that may affect a listed species must consult with the USFWS to ensure that its actions are not likely to jeopardize the continued existence of any listed species. The BLM has jurisdiction of the unpatented claims on federal lands and as such will prepare a Biological Assessment (BA) in consultation with the USFWS. The USFWS will review the BA and prepare a Biological Opinion (BO) to state the opinion of the Service as to whether or not the Federal action is likely to jeopardize the continued existence of listed species (in this case the desert tortoise) or result in the destruction or adverse modification of critical habitat. The Biological Opinion will include conditions to minimize impacts to the desert tortoise.

3.1.2 California Endangered Species Act

The California Endangered Species Act (CESA) states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. The California Department of Fish and Wildlife will work with all interested persons, agencies and organizations to protect and preserve such sensitive resources and their habitats.

However, CESA also allows for take incidental to otherwise lawful development projects. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species.

3.1.3 California Environmental Quality Act

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps to guide the California Department of Fish and Wildlife during issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a California public agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to:

- Disclose to the public the significant environmental effects of a proposed discretionary project, through the preparation of an Initial Study (IS), Negative Declaration (ND), or Environmental Impact Report (EIR).
- Prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring.
- Disclose to the public the agency's decision making process utilized to approve discretionary projects through findings and statements of overriding consideration.
- Enhance public participation in the environmental review process through scoping meetings, public notice, public review, hearings, and the judicial process.
- Improve interagency coordination through early consultations, scoping meetings, notices of preparation, and State Clearinghouse review.

California Public Resources Code Sections 21000-21004 generally state that:

- State agencies shall regulate the activities of private individuals, corporations, and other public agencies whose activities may affect the environment shall regulate to prevent environmental damage.
- State government agencies shall develop standards and procedures necessary to maintain, protect, rehabilitate and enhance environmental quality, including fish and wildlife populations and plant and animal communities.
- Projects carried out by public agencies shall be subject to the same level of review as private projects requiring approval by public agencies.
- No projects which would cause significant environmental effects should be approved as proposed if there are feasible alternatives or mitigation measures that would lessen those effects.
- Environmental impact reports (EIRs) shall be used to provide full public disclosure of the environmental impacts of a proposed project.
- EIRs shall include identification of all significant effects, alternatives, and potential mitigation measures.
- Local agencies should integrate CEQA with other environmental review, planning, and information gathering so as to cut costs and time and to apply the conservation of financial, governmental, physical, and social resources towards better mitigation.

- Identification of significant effects, alternatives and mitigation measures, as well as comments from the public and public agencies, and relevant information about significant effects should be made as early as possible in the process.

Failure to comply with CEQA to provide full disclosure of information during the CEQA process, which would result in relevant information not being presented to the public agency, would constitute prejudicial abuse of discretion leaving the project proponent open to possible lawsuits.

4.0 METHODOLOGY

4.1 LITERATURE SEARCH

A literature search was conducted to obtain information for this BRA. The following sources were used to gather species information, topographic data, resource value, federal and State jurisdictions, aerials, and satellite images.

- California Natural Diversity Data Base; United States Geological Survey Topographic Quadrangles: New Dale, Clark Pass, East of Dale, Dale Lake, East of Valley Mountain, Humbug Mountain, Pinto Mountain, San Bernardino Wash, and Placer Canyon;
- United States Fish and Wildlife Service Critical Habitat Portal;
- United States Fish and Wildlife Service Environmental Conservation Online Service;
- Terraserver USA;
- Calflora;
- National Agricultural Imagery Program; and
- Landsat 7 Color Imagery.

4.2 FIELD SURVEY

A field survey of the subject site and adjacent habitat was conducted on April 11-13, 2012 by Lilburn Corporation for the purpose of assessing habitat that is present within the subject property and to establish the presence or probability of presence of Threatened or Endangered species or their habitat as listed in Section 2.1 and 2.2 above. The survey area encompassed approximately 1,527 acres based on the perimeter transect belts conducted for the desert tortoise. All species with the potential to occur, including sensitive species, are listed in Appendix A. Species observed during the course of the field survey are listed in Appendix B. Representative photographs of the habitat were taken and are included in Appendix C.

4.3 RARE PLANT STUDY

Focused botanical surveys of the haul road right-of-way, mill site, and tailings area were conducted on April 7-8, and May 27-28, 2012. The rare plant survey was conducted to satisfy Federal and State regulatory requirements to mitigate any potential impacts to sensitive species protected under the California Public Resources Code Section 2100-21004, the California

Endangered Species Act, and Section 7 of the Federal Endangered Species Act. No records of Rare, Threatened, or Endangered plant species are reported at the Iron Age Mine or its vicinity in the California Natural Diversity Database. The field survey focused on plant species reported in the CNPS list and listed on Appendix A of this report. No sensitive plant species were observed within the survey area. The plant and animal species observed during the surveys are listed in Appendix B.

5.0 RESULTS

5.1 VEGETATION HABITAT TYPES

Six vegetation habitat types were observed to occur within the subject property survey area (Figure 3). Each habitat type is described below.

5.1.1 BRITTLEBUSH SERIES

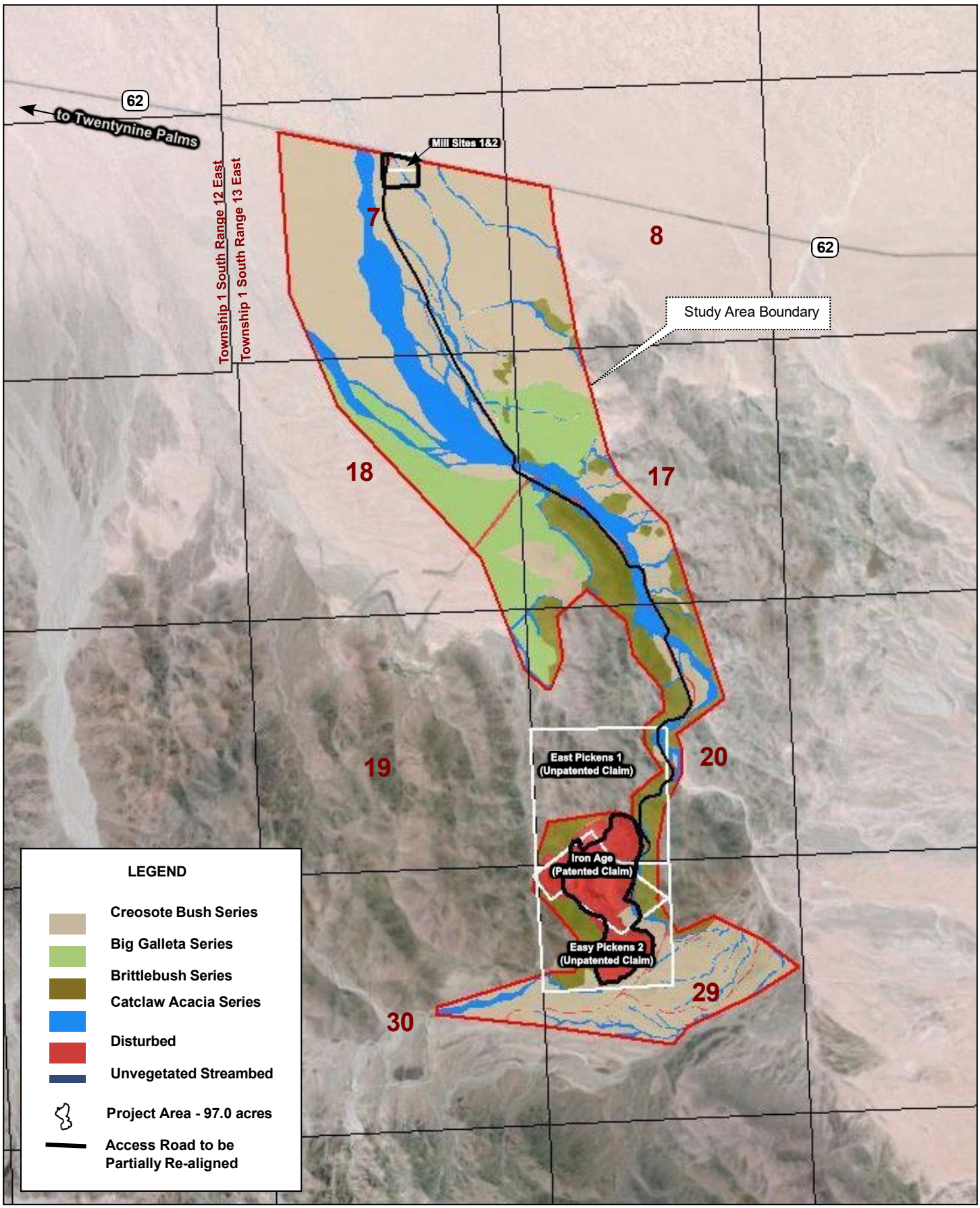
The survey area contains approximately 190 acres of brittlebush series dominated habitat. Brittlebush series habitat typically occurs in alluvial fans, bajadas, and upland slopes with well drained soils and occasionally desert pavement surfaces. The brittlebush series is often considered part of creosote bush scrub with brittlebush being dominant over any other shrubs that may be present. The amount of shrub canopy in the series varies among stands. Dense canopies are common on steep rocky slopes; areas of desert pavement have occasional shrub cover. Additional flora species observed within this community included: white bursage (*Ambrosia dumosa*), creosote bush *(larrea tridentata*), encelia *(Encelia farinosa)*, white rhatany *(Krameria bicolor)*, and pencil cholla *(Cylindropuntia ramosissima)*.

5.1.2 BIG GALLETA SERIES

The survey area contains approximately 222 acres of big galleta series habitat. Big galleta series typically occurs in uplands characterized by flat ridges, lower slopes, and on stabilized sand dunes. Stands of this series often form fine grain mosaics with stands of creosote bush or Joshua tree series where big galleta is the common ground layer species. Determination of the layer with the highest cover determines the proper assignment of the stand. Other flora species typically observed within the big galleta habitat include: desert sand verbena (*Abronia villosa*), white bursage (*Ambrosia dumosa*), needle grama (*Bouteloua aristidoides* var. *aristidoides*), sixweeks grama (*Bouteloua barbata*), bromus rubens (*Bromus madritensis* ssp. *rubens*), creosote bush (*Larrea tridentata*), and bush arrowleaf (*Pleurocoronis pluriseta*).

5.1.3 CREOSOTE BUSH SERIES

The survey area included approximately 764 acres of creosote bush series habitat. This series is typical of uplands characterized by alluvial fans, bajadas, upland slopes. Soils are typically well-drained and may include desert pavement surfaces. White bursage *(Ambrosia dumosa)* was observed to occur within the creosote bush dominated habitat. Species typically observed within creosote bush series habitat include: white bursage (*Ambrosia dumosa*), desert holly saltbush (*Atriplex hymenelytra*), California croton (*Croton californicus*), brittle bush (*Encelia farinosa*),



LILBURN CORPORATION

Study Area Vegetation Map

Iron Age Mine Biological Resources Assessment
San Bernardino County, California

Figure 3

rough jointfir (*Ephedra aspera*), Mormon tea (*Ephedra viridis*), hopsage (*Grayia spinosa*), creosote bush (*Larrea tridentata*), screwbean (*Prosopis pubescens*), and Indigo bush (*Psorothamnus schottii*).

5.1.4 CATCLAW ACACIA SERIES

The survey area included approximately 204 acres of catclaw acacia (*Acacia gregii*) series habitat. Catclaw acacia series occurs in uplands and rarely flooded margins of arroyos and washes. Flora species observed within this vegetation series habitat included: creosote bush (*Larrea tridentata*), smoke tree (*Psorothamnus spinosus*), sweetbush (*Bebbia juncea*), white bursage (*Ambrosia dumosa*), burrobush (*Ambrosia salsola*), white rhatany (*Krameria bicolor*), desert senna (*Senna armata*), goldenbush (*Ericameria* sp.), Ephedra (*Ephedra* sp.), pencil cholla (*Cylindropuntia ramosissima*).

5.1.5 STREAMBED

The survey area included approximately 26 acres of ephemeral streambed habitat. Identified ephemeral streambed habitat was unvegetated and characterized by sandy beds with no vegetation or the stream was dominated by upland species. No riparian vegetation was observed within this habitat type.

5.1.6 DISTURBED HABITAT

Approximately 120 acres of disturbed habitat were observed to occur within the survey area. Areas of disturbed habitat were observed at the tailings and overburden mound site locations, and in areas disturbed by old access roads. In general, disturbed habitat was observed to be void of vegetation and had signs of heavy off-road use.

5.2 RARE, ENDANGERED, OR SENSITIVE SPECIES AND HABITAT RESULTS

The subject site was evaluated for the potential presence of threatened, endangered, or rare plant and animal species. The evaluation was based on either direct observation of the species or the presence of suitable habitat for that species. If suitable habitat was present, the probability of the presence of the species was determined by other factors such as: human influences, records and proximity of similar observed species, and any other factors that would either benefit or detract from the species being present. Appendix B lists all the species observed at the site.

5.2.1 FEDERALLY AND STATE LISTED FLORA PRESENCE/ABSENCE

No federally or state listed plants were observed at the time of BRA field surveys. Furthermore, no federally or state listed plants were identified through the California Diversity Data Base to have the potential to occur within or in the vicinity of the project site.

All plant species observed on-site are listed in Appendix B. Sensitive plants, as identified in the CNDDB or that have the potential to occur at the site, but not listed in CDFG's "State and Federally Listed Endangered, Threatened, and Rare Plants of California" May 2012 were looked

for and potential habitat was evaluated during the field survey. Field results for these species are included in Appendix A.

Sensitive plant species observed during the field survey but not classified as Rare, Threatened or Endangered under the federal and state Endangered Species Act and listed in the CDFG's State and Federally Listed Endangered, Threatened, and Rare Plants of California List (May 2012) are listed in the Observed Species List included in this report as Appendix B. A probability of occurrence for each sensitive plant species reported to occur at the project site or its vicinity in the California Natural Diversity Data Base is included as Appendix A.

5.2.2 FEDERALLY AND STATE LISTED FAUNA PRESENCE/ABSENCE

Desert Tortoise (*Goherus agassizii*)

The desert tortoise is a federal and state listed threatened species. The desert tortoise is found in the Mojave Desert at elevations ranging from sea level to approximately 7,200 feet above mean sea level (amsl). It inhabits habitat with pliable soils where it can dig burrows for shelter. The desert tortoise eats a variety of desert annual and perennial herbaceous plants. The desert tortoise is commonly found in creosote bush series scrub, Joshua tree series scrub and in some cases in rocky environments on or near flat areas, bajadas, alluvial fans, and desert washes.

Conclusion: This species has a moderate potential to exist within the survey area. Even though protocol surveys did not see any desert tortoise, two burrows were found south of the tailings area that could have been used by desert tortoise at one time. Approximately 76 acres of the 97-acre project site are considered disturbed. The proposed project would impact a total of 21 acres of suitable desert tortoise habitat; 15.7 of those acres occur within the Pinto Mountains critical habitat unit and 5.3 acres occur outside of the critical habitat unit. The proposed project will be required to comply with FESA and CESA regulations and additional measures implemented at the discretion of the respective regulatory agencies upon notification for applicable permits.

5.2.3 OTHER SENSITIVE SPECIES

The following species have been designated by the California Department of Fish and Wildlife as "Special Animals." The CDFW defines "Special Animals" as a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. The CDFW considers the taxa in its latest list (January 2011) to be those of greatest conservation need. The following species from the Special Animal list either have a probability to occur at the subject site or were observed to be present in the course of biological surveys.

Pallid Bat (*Antrozous pallidus*)
The long-eared owl is found in riparian bottomlands with tall willows and cottonwoods. It also prefers areas with live oak paralleling streams. It needs grasslands adjacent to riparian habitat to find prey.
Conclusion: The species has a moderate probability of occurrence along the access road.

California Leaf-nosed Bat (*Macrotus californicus*)
California leaf-nosed bats are active year long and do not migrate or hibernate. They occur in caves and abandoned mines in the deserts of Southwest North America. The species may feed up to 1.3km from their roost and uses its unusual hovering ability to capture insects from the ground instead of from the air.
Conclusion: The species has a moderate probability of occurrence along the access road and at the mill sites.

Coast Horned Lizard (*Phrynosoma blainvilii*)
The horned lizard is found in a wide variety of habitat. It is most common in lowlands along sandy washes with scattered low vegetation. It prefers open areas for sunning, and low shrubs for shelter. It feeds on ants and other insects.
Conclusion: The species has a moderate probability of occurrence along the haul road and stockpile areas.

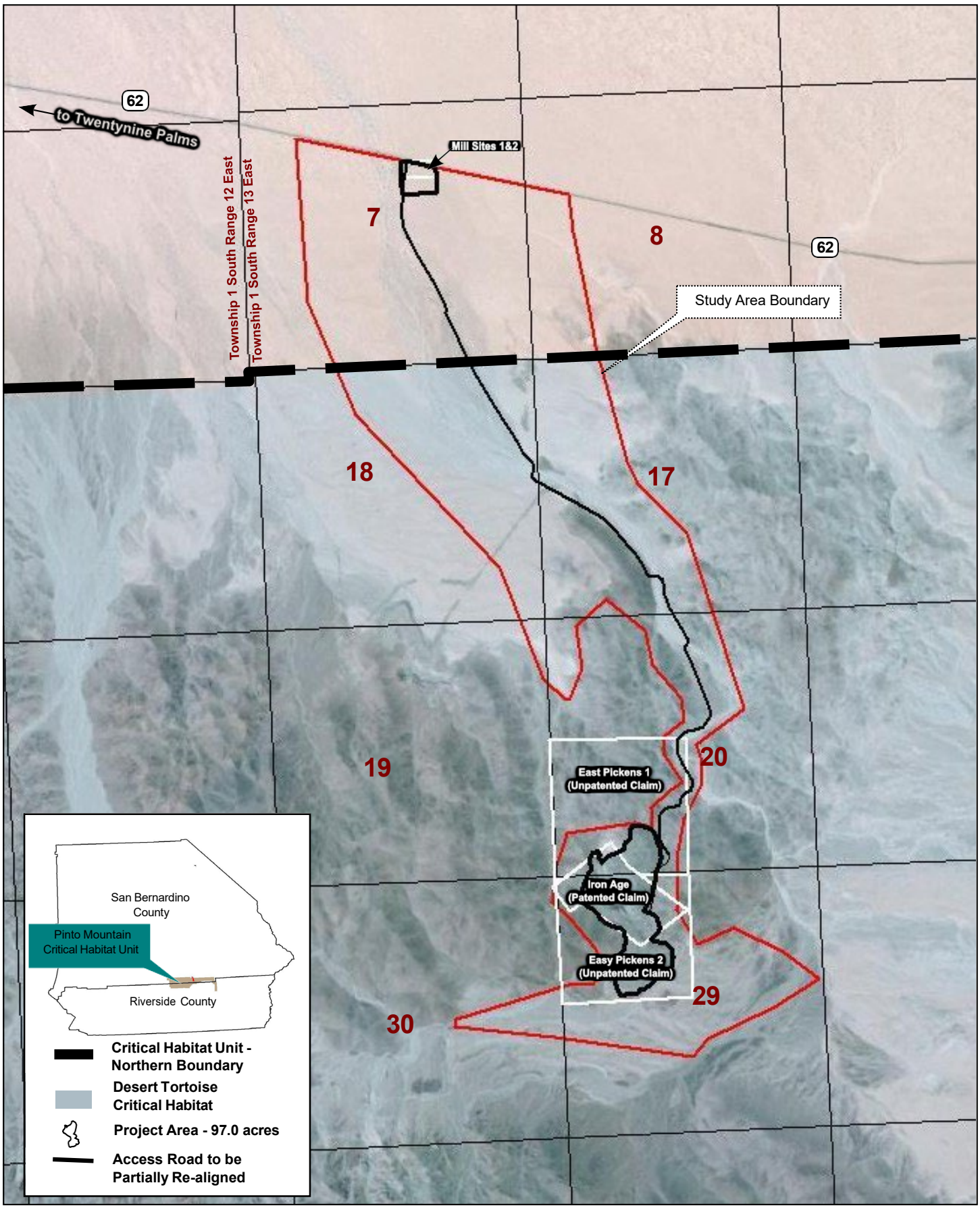
American Badger (*Taxidea taxus*)
Badgers occur in appropriate habitat throughout the western United States, and south throughout the mountainous areas of Mexico. They prefer to live in dry, open grasslands, fields, and pastures. The species is found from high alpine meadows to sea level.
Conclusion: The species has a moderate probability for occurrence along the haul road and at the mill sites.

Le Conte's Thrasher (*Toxostoma lecontei*)
Le Conte's thrasher is a desert resident, primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitat. The species commonly nest in dense, spiny shrubs or densely branched cactus in desert wash habitats.
Conclusion: The species has a moderate probability of occurrence along the access road and at the mill site.

Mojave Fringe-toed Lizard (*Uma scoparia*)
The Mojave fringe-toed lizard occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. It is a subterranean nester dependent upon burrowing mammals. The northern portion of the project area overlies a Mojave Fringe-toed Lizard Area of Critical Environmental Concern (ACEC) established by the BLM.
Conclusion: The species has a moderate probability of occurrence along the access road and at the mill site.

6.0 CRITICAL HABITAT

The tailings and portions of the proposed haul road alignment, amounting to 84.2 acres, occur within the Pinto Mountain critical habitat unit for the desert tortoise as designated by the USFWS (see Figure 4). If critical habitat will be impacted, and a federal agency would fund, carry out or authorize the activity associated with the proposed project, then a Section 7 Consultation of the Federal Endangered Species Act would need to be conducted.



0 0.5
Approximate Miles

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Critical Habitat Impacts

Iron Age Mine Biological Resources Assessment
San Bernardino County, California

Figure 4

Critical habitat as defined in section 3(5)(A) of the Federal Endangered Species Act (Act) is "(i) the specific areas within the geographic area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed…upon a determination…that such areas are essential for the conservation of the species." The physical and biological habitat features are referred to as primary constituent elements. Primary constituent elements of desert tortoise habitat include: sufficient space to support viable populations within each of the [five] recovery units and provide for movements, dispersal, and gene flow; sufficient quantity and quality of forage spaces and the proper soil conditions to provide for the growth of such species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality. The 2011 USFWS *Revised Recovery Plan for the Mojave Population of the Desert Tortoise* has designated five regional recovery units: Western Mojave, Eastern Mojave, Northeastern Mojave, Colorado Desert and Upper Virgin River. Critical habitat units, are identified within the larger recovery units. Critical habitat units are specific areas identified to support the physical and biological features that are essential for the conservation of the species and that may require special management considerations or protection. The Iron Age Mine site occurs in the Pinto Mountains critical habitat unit of the Western Mojave recovery unit.

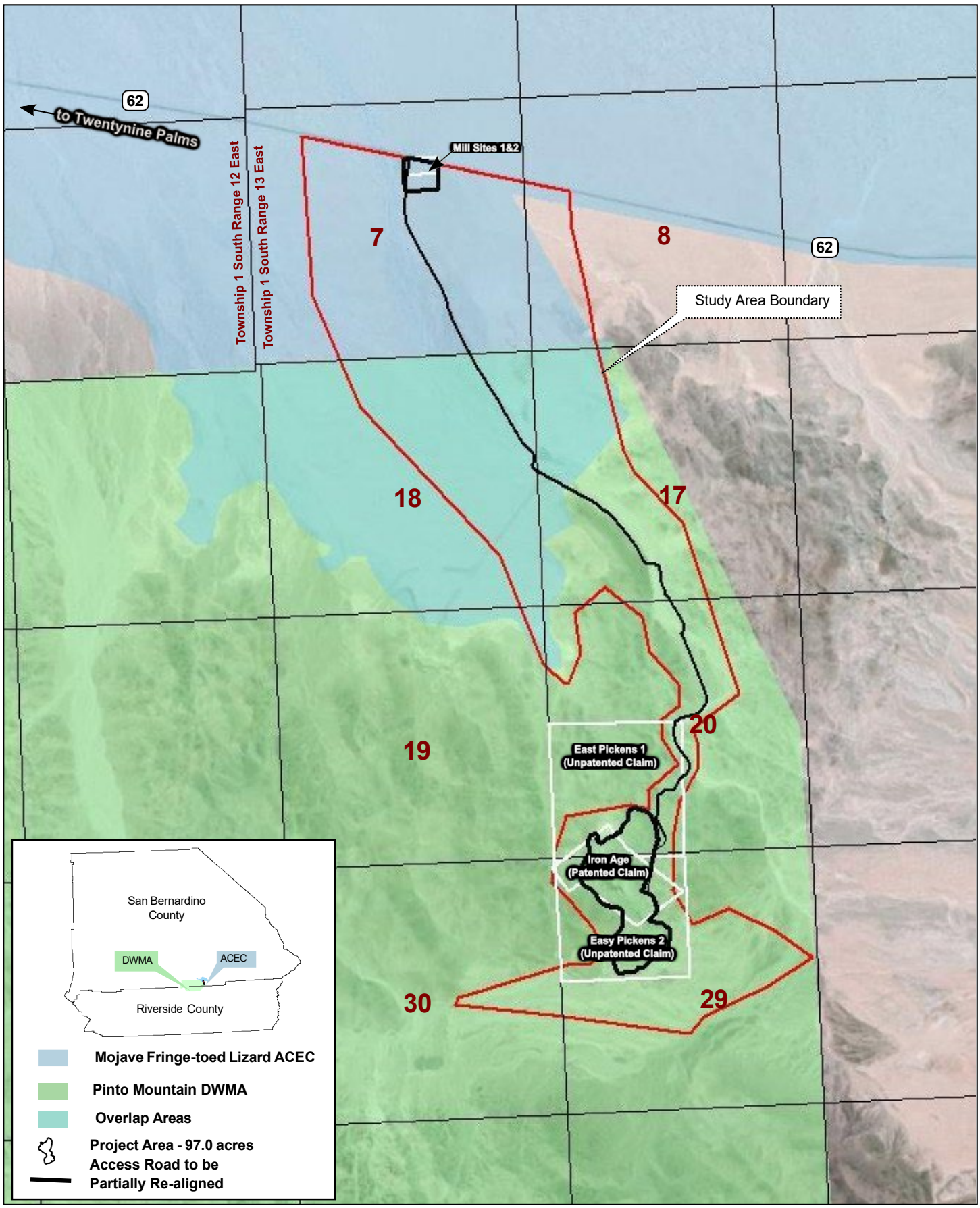
The tailings and portions of the proposed haul road alignment, amounting to 84.2 acres, occur within the Pinto Mountain critical habitat unit for the desert tortoise. Of the 84.2 acres, 68.5 acres, comprising the iron ore tailings, quarry, and the existing haul road do not exhibit the constituent elements of critical habitat for the desert tortoise. The tailings mounds are characterized by hard compacted soils rich in iron ore and are bare of vegetation. The tailings do not support vegetation, or support the proper soil conditions including substrates for burrowing, nesting, or other shelter required by the desert tortoise. The quarry is characterized by steep rock slopes devoid of vegetation. Because 68.5 acres of the habitat have been severely disturbed by the stockpiling of iron ore tailings and is not suitable for desert tortoise, the proposed project would only result in impacts to 15.7 acres of critical habitat suitable for desert tortoise.

6.1 BLM DESIGNATED HABITAT MANAGEMENT AREAS

The Project Area overlies two BLM designated habitat management areas; these include the Mojave fringe-toed lizard ACEC and Pinto Mountain Desert Wildlife Management Area (DWMA) (see Figure 5).

<u>Mojave Fringe-Toed Lizard ACEC</u>

The Mojave fringe-toed lizard ACEC is bounded by the Sheephole Mountains in the northeast and east, SH 62 on the south, the Pinto Mountains on the southwest, and Dale Dry Lake on the northwest. The Mojave fringe-toed lizard is and aeolian sand specialist that occurs in a limited habitat type. The BLM has established ACECs that protect habitat for this species. Protected land includes areas for source sand, wind and sand corridors, as well as the sand dune habitat and its associated shade plants. Conservation of the Mojave fringe-toed lizard requires protection of the dune, hummock, and sand sheet habitat occupied by the species as well as the sand sources and sand transport.



0 0.5
Approximate Miles

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BLM Habitat Management Areas

Iron Age Mine Biological Resources Assessment
San Bernardino County, California

Figure 5

Pinto Mountain DWMA

The Pinto Mountain DWMA consist of 183 square miles surrounded on the west, south, and east by Joshua Tree National Park and bounded on the north by SR 62. The DWMA directly overlies the Pinto Mountain critical habitat unit identified by the FWS. The area is identified to contain Category I desert tortoise habitat. Category I habitat is defined as habitat capable of sustaining viable tortoise populations. The DWMA is managed for desert tortoise conservation and recovery.

7.0 WILDLIFE CORRIDORS

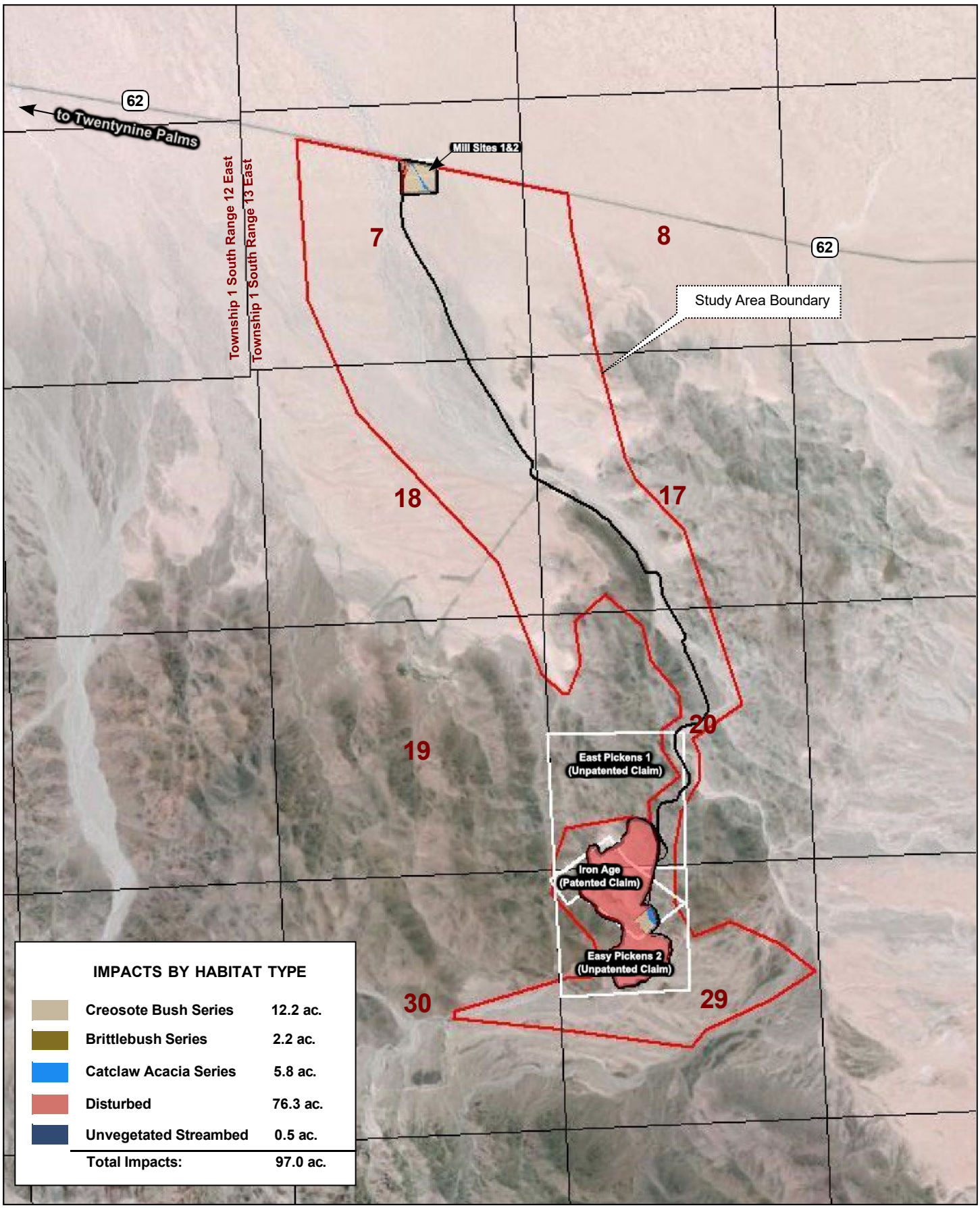
The Project Area is located adjacent to the Joshua Tree National Park to the east and south, to the Humbug Mountains to the west, and to the Pinto Mountains to the southwest. The general location of the mine site has a wildlife corridor function for species moving to and from the above mentioned locations. The large wash adjacent to the proposed haul road also serves as a wildlife corridor for species moving from the rocky areas of brittlebush series habitat, to the big galleta grass habitat and creosote bush habitat found to the north of the biological study area. The washes themselves are used by various mammals, reptiles, and bird species to forage, seek shelter, and migrate; the washes contain a wide variety of plant species. Special mitigation shall be implemented to assure continued use of the project area and its washes as wildlife corridors.

8.0 POTENTIAL IMPACTS TO SENSITIVE AND JURISDICTIONAL AREAS

The proposed project will impact a total of approximately 97.0 acres of four habitats and areas already disturbed. Impacts to the habitats area as follows (see Figure 6):

- 12.2 acres of habitat with vegetation described by the creosote bush series;
- 2.2 acres of habitat with vegetation described by the brittlebush series;
- 5.8 acres of habitat with vegetation described by the catclaw acacia series;
- 0.5 acres of habitat described as unvegetated stream or stream dominated by upland species; and,
- 76.3 acres of areas which have been previously disturbed by past mining operations or off-road vehicle use.

A Jurisdictional Delineation prepared by Lilburn Corporation identified a total of 6.3 acres of impacts to jurisdictional ephemeral drainages within the project area; these impacts are included in the total 97 acres of impacts. The drainages were identified as waters under the jurisdiction of the state and characterized as either streambed with catclaw acacia vegetation or streambed with no vegetation. Impacts to jurisdictional drainages must be reported to the CDFW and Regional Water Quality Control Board via their respective notification processes.



N

0 0.5

Approximate Miles

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Project Area - 97.0 acres

Access Road to be Partially Re-aligned

Project Impacts

Iron Age Mine Biological Resources Assessment
San Bernardino County, California

Figure 6

9.0 HABITAT CONSERVATION PLANS OR NATURAL COMMUNITY CONSERVATION PLANS

The Project Area falls within the planning area for the West Mojave Plan (WMP). The WMP consists of two components: a Federal component that will amend the existing 1980 California Desert Conservation Area Plan, and a Habitat Conservation Plan that will cover development on private lands. A Biological Opinion was finalized for the federal portion of the WMP; however, the plan is currently in litigation after a suit was filed by conservation groups.

The HCP component of the Plan is still in the development phase and the expected completion date is unknown at this time. The CDFW in collaboration with local and County jurisdictions are working to develop conservation measures that will be sufficient for the HCP to fulfill the requirements of the California and Federal Endangered Species Act.

10.0 PROPOSED RECOMMENDATIONS AND MITIGATION MEASURES

In order to mitigate potential impacts to sensitive habitat and species that may occur within the project impact area, the following recommendations for each potentially impacted species are made:

10.1 DESERT TORTOISE

The following are typical measures to minimize and avoid impacts to the desert tortoise; final measures will be within the conditions of approval from the BLM and County:

- An authorized biologist shall conduct a tortoise educational program for personnel who will work at the project site; the program shall discuss conservation measures, life history, legal status, and fines.
- An authorized biologist shall survey the project area for the presence of desert tortoise no more than 72 hours prior to the commencement of project activities within desert tortoise habitat. If necessary, the biologist should relocate tortoise a minimum distance necessary to ensure their safety. In general, desert tortoise should be moved no more than 1,000 feet for juveniles and adults, and 300 feet for hatchlings.
- Procedures for handling tortoises would follow those described in the Desert Tortoise Field Manual (USFWS 2009). All tortoises shall be handled using disposable surgical gloves. The gloves must be disposed of after handling each tortoise. Equipment or materials that contact desert tortoise must be sterilized, disposed of, or changed before contacting another tortoise. Desert tortoises must only be moved for the purpose of removing the tortoises out of harm's way. The authorized biologist shall document each tortoise encounter/handling with the following information, at a minimum: A narrative describing circumstances; vegetation type; dates of observations; conditions and health; any apparent injuries and state of healing; if moved, the location from which it was captured and the location in which it was released; maps; whether animals voided their bladders; and diagnostic markings (that is, identification numbers marked on lateral scutes).

- The mill site shall be enclosed within a desert tortoise proof fence. Tortoise fencing shall be no greater than a ½ inch mesh and shall extend 16 inches below ground. Upon completion of the fencing, the authorized biologist shall survey the enclosure and remove any tortoises encountered prior to commencing ground disturbing activities.
- Should it prove necessary to excavate a desert tortoise from its burrow to move it from harm's way, excavation should be performed using hand tools either by, or under the direct supervision of an authorized biologist.
- To insure their safety, all desert tortoise moved shall be monitored for at least two days or until the end of the project activities for that area, whichever period is longer.
- Disturbance shall be confined to the smallest practical area, considering topography, placement of pipelines, location of burrows, public health and safety, and other limiting factors. To the extent possible, project activities should be limited to previously disturbed areas.
- Vehicle speeds shall not exceed 15 miles per hour through desert tortoise habitat.
- Cross-country travel with motorized vehicles outside of the project area by project personnel is prohibited. When vehicles are parked in tortoise habitat, workers shall inspect for desert tortoise under vehicles prior to moving them.
- Vehicles and equipment parked in desert tortoise habitat shall be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the authorized biologist shall be contacted to move the animal from harm's way, or the vehicle shall not be moved until the desert tortoise leaves of its own accord. The authorized biologist shall be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes which could be harmful to the animal.
- To the extent possible, new disturbances on undisturbed areas shall be scheduled when tortoises are inactive (November 1 - March 15).
- All trash and food items shall be promptly contained within closed, common raven-proofed containers and will be removed daily from the project site to reduce the attractiveness of the area to common ravens (*Corvus corax*).
- Firearms, dogs, or other pets are prohibited at the work site.
- The proponent shall offset the loss of tortoise habitat by either paying compensation at a rate of 5:1 (five acres for every one acre disturbed) for impacts on undisturbed areas within the DWMA (15.7 acres times 5 or 78.5 acres) and 1:1 for impacts on undisturbed areas outside the DWMA (5.3 acres) or the proponent may transfer the land equivalent to the BLM for a total of 83.8 acres.

Monitoring and Reporting

- No more than 90 days upon completion of construction of the mill site and access route repairs, the authorized biologist and Field Contact Representative (FCR) shall submit a post construction report to the Barstow Field Office of BLM and Ventura Field Office of Fish and Wildlife Service. The report shall include: the number of tortoises encountered, the number of tortoises moved, and the number of tortoises injured or killed. The report shall also include the actual acreage disturbed by the project. An authorized biologist shall inspect potential desert tortoise burrows including collapsed burrows for occupancy.

- The authorized biologist and FCR shall submit an annual written report to the Barstow Field Office of BLM and Ventura Field Office of Fish and Wildlife Service. The report shall include: the number of tortoises encountered, the number of tortoises moved, and the number of tortoises injured or killed. The report shall also include the actual cumulative acreage disturbed by the project. An authorized biologist shall inspect potential desert tortoise burrows including collapsed burrows for occupancy.

Reclamation and Revegetation:

- The operator shall comply with reclamation requirements, phasing, clean-up, and the success of the revegetation effort. Annual assessments of the reclamation area will be conducted by a qualified botanist to determine species diversity, density and compliance with stipulated success ratios and goals. Remedial actions may include removing invasive non-native noxious weed species and reseeding with different species based on annual assessment results. An evaluation of the surviving species will be repeated annually following initial seeding for five years or until the success criteria are achieved.
- Reclamation and the on-site conditions will be inspected annually for compliance. Reclamation bonds are released upon restoration and reclamation compliance by the BLM and the County, the SMARA lead agency.

10.2 PALLID BAT AND CALIFORNIA LEAF-NOSED BAT

The pallid bat and California leaf-nosed bat have a moderate probability to occur along the haul road areas. Direct impacts may include loss of potential roosting habitat such as rock outcrops, and loss of foraging habitat. Bats that forage near the ground, such as the pallid bat, would also be subject to crushing or disturbance by vehicles driving at dusk, dawn, or during the night. The construction and use of access roads may also disturb bats. Mitigation measures that would reduce potential impacts to the species include:

- Implementation of a revegetation plan to reduce impacts associated with loss of foraging habitat; and
- Maintaining a speed limit of 20 mph on all access roads.

10.3 AMERICAN BADGER

The American badger has a moderate possibility to occur in areas along the haul road and mill site. Mitigation measures that would reduce potential impacts to the species include:

- 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 which have been flagged to avoid adverse impacts to the badger. All workers shall be instructed that their activities are restricted to flagged and cleared areas; and
- Iron Age Mine will engage an on-call biological monitor to help identify any potential impacts to the badger.

10.4 LE CONTE'S THRASHER

Le Conte's thrasher has a moderate probability to occur in areas along the haul road and mill site. Mitigation measures that would reduce the potential impacts to the species include:

- If construction activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the Migratory Bird Treaty Act, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed;
- All project activities will remain within the established project area and unnecessary vehicle or personnel activity will be avoided outside the project area. Potential direct impacts to the species include being hit by vehicles on access roads, grading of new access roads, preparation of staging locations, and general disturbance due to increased human activity.

10.5 PRAIRIE FALCON

This raptor species has a moderate possibility to occur in areas along the haul road and mill site. Direct impacts may include disruption of breeding activities due to increased dust, noise, and human presence. Potential indirect impacts include the loss of habitat due to the establishment of noxious weeds. Mitigation measures that would reduce the potential for impacts to the species include:

- Revegetation of habitat to reduce impacts associated with loss of foraging habitat for the species.

10.6 NELSON'S BIG HORN SHEEP

Nelson's big horn sheep has a moderate possibility to occur in rocky areas and washes along the haul road and tailings stockpiles. Direct impacts may include, loss of habitat, dust generated by the mining operation, and loss of individuals to accidents. Mitigation measures that would reduce the potential for impacts to the species include:

- Implementation of a revegetation plan at the stockpile removal site to reduce impacts associated with loss of foraging habitat;
- Maintaining a speed limit of 20 mph on all access roads;

10.7 COAST HORNED LIZARD, MOJAVE FRINGE-TOED LIZARD

Coast horned lizard and Mojave fringe-toed lizard have a moderate probability of occurring within the project impact area. Potential impacts include compaction of soils and the introduction

of exotic plant and animal species. Mitigation measures that would reduce the potential for impacts to the species include:

- Conducting clearance surveys prior to the commencement of any ground disturbing activities;
- Worker environmental training; and,
- Maintaining a speed limit of 20 mph on all access roads.

10.8 BURROWING OWL

Burrowing owl has a moderate probability to occur in areas along the haul road and mill site. Mitigation measures that would reduce the potential for impacts to the species include:

- The project impact area should be surveyed for the presence of burrowing owl no more than thirty days prior to ground disturbing activities;
- If the burrowing owl is found or the presence or burrowing owl is confirmed, and the project construction will occur during the breeding season (February 15 to August 15), then the active owl burrows on-site and within 500 feet of the project area shall be identified, and physically marked before the start of any construction activities. A survey to mark the burrows shall be undertaken no earlier than February 15. During the construction period, active burrows that are not going to be removed by construction activities will be afforded a minimum 250-foot buffer to protect foraging habitat and owls. A biological monitor will be present to ensure that adequate avoidance of impacts to owls and their burrows is maintained. The monitor will have the authority to modify the buffer zone in order to protect the owls from harm;
- If necessary, passive relocation techniques should adhere to those described in the *Burrowing Owl Consortium Survey Protocol & Mitigation Guidelines*.

11.0 REFERENCES

CDFG (California Department of Fish and Game). 2011 (May). *Natural Communities List.* The Resources Agency of California, Department of Fish and Game, Natural Diversity Data Base. Sacramento, California.

CDFG (California Department of Fish and Game). 2011 (May*). Endangered and Threatened Animals List.* The Resources Agency of California, Department of Fish and Game, Natural Diversity Data Base. Sacramento, California.

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12.0 CERTIFICATION

The repo11 must include the ce11ification statement within the body of the report as shown below:

CERTIFICATION: *"I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and iriformation presented are true and correct to the best of my knowledge and belief Field work conducted for this assessment was pe,formed by me or under my direct supervision. I certify that I have not signed a nondisclosure or consultant confidential,i. agreement with the project applicant or applicant's representative a, that I c,. 11 financial interest in the project."*

DATE: April 11, 2014

SIGNED: _____
Report Author

Include names and signatures for those performing fieldwork.

1) Fieldwork Performed By:

_____
Name

2) Fieldwork Performed By:

_____
Name

3) Fieldwork Performed By:

_____
Name

4) Fieldwork Performed By:

_____
Name

Check here ___ if adding any additional names/signatures, below or on other side of page.

APPENDIX A
SPECIES PROBABILITY LIST

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	CDFG	CNPS	GENERAL HABITAT	MICRO HABITAT	ECOLOGICAL COMMUNITY	PROBABILITY OF OCCURRENCE
Antrozous pallidus	pallid bat	7	5	SC		DESERTS, GRASSLANDS, SHRUBLANDS, WOODLANDS & FORESTS. MOST COMMON IN OPEN, DRY HABITATS WITH ROCKY AREAS FOR ROOSTING.	ROOSTS MUST PROTECT BATS FROM HIGH TEMPERATURES. VERY SENSITIVE TO DISTURBANCE OF ROOSTING SITES.		Moderate-Areas along the haul road may have roosting and foraging habitat.
Astragalus insularis var. harwoodii	Harwood's milk-vetch	7	5		2.2	DESERT DUNES.	OPEN SANDY FLATS AND SANDY OR STONY DESERT WASHES; MOSTLY IN CREOSOTE BUSH SCRUB. -50-500M.	SANDY WASH.	Moderate-Areas along the haul road may have suitable habitat..
Castela emoryi	Emory's crucifixion-thorn	7	5		2.3	MOJAVEAN DESERT SCRUB, SONORAN DESERT SCRUB, PLAYAS.	GRAVELLY SOILS, SOMETIMES IN ALKALI PLAYAS OR WASHES. 85-770M.	IN FINE SOIL OF MUD FLAT AT LOW POINT OF ALLUVIAL FAN.	Moderate-Areas along the haul road may have suitable habitat..
Chamaesyce abramsiana	Abrams' spurge	7	5		2.2	MOJAVEAN DESERT SCRUB, SONORAN DESERT SCRUB.	SANDY SITES. -5-915M.	CREOSOTE BUSH IN SOFT SAND.	Moderate-Areas along the haul road and mill site may have suitable habitat.
Eriastrum harwoodii	Harwood's eriastrum	7	5		1B.2	DESERT DUNES.	200-915M.	STABILIZED SAND DUNES.	Moderate-Areas along the haul road and mill site may have suitable habitat.
Falco mexicanus	prairie falcon	7	5			INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.	BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.		Moderate-Areas along the haul road and mill site may have suitable habitat.
Gopherus agassizii	desert tortoise	Threatened	Threatened			MOST COMMON IN DESERT SCRUB, DESERT WASH, AND JOSHUA TREE HABITATS; OCCURS IN ALMOST EVERY DESERT HABITAT.	REQUIRE FRIABLE SOIL FOR BURROW AND NEST CONSTRUCTION. CREOSOTE BUSH HABITAT WITH LG ANNUAL WILDFLOWER BLOOMS PREFERRED.		Moderate-Areas along the haul road and mill site may have suitable habitat.
Macrotus californicus	California leaf-nosed bat	7	5	SC		DESERT RIPARIAN, DESERT WASH, DESERT SCRUB, DESERT SUCCULENT SCRUB, ALKALI SCRUB AND PALM OASIS HABITATS.	NEEDS ROCKY, RUGGED TERRAIN WITH MINES OR CAVES FOR ROOSTING.	HABITAT SURROUNDING THIS ROOST SITE CONSISTS OF CREOSOTE BUSH SCRUB IN THE LOWER SONORAN LIFE ZONE.	Moderate-Areas along the haul road and mill site may have suitable habitat.
Matelea parvifolia	spear-leaf matelea	7	5		2.3	MOJAVEAN DESERT SCRUB, SONORAN DESERT SCRUB.	DRY ROCKY LEDGES AND SLOPES. 440-1095M.	GROWING IN WASH ON AMBROSIA DUMOSA AND ENCELIA FRUTESCENS.	Moderate-Areas along the haul road may have suitable habitat.
Menodora spinescens var. mohavensis	Mojave menodora	7	5		1B.2	MOJAVEAN DESERT SCRUB.	ROCKY HILLSIDES, CANYONS. ANDESITE GRAVEL. 690-2000 M.	OPEN SCRUB.	Moderate-Areas along the haul road and stockpile area may have suitable habitat.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	CDFG	CNPS	GENERAL HABITAT	MICRO HABITAT	ECOLOGICAL COMMUNITY	PROBABILITY OF OCCURRENCE
Mentzelia puberula	Darlington's blazing star	7	5		2.2	MOJAVE DESERT SCRUB.	SANDY CREVICES IN CLIFFS OR ON ROCKY SLOPES. 90-1280 M.	SANDY ALLUVIAL SLOPE, LARGE WASH, ROCKY SLOPES IN CANYON; DECOMPOSED GRANITE SOIL. CREOSOTE BUSH SCRUB. FOUND AMONG ROCKS ON SLOPE IN CANYON.	Moderate-Areas along the haul road and stockpile area may have suitable habitat.
Monardella robisonii	Robison's monardella	7	5		1B.3	PINYON-JUNIPER WOODLAND, JOSHUA TREE WOODLAND.	ROCKY DESERT SLOPES, OFTEN AMONG GRANITIC BOULDERS. 1000-1500M.	SCATTERED ALONG UPPER CANYONS, EAST FACING ROCK LEDGE. SUBSTRATE IS WHITE QUARTZ, GRANITIC DERIVATIVE. ASSOCIATES INCLUDE PRUNUS FASCICULATA, GUTIERREZIA SAROTHRAE, ACHNATHERUM SPECIOSUM, PLEUROCORONIS PLURISETA, LARREA TRIDENTATA, ETC.	Low-The project location does not contain pinyon juniper or joshoua tree woodland.
Ovis canadensis nelsoni	Nelson's bighorn sheep	7	5			WIDELY DISTRIBUTED FROM THE WHITE MTNS IN MONO CO. TO THE CHOCOLATE MTS IN IMPERIAL CO.	OPEN, ROCKY, STEEP AREAS WITH AVAILABLE WATER AND HERBACEOUS FORAGE.		Moderate-Areas along the haul road and stockpile area may have suitable habitat.
Phrynosoma blainvillii	coast horned lizard	7	5	SC		FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.	OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.		Moderate-Areas along the haul road and stockpile area may have suitable habitat.
Physalis lobata	lobed ground-cherry	7	5		2.3	MOJAVEAN DESERT SCRUB, PLAYAS.	DECOMPOSED GRANITE SOIL, ALKALINE DRY LAKES. 500-800M.	COMMON IN SINK AREA JUST EAST OF PASS. SOIL PRIMARILY DECOMPOSED GRANITE.	Low-The project location does not contain alkaline dry lakes.
Taxidea taxus	American badger	7	5	SC		MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.	NEEDS SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREYS ON BURROWING RODENTS. DIGS BURROWS.		Moderate-Areas along the haul road and mill site may have suitable habitat.
Toxostoma lecontei	Le Conte's thrasher	7	5	SC		DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.	COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.	VEGETATION WITHIN A 50 M RADIUS INCLUDES LARREA TRIDENTATA, AMBROSIA DUMOSA, HYMENOCLEA SALSOLA, OPUNTIA ECHINOCARPA AND O. RAMOSISSIMA. PAVED ROAD OCCURS WITHIN HABITAT.	Moderate-Areas along the haul road and mill site may have suitable habitat.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	CDFG	CNPS	GENERAL HABITAT	MICRO HABITAT	ECOLOGICAL COMMUNITY	PROBABILITY OF OCCURRENCE
Uma scoparia	Mojave fringe-toed lizard	7	5	SC		FINE, LOOSE, WIND-BLOWN SAND IN SAND DUNES, DRY LAKEBEDS, RIVERBANKS, DESERT WASHES, SPARSE ALKALI SCRUB & DESERT SCRUB.	SHRUBS OR ANNUAL PLANTS MAY BE NECESSARY FOR ARTHROPODS FOUND IN THE DIET.		Moderate-Areas along the haul road and mill site may have suitable habitat.
Athene cunicularia	burrowing owl					OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.	SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.	BURROW IS LOCATED ALONG A CANAL, ON THE PERIMETER OF A SUGAR BEET FIELD TO THE SOUTH AND A WHEAT FIELD TO THE NORTH.	Moderate Probability

APPENDIX B
OBSERVED SPECIES LIST

List of Plants Observed at Iron Age Mine Haul Road, Mill Site, and Quarry Study Area			
EPHEDRACEAE		**JOINT-FIR FAMILY**	
	Ephedra californica		California joint-fir
AMARANTHACEAE		**AMARANTH FAMILY**	
	Tidestromia suffruticosa var. *oblongifolia*		Arizona honeysweet
APOCYNACEAE		**DOGBANE FAMILY**	
	Asclepias subulata		Milkweed
	Funastrum hirtellum		Hairy milkweed
ASTERACEAE		**COMPOSITE FAMILY**	
	Adenophyllum porophylloides		San Felipe dyssodia
	Ambrosia acanthicarpa		Annual bur-sage
	Ambrosia dumosa		White bursage, Burrobush
	Ambrosia salsola v. *salsola*		Cheeseweed
	Baileya pauciradiata		Colorado desert marigold
	Baileya multiradiata		Desert marigold
	Bebbia juncea var. *aspera*		Sweetbush
	Chaenactis carphoclinia var. *carphoclinia*		Pebble pincushion
	Encelia farinosa		Brittlebush
	Encelia frutescens		Rayless encelia
	Ericameria paniculata		Black-banded rabbitbrush
	Geraea canescens		Desert Sunflower
	Malacothrix glabrata		Desert dandelion
	Monoptilon bellioides		Mojave desert star
	Palafoxia arida var. *arida*		Spanish needles
	Perityle emoryi		Rock-daisy
	Peucephyllum schottii		Pygmy-cedar
	Pleurocoronis pleuriseta		Arrow-leaf
	Rafinesquia neomexicana		Desert chicory
	Stephanomeria pauciflora		Wire lettuce
	Trichoptilium incisum		Yellow dome
BIGNONIACEAE		**BIGNONIA FAMILY**	
	Chilopsis linearis ssp. *arcuata*		Desert willow
BORAGINACEAE		**BORAGE FAMILY**	
	Amsinckia tessellata var. *tessellata*		Devil's lettuce
	Cryptantha angustifolia		Narrow-leaved cryptantha
	Cryptantha barbigera		Bearded cryptantha

	Cryptantha circumcissa		Cushion cryptantha
	Cryptantha decipiens		Gravel cryptantha
	Cryptantha maritima		Guadalupe cryptantha
	Cryptantha pterocarya		Winged cryptantha
	Cryptantha racemosa		Shrubby cryptantha
	Pectocarya platycarpa		Broadfruit combseed
	Phacelia crenulata var. *ambigua*		Notch-leaved phacelia
	Phacelia pedicellata		Specter phacelia
	Tiquilia plicata		Fanleaf crinklemat
BRASSICACEAE		**MUSTARD FAMILY**	
	*Brassica tournefortii**		African mustard*
	Lepidium lasiocarpum ssp. *lasiocarpum*		Pepperweed
	Streptanthella longirostris		Longbeak fiddle mustard
CACTACEAE		**CACTUS FAMILY**	
	Cylindropuntia echinocarpa		Silver cholla
	Cylindropuntia ramosissima		Diamond cholla
	Opuntia basilaris var. *basilaris*		Beavertail cactus
CARYOPHYLLACEAE		**PINK FAMILY**	
	Achyronychia cooperi		Onyx flower, Frost-mat
EUPHORBIACEAE		**SPURGE FAMILY**	
	Chamaesyce micromeria		Sonoran sand mat
	Ditaxis neomexicana		Common ditaxis
FABACEAE		**LEGUME FAMILY**	
	Dalea mollis		Hairy prairie clover
	Lotus strigosus		Strigose lotus
	Lupinus arizonicus		Arizona lupine
	Marina parryi		Parry dalea
	Psorothamnus emoryi		Emory indigobush
	Psorothamnus spinosus		Smoke tree
	Senegalia greggii		Catclaw acacia
	Senna armata		Desert senna
GERANIACEAE		**GERANIUM FAMILY**	
	*Erodium cicutarium**		Red-stem filaree*
KRAMERIACEAE		**RHATANY FAMILY**	
	Krameria grayi		White rhatany

LAMIACEAE		**MINT FAMILY**	
	Hyptis emoryi		Desert lavender
	Salvia columbariae		Chia
LOASACEAE		**LOASA FAMILY**	
	Mentzelia involucrata		White bract stickleaf
MALVACEAE		**MALLOW FAMILY**	
	Eremalche rotundifolia		Desert five-spot
	Sphaeralcea ambigua var. *ambigua*		Globe mallow
NYCTAGINACEAE		**FOUR-O'CLOCK FAMILY**	
	Allionia incarnata		Windmills
	Mirabilis laevis var. *retrorsa*		Desert wishbone bush
ONAGRACEAE		**EVENING-PRIMROSE FAMILY**	
	Chylismia brevipes ssp. *brevipes*		Yellow cups
	Chylismia cardiophylla ssp. *cardiophylla*		Heart-leaved suncup
	Chylismia claviformis ssp. *aurantiaca*		Brown-eyed evening-primrose
	Oenothera deltoides ssp. *deltoides*		Bird-cage evening-primrose
PAPAVERACEAE		**POPPY FAMILY**	
	Eschscholzia minutiflora		Pygmy goldenpoppy
PLANTAGINACEAE		**PLANTAIN FAMILY**	
	Mohavea confertiflora		Ghost flower
	Plantago ovata		Woolly plantain
POLEMONIACEAE		**PHLOX FAMILY**	
	*Alciella latifolia s*sp. *latifolia*		Broadleaf gilia
	Langloisia setosissima ssp. *punctata*		Lilac sunbonnet
POLYGONACEAE		**BUCKWHEAT FAMILY**	
	Chorizanthe brevicornu var. brevicornu		Brittle spineflower
	Chorizanthe rigida		Rigid spineflower
	Eriogonum deflexum ssp. *deflexum*		Flat-topped skeleton weed
	Eriogonum inflatum		Desert trumpet
	Eriogonum thomasii		Thomas buckwheat
	Eriogonum trichopes		Little trumpet
RESEDACEAE		**MIGNONETTE FAMILY**	

	Oligomeris linifolia		Lineleaf whitepuff
SOLANACEAE		**NIGHTSHADE FAMILY**	
	Lycium andersonii		Anderson wolfberry
	Nicotiana obtusifolia		Desert tobacco
	Physalis crassifolia		Thick-leaved ground cheery
VISCACEAE		**MISTLETOE FAMILY**	
	Phoradendron californicum		Desert mistletoe
ZYGOPHYLLACEAE		**CALTROP FAMILY**	
	Fagonia laevis		California fagonbush
	Larrea tridentata		Creosote bush
AGAVACEAE		**CENTURY PLANT FAMILY**	
	Yucca brevifolia		Joshua tree
	Yucca schidigera		Mojave cholla
POACEAE		**GRASS FAMILY**	
	Aristida adscensionis		Six weeks three awn
	Bouteloua barbata var. *barbata*		Six weeks grama
	Dasyochloa pulchella		Fluff grass
	Hilaria rigida		Big galleta
	Muhlenbergia microsperma		Little seed muhly
	*Schismus arabicus**		Mediterranean grass*
* denotes non-native species		** Taxonomy follows Baldwin 2012,	

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012.The Jepson manual: Vascular Plants of Southeastern California, second edition. University of California Press, Berkeley.

List of Wildlife Observed at Iron Age Mine Haul Road, Mill Site, and Quarry Study Area

LATIN NAME	COMMON NAME
BIRDS	
CATHARTIDAE	**NEW WORLD VULTURES**
Cathartes aura	Turkey Vulture
ACCIPITRIDAE	**HAWK FAMILY**
Buteo jamaicensis	Red-tailed Hawk
Buteo swainsoni	Swainson's Hawk
COLUMBIDAE	**PIGEON AND DOVE FAMILY**
Zenaida macroura	Mourning Dove
Columba livia	Rock Dove*
CAPRIMULGIDAE	**GOATSUCKER FAMILY**
Phalaenoptilus nuttallii	Common Poorwill
APODIDAE	**SWIFT FAMILY**
Aeronautes saxatalis	White-throated Swift
TROCHILIDAE	**HUMMINGBIRD FAMILY**
Calypte anna	Anna's Hummingbird
Calypte costae	Costa's Hummingbird
TYRANNIDAE	**TYRANT FLYCATCHER FAMILY**
Sayornis nigricans	Black Phoebe
Sayornis sayi	Say's Phoebe
Empidonax wrightii	Gray Flycatcher
Myiarchus cinerascens	Ash-throated flycatcher
Tyrannus verticalis	Western kingbird
CORVIDAE	**JAY AND CROW FAMILY**
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
ALAUDIDAE	**LARK FAMILY**

Eremophila alpestris	Horned Lark**
Lanius ludovicianus	Loggerhead Shrike**
REMIZIDAE	**VERDIN FAMILY**
Auriparus falviceps	Verdin
VIREONIDAE	**VIREO FAMILY**
Vireo gilvus	Warbling Vireo
TROGLODYTIDAE	**WREN FAMILY**
Thryomanes bewickii	Bewick's Wren
Campylorhynchus brunneicapillus	Cactus Wren
Salpinctes obsoletus	Rock Wren
SYLVIIDAE	**GNATCATCHER FAMILY**
Polioptila melaneura	Black-tailed Gnatcatcher**
PTILOGONATIDAE	**SILKY-FLYCATCHER FAMILY**
Phainopepla nitens	Phainopepla
PARULIDAE	**WOOD-WARBLER FAMILY**
Dendroica coronata	Yellow-rummped Warbler
Oreothlypis celata	Orange-crowned Warbler
Wilsonia pusilla	Wilson's Warbler
EMBERIZIDAE	**SPARROW FAMILY**
Amphispiza bilineata	Black-throated Sparrow
Junco hyemalis	Dark-eyed Junco
Spizella breweri	Brewer's Sparrow
Zonotrichia leucophrys	White-crowned Sparrow
ODONTOPHORIDAE	
Callipepla gambelii	Gambel's Quail
PICIDAE	
Picoides scalaris	Ladder-backed Woodpecker
Colaptes auratus	Northern Flicker
HIRUNDINIDAE	
Petrochenlidon pyrrhonota	Cliff Swallow
Hirundo rustica	Barn Swallow

FRINGILLIDAE	
Carpodacus mexicanus	House Finch
MIMIDAE	**MOCKINGBIRDS AND THRASHERS**
Mimus polyglottis	Northern mockingbird
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European Starling
PARULIDAE	**WOOD WARBLERS**
Dendroica petechia	Yellow Warbler**
Dendroica coronate	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
THRAUPIDAE	**TANAGER FAMILY**
Piranga ludoviciana	Western Tanager
PASSERIDAE	**OLD WORLD SPARROWS**
Passer domesticus	House sparrow*
Spizella breweri	Brewer's sparrow
Amphispiza bilineata	Black-throated sparrow
Amphispiza belli	Sage sparrow
Zonotrichia leucophrys	White-crowned sparrow
OTHER BIRDS	
Sturnella neglecta	Western Meadowlark
MAMMALS	
LEPORIDAE	**HARE, RABBIT FAMILY**
Lepus californicus	Black-tailed Jackrabbit**
Sylvialagus audobonii	Desert cottontail
SCIURIDAE	**SQUIRREL FAMILY**
Ammospermophilus leucurus	White-tailed Antelope Squirrel
Spermophilus leucurus	California Ground Squirrel
MURIDAE	**MOUSE AND RAT FAMILY**
Neotoma sp.	Woodrat
HETEROMYIDAE	**KANGAROO RAT FAMILY**

Dipodomys sp.	Kangaroo Rat
Neotoma lepida	Desert Woodrat
CANIDAE	**DOGS/WOLVES/FOXES**
Canis familiarus	Domestic dog
Canis latrans	Coyote
BOVIDAE	**BOVIDS**
Ovis canadensis nelsoni	Nelson's bighorn sheep
OTHER MAMMALS	
Thomomys bottae	Botta pocket gopher
REPTILES AND AMPHIBIANS	
CROTAPHYTIDAE	**COLLARED, LEOPARD LIZARD FAMILY**
Gambelia wislizenii	Long-nosed Leopard Lizard
IGUANIDAE	**IGUANA AND CHUCKWALLA FAMILY**
Diposaurus dorsalis dorsalis	Northern Desert Iguana
Gambelia wislizenii wislizenii	Large-spotted Leopard Lizard
Urosaurus graciosus	Long-tailed Brush Lizard
Phrynosoma platyrhinos	Desert Horned Lizard
PHRYNOSOMATIDAE	**PHRYNOSOMATID LIZARD FAMILY**
Callisaurus draconoides rhodostictus	Western Zebra-tailed Lizard
Phrynosama platyrhinos calidiarum	Southern Desert Horned Lizard
Uta stansburiana	Common Side-blotched Lizard
TEIIDAE	**WHIPTAIL FAMILY**
Aspidoscelis tigris tigris	Great Basin Whiptail
Cnemidophorus tigris	Western whiptail Lizard
* denotes non-native species	
** denotes sensitive species	

APPENDIX C
SITE PHOTOS

Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Catclaw acacia series ephemeral drainage.

Creosote bush series vegetation.

LILBURN CORPORATION

Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

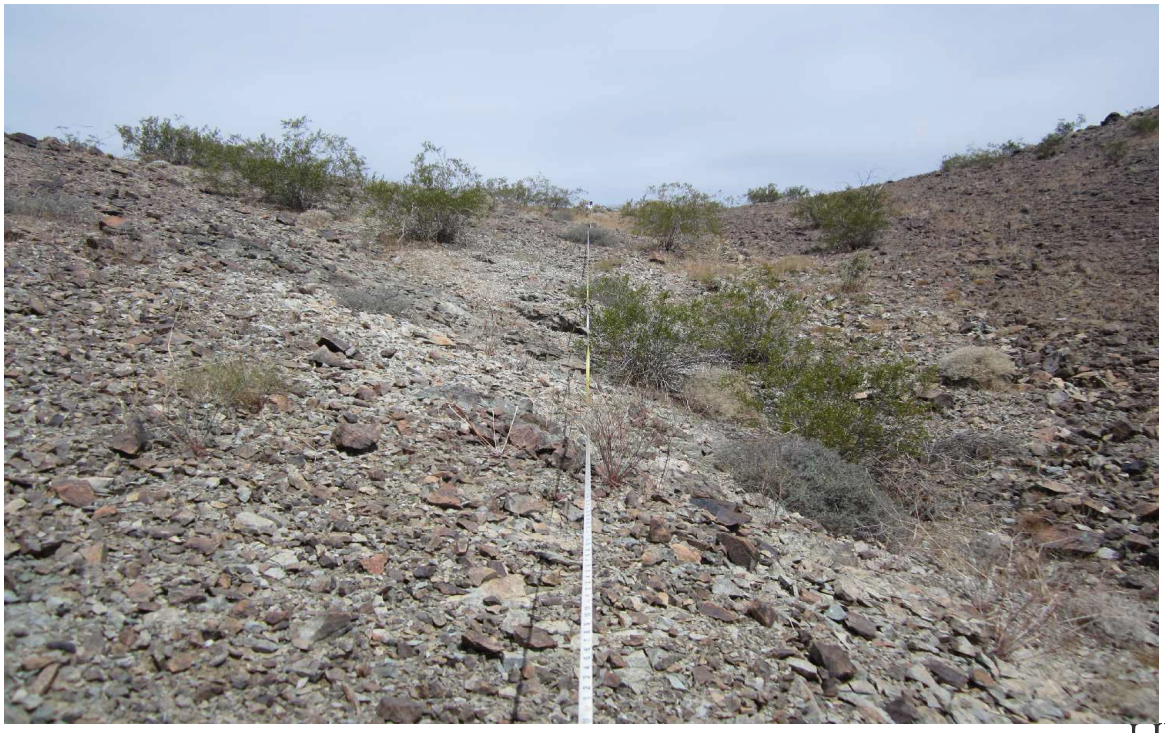
Disturbed existing haul road that will be used as part of the proposed haul road right-of-way.

Creosote bush series vegetation facing south east.

LILBURN CORPORATION

Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Class 5 Burrow. Class 5 burrows are deteriorated and include collapsed burrows. They are possible tortoise burrows.



Brittlebush series vegetation.

LILBURN CORPORATION

APPENDIX C
DESERT TORTOISE PRESENCE/ABSENCE PRE-PROJECT SURVEY

DESERT TORTOISE PRESENCE/ABSENCE PRE-PROJECT SURVEY FOR IRON AGE MINE SAN BERNARDINO COUNTY, CALIFORNIA

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February 2013

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EXECUTIVE SUMMARY

Iron Age Mine, LLC, a part of US Iron LLC, has submitted a Plan of Operations to the Bureau of Land Management (BLM) and a Mine Reclamation application to the County of San Bernardino proposing to remove iron ore tailings left at the Iron Age Mine site by a previous mining operation. The Iron Age Mine site is located in the Dale Mining District in the Pinto Mountain Range, San Bernardino County, California, and is approximately 18 miles east/southeast of the city of Twentynine Palms and occurs in desert tortoise habitat. Approximately 97 acres will be impacted by tailings removal, a plant site, and access roads, of which approximately 76 acres have been previously impacted by historic mining activities. The site consists of 34 acres of patented (private) land and 63 acres of unpatented claims under the jurisdiction of the BLM.

In order to identify the presence of the species and potential impacts, protocol presence/absence surveys for desert tortoise were conducted on April 11-13, 2012. The surveys implemented the United States Fish and Wildlife Service's *Pre-project Field Survey Protocol for Potential Desert Tortoise Habitats* (USFWS 2010). No live desert tortoise or desert tortoise sign were observed at the proposed mill site location, along the proposed haul road re-alignment, or at the tailings removal area. The surveys identified two potential desert tortoise burrows at the south end of the study area, outside of the project site. The proposed project would impact a total of 21 acres of suitable desert tortoise habitat; 15.7 of those acres occur within the Pinto Mountains critical habitat unit and 5.3 acres occur outside of the critical habitat unit.

Recommendations to minimize and avoid potential impacts to the desert tortoise are included in this report.

1.0 INTRODUCTION

1.1 PROJECT LOCATION

The Iron Age Mine site is located in the Pinto Mountain Range, San Bernardino County, California, and is approximately 18 miles east/southeast of the city of Twenty-Nine Palms (see Figure 1). The mine is located south of State Highway 62 (SH 62) and is accessible by an unnamed road approximately one and a half miles east of Iron Age Road (see Figure 2). The Iron Age Mine holdings relevant to the Plan of Operations consist of patented claims (private land) and unpatented claims owned by Iron Age Mine LLC on public lands managed by the BLM Barstow office. As such, Iron Age Mine LLC has submitted a Plan of Operations to the BLM. The extent of the claims includes approximately 60.6 acres of patented claims within portions of Sections 20 and 29, Township 1 South, Range 13 East, San Bernardino Base and Meridian, USGS New Dale 7.5-minute quadrangle and 330 acres of unpatented claims (public land) within portions of Sections 7, 17, 18, 20 and 29 including two 5-acre mill site claims in Section 7. The mine road re-alignment extends into additional unpatented placer claims within Sections 7, 17, 18 and 20.

The site is located in an unincorporated area of San Bernardino County. The site is located in desert tortoise (*Gopherus agassizii*) habitat. The desert tortoise is a federal and state endangered species.

1.2 PROJECT DESCRIPTION

Iron Age Mine, LLC proposes to remove tailings left behind by a previous mining operation at its Iron Age Mine site. Operations would consist of removing iron ore tailings from existing stockpiles on approximately 59 acres, plant operations and roads on 5 acres on patented land, trucking ore product to the mill sites along the 3.4 mile long re-aligned haul road (17 acres), and loading and shipping the material on street legal trucks at the mill sites (8.5 acres) on SR 62. Waste material not meeting iron ore specs will be conveyed and backfilled into the existing quarry.

The total disturbance area, of which 76 acres have been previously disturbed, is approximately 97 acres including the existing and planned roadway. Approximately 78 of the 97-acre project area will be reclaimed of which approximately 70 acres will be revegetated (46 acres of BLM and 24 acres of patented lands). The access road (17 acres) and the onsite access roads (2 acres) will remain in place. The approximately 8 acres of backfilling on patented land will not be conducive for revegetation due to the iron ore surface and lack of topsoil available. Approximately 26 acres of the patented land not within the 97-acre project site, will not be disturbed by this Plan, much of which has been disturbed by pre-SMARA activities and left as is.

1.3 DESERT TORTOISE LIFE HISTORY

The desert tortoise is a medium-sized, terrestrial turtle in the family Testudinidae. The shell is light brown to very dark brown with brown to orange or yellow in the centers of scutes, particularly in young animals. The skin is dry and scaly with thick, stumpy, elephantine hind legs. A strong projection, the gular horn, located at the anterior end of the plastron, is most

Regional Vicinity

Iron Age Mine Desert Tortoise Presence/Absence Report
San Bernardino County, California

Figure 1

0 5
Approximate Miles

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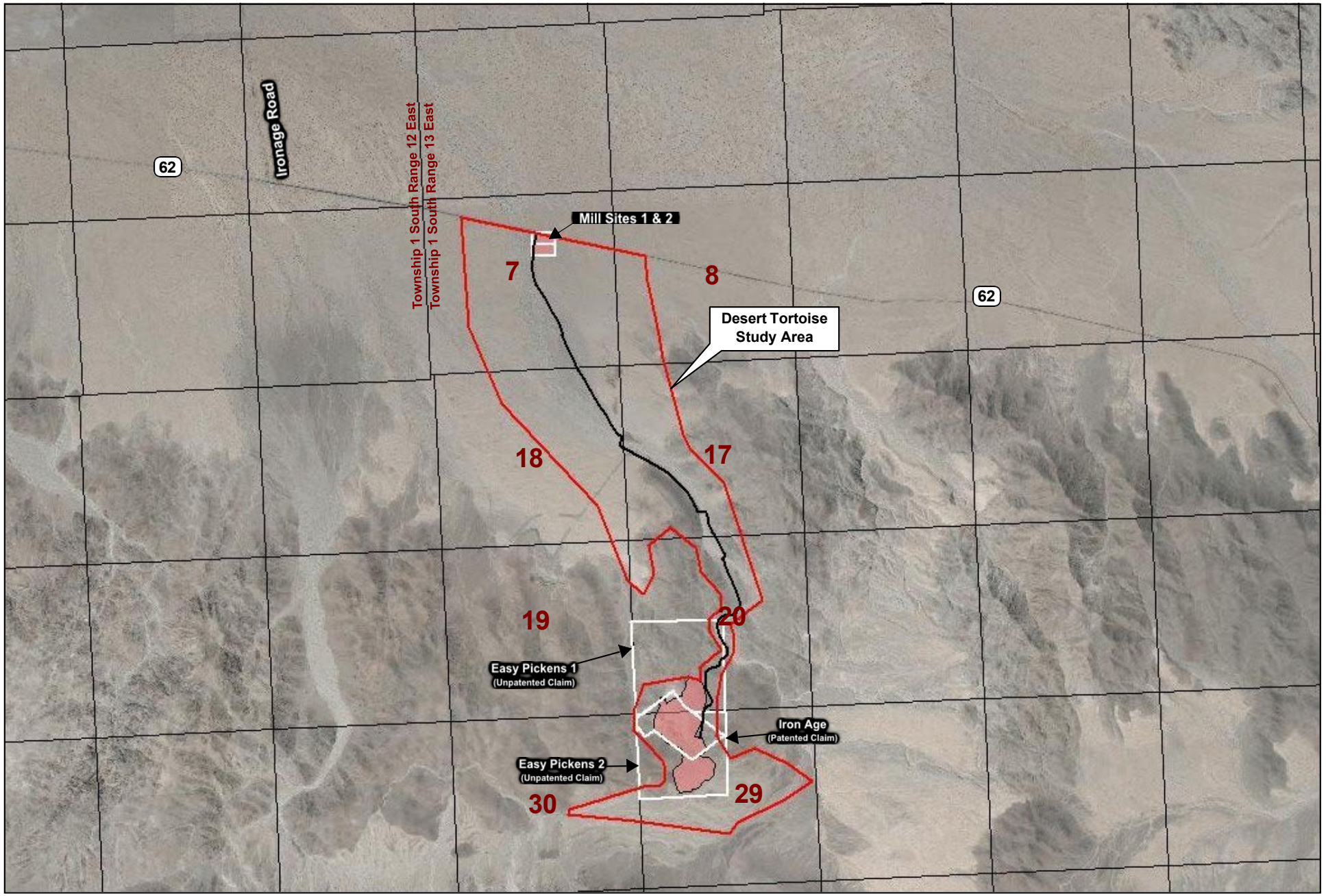

Project Location

Iron Age Mine Desert Tortoise Presence/Absence Report
San Bernardino County, California
Figure 2

Project Area - 97.0 acres

Existing Access Road to be Partially Re-aligned

N

0 0.65

Approximate Miles

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pronounced in adult males. Adult males also have shorter claws, longer, thicker tails, a concave plastron, and pronounced chin glands. They weigh 0.04-10+ lbs (20-5000+ g) and range in size from about 1.4 inches (35 mm; carapace length) at hatching to 11-16 inches (280-400 mm; carapace length) as adults. No other terrestrial turtle occurs within the range of the desert tortoise.

Desert tortoises are long lived with delayed sexual maturity. Some individuals begin reproducing when 7.4 inches (180 mm) long (median carapace length, MCL), which they attain at about 12-15 years old. The majority do not begin reproducing until they reach 8.2 inches (208 mm approximately 12-20 years old; Turner and Berry 1984, Turner et al. 1986). Maximum longevity in the wild is likely to be about 50 to 70 years, the norm being 25 to 35 years (Germano 1992, 1994).

The average clutch size is 4.5 eggs (range 1-8), with 0-3 clutches deposited per year (Turner et al. 1986). Clutch size and number probably depend on female size, water, and annual productivity of forage plants in the current and previous year (Turner et al. 1984, 1986; Henen 1997). The ability to alter reproductive output in response to resource availability may allow individuals more options to ensure higher lifetime reproductive success. The interaction of longevity, late maturation, and relatively low annual reproductive output causes tortoise populations to recover slowly from natural or anthropogenic decreases in density. To ensure population stability or increase, these factors also require relatively high juvenile survivorship (75-98% per year), particularly when adult mortality is elevated (Congdon et al. 1993). Most eggs are laid in spring (Apr -Jun) and occasionally in fall (Sept-Oct). Eggs are laid in sandy or friable soil, often at the mouths of burrows. Hatching occurs 90-120 days later, mostly in late summer and fall (mid Aug-Oct). Eggs and young are untended by the parents.

Tortoise sex determination is environmentally controlled during incubation (Spotila et al. 1994). Hatchlings develop into females when the incubation (i.e., soil) temperature is greater than 89.3° F (31.8° C) and males when the temperature is below that (Spotila et al. 1994). Mortality is higher when incubation temperatures are greater than 95.5° F (35.3° C) or less than 78.8° F (26.0° C). The sensitivity of embryonic tortoises to incubation temperature may make populations vulnerable to unusual changes in soil temperature (e.g., from changes in vegetation cover), but there are no data available from the field that can be used to test this hypothesis.

Tortoise activity patterns are primarily controlled by ambient temperature and precipitation (Nagy and Medica 1986, Zimmerman et al. 1994). In the East Mojave and Colorado Deserts, annual precipitation occurs in both summer and winter, providing food and water to tortoises throughout much of the summer and fall. Most precipitation occurs in winter in the West Mojave Desert resulting in an abundance of annual spring vegetation, which dries up by late May or June. Tortoises in this region are primarily active between May and June, with a secondary activity period from September through October. Tortoises may also be active during periods of mild or rainy weather in summer and winter. During inactive periods, tortoises hibernate, aestivate, or rest in subterranean burrows or caliche caves, and spend approximately 98% of the time in these cover sites (Marlow 1979, Nagy and Medica 1986). During active periods, they usually spend nights and the hotter part of the day in their burrow; they may also rest under shrubs or in shallow burrows (called pallets). Tortoises use an average of 7-12 burrows at any

given time (Barrett 1990, Bulova 1994, TRW Environmental Safety Systems Inc. 1997); some burrows may be used for relatively short periods of time and then are replaced by other burrows. Tortoises sometimes share a burrow with several other tortoises (Bulova 1994).

Tortoises eat primarily annual forbs, but also perennials (e.g., cacti and grasses). Forage species selected by tortoises in the west Mojave Desert include: *Astragalus didymocarpus*, *Astragalus layneae*, *Camissonia boothii*, *Euphorbia albomarginatus*, *Lotus humistratus*, and *Mirabilis bigelovii* (Jennings 1993). In the east Mojave Desert, tortoises showed a preference for *Camissonia boothii*, *Cryptantha angustifolia*, *Malacothrix glabrata*, *Opuntia basilaris*, *Rafinesquia neomexicana*, *Schismus barbata*, *Stephanomeria exigua* and other species (Avery 1998). On rare occasions they have been observed eating other items such as caterpillars, lizards, and cow dung, but these make up a very small proportion of their diets (Jennings 1993, Esque 1994, Avery 1998). Although they will eat exotic plants, tortoises generally prefer native forbs when available (Jennings 1993, Avery 1998, cf. Esque 1994). The dietary preference may place them at risk for a nitrogen and water deficit. Droughts frequently occur in the desert, resulting in extended periods of low water availability. Periods of extended drought place tortoises at even greater water and nitrogen deficit than during moderate or high rainfall years (Peterson 1996, Henen 1997). During a drought, more nitrogen than normal is required to excrete nitrogenous wastes, thus more rapidly depleting nitrogen stored in body tissues. Plants also play important roles in stabilizing soil and providing cover for protection from predators and heat.

The tortoise mating system is probably polygynous, and may be polyandrous, although DNA fingerprinting to analyze patterns of paternity has not been conducted. Choice of mate is mediated by aggressive male-male interactions and possibly by female choice (Niblick et al. 1994). Recent findings indicate that tortoises in the West Mojave Desert may exhibit prebreeding dispersal movements, typical of other vertebrates, ranging from 1 to 10 miles (0.6-16 km) away in a single season (Sazaki et al. 1995). The advantage of pre-breeding dispersal may be to find a more favorable environment (physical, biotic, social) in which to reproduce. However, the risk is increased mortality from predation, exposure, starvation, or anthropogenic factors (e.g., motor vehicle mortality).

Tortoise activities are concentrated in core areas, known as home ranges. These home ranges overlap; because tortoises do not defend a specific, exclusive area, they do not maintain territories. Home range sizes have been measured at 10-450 acres (4-180 hectares) and vary with sex, age, season, and density or availability of resources (USFWS 1994). Whereas home range sizes may vary from year to year, it is not known at what rate tortoises change their home range location and size over the course of their life. Over their entire life span, an individual tortoise may require considerably larger areas than that used in individual years.

There are many natural causes of mortality, but their extents are difficult to evaluate and vary from location to location. Several native predators are known to prey on tortoise eggs, hatchlings, juveniles, and adults including: coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), badger (*Taxidea taxus*), skunks (*Spilogale putorius*), common ravens (*Corvus corax*), golden eagles (*Aquila chrysaetos*), and Gila monsters (*Heloderma suspectum*).

1.4 HABITAT REQUIREMENTS

The greatest population densities of desert tortoise are found in creosote bush scrub with lower densities occurring in Joshua tree woodland and Mojave-saltbush-allscale scrub. Major topographical features used by tortoises include flats, valleys, bajadas, and rolling hills generally from 2000-3300 ft (600-1000 m) in elevation and occasionally above 4100 ft (1250 m; Weinstein 1989). Tortoises typically avoid plateaus, playas, sand dunes, steep slopes (>20%) and areas with many obstacles to free movement. They prefer surfaces covered with sand and fine gravel versus coarse gravel, pebbles, and desert pavement (Weinstein 1989). Friable soil is important for digging burrows, but when friability (e.g., diggability) is similar, productivity of plants is more important (Wilson and Stager 1992). Food availability, soil diggability, longitude (higher densities in West Mojave Desert), and degree of stream-washing were the habitat characteristics that were most useful in discriminating between areas with high densities of tortoises and those with no tortoises.

1.5 PURPOSE AND OBJECTIVES

The purpose of this survey is to provide baseline data regarding the presence or absence of desert tortoise within the proposed tailings and operations areas and within a 50-foot ROW for the proposed haul road.

The objectives for this study are as follows:

- Conduct protocol presence/absence surveys for desert tortoise at the tailings and overburden mounds mining area, proposed mill site area, and along the proposed haul road at the Iron Age Mine Site.
- Document the results of the survey and present them via this report.

2.0 METHODS

The presence/absence studies conducted by biologists representing Lilburn Corporation implemented the United States Fish and Wildlife Service's *Pre-project Field Survey Protocol for Potential Desert Tortoise Habitats* (USFWS 2010). The presence/absence surveys were conducted on April 11-13, 2012. Representative site photos are included in Appendix A.

2.1 PERSONNEL

All biologists conducting the survey have had experience in desert tortoise presence/absence surveys, clearance surveys, and have attended the Desert Tortoise Council's Desert Tortoise Workshop. The authorized biologist for this project was Juan Hernandez.

2.2 SURVEY METHODOLOGY

Protocol presence/absence surveys were conducted in the approximately 1,527-acre project study area which included the required perimeter belt transects parallel to the 3.4-mile long haul road and around the tailings and mill areas (see Figure 3). The existing tailings and mine areas, the

mill site location, and the haul road re-alignment were surveyed for 100% coverage. Surveys were conducted by walking transects 10 meters (30 feet) apart. All tortoise sign (live tortoises, shells, bones, scutes, limbs, scats, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, mineral licks, etc.) observed during the pedestrian surveys were mapped using Global Position Systems (GPS). When no tortoise or tortoise sign were encountered within the project action area, three additional 30-foot belt transects were surveyed at 200 meters, 400 meters, and 600 meters around the perimeter of the project site. Perimeter belt transects are used to determine if the project overlaps part of a tortoise's annual home range and the possibility that a resident tortoise was outside the project area at the time surveys were conducted. The perimeter belt transects are only used for the presence/absence determination.

3.0 RESULTS

This section summarizes the findings of the desert tortoise presence/absence survey and provides a general description of the plant communities identified within the survey area.

3.1 PLANT COMMUNITIES

The following plant communities were identified within the project study area: creosote bush series, big galleta series, brittlebush series, and catclaw acacia series. Other habitat types identified within the study area included disturbed habitat predominantly devoid of vegetation and streambeds either unvegetated or vegetated by upland species (see Figure 4).

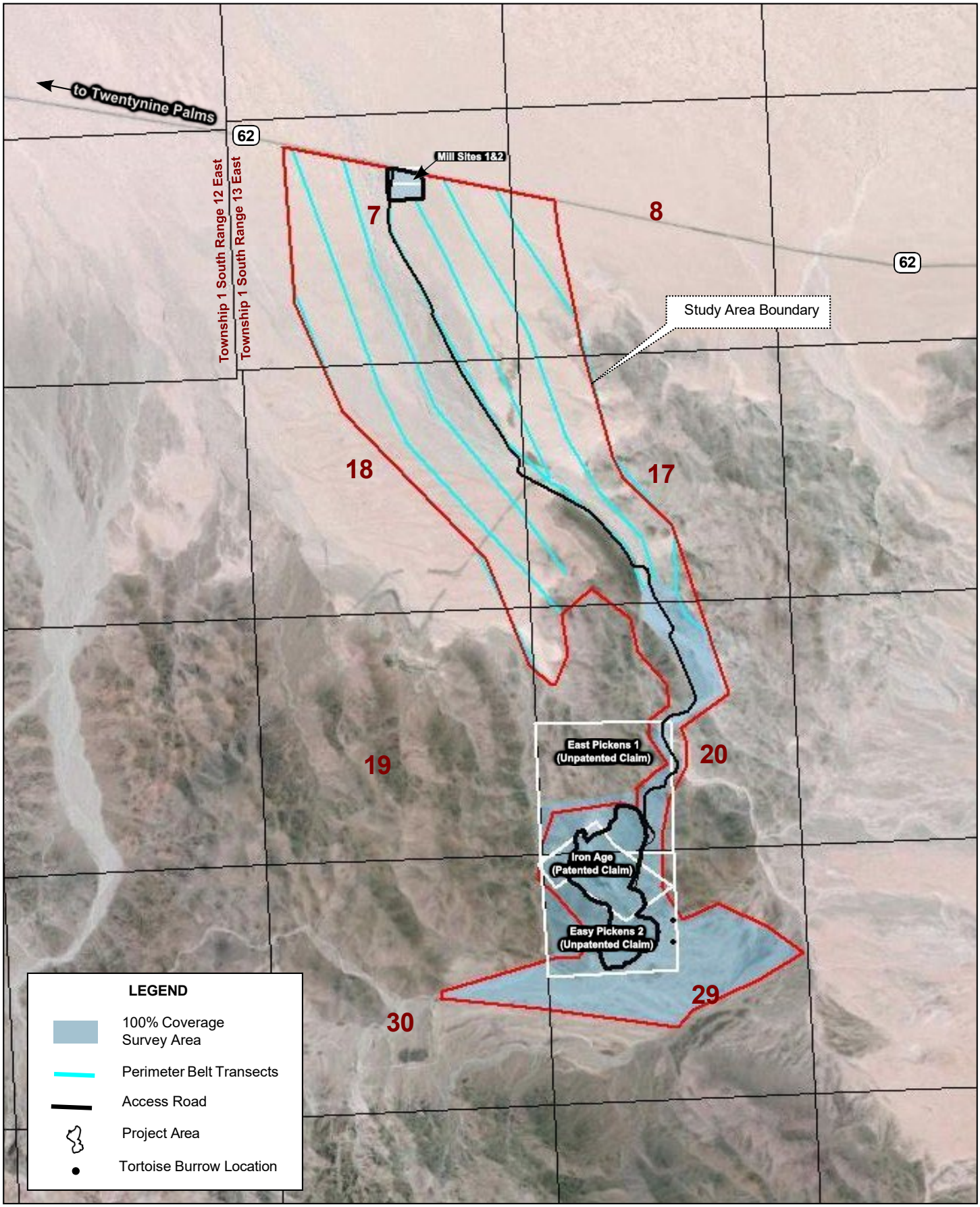
Habitat in the 97-acre project area is predominantly disturbed habitat, 76 acres. Other habitat found on the remaining 21 acres within the project area includes: creosote bush series, brittlebush series, catclaw acacia series, and unvegetated stream.

3.2 DESERT TORTOISE PRESENCE/ABSENCE

No live desert tortoise or desert tortoise sign were observed at the proposed mill site location, along the proposed haul road alignment, or within the mine and tailings area. Two burrows were observed south of the proposed mining area (see Table 1 and Figure 3). Per the USFWS protocol survey guidelines, a mirror was used to direct sunlight into the burrow openings to locate desert tortoise sign; no sign was identified in either burrow.

3.3 DESERT TORTOISE HABITAT

Proposed project activities at the mill site, quarry area, haul road right-of-way alignment, and tailings removal sites will impact a total of 97 acres. The 97-acre area is considered within desert tortoise habitat. Of the 97 acres, approximately 76 acres are severely disturbed by the stockpiling of iron ore tailings, the existing quarry, and the existing haul road and do not constitute suitable habitat for desert tortoise. Therefore, the proposed project would only impact 21 acres of suitable habitat for desert tortoise. Approximately 15.7 acres of suitable desert tortoise habitat occur within the Pinto Mountain Critical Habitat Unit for desert tortoise as designated by the U.S. Fish and Wildlife Service and BLM designated Desert Wildlife Management Area (DWMA).



N

0 0.5

Approximate Miles

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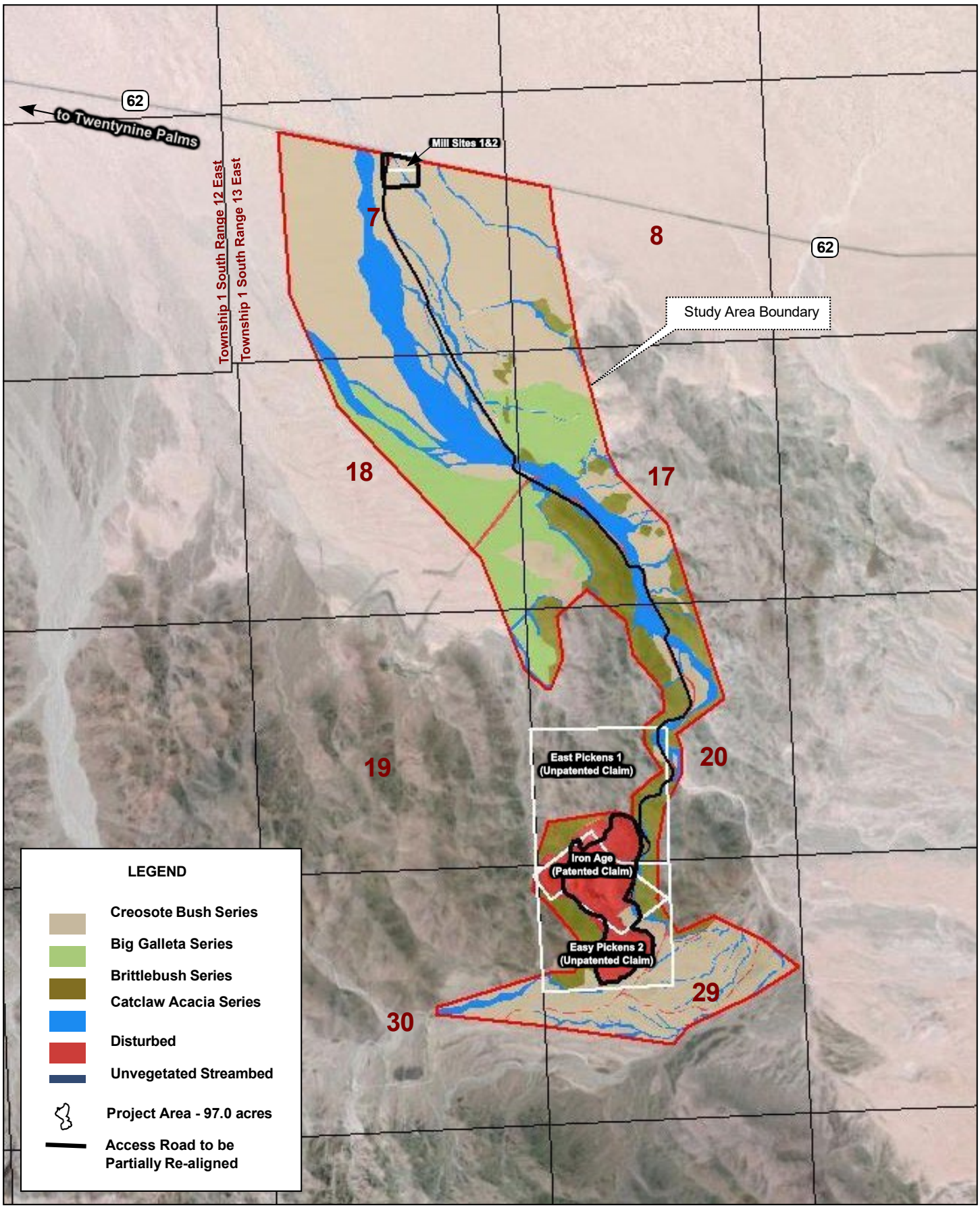
Desert Tortoise Presence/Absence Survey Area

Iron Age Mine Desert Tortoise Presence/Absence Report
San Bernardino County, California

Figure 3



N

0 0.5

Approximate Miles

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Study Area Vegetation Map

Iron Age Mine Desert Tortoise Presence/Absence Report
San Bernardino County, California

Figure 4

Table 1
Desert Tortoise Sign Observation Results

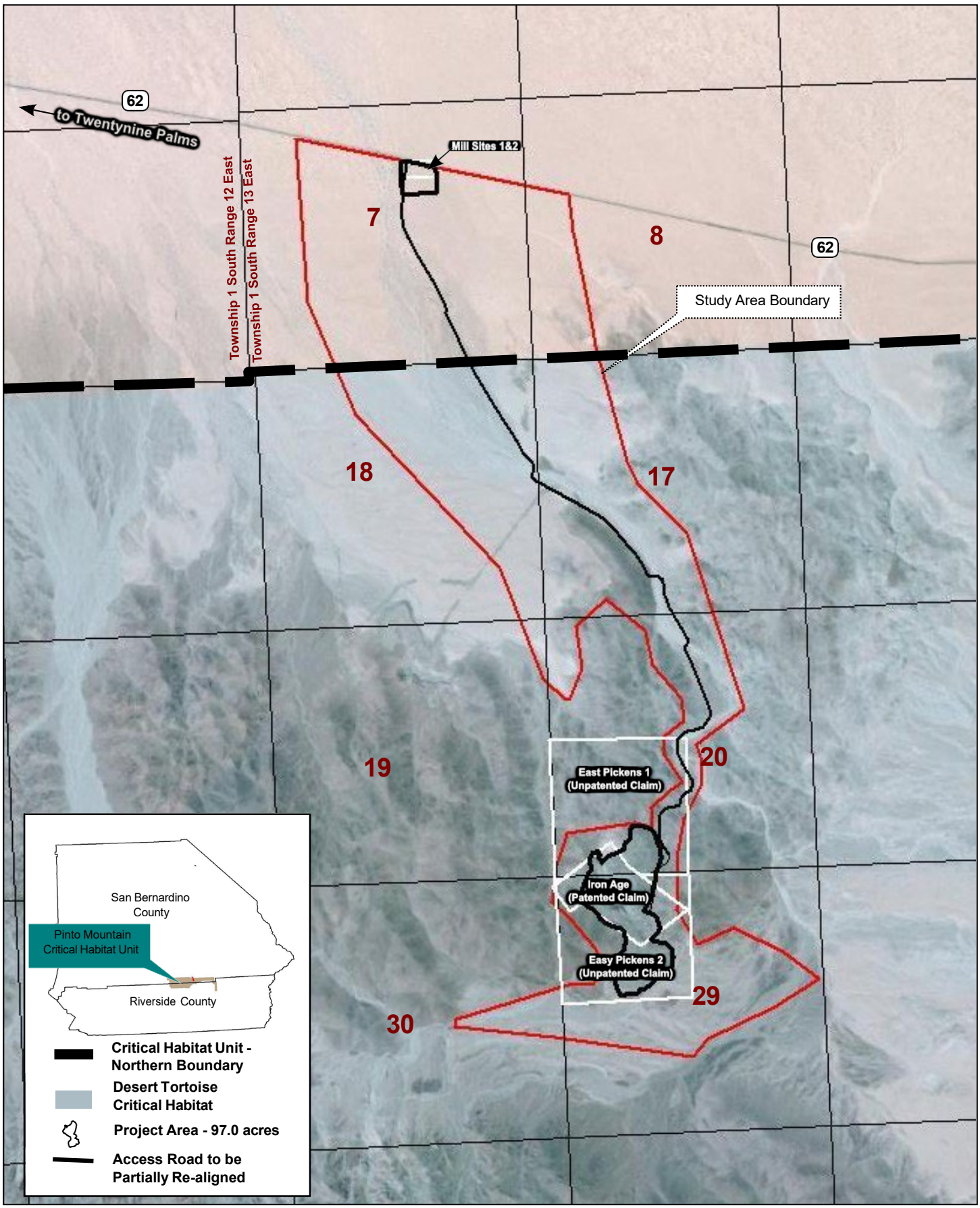
Class*	Burrows	Carcass	Comments
1			
2			
3			
4	1		
5	1		
Total	2		

*Desert Tortoise Sign Classification	
Burrow Classes	**Carcass Classes**
1- Currently Active 2- Good Condition, definitely tortoise, no recent use 3- Deteriortated, including collapsed, definitely tortoise 4-Good Condition, possibly tortoise 5-Deteriorated, including collapsed possibly tortoise	1- Fresh or Putrid 2- Normal color, scutes adhered to bone 3-Scutes peeled off bone 4-Bones falling apart 5-Disarticulated

3.4 DESERT TORTOISE CRITICAL HABITAT

The tailings stockpiles, quarry, and portions of the proposed haul road re-alignment, amounting to approximately 84.2 acres, occur within the USFWS designated Pinto Mountain critical habitat unit for the desert tortoise and BLM designated DWMA (see Figure 5). Since the BLM would authorize the activity associated with the proposed project a Section 7 Consultation of the Federal Endangered Species Act would need to be conducted between the BLM and the USFWS. The proposed project requires approval of a Plan of Operations for the tailings removal operations and the haul road re-alignment from the BLM.

Critical habitat as defined in section 3(5)(A) of the Federal Endangered Species Act (Act) is "(i) the specific areas within the geographic area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed…upon a determination…that such areas are essential for the conservation of the species." The physical and biological habitat features are referred to as primary constituent elements. Primary constituent elements of desert tortoise habitat include: sufficient space to support viable populations within each of the [five] recovery units and provide for movements, dispersal, and gene flow; sufficient quantity and quality of forage spaces and the proper soil conditions to provide for the growth of such species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality. The 2011 USFWS *Revised Recovery Plan for the Mojave Population of the Desert Tortoise* has designated five regional recovery units: Western Mojave, Eastern Mojave, Northeastern Mojave, Colorado Desert and Upper Virgin River. Critical habitat units, are identified within the larger recovery units. Critical habitat units are specific areas identified to support the physical and biological features that are



0 0.5
Approximate Miles

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Critical Habitat Impacts

Iron Age Mine Desert Tortoise Presence/Absence Report
San Bernardino County, California

Figure 5

essential for the conservation of the species and that may require special management considerations or protection. The Iron Age Mine site occurs in the Pinto Mountains critical habitat unit of the Western Mojave recovery unit.

The tailings, quarry area, and portions of the proposed haul road alignment, amounting to 84.2 acres, occur within the Pinto Mountain critical habitat unit for the desert tortoise. Of the 84.2 acres, 68.5 acres, comprising the iron ore tailings, quarry, and existing haul road do not exhibit the constituent elements of critical habitat for the desert tortoise. The tailings mounds are characterized by hard compacted soils rich in iron ore and are bare of vegetation. The tailings do not support vegetation, or support the proper soil conditions including substrates for burrowing, nesting, or other shelter required by the desert tortoise. The quarry is characterized by steep rock slopes devoid of vegetation. Because 68.5 acres of the habitat have been severely disturbed by the stockpiling of iron ore tailings and mining and is not suitable for desert tortoise, the proposed project would only result in impacts to 15.7 acres of critical habitat suitable for desert tortoise.

The proposed project would impact a total of 21 acres of suitable desert tortoise habitat; 15.7 of those acres occur within the Pinto Mountains critical habitat unit and 5.3 acres occur outside of the critical habitat unit.

3.4.1 BLM DESIGNATED HABITAT MANAGEMENT AREAS

The Project Area occurs within the BLM designated Pinto Mountain Desert Wildlife Management Area (DWMA). Desert Wildlife Management Areas have been established to protect high quality habitat for the threatened desert tortoise. The Pinto Mountain DWMA consist of 183 square miles surrounded on the west, south, and east by Joshua Tree National Park and bounded on the north by SH 62. The DWMA directly overlies the Pinto Mountain critical habitat unit identified by the FWS. The area is identified to contain Category I desert tortoise habitat. Category I habitat is defined as habitat capable of sustaining viable tortoise populations. The DWMA is managed for desert tortoise conservation and recovery.

4.0 CONCLUSIONS

The presence/absence survey conducted by Lilburn Corporation at the Iron Age Mine site and within a 600-foot perimeter area, documented a total of two burrows south of the proposed project area. No tortoise sign was observed within either burrow.

5.0 RECOMMENDATIONS

Lilburn Corporation recommends the following to avoid and minimize impacts to desert tortoise:

- Comply with BLM and USFWS conditions and compensation requirements.
- Consult with the California Department of Fish and Wildlife regarding the results of this survey.
- Have an authorized biologist conduct a tortoise educational program for personnel at the project site; the program should discuss conservation measures as well as pre-entrance

and pre-construction surveys before personnel obtain access to the site roads and work areas.

- Authorized biologists or monitors should be present on-site during all activities on portions of the project that intersect with or are adjacent to tortoise habitat, to ensure take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to engage in any such conduct) will not occur.
- An authorized biologist should survey the project area for the presence of desert tortoise no more than 14 days prior to the commencement of project activities within desert tortoise habitat. If necessary, the biologist should relocate tortoise a minimum distance necessary to ensure their safety. In general, desert tortoise should be moved no more than 1,000 feet for juveniles and adults, and 300 feet for hatchlings.
- Any desert tortoise burrows within 50 yards of the proposed project area should be flagged for avoidance.
- An authorized biologist should inspect potential desert tortoise burrows including collapsed burrows for occupancy.
- If a desert tortoise and burrow are within 50 yards of the project area, the animal and burrow may be fenced for no more than 3 days to confine the desert tortoise to its burrow and the area adjacent to its burrow.
- Should it prove necessary to excavate a desert tortoise from its burrow to move it from harm's way, excavation should be performed using hand tools either by, or under the direct supervision of an authorize biologist.
- To insure safety, all desert tortoise moved should be monitored for at least two days or until the end of the project activities for that area, whichever period is longer.
- Disturbance should be confined to the smallest practical area, considering topography, placement of pipelines, location of burrows, public health and safety, and other limiting factors. To the extent possible, project activities should be limited to previously disturbed areas. If possible, vegetation should be crushed rather than bladed to allow for root sprouting of shrubs.
- Temporary barriers such as plywood sheeting used to cover the trench or excavation and/or temporary desert tortoise fencing should be used to exclude desert tortoises and other wildlife species from entering trenches or other excavations left open overnight or unattended during the day.
- Vehicle speeds should not exceed 15 miles per hour through desert tortoise habitat.
- A distance of 25 yards should be maintained between moving vehicles traveling to or from project activities.
- Work should cease a minimum of one hour before sunset on rainy or overcast days allowing workers to travel the access road when visibility is not impaired by darkness.
- No cross-country travel with motorized vehicles outside of the project area by project personnel should be permitted.
- Workers should inspect for desert tortoise under vehicles prior to moving them.

- All trash and food items should be promptly contained within closed, common raven-proofed containers and will be removed daily from the project site to reduce the attractiveness of the area to common ravens (Corvus corax).
- No firearms, dogs, or other pets should be allowed in desert tortoise habitat within the project area.

6.0 REFERENCES

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APPENDIX A
SITE PHOTOS

US Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Catclaw acacia series ephemeral drainage.

Creosote bush series vegetation.

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US Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Disturbed existing haul road that will be used as part of the proposed haul road right-of-way.

Creosote bush series vegetation facing south east.

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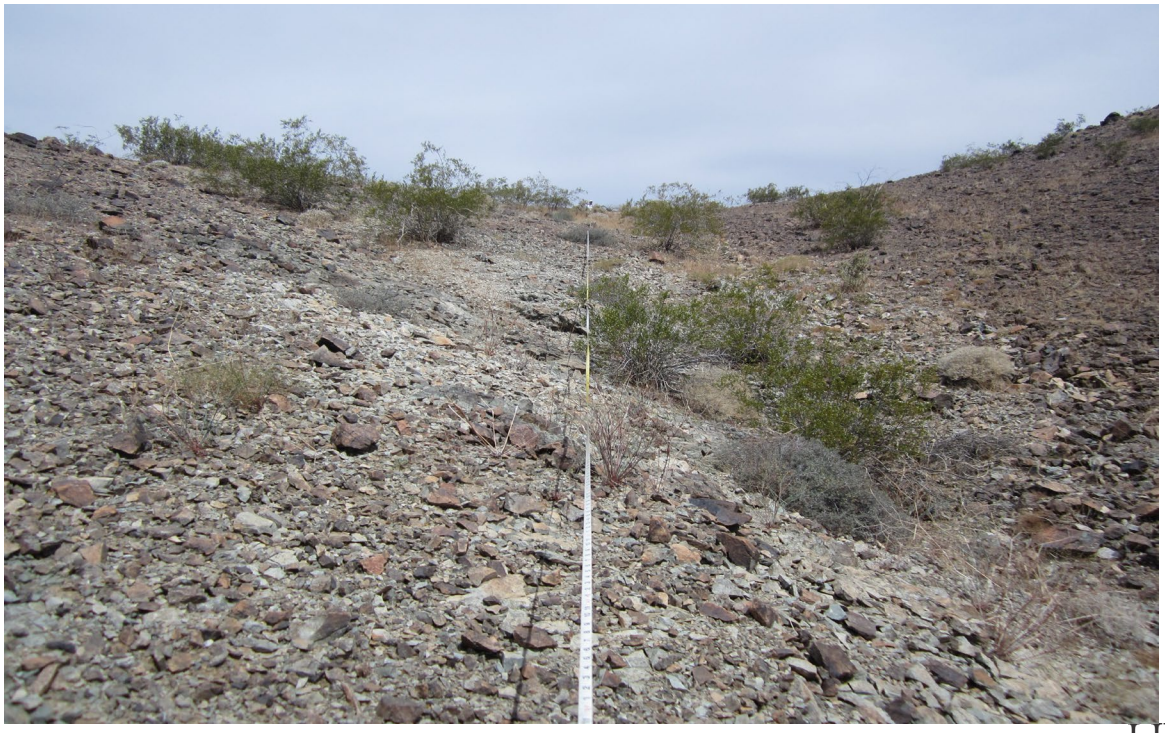
US Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Class 5 Burrow. Class 5 burrows are deteriorated and include collapsed burrows. They are possible tortoise burrows.



Brittlebush series vegetation.

APPENDIX D
REVEGETATION PLAN FOR IRON AGE MINE

REVEGETATION PLAN
FOR THE
IRON AGE MINE

SAN BERNARDINO COUNTY, CALIFORNIA

Prepared For:
Iron Age Mine, LLC
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Miramar Beach, FL 32550

Submitted To:
County of San Bernardino
Planning Department
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San Bernardino, California 92415

Prepared By:
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August 2012
Updated July 2014

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1.0 INTRODUCTION

This Revegetation Plan is designed to meet the Surface Mining and Reclamation Act (SMARA) performance guidelines for revegetation (Article 9, Section 3709) and soil salvage (Article 9, Section 3711) for the proposed removal of iron tailings stockpiled historically by a previous mining operation at the Iron Age Mine. The Iron Age Mine is an iron ore deposit that has been extensively mined prior to the enactment of the SMARA. The Proposed Project area is 97 acres of which 76 acres are currently disturbed. The 60.6 acres of patented land is currently owned and the surrounding unpatented claims are controlled by Iron Age Mine, LLC. The company intends to remove, screen, and sell existing tailings and reclaim the site during a 15-year operation period. The goal of the revegetation program is to establish the guidelines to monitor, maintain, and assess the results of the completed revegetation program through comparison to the established baseline data and recommended success criteria.

1.1 PROJECT LOCATION

The Iron Mine Site is located in the Dale Mining District within the Pinto Mountain Range, San Bernardino County, California, and is approximately 18 miles east/southeast of the City of Twentynine Palms (see Figure 1). The mine is located south of State Route 62 (SR 62) and is accessible by an unnamed road approximately one and a half miles east of Ironage Road (see Figure 2).

The Iron Age Mine holdings relevant to this plan consist of 60.6 acres of patented land (private land) within portions of Sections 20 and 29, San Bernardino Base and Meridian (SBBM), USGS New Dale 7.5-minute quadrangle), and 330 acres of unpatented claims (public land) managed by the Bureau of Land Management (BLM Barstow office) within portions of Sections 7, 17, 18, 20 and 29, SBBM. The project also includes two 5-acre mill site claims in Section 7. The mine road alignment extends 3.4 miles (approximately 17 acres) into additional unpatented placer claims within Sections 7, 17, 18 and 20, SBBM. The site is located in an unincorporated area of San Bernardino County.

1.2 PROJECT DESCRIPTION

Existing conditions at the Iron Age Mine site include a pre-SMARA quarry area, access roads, and tailings disposal areas from historic mining of the site. The site was active until the mid-1960s. The proposed Iron Age Mine is planned to include a total of 97 acres: approximately 34 patented acres, 37.5 acres of the unpatented claims, 8.5 acres of the 10-acre mill site claims and approximately 17 acres of roadway (Iron Age Mine Road) that connects the mine site to SR 62 over a distance of 3.4 miles.

The total project area is approximately 97 acres including the existing and planned roadway of which 76 acres are considered disturbed from historic mining activities. Approximately 78 of the 97-acre project area will be reclaimed of which approximately 70 acres will be revegetated (46 acres of BLM and 24 acres of patented lands). The existing access road (17 acres), partly eroded away, will be re-constructed as part of the Proposed Project. The access road and the onsite access roads (2 acres) will remain in place. The approximately 8 acres of backfilling on

Regional Vicinity

Iron Age Mine Revegetation Plan
San Bernardino County, California

Figure 1

0 5
Approximate Miles

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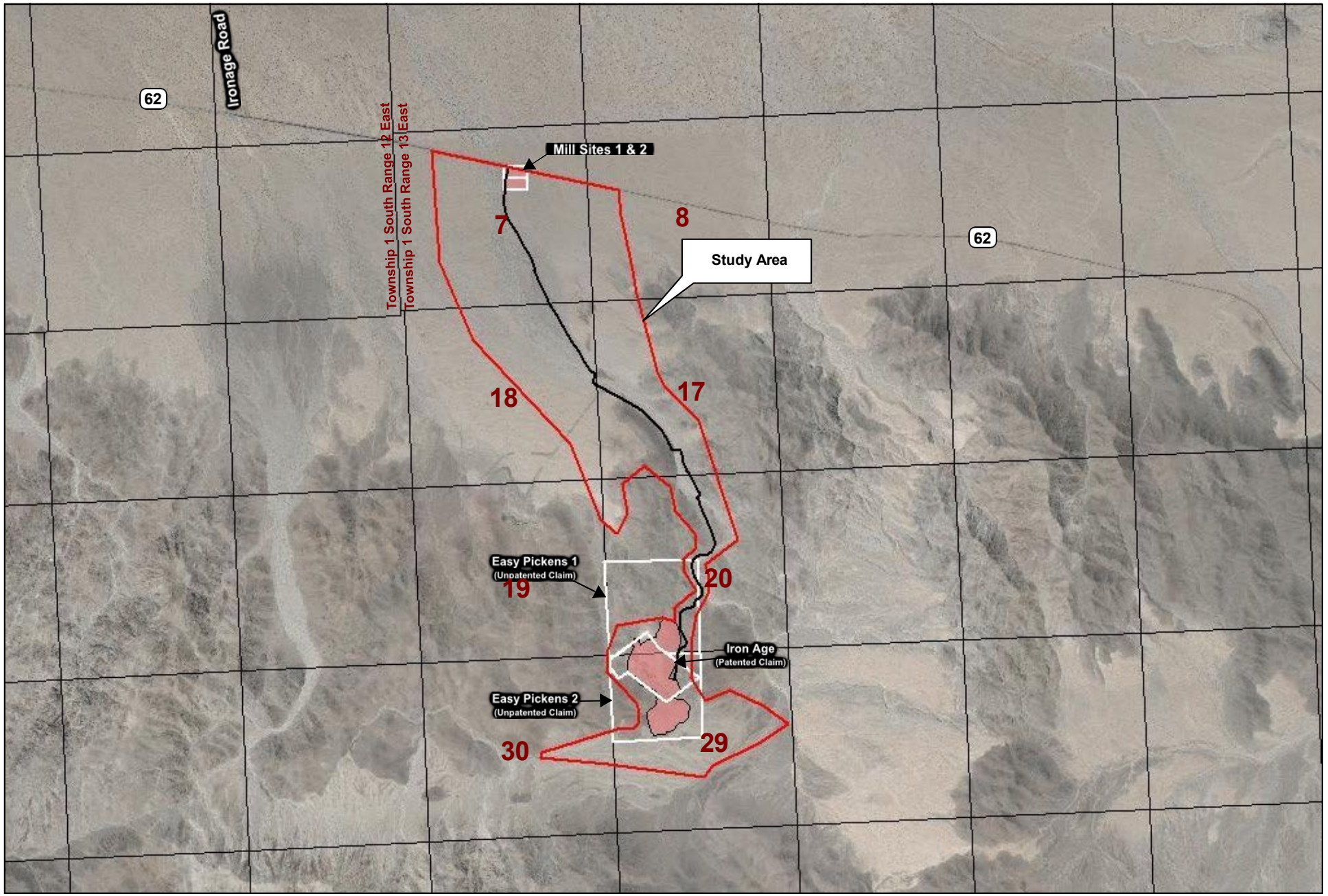

Project Location

Iron Age Mine Revegetation Plan
San Bernardino County, California
Figure 2

Project Area - 97 acres

0 0.65
Approximate Miles

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patented land will not be conducive for revegetation due to the iron ore surface and lack of topsoil available. Approximately 26 acres of the patented land will not be disturbed by this Plan, much of which has been disturbed by pre-SMARA activities and left as is.

Unlike most reclamation plans which reclaim areas planned for mining, this Reclamation Plan will reclaim approximately 58 acres covered with iron ore tailings deposited historically prior to the enactment of SMARA. The removal of the tailings will provide a marketable product and a heavily disturbed area will subsequently be reclaimed back to open space. The tailings area will be graded back to the original surface and revegetated. Waste rock and low quality iron ore will be backfilled into the existing Iron Age Quarry on approximately 8 acres. A total of 70 acres altogether will be reclaimed and revegetated returning currently disturbed areas back to open space habitat.

Proposed operations would occur in four phases; generally trending from the western limits of the tailings area to the northwest and eventually to the northeast. The operation would consist of excavating and loading the broken iron tailings into a feeder, screen, and magnetic separator. Upon separation, off-road haul trucks will transport the iron ore via a re-built mine haul road to a proposed mill site facility located on SR 62. The mill site would be located approximately 3.4 miles north of the tailings area; iron ore transported from the tailings area to the mill site would be stockpiled and ultimately transferred to market.

Based on reconnaissance analysis of the existing stockpile reserves, the site is anticipated to have an estimated operating life of 15 years. This report describes the planned revegetation of the tailings following their removal and revegetation of the proposed mill site at the conclusion of project activities.

2.0 ENVIRONMENTAL SETTING

The Iron Age Mine site is situated in the north eastern portion of the Pinto Range of mountains in San Bernardino County California. The Pinto Mountains rise sharply up from the northern edge of the Pinto Basin, an alluvial plain located within Joshua Tree National Park; roughly half of the Pinto Range occurs within the Park and is managed as the Joshua Tree Wilderness. Elevation at the site ranges from 1,975 to 2,250 feet above mean sea level. Annual temperatures range from 35°F to 105°F and annual precipitation is approximately 0.9 inches.

2.1 EXISTING VEGETATION

The baseline inventory of flora was conducted on May 1, 2012 by Lilburn Corporation. The survey was conducted to provide data upon which to base the revegetation plan of the mining site after the removal of the tailings, and the success criteria for the site. The Biological Resources Assessment (BRA) for the subject site identified six habitat types within the BRA survey area; these include: brittlebush series, big galleta series, creosote bush series, catclaw acacia series, streambed, and disturbed habitat (series based on Sawyer retrieved 2012). The location of the tailings and overburden mounds and the impacted quarry area were identified as disturbed habitat and was described as generally void of vegetation. Vegetation communities occurring adjacent to the tailings and overburden mounds and at the location of the proposed mill site

include: brittlebush series, creosote bush series, and catclaw acacia series. Vegetation reference sites were established in each of the three communities to gather baseline cover, density, and species richness data. The study area vegetation and anticipated project impacts are mapped on Figure 3.

A comprehensive list of observed flora and fauna species is included as Appendix A. Representative site photos of the habitat areas are included as Appendix B. Field data sheets are included as Appendix C.

2.2 BASELINE VEGETATION

The BRA documents project impacts to three homogeneous vegetation communities and to existing disturbed habitat. In order to collect data needed to establish revegetation criteria, the site was stratified into three sample unit areas corresponding to the three vegetation communities that will be impacted by the proposed project. Random reference sites within the sample unit areas were surveyed for shrub cover, density, and species richness. Transect endpoint locations were recorded on a handheld GPS. To evaluate vegetative cover, a series of 50-meter point-intercept transects were established; a vertical point was projected at each 0.5-meter interval and any plant, stem, or canopy intercepting the point was recorded. Shrub density and species richness were recorded in 100 square meter (m^2) plots located along the edge of the 50-meter transects and extending 2 meters out from its edge; all shrubs rooted in the plots and the number of different shrub species were recorded. Transects and plot locations were chosen randomly within the reference area. A total of 10 transects in each sample unit area were surveyed to provide baseline data needed to determine seed types and seeding rates, and to establish the success criteria for future revegetation efforts.

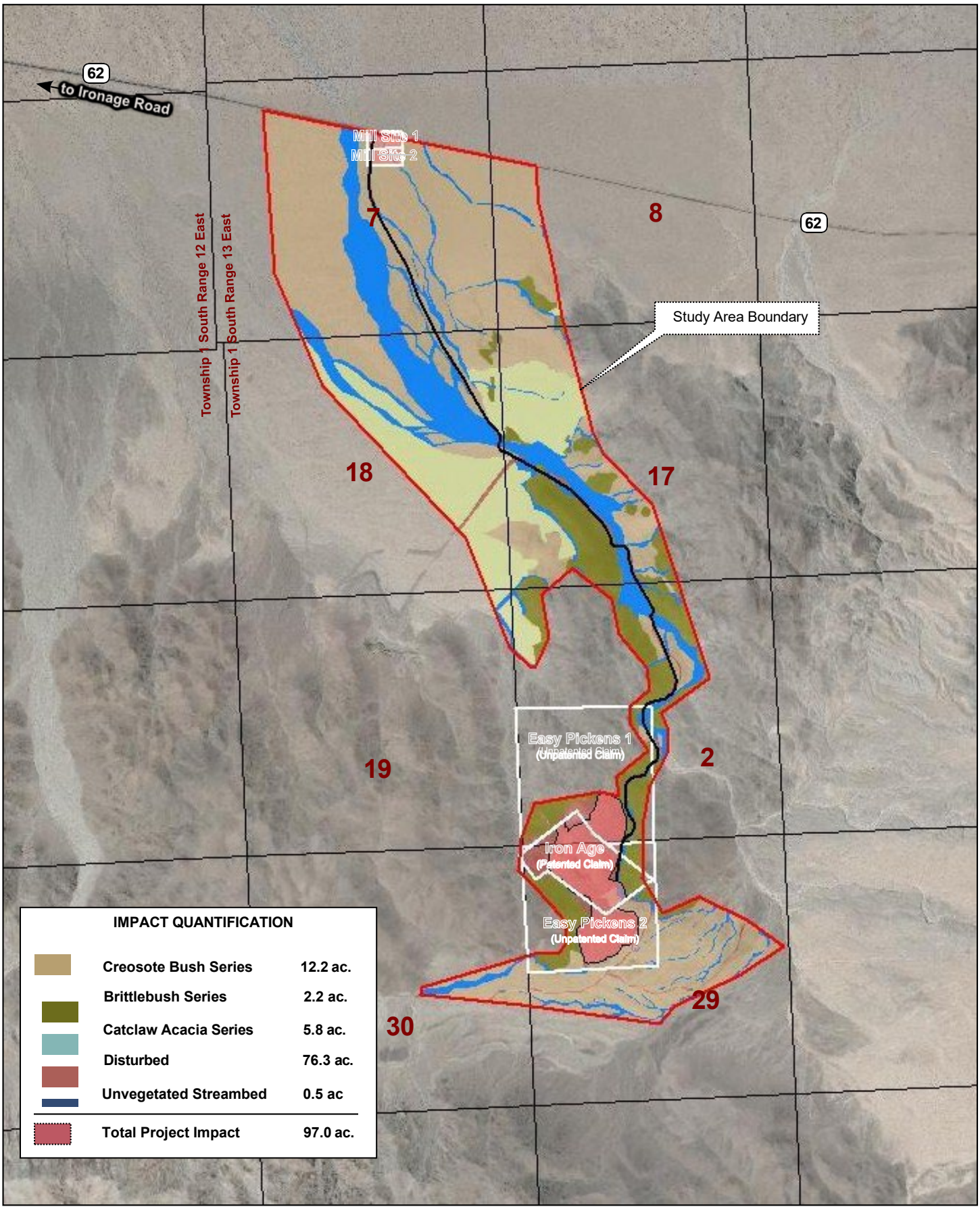
For purposes of reclamation, SMARA requires that a sampled area be of adequate size to accurately represent the vegetative cover, density, and richness in a vegetation community. To determine the minimum number of samples required to achieve a minimum of 80% confidence, the following statistical formula is applied, where n is the sample size needed, t^2 is the statistical t value for the sample, s^2 is the variance, and x is the statistical average.

$$n = \frac{t^2 s^2}{(0.2x)^2}$$

2.2.1 BASELINE SURVEY RESULTS

Reference Site 1 – Brittlebush Series

Brittlebush (*encelia farinosa*) was identified as the dominant vegetation type at Reference Site 1. Average absolute shrub cover measured a mean of 10%; average shrub density measured 8.8 shrubs per 100 m^2 plot; and an average of 2.5 species was observed to occur per 100 m^2 plot. Baseline cover results are summarized in Table 1; density and species richness results are summarized in Table 2.



0 0.5
Approximate Miles

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Vegetation and Impact Areas

Iron Age Mine Revegetation Plan
San Bernardino County, California

Figure 3

Table 1
Reference Site 1-Brittlebush Series
Baseline Cover Results

Transect	1	2	3	4	5	6	7	8	9	10	Total	Mean	Var.
Encelia farinosa	4	2	4	0	7	1	0	3	0	0	21	2.1	
Larrea tridentata	0	4	1	7	3	4	13	7	17	12	68	6.8	
Ambrosia dumosa	0	0	0	0	2	2	0	0	0	0	4	0.4	
Krameria bicolor	0	0	0	0	0	3	0	0	0	0	0	0.3	
Cylindropuntia ramosissima	0	0	0	1	0	3	0	0	0	0	4	0.4	
Absolute Shrub Cover Percentage	**4**	**6**	**5**	**8**	**12**	**13**	**13**	**10**	**17**	**12**	**100**	**10.00**	**17.33**
% Bare Ground	96	94	95	92	88	87	87	90	83	88	900	90	

Minimum Number of Transects Required to Achieve Confidence									
Sample Size Calculations for Shrub Cover	**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
	17.33	1.38	1.83	2.26	10	4.00	**9.80**	**7.94**	**5.99**

***** Cover values for individual shrub species will not necessarily equal absolute shrub cover due to overlapping vegetation at transect points.
s^2 = variance, t^2 = Students' t value for sample, x = sample average

Table 2
Reference Site 1-Brittlebush Series
Baseline Density and Species Richness Results

Transect	1	2	3	4	5	6	7	8	9	10	Total	Mean	Variance
Encelia farinosa	7	9	6	1	5	1	0	11	1	0	41	4.10	
Larrea tridentata	2	2	2	2	3	2	6	4	6	7	36	3.60	
Ambrosia dumosa	0	0	0	0	1	3	0	0	0	0	4	0.40	
Krameria bicolor	0	0	0	0	0	2	0	0	0	0	2	0.20	
Ericameria linearfolia	0	1	0	0	0	0	0	0	0	0	1	0.18	
Cylindropuntia ramosissima	0	0	0	1	1	2	0	0	0	0	4	0.40	
Total Shrub Density	**9**	**12**	**8**	**4**	**10**	**10**	**6**	**15**	**7**	**7**	**88**	**8.80**	**9.96**
Total Species Richness	**2**	**3**	**2**	**3**	**4**	**5**	**1**	**2**	**2**	**1**	**25**	**2.50**	**1.61**

Minimum Number of Transects Required to Achieve Confidence									
Sample Size Calculations for Species Richness	**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
	9.96	1.383	1.833	2.262	8.8	3.10	**7.27**	**5.89**	**4.45**
Sample Size Calculations for Species Richness	**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
	1.61	1.38	1.83	2.26	2.5	0.25	**14.57**	**11.80**	**8.91**

s^2 = variance, t^2 = Students' t value for sample, x = sample average

Reference Site 2 – Creosote Bush Series

The dominant vegetation at Reference Site 2 is creosote bush (*Larrea tridentata*). Average absolute shrub cover was measured at 9.6%; average species richness measured 6.4 shrubs per 100 m^2 plot; and an average of 1.1 species was observed to occur per 100 m^2 plot. Baseline cover results are summarized in Table 3; density and species richness results are summarized in Table 4.

Table 3
Reference Site 2- Creosote Bush Series
Baseline Cover Results

Transect	1	2	3	4	5	6	7	8	9	10	Total	Mean	Var.
Larrea tridentata	16	14	6	10	6	15	5	10	10	3	95	9.5	
Ambrosia dumosa	0	0	0	0	0	0	0	0	0	1	1	0.1	
Absolute Shrub Cover Percentage	**16**	**14**	**6**	**10**	**6**	**15**	**5**	**10**	**10**	**4**	**96**	**9.60**	**18.71**
% Bare Ground	84	86	94	90	94	85	95	90	90	96	904	90.4	

Minimum Number of Transects Required to Achieve Confidence									
Sample Size Calculations for Shrub Cover	**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
	18.71	1.38	1.83	2.26	9.6	3.96	**11.48**	**9.30**	**7.02**

* Cover values for individual shrub species will not necessarily equal absolute shrub cover due to overlapping vegetation at transect points.
s^2 = variance, t^2 = Students' t value for sample, x = sample average

Table 4
Reference Site 2-Creosote Bush Series
Baseline Density and Species Richness Results

Transect	1	2	3	4	5	6	7	8	9	10	Total	Mean	Variance
Larrea tridentata	7	7	6	7	5	12	4	6	6	3	63	6.30	
Ambrosia dumosa	0	0	0	0	0	0	0	0	0	1	1	0.10	
Total Shrub Density	**7**	**7**	**6**	**7**	**5**	**12**	**4**	**6**	**6**	**4**	**64**	**6.40**	**5.16**
Total Species Richness	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**11**	**1.10**	**0.10**

Minimum Number of Transects Required to Achieve Confidence									
Sample Size Calculations for Shrub Density	**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
	5.16	1.383	1.83	2.26	6.4	1.64	**7.12**	**5.77**	**4.36**
Sample Size Calculations for Species Richness	**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
	0.1	1.383	1.83	2.26	1.1	0.05	**4.67**	**3.79**	**2.86**

s^2 = variance, t^2 = Students' t value for sample, x = sample average

Reference Site 3 –Catclaw Acacia Series

The dominant vegetation at Reference Site 3 is catclaw acacia (*Acacia greggii*); creosote bush (*Larrea tridentata*) and white bursage (*ambrosia* dumosa) were observed to be important species. Average absolute shrub cover was measured at 21.9%; average shrub density measured

17.3 shrubs per 100 m^2 plot; and an average of 5.5 species was observed to occur per 100 m^2 plot. Baseline cover results are summarized in Table 5; density and species richness results are summarized in Table 6.

Table 5
Reference Site 3 – Catclaw Acacia Series
Baseline Cover Results

Transect	1	2	3	4	5	6	7	8	9	10	Total	Mean	Var.
Acacia greggii	10	2	12	19	2	5	2	0	24	5	81	8.1	
Bebbia juncea	0	0	0	0	0	0	3	0	0	0	3	0.3	
Larrea tridentata	7	6	0	0	0	6	10	8	5	1	43	4.3	
Ambrosia dumosa	0	0	3	0	0	1	0	0	0	0	4	0.4	
Ambrosia salsola	0	9	0	0	1	2	6	0	0	0	18	1.8	
Krameria bicolor	3	0	7	0	0	0	8	1	1	0	20	2	
Senna armata	4	0	0	0	0	0	0	0	0	0	4	0.4	
Ericameria sp.	0	4	6	0	0	0	0	4	7	2	23	2.3	
Ephedra sp.	0	0	0	8	5	2	4	0	0	0	19	1.9	
Psorothamnus spinosa	0	0	0	5	6	12	0	0	0	0	23	2.3	
Cylindropuntia ramosissima	0	0	0	4	0	0	0	0	0	0	4	0.4	
Absolute Shrub Cover Percentage	**19**	**19**	**23**	**31**	**14**	**32**	**28**	**13**	**32**	**8**	**219**	**21.90**	**75.21**
% Bare Ground	81	81	77	69	86	68	72	87	68	92	781	78.1	
Minimum Number of Transects Required to Achieve Confidence													
Sample Size Calculations for Shrub Cover					**S^2**	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
					75.21	1.38	1.83	2.26	21.9	19.18	**8.87**	**7.19**	**5.42**

***** Cover values for individual shrub species will not necessarily equal absolute shrub cover due to overlapping vegetation at transect points.
s^2 = variance, t^2 = Students' t value for sample, x = sample average

Table 6
Reference Site 3 – Catclaw Acacia Series
Baseline Density and Species Richness Results

Transect	1	2	3	4	5	6	7	8	9	10	Total	Mean	Variance
Acacia greggii	2	2	8	6	1	1	1	2	6	1	30	3.00	
Bebbia juncea	0	0	0	0	0	0	1	0	0	0	1	0.10	
Larrea tridentata	2	3	0	0	1	2	5	3	2	1	19	1.90	
Ambrosia dumosa	3	1	7	6	3	5	1	2	2	0	30	3.00	
Ambrosia salsola	0	6	1	0	4	2	2	1	2	0	18	1.80	
Krameria bicolor	1	0	4	0	0	0	2	5	3	1	16	1.60	
Senna armata	4	0	0	0	0	0	0	0	0	0	4	0.40	
Ericameria sp.	0	1	1	0	0	1	1	0	0	1	5	0.50	
Ephedra sp.	0	0	0	13	15	15	1	0	0	0	44	4.40	
Psorothamnus spinosa	0	1	0	0	1	2	0	0	0	0	4	0.40	
Cylindropuntia ramosissima	1	0	0	1	0	0	0	0	0	0	2	0.20	
Total Shrub Density	**13**	**14**	**21**	**26**	**25**	**28**	**14**	**13**	**15**	**4**	**173**	**17.30**	**56.01**
Total Species Richness	**6**	**6**	**5**	**4**	**6**	**7**	**7**	**5**	**5**	**4**	**55**	**5.50**	**1.17**

Minimum Number of Transects Required to Achieve Confidence									
	S^2	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
Sample Size Calculations for Shrub Density	56.01	1.383	1.833	2.262	17.3	11.97	**10.58**	**8.58**	**6.47**
	S^2	**t^2 (80%)**	**t^2 (90%)**	**t^2 (95%)**	**x**	**(0.2x)^2**	**95%**	**90%**	**80%**
Sample Size Calculations for Species Richness	1.17	1.38	1.83	2.26	5.5	1.21	**2.19**	**1.77**	**1.34**

s^2 = variance, t^2 = Students' t value for sample, x = sample average

3.0 REVEGETATION

Revegetation of the site upon removal of the tailings would follow a series of steps. These steps may be modified or changed should new information or techniques that would improve the results of the revegetation activities become available. The removal of the tailings allows the site

to be reclaimed and revegetated back to its natural conditions. The currently disturbed tailings site would be reclaimed to approximately 26.8 acres of creosote bush series vegetation, 33.8 acres of brittlebush series vegetation, and 0.90 acres of catclaw acacia series vegetation. At the proposed mill site, 8.5 acres of creosote bush series habitat would be revegetated at the end of operations (see Figure 4). Success criteria and revegetation strategies were designed specifically to meet the needs of the vegetative communities and environmental conditions at the site.

3.1 SOIL SALVAGE

The proposed activities would remove the existing iron ore tailings at the site which have no soil cover. Prior to ore extraction, any available soils onsite from the mill sites, plant area and other on-site areas will be stockpiled in separate identified stockpiles for use as a seed bank during revegetation. Soil stockpiles will be located in the southwestern portion of the patented lands and on the southern and eastern perimeter of the mill sites. The soil stockpiles will be clearly marked and covered with rock or seeded with a native erosion control cover to limit wind and water erosion. In addition, fines from the tailings processing will be assessed for use as soil augmentation and stockpiled in the northwestern portion of Phase 1B.

3.2 SEED COLLECTION

The goal of seed collection is to preserve the local genetic diversity of the existing plant community while providing seed that is well suited for growth at the site. Seed collection must be undertaken and monitored by a professional seed collecting firm or a qualified botanist. When seed collection is not possible, a certified weed free seed mix may be used in lieu of seed collected at the site. Certified weed free seed mixes are available and may be purchased from professional nurseries.

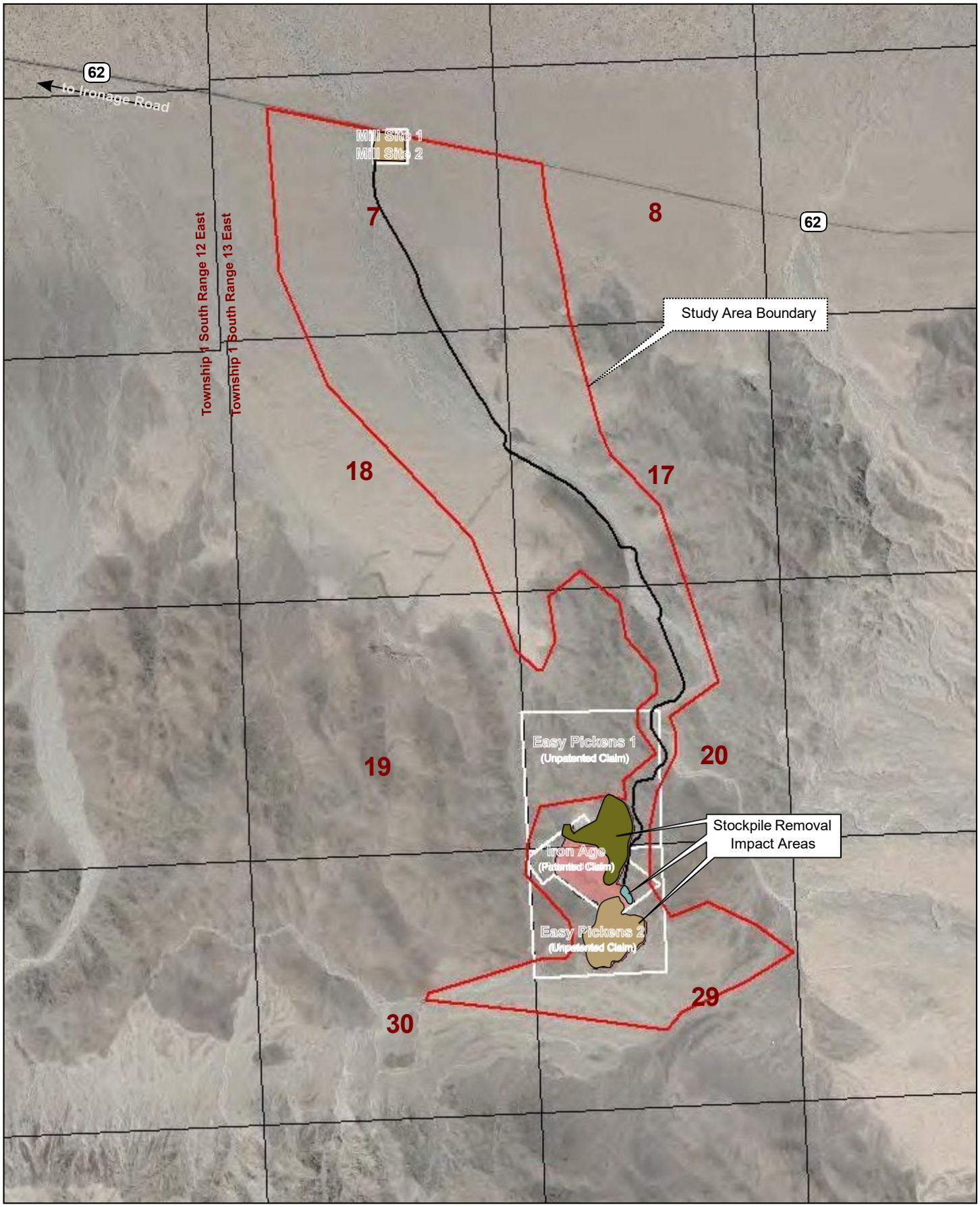
3.3 SITE PREPARATION

The proposed operation would involve the removal of tailings left behind by a previous mining operation. As tailings are loosened and removed for processing the surfaces to be revegetated would be returned to their original land contours. Where possible, revegetation surfaces would be ripped to about 18 to 36 inches in depth to break up compacted areas and would be left in a textured or rough condition with shallow rills and furrows to create optimal conditions for revegetation with a native seed mix. Any available soils and fines will be deposited in random “islands” up to one-foot thick and seeded.

Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control. By providing short-term erosion control, more favorable growing conditions will be created for climax species that will provide long-term erosion control.

3.4 IRRIGATION

The plant palette proposed for the mine site consists of primarily drought-tolerant plants species that should perform well without additional water. The average precipitation in the area should be sufficient for seed germination and root establishment of native species.



N

0 0.5
Approximate Miles

LILBURN CORPORATION

	Creosote Bush Series	35.3 acres
	Brittlebush Series	33.8 acres
	Catclaw Acacia Series	0.90 acres
	Quarry Area / Roads (no revegetation)	27.0 acres

Revegetation Areas

Iron Age Mine Revegetation Plan
San Bernardino County, California
Figure 4

Planting in the fall, prior to the winter rains, will be sufficient for seed germination and root establishment and reduce weed growth that is typically associated with supplemental irrigation. Scarification of the soil and the creation of surface rills and furrows will allow for maximized collection of water from rain events and run-off.

3.5 FERTILIZATION

No fertilization of the site is recommended. The native seeds used for revegetation will be tolerant of existing soil conditions. Additionally, the mechanical loosening, and creation of surface rills and furrows, will create conditions favorable for seed germination and root establishment by native species. Widespread use of fertilizers on desert sites appears to benefit non-native weedy species and not the native species sought as the goal of the revegetation plan (Clary, 1987).

3.6 WEED CONTROL

The purpose of the non-native invasive species control plan is to reduce or eliminate the occurrence of non-native invasive plant species that may invade the site where active and natural revegetation is taking place. Non-native invasive species (weeds) can compete with native plant species for available moisture and nutrients and consequently interfere with revegetation of the site.

The occurrence of non-native invasive species on-site shall be monitored by visual inspection. The goal is to prevent non-native invasive species from becoming established and depositing seeds in revegetated areas. No areas will be allowed to have more than 10 percent of the ground cover provided by non-native invasive species. If inspections reveal that non-native invasive species are becoming or have established on-site, then removal will be initiated. Inspections shall be made in conjunction with revegetation monitoring.

Non-native invasive species removal will be accomplished through manual, mechanical or chemical methods depending on the specific circumstances. For example, solitary or limited numbers of non-native invasive shrub species will be manually removed (chopped) and the stumps sprayed with an approved weed killer such as Round-Up. Smaller plants (wild oats and bromes) that cover more area may be sprayed, scraped with a tractor, or chopped by hand, depending upon the size of the area of infestation and the number of desired native plants in proximity or mixed in with the non-native invasive species.

Reports of inspections and weed control implementation shall be part of the annual revegetation monitoring and kept on file by the operator.

3.7 SEEDING METHODS AND RATES

The revegetation area will be seeded with a certified weed-free seed mix using a broadcast method. Following seeding, the area will be raked in order to cover the seeds and protect them from desiccation and predation. Unique seed mixes were developed for each of the vegetation series occurring in the project impact area. The recommended seed mix and seeding rate for each

of the vegetation series is outlined in Table 7 and may be modified or species re-placed due to availability of the seed that year and seed costs.

Table 7
Iron Age Mine
Recommended Seed Mix and Rates

Species	PLS LBS/ Acre
Brittle Bush Series	
Encelia farinose (Brittlebush)	2
Larrea tridentate (creosote bush)	5
Ambrosia dumosa (white bursage)	4
Vulpia octoflora (six-weeks fescue)	1
Lupinus sparciflorus (Mojave lupine)	1
Sphaeralcea ambigua (Desert globemallow)	2
Baileya multiradiata (Desert marigold)	1
Lasthenia californica (California goldfields)	0.5
Ambrosia or Hymenoclea salsola (chessebush)	1
Simmondsia chinensis (coffeeberry)	1
Creosote Bush Series	
Larrea tridentate (creosote bush)	8
Ambrosia dumosa (white bursage)	6
Vulpia octoflora (six-weeks fescue)	1
Lupinus sparciflorus (Mojave lupine)	1
Baileya multiradiata (Desert marigold)	1
Lasthenia californica (California goldfields)	0.5
Malacothrix glabrata (desert dandelion)	0.1
Catclaw Acacia Series	
Acacia greggii (catclaw acacia)	1.
Bebbia juncea (sweet bush)	0.1
Larrea tridentate (creosote bush)	4
Ambrosia dumosa (white bursage)	3
Senna armata (spiny senna)	2
Ephedra californica (California jointfir)	1
Psorothamnus spinosa (smoketree)	1
Vulpia octoflora (six-weeks fescue)	1
Lupinus sparciflorus (Mojave lupine)	1
Hymenoclea salsola (chessebush)	1
Lasthenia californica (California goldfields)	0.5

Per OMR comments in November 2012, the following successional species and grasses will be added to the seed mix at a rate of 1 to 2 pounds of pure live seed: big galleta, six-weeks grama, six weeks three awn, strigose lotus, black-banded rabbitbrush, and wire lettuce.

3.8 SCHEDULE OF REVEGETATION

Seeding of the revegetation area shall occur at the appropriate time of the year and at an application rate for optimum seed sprouting and growth. Seeding is recommended to occur in the fall after the first substantial rains but prior to winter rains. Following the initial seeding, revegetation areas will be monitored annually, and as necessary, appropriate remediation action such as reseeding and weed removal will be determined at the time of monitoring.

3.9 TEST PLOTS

The operator shall establish at a minimum, seven 100 meter^2 test plots representative of an area where the tailings are removed. The test plots will be located in the southwestern portion of the site where tailings will be removed within the first two years and within a drainage to be reclaimed for the catclaw seed mixture to be determined. Test plots will include surface ripping/no seeding (control plot); surface ripping and seeding as described above with each of the three seed mixtures; and surface ripping, placement of fines, and seeding as described with each of the three seed mixtures. Additional tests will be conducted if the initial tests and any active revegetation are not successful and may include various types and amounts of seeds and different surface/soil preparation.

4.0 REVEGETATION MONITORING

4.1 SUCCESS CRITERIA

Successful revegetation will be achieved when a self-sustaining native plant cover is established in the disturbed areas of the proposed mining activity. The revegetated site must resemble and blend into the natural surrounding environment. The success of the revegetation effort will be determined through statistical comparison of the revegetated areas to the baseline inventory.

Acceptable performance standards for mine reclamation are based on a percentage of cover, density, and species richness when compared with the baseline. An acceptable standard at the Iron Age Mine would measure success at 45% of the baseline cover, 45% of the baseline density, and 40% of the baseline species richness five years after reclamation. The revegetation success criterion for each of the sampled habitat types is outlined in Table 8.

4.2 TECHNICAL ASSESSMENT

The permanence and sustainability of the revegetated plant communities will be determined annually after the initial seeding. Annual assessments of the reclamation area will be conducted by a qualified botanist to determine the success of the revegetation effort. Interim success standards may be used as thresholds for annual monitoring and to ensure the success of revegetation.

Table 8
Iron Age Mine
Recommended Success Criteria

	Baseline Mean	Standard Success Percentage	Success Criteria
Brittlebush Series			
Cover	10.0%	45%	5% cover of native perennials
Shrub Density	8.8*	45%	3 native perennials per 100 m^2
Species Richness	2.5*	40%	2 native perennials per 100 m^2
Creosote Bush Series			
Cover	9.6%	45%	4% cover of native perennials
Shrub Density	6.4*	45%	3 native perennials per 100 m^2
Species Richness	1.1*	40%	1 native perennial per 100 m^2
Catclaw Acacia Series			
Cover	21.9%	45%	10% cover of native perennials
Shrub Density	17.3*	45%	8 native perennials per 100 m^2
Species Richness	5.5*	40%	2 native perennials per 100 m^2

*per 100 m^2 plot

The plant species will be evaluated for relative success as determined by the cover, density, and species richness success criteria. Remedial actions include removing non-native invasive species and reseeding based on annual assessment results. An evaluation of the surviving species will be repeated annually following initial seeding for five years or until the success criteria are achieved.

Annual monitoring will include random transect sampling within the revegetation area. The number of transects and plots will vary in order to produce the 80% confidence level required under SMARA's Performance Standards for Revegetation. The following data will be collected within transects and plots:

a. Survivorship: assessed by absolute counts
b. Plant density
c. Species richness
d. Cover per specified area

All data will be recorded on a standard form and copies will be submitted as an appendix to each Annual Report. Photo documentation will also be included for representative transects in order to visually document annual vegetation changes and community development.

4.3 REPORTING

Iron Age Mine will document the progress of the revegetation effort and submit Annual Maintenance and Monitoring reports to the County of San Bernardino. Annual reports are due by December 31st of each year.

5.0 CONCLUSION

As tailings are removed, the site will be prepared for revegetation concurrently by returning the surface to its original natural contours and scarifying to create conditions optimal for seeding. The revegetation areas including the tailings, plant, mill sites and miscellaneous areas will be covered with available surface materials in "islands," broadcast seeded, and raked to cover seeds and protect them from desiccation and predation. Seeding would occur following the first rain of the fall season and before the winter rains.

The acceptable performance standards for at the Iron Age Mine would measure success at 45% of the baseline cover, 45% of the baseline density, and 40% of the baseline species richness five years after reclamation until success criteria achieved. Accordingly successful revegetation in the brittlebush series revegetation area would be achieved at 5% cover by native perennials, three native perennials per 100 m^2 plot, and one species per 100 m^2 plot. Similarly, successful revegetation in the creosote bush series revegetation area would be achieved at 4% cover by native perennials, three native perennials per 100 m^2 plot, and one native perennial species per 100 m^2 plot. Successful revegetation in the acacia catclaw series would be achieved at 10% cover by native perennials, eight native perennials per 100 m^2 plot, and two native perennial species per 100 m^2 plot.

Annual assessments of the reclamation area will be conducted by a revegetation specialist to determine the success of the revegetation effort until said criteria are achieved. Remedial action would occur per the recommendation of the revegetation specialist.

6.0 REFERENCES

Clary, R.F. 1987. Roadside revegetation in the Mojave Desert. *Restoration and Management Notes,* Vol. 5:2 page 97.

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APPENDIX A
OBSERVED SPECIES LIST

List of Plants Observed at Iron Age Mine Haul Road, Mill Site, and Quarry Study Area			
EPHEDRACEAE		**JOINT-FIR FAMILY**	
	Ephedra californica		California joint-fir
AMARANTHACEAE		**AMARANTH FAMILY**	
	Tidestromia suffruticosa var. *oblongifolia*		Arizona honeysweet
APOCYNACEAE		**DOGBANE FAMILY**	
	Asclepias subulata		Milkweed
	Funastrum hirtellum		Hairy milkweed
ASTERACEAE		**COMPOSITE FAMILY**	
	Adenophyllum porophylloides		San Felipe dyssodia
	Ambrosia acanthicarpa		Annual bur-sage
	Ambrosia dumosa		White bursage, Burrobush
	Ambrosia salsola v. *salsola*		Cheeseweed
	Baileya pauciradiata		Colorado desert marigold
	Baileya multiradiata		Desert marigold
	Bebbia juncea var. *aspera*		Sweetbush
	Chaenactis carphoclinia var. *carphoclinia*		Pebble pincushion
	Encelia farinosa		Brittlebush
	Encelia frutescens		Rayless encelia
	Ericameria paniculata		Black-banded rabbitbrush
	Geraea canescens		Desert Sunflower
	Malacothrix glabrata		Desert dandelion
	Monoptilon bellioides		Mojave desert star
	Palafoxia arida var. *arida*		Spanish needles
	Perityle emoryi		Rock-daisy
	Peucephyllum schottii		Pygmy-cedar
	Pleurocoronis pleuriseta		Arrow-leaf
	Rafinesquia neomexicana		Desert chicory
	Stephanomeria pauciflora		Wire lettuce
	Trichoptilium incisum		Yellow dome
BIGNONIACEAE		**BIGNONIA FAMILY**	
	Chilopsis linearis ssp. *arcuata*		Desert willow
BORAGINACEAE		**BORAGE FAMILY**	
	Amsinckia tessellata var. *tessellata*		Devil's lettuce
	Cryptantha angustifolia		Narrow-leaved cryptantha
	Cryptantha barbigera		Bearded cryptantha

	Cryptantha circumcissa		Cushion cryptantha
	Cryptantha decipiens		Gravel cryptantha
	Cryptantha maritima		Guadalupe cryptantha
	Cryptantha pterocarya		Winged cryptantha
	Cryptantha racemosa		Shrubby cryptantha
	Pectocarya platycarpa		Broadfruit combseed
	Phacelia crenulata var. *ambigua*		Notch-leaved phacelia
	Phacelia pedicellata		Specter phacelia
	Tiquilia plicata		Fanleaf crinklemat
BRASSICACEAE		**MUSTARD FAMILY**	
	*Brassica tournefortii**		African mustard*
	Lepidium lasiocarpum ssp. *lasiocarpum*		Pepperweed
	Streptanthella longirostris		Longbeak fiddle mustard
CACTACEAE		**CACTUS FAMILY**	
	Cylindropuntia echinocarpa		Silver cholla
	Cylindropuntia ramosissima		Diamond cholla
	Opuntia basilaris var. *basilaris*		Beavertail cactus
CARYOPHYLLACEAE		**PINK FAMILY**	
	Achyronychia cooperi		Onyx flower, Frost-mat
EUPHORBIACEAE		**SPURGE FAMILY**	
	Chamaesyce micromeria		Sonoran sand mat
	Ditaxis neomexicana		Common ditaxis
FABACEAE		**LEGUME FAMILY**	
	Dalea mollis		Hairy prairie clover
	Lotus strigosus		Strigose lotus
	Lupinus arizonicus		Arizona lupine
	Marina parryi		Parry dalea
	Psorothamnus emoryi		Emory indigobush
	Psorothamnus spinosus		Smoke tree
	Senegalia greggii		Catclaw acacia
	Senna armata		Desert senna
GERANIACEAE		**GERANIUM FAMILY**	
	*Erodium cicutarium**		Red-stem filaree*
KRAMERIACEAE		**RHATANY FAMILY**	
	Krameria grayi		White rhatany

LAMIACEAE		**MINT FAMILY**	
	Hyptis emoryi		Desert lavender
	Salvia columbariae		Chia
LOASACEAE		**LOASA FAMILY**	
	Mentzelia involucrata		White bract stickleaf
MALVACEAE		**MALLOW FAMILY**	
	Eremalche rotundifolia		Desert five-spot
	Sphaeralcea ambigua var. *ambigua*		Globe mallow
NYCTAGINACEAE		**FOUR-O'CLOCK FAMILY**	
	Allionia incarnata		Windmills
	Mirabilis laevis var. *retrorsa*		Desert wishbone bush
ONAGRACEAE		**EVENING-PRIMROSE FAMILY**	
	Chylismia brevipes ssp. *brevipes*		Yellow cups
	Chylismia cardiophylla ssp. *cardiophylla*		Heart-leaved suncup
	Chylismia claviformis ssp. *aurantiaca*		Brown-eyed evening-primrose
	Oenothera deltoides ssp. *deltoides*		Bird-cage evening-primrose
PAPAVERACEAE		**POPPY FAMILY**	
	Eschscholzia minutiflora		Pygmy goldenpoppy
PLANTAGINACEAE		**PLANTAIN FAMILY**	
	Mohavea confertiflora		Ghost flower
	Plantago ovata		Woolly plantain
POLEMONIACEAE		**PHLOX FAMILY**	
	*Alciella latifolia s*sp. *latifolia*		Broadleaf gilia
	Langloisia setosissima ssp. *punctata*		Lilac sunbonnet
POLYGONACEAE		**BUCKWHEAT FAMILY**	
	Chorizanthe brevicornu var. brevicornu		Brittle spineflower
	Chorizanthe rigida		Rigid spineflower
	Eriogonum deflexum ssp. *deflexum*		Flat-topped skeleton weed
	Eriogonum inflatum		Desert trumpet
	Eriogonum thomasii		Thomas buckwheat
	Eriogonum trichopes		Little trumpet
RESEDACEAE		**MIGNONETTE FAMILY**	

	Oligomeris linifolia		Lineleaf whitepuff
SOLANACEAE		**NIGHTSHADE FAMILY**	
	Lycium andersonii		Anderson wolfberry
	Nicotiana obtusifolia		Desert tobacco
	Physalis crassifolia		Thick-leaved ground cheery
VISCACEAE		**MISTLETOE FAMILY**	
	Phoradendron californicum		Desert mistletoe
ZYGOPHYLLACEAE		**CALTROP FAMILY**	
	Fagonia laevis		California fagonbush
	Larrea tridentata		Creosote bush
AGAVACEAE		**CENTURY PLANT FAMILY**	
	Yucca brevifolia		Joshua tree
	Yucca schidigera		Mojave cholla
POACEAE		**GRASS FAMILY**	
	Aristida adscensionis		Six weeks three awn
	Bouteloua barbata var. *barbata*		Six weeks grama
	Dasyochloa pulchella		Fluff grass
	Hilaria rigida		Big galleta
	Muhlenbergia microsperma		Little seed muhly
	*Schismus arabicus**		Mediterranean grass*
* denotes non-native species		** Taxonomy follows Baldwin 2012,	

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List of Wildlife Observed at Iron Age Mine Haul Road, Mill Site, and Quarry Study Area

LATIN NAME	COMMON NAME
BIRDS	
CATHARTIDAE	**NEW WORLD VULTURES**
Cathartes aura	Turkey Vulture
ACCIPITRIDAE	**HAWK FAMILY**
Buteo jamaicensis	Red-tailed Hawk
Buteo swainsoni	Swainson's Hawk
COLUMBIDAE	**PIGEON AND DOVE FAMILY**
Zenaida macroura	Mourning Dove
Columba livia	Rock Dove*
CAPRIMULGIDAE	**GOATSUCKER FAMILY**
Phalaenoptilus nuttallii	Common Poorwill
APODIDAE	**SWIFT FAMILY**
Aeronautes saxatalis	White-throated Swift
TROCHILIDAE	**HUMMINGBIRD FAMILY**
Calypte anna	Anna's Hummingbird
Calypte costae	Costa's Hummingbird
TYRANNIDAE	**TYRANT FLYCATCHER FAMILY**
Sayornis nigricans	Black Phoebe
Sayornis sayi	Say's Phoebe
Empidonax wrightii	Gray Flycatcher
Myiarchus cinerascens	Ash-throated flycatcher
Tyrannus verticalis	Western kingbird
CORVIDAE	**JAY AND CROW FAMILY**
Corvus brachyrhynchos	American Crow
Corvus corax	Common Raven
ALAUDIDAE	**LARK FAMILY**

Eremophila alpestris	Horned Lark**
Lanius ludovicianus	Loggerhead Shrike**
REMIZIDAE	**VERDIN FAMILY**
Auriparus falviceps	Verdin
VIREONIDAE	**VIREO FAMILY**
Vireo gilvus	Warbling Vireo
TROGLODYTIDAE	**WREN FAMILY**
Thryomanes bewickii	Bewick's Wren
Campylorhynchus brunneicapillus	Cactus Wren
Salpinctes obsoletus	Rock Wren
SYLVIIDAE	**GNATCATCHER FAMILY**
Polioptila melaneura	Black-tailed Gnatcatcher**
PTILOGONATIDAE	**SILKY-FLYCATCHER FAMILY**
Phainopepla nitens	Phainopepla
PARULIDAE	**WOOD-WARBLER FAMILY**
Dendroica coronata	Yellow-rummped Warbler
Oreothlypis celata	Orange-crowned Warbler
Wilsonia pusilla	Wilson's Warbler
EMBERIZIDAE	**SPARROW FAMILY**
Amphispiza bilineata	Black-throated Sparrow
Junco hyemalis	Dark-eyed Junco
Spizella breweri	Brewer's Sparrow
Zonotrichia leucophrys	White-crowned Sparrow
ODONTOPHORIDAE	
Callipepla gambelii	Gambel's Quail
PICIDAE	
Picoides scalaris	Ladder-backed Woodpecker
Colaptes auratus	Northern Flicker
HIRUNDINIDAE	
Petrochenlidon pyrrhonota	Cliff Swallow
Hirundo rustica	Barn Swallow

FRINGILLIDAE	
Carpodacus mexicanus	House Finch
MIMIDAE	**MOCKINGBIRDS AND THRASHERS**
Mimus polyglottis	Northern mockingbird
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European Starling
PARULIDAE	**WOOD WARBLERS**
Dendroica petechia	Yellow Warbler**
Dendroica coronate	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
THRAUPIDAE	**TANAGER FAMILY**
Piranga ludoviciana	Western Tanager
PASSERIDAE	**OLD WORLD SPARROWS**
Passer domesticus	House sparrow*
Spizella breweri	Brewer's sparrow
Amphispiza bilineata	Black-throated sparrow
Amphispiza belli	Sage sparrow
Zonotrichia leucophrys	White-crowned sparrow
OTHER BIRDS	
Sturnella neglecta	Western Meadowlark
MAMMALS	
LEPORIDAE	**HARE, RABBIT FAMILY**
Lepus californicus	Black-tailed Jackrabbit**
Sylvialagus audobonii	Desert cottontail
SCIURIDAE	**SQUIRREL FAMILY**
Ammospermophilus leucurus	White-tailed Antelope Squirrel
Spermophilus leucurus	California Ground Squirrel
MURIDAE	**MOUSE AND RAT FAMILY**
Neotoma sp.	Woodrat
HETEROMYIDAE	**KANGAROO RAT FAMILY**

Dipodomys sp.	Kangaroo Rat
Neotoma lepida	Desert Woodrat
CANIDAE	**DOGS/WOLVES/FOXES**
Canis familiarus	Domestic dog
Canis latrans	Coyote
BOVIDAE	**BOVIDS**
Ovis canadensis nelsoni	Nelson's bighorn sheep
OTHER MAMMALS	
Thomomys bottae	Botta pocket gopher
REPTILES AND AMPHIBIANS	
CROTAPHYTIDAE	**COLLARED, LEOPARD LIZARD FAMILY**
Gambelia wislizenii	Long-nosed Leopard Lizard
IGUANIDAE	**IGUANA AND CHUCKWALLA FAMILY**
Diposaurus dorsalis dorsalis	Northern Desert Iguana
Gambelia wislizenii wislizenii	Large-spotted Leopard Lizard
Urosaurus graciosus	Long-tailed Brush Lizard
Phrynosoma platyrhinos	Desert Horned Lizard
PHRYNOSOMATIDAE	**PHRYNOSOMATID LIZARD FAMILY**
Callisaurus draconoides rhodostictus	Western Zebra-tailed Lizard
Phrynosama platyrhinos calidiarum	Southern Desert Horned Lizard
Uta stansburiana	Common Side-blotched Lizard
TEIIDAE	**WHIPTAIL FAMILY**
Aspidoscelis tigris tigris	Great Basin Whiptail
Cnemidophorus tigris	Western whiptail Lizard
* denotes non-native species	
** denotes sensitive species	

APPENDIX B
SITE PHOTOS

US Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

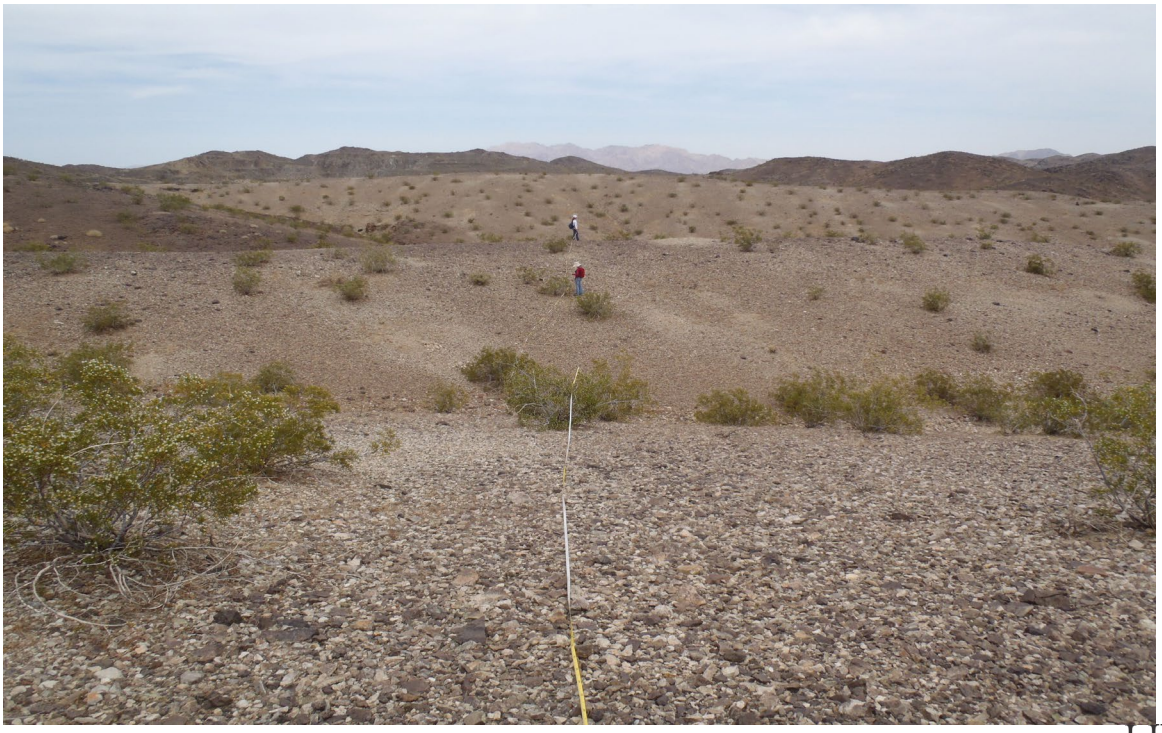
Catclaw acacia series ephemeral drainage.

Creosote bush series vegetation.

LILBURN CORPORATION

US Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Disturbed existing haul road that will be used as part of the proposed haul road right-of-way.

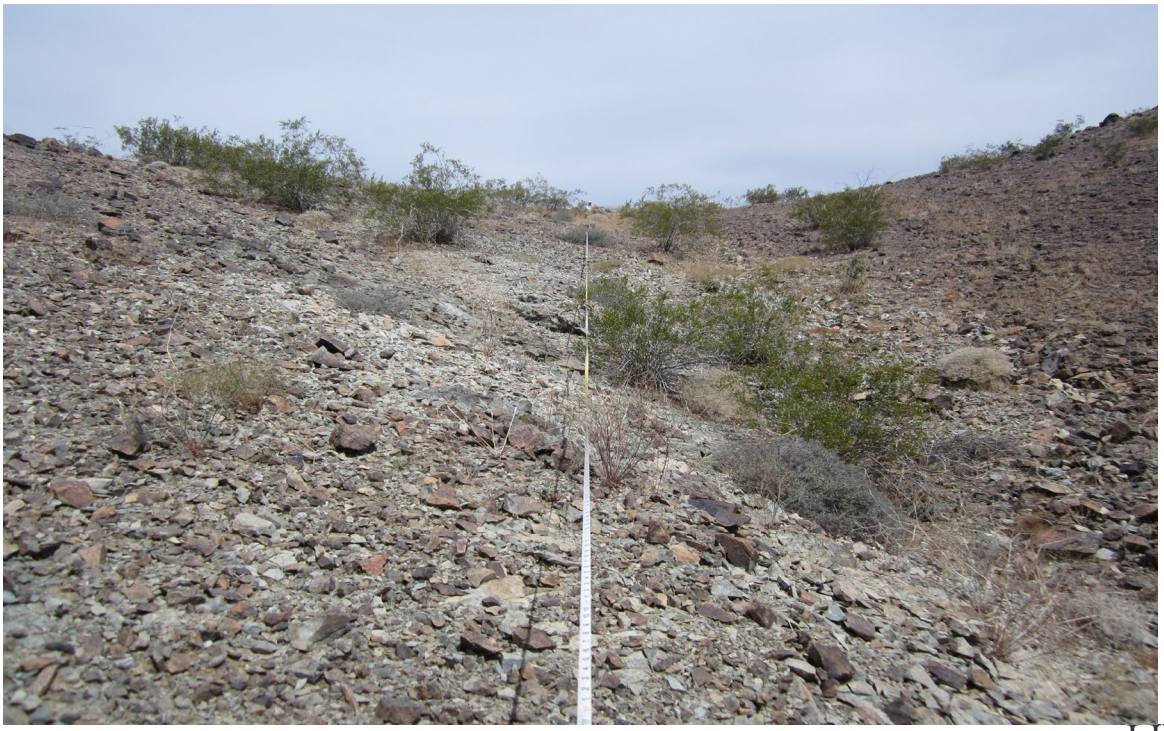


Creosote bush series vegetation sample transect.

LILBURN CORPORATION

US Iron Age Mine Site
San Bernardino County, California
Representative Site Photos

Sample transect in catclaw acacia series survey area.



Brittlebush series vegetation.

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APPENDIX C
DATA SHEETS

Project Iron Age Mine	**Transect** 1E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50	x								
1.00	x								
1.50	x								
2.00	x								
2.50	x								
3.00	x								
3.50	x								
4.00	x								
4.50	x								
5.00	x								
5.50	x								
6.00	x								
6.50	x								
7.00	x								
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11.00	x								
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12.00	x								
12.50	x								
13.00	x								
13.50	x								
14.00	x								
14.50	x								
15.00	x								
15.50	x								
16.00	x								
16.50	x								
17.00	x								

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farinosa	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50	x								
18.00	x								
18.50	x								
19.00	x								
19.50	x								
20.00	x								
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32.00	x								
32.50	x								
33.00	x								
33.50	x								
34.00	x								
34.50	x								
35.00	x								

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farinosa	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50	x								
36.00	x								
36.50	x								
37.00	x								
37.50	x								
38.00	x								
38.50	x								
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39.50	x								
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41.50	x								
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43.50	x								
44.00	x								
44.50	x								
45.00	x								
45.50	x								
46.00	x								
46.50		x							
47.00		x							
47.50	x								
48.00	x								
48.50	x								
49.00	x								
49.50	x								
50.00	x								

Percent Cover:	4	**4%**

Transect : E1
Plot Size: 100 square meters
Total Density: 9
Total Diversity: 2

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	7
Larrea tridentata	2

Project Iron Age Mine	**Transect** 2E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
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1.50									
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16.00									
16.50									
17.00									

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Encelia farinosa	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50									
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28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50			x						
44.00									
44.50									
45.00									
45.50									
46.00									
46.50		x							
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	1	4	**5%**

Transect : E2
Plot Size: 100 square meters
Total Density: 12
Total Diversity: 3

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	9
Larrea tridentata	2
Ericameria linearifolia	1

Project Iron Age Mine **Transect** 3E **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentat	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00			x						
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farnosa	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farinosa	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50		x							
44.00									
44.50									
45.00									
45.50		x							
46.00		x							
46.50									
47.00		x							
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	4	1	**5%**

Transect : E3
Plot Size: 100 square meters
Total Density: 8
Total Diversity: 2

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	6
Larrea tridentata	2

Project Iron Age Mine	**Transect** 4E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Encelia farinosa	**Plant:** Larrea tridentata	**Plant:** Cylindropuntia ramosissima	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
0.50			x						
1.00			x						
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00			x						
15.50			x						
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:	Plant:	Plant:
17.50				x					
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:	Plant:	Plant:
35.50			x						
36.00			x						
36.50			x						
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:			7	1					**8%**

Transect : E4
Plot Size: 100 square meters
Total Density: 4
Total Diversity: 3

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	1
Larrea tridentata	2
Cylindropuntia ramosissima	1

Project Iron Age Mine **Transect** 5E **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant:	Plant:	Plant:	Plant:	Plant:
0.50			x						
1.00			x						
1.50			x						
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00		x							
11.50		x							
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50				x					
19.00				x					
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00		x							
27.50		x							
28.00		x							
28.50		x							
29.00		x							
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant:	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									
Percent Cover:		7	3	2					**12%**

Transect : E5
Plot Size: 100 square meters
Total Density: 10
Total Diversity: 4

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	5
Larrea tridentata	3
Ambrosia dumosa	1
Cylindropuntia ramosissima	1

Project Iron Age Mine	**Transect** 6E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Encelia farinosa	**Plant:** Larrea tridentata	**Plant:** Ambrosia dumosa	**Plant:** Krameria bicolor	**Plant:** Cylindropuntia ramosissima	**Plant:**	**Plant:**	**Plant:**
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50			x						
8.00			x						
8.50			x						
9.00									
9.50									
10.00									
10.50					x				
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00					x				
16.50					x				
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00				x					
26.50				x					
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00		x							
33.50									
34.00									
34.50						x			
35.00						x			

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
35.50						x			
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50			x						
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	1	4	2	3	3	**13%**

Transect : E6
Plot Size: 100 square meters
Total Density: 10
Total Diversity: 5

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	1
Larrea tridentata	2
Ambrosia dumosa	3
Cylindropuntia ramosissima	2
Krameria bicolor	2

Project Iron Age Mine	**Transect** 7E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
0.50									
1.00									
1.50			x						
2.00			x						
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00			x						
8.50			x						
9.00			x						
9.50			x						
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50			x						
14.00			x						
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00			x						
26.50			x						
27.00			x						
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00			x						
34.50			x						
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farinosa	**Plant:** Larrea tridentata	**Plant:** Ambrosia dumosa	**Plant:** Krameria bicolor	**Plant:** Cylindropuntia ramosissima	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	13	**13%**

Transect : E7
Plot Size: 100 square meters
Total Density: 6
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	
Larrea tridentata	6
Ambrosia dumosa	
Cylindropuntia ramosissima	
Krameria bicolor	

Project Iron Age Mine	**Transect** 8E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Encelia farinosa	**Plant:** Larrea tridentata	**Plant:** Ambrosia dumosa	**Plant:** Krameria bicolor	**Plant:** Cylindropuntia ramosissima	**Plant:**	**Plant:**	**Plant:**
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00		x							
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00		x							
13.50									
14.00			x						
14.50									
15.00		x	x						
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50			x						
25.00			x						
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00			x						

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
35.50			x						
36.00			x						
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	3	7	0	0	0	**10%**

Transect : E8
Plot Size: 100 square meters
Total Density: 15
Total Diversity: 2

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	11
Larrea tridentata	4
Ambrosia dumosa	
Cylindropuntia ramosissima	
Krameria bicolor	

Project Iron Age Mine	**Transect** 9E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
0.50									
1.00			x						
1.50			x						
2.00			x						
2.50			x						
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50			x						
8.00			x						
8.50			x						
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50			x						
20.00			x						
20.50			x						
21.00			x						
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00			x						
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00			x						
41.50			x						
42.00			x						
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50			x						
46.00			x						
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	17	**17%**

Transect : E9
Plot Size: 100 square meters
Total Density: 7
Total Diversity: 2

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	1
Larrea tridentata	6
Ambrosia dumosa	
Cylindropuntia ramosissima	
Krameria bicolor	

Project Iron Age Mine	**Transect** 10E	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Encelia farinosa	**Plant:** Larrea tridentata	**Plant:** Ambrosia dumosa	**Plant:** Krameria bicolor	**Plant:** Cylindropuntia ramosissima	**Plant:**	**Plant:**	**Plant:**
0.50			x						
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50			x						
8.00			x						
8.50			x						
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farnosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00			x						
20.50			x						
21.00			x						
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00			x						
29.50			x						
30.00			x						
30.50			x						
31.00			x						
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Encelia farinosa	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Cylindropuntia ramosissima	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									
Percent Cover:		0	12	0	0	0			**12%**

Transect : E10
Plot Size: 100 square meters
Total Density: 7
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Encelia farinosa	
Larrea tridentata	7
Ambrosia dumosa	
Cylindropuntia ramosissima	
Krameria bicolor	

Project Iron Age Mine	**Transect** 1C	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50	x								
1.00	x								
1.50	x								
2.00	x								
2.50	x								
3.00	x								
3.50	x								
4.00	x								
4.50	x								
5.00	x								
5.50	x								
6.00	x								
6.50	x								
7.00	x								
7.50	x								
8.00	x								
8.50	x								
9.00	x								
9.50	x								
10.00	x								
10.50	x								
11.00	x								
11.50	x								
12.00	x								
12.50	x								
13.00		x							
13.50		x							
14.00	x								
14.50	x								
15.00	x								
15.50	x								
16.00	x								
16.50	x								
17.00	x								

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farinosa	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50	x								
18.00	x								
18.50	x								
19.00	x								
19.50	x								
20.00	x								
20.50		x							
21.00		x							
21.50		x							
22.00		x							
22.50	x								
23.00	x								
23.50	x								
24.00	x								
24.50	x								
25.00	x								
25.50	x								
26.00	x								
26.50	x								
27.00		x							
27.50		x							
28.00		x							
28.50		x							
29.00		x							
29.50	x								
30.00	x								
30.50	x								
31.00	x								
31.50	x								
32.00	x								
32.50	x								
33.00	x								
33.50	x								
34.00	x								
34.50	x								
35.00	x								

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Encelia farinosa	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50	x								
36.00	x								
36.50	x								
37.00		x							
37.50		x							
38.00		x							
38.50	x								
39.00	x								
39.50	x								
40.00	x								
40.50	x								
41.00	x								
41.50	x								
42.00	x								
42.50	x								
43.00	x								
43.50	x								
44.00	x								
44.50	x								
45.00		x							
45.50		x							
46.00	x								
46.50	x								
47.00	x								
47.50	x								
48.00	x								
48.50	x								
49.00	x								
49.50	x								
50.00	x								

Percent Cover:	16	**16%**

Transect : C1
Plot Size: 100 square meters
Total Density: 7
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	7

Project Iron Age Mine	**Transect** 2C	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
0.50									
1.00									
1.50									
2.00		x							
2.50									
3.00									
3.50		x							
4.00		x							
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00		x							
14.50		x							
15.00		x							
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50		x							
19.00		x							
19.50		x							
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00		x							
23.50		x							
24.00		x							
24.50		x							
25.00		x							
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
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43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	14	**14%**

Transect : C3
Plot Size: 100 square meters
Total Density: 7
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	7

Project Iron Age Mine **Transect** 3C **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50		x							
4.00		x							
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50		x							
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
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22.00									
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28.00									
28.50									
29.00									
29.50									
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30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00		x							
47.50		x							
48.00		x							
48.50									
49.00									
49.50									
50.00									

Percent Cover:	6	**6%**

Transect : 3C
Plot Size: 100 square meters
Total Density: 6
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	6

Project Iron Age Mine	**Transect** 4C	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
0.50									
1.00									
1.50									
2.00		x							
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00		x							
8.50		x							
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00		x							
27.50		x							
28.00		x							
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00		x							
33.50		x							
34.00		x							
34.50		x							
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
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42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	10	**10%**

Transect : 4C
Plot Size: 100 square meters
Total Density: 7
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	7

Project Iron Age Mine **Transect** 5C **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50		x							
8.00		x							
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
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22.00									
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24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50		x							
30.00		x							
30.50		x							
31.00		x							
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
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39.00									
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42.50									
43.00									
43.50									
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44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	6	**6%**

Transect : 5C
Plot Size: 100 square meters
Total Density: 5
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	5

Project Iron Age Mine	**Transect** 6C	**Date** 5-1-2012	
Point Intercept Data Sheet-Cover, Density, Diversity	**Page**	**of**	

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00		x							
8.50		x							
9.00		x							
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00		x							
15.50		x							
16.00		x							
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
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23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50		x							
28.00		x							
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50		x							
33.00		x							
33.50		x							
34.00		x							
34.50		x							
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00		x							
37.50		x							
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
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46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	15	**15%**

Transect : 6C
Plot Size: 100 square meters
Total Density: 12
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	12

Project Iron Age Mine **Transect** 7C **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
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13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50									
18.00									
18.50									
19.00									
19.50									
20.00		x							
20.50		x							
21.00									
21.50									
22.00									
22.50									
23.00									
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24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50		x							
29.00		x							
29.50		x							
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	5	**5%**

Transect : 7C
Plot Size: 100 square meters
Total Density: 4
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	4

Project Iron Age Mine	**Transect** 8C	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00		x							
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50		x							
11.00		x							
11.50		x							
12.00		x							
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00		x							
29.50		x							
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50		x							
45.00		x							
45.50		x							
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	10	0	0	0	0	**10%**

Transect : 8C
Plot Size: 100 square meters
Total Density: 6
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	6

Project Iron Age Mine	**Transect** 9C	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50		x							
9.00		x							
9.50		x							
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50		x							
32.00		x							
32.50									
33.00									
33.50		x							
34.00		x							
34.50		x							
35.00		x							

Point # Meters	Bare Ground,Rocks, Debris	**Plant:** Larrea tridentata	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**	**Plant:**
35.50		x							
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	10	**10%**

Transect : 9C
Plot Size: 100 square meters
Total Density: 6
Total Diversity: 1

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	6

Project Iron Age Mine	**Transect** 10C	**Date** 5-1-2012	
Point Intercept Data Sheet-Cover, Density, Diversity	**Page**	**of**	

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Ambrosia dumosa	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00		x							
12.50		x							
13.00		x							
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Dumosa ambrosia	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50									
29.00			x						
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Ambrosia dumoasa	Plant:	Plant:	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	3	1	**4%**

Transect : 10C
Plot Size: 100 square meters
Total Density: 4
Total Diversity: 2

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	3
Ambrosia dumosa	1

Project Iron Age Mine	**Transect** 1W	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** acacia gregii	**Plant:** Larrea tridentata	**Plant:** Psorothamnus spinosus	**Plant:** Senna armata	**Plant:** Krameria bicolor	**Plant:**	**Plant:**	**Plant:**
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00		x							
16.50		x							
17.00		x							

Point # Meters	Bare Ground,Rocks, Debris	Plant: acacia gregii	Plant: Larrea tridentata	Plant: Psorothamnus spinosus	Plant: Senna armata	Plant: Krameria bicolor	Plant:	Plant:	Plant:
17.50		x							
18.00		x							
18.50		x							
19.00		x							
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00									
28.50					x				
29.00					x				
29.50		x			x				
30.00		x			x	x			
30.50		x	x			x			
31.00			x			x			
31.50			x						
32.00									
32.50									
33.00									
33.50									
34.00			x						
34.50			x						
35.00			x						

Point # Meters	Bare Ground,Rocks, Debris	Plant: acacia gregii	Plant: Larrea tridentata	Plant: Psorothamnus spinosus	Plant: Senna armata	Plant: Krameria bicolor	Plant:	Plant:	Plant:
35.50			x						
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:		10	7		4	3			**19%**

Transect : 1W
Plot Size: 100 square meters
Total Density: 13
Total Diversity: 6

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Cylindropuntia ramosissima	1
Ambrosia dumosa	3
Larrea tridentata	2
Senna armata	4
Acacia gregii	2
Krameria bicolor	1

Project Iron Age Mine **Transect** 2W **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Ambrosia salsosa	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50		x							
15.00		x							
15.50		x							
16.00		x							
16.50		x							
17.00		x							

Point # Meters	Bare Ground,Rocks, Debris	Plant: Ambrosia salsosa	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:
17.50		x							
18.00		x	x						
18.50		x	x						
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50				x					
26.00				x					
26.50				x					
27.00				x					
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Ambrosia salsosa	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50					x				
45.00					x				
45.50									
46.00									
46.50					x				
47.00					x				
47.50					x				
48.00					x				
48.50									
49.00									
49.50									
50.00									
Percent Cover:		9	2	4	6				**19%**

Transect : 2W
Plot Size: 100 square meters
Total Density: 14
Total Diversity: 6

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	3
Ambrosia dumosa	1
Ambosia salsosa	6
Ericameria sp.	1
Psorothamnus spinosus	1
Acacia gregii	2

Project Iron Age Mine	**Transect** 3W	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Psorothamnus spinosus	**Plant:** Ambrosia salsola	**Plant:** Acacia gregii	**Plant:** Larrea tridentata	**Plant:** Krameria bicolor	**Plant:** Ambrosia dumosa	**Plant:** Ericameria sp.	**Plant:**
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant: Ambrosia dumosa	Plant: Ericameria sp.	Plant:
17.50									
18.00				x					
18.50				x					
19.00				x					
19.50				x					
20.00				x				x	
20.50				x				x	
21.00				x				x	
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50				x					
28.00				x		x			
28.50				x		x			
29.00				x					
29.50				x					
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00							x		
33.50							x		
34.00							x		
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant: Ambrosia dumosa	Plant: Ericameria sp.	Plant:
35.50									
36.00								x	
36.50								x	
37.00								x	
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00						x			
44.50						x			
45.00						x			
45.50						x			
46.00						x			
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									
Percent Cover:		0	0	12	0	7	3	6	**23%**

Transect : 3W
Plot Size: 100 square meters
Total Density: 21
Total Diversity: 5

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Ambrosia dumosa	7
Krameria bicolor	4
Acacia gregii	8
Ericameria sp.	1
Ambrosia salsola	1

Project Iron Age Mine **Transect** 4W **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Psorothamnus spinosus	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Ephedra sp.	Plant: cylindropuntia ramosissima	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00		x							
14.50		x							
15.00		x	x						
15.50		x	x						
16.00		x	x						
16.50		x	x						
17.00		x	x						

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Psorothamnus spinosus	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Ephedra sp.	Plant: cylindropuntia ramosissima	Plant:	Plant:
17.50		x							
18.00		x							
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00		x							
22.50		x							
23.00		x							
23.50		x							
24.00		x							
24.50		x							
25.00		x							
25.50		x							
26.00		x				x			
26.50		x				x			
27.00						x			
27.50						x			
28.00						x			
28.50						x			
29.00						x			
29.50						x			
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Psorothamnus spinosus	Plant: Ambrosia dumosa	Plant: Krameria bicolor	Plant: Ephedra sp.	Plant: cylindropuntia ramosissima	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00							x		
47.50							x		
48.00							x		
48.50							x		
49.00									
49.50									
50.00									

Percent Cover:		19	5			8	4		**31%**

Transect : 4W
Plot Size: 100 square meters
Total Density: 26
Total Diversity: 4

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Cylindropuntia ramosissima	1
Ambrosia dumosa	6
Ephedra sp.	13
Acacia gregii	6

Project Iron Age Mine **Transect** 5W **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Ephedra sp.	Plant:	Plant:	Plant:	Plant:
0.50		x							
1.00		x							
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50			x						
10.00			x						
10.50			x						
11.00			x						
11.50			x						
12.00			x						
12.50									
13.00									
13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Ephedra sp.	Plant:	Plant:	Plant:	Plant:
17.00									
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50				x					
24.00					x				
24.50					x				
25.00					x				
25.50					x				
26.00					x				
26.50									
27.00									
27.50									
28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Ephedra sp.	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									
Percent Cover:		2	6	1	5				**14%**

Transect : 5W
Plot Size: 100 square meters
Total Density: 25
Total Diversity: 6

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Ambrosia dumosa	3
Larrea tridentata	1
Ephedra sp.	15
Ambrosia salsola	4
Psorothamnus spinosus	1
Acacia gregii	1

Project Iron Age Mine	**Transect** 6W	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Larrea tridentata	**Plant:** Psorothamnus spinosus	**Plant:** Ambrosia salsola	**Plant:** Acacia gregii	**Plant:** Ephedra sp.	**Plant:** Ambrosia dumosa	**Plant:**	**Plant:**
0.50		x							
1.00		x							
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00			x						
14.50			x						
15.00			x						
15.50			x						
16.00			x						
16.50									
17.00			x						

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Ephedra sp.	Plant: Ambrosia dumosa	Plant:	Plant:
17.50			x						
18.00			x						
18.50			x						
19.00			x						
19.50			x						
20.00			x						
20.50									
21.00									
21.50									
22.00									
22.50									
23.00									
23.50									
24.00									
24.50									
25.00									
25.50									
26.00									
26.50									
27.00									
27.50									
28.00				x					
28.50				x		x			
29.00					x	x			
29.50					x	x			
30.00					x	x			
30.50					x	x			
31.00					x	x			
31.50									
32.00									
32.50									
33.00									
33.50									
34.00						x			
34.50						x			
35.00						x			

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Psorothamnus spinosus	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Ephedra sp.	Plant: Ambrosia dumosa	Plant:	Plant:
35.50						x			
36.00		x				x			
36.50		x							
37.00									
37.50									
38.00									
38.50									
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00							x		
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	4	12	2	5	11	1	**32%**

Transect : 6W
Plot Size: 100 square meters
Total Density: 28
Total Diversity: 7

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Ambrosia dumosa	5
Ephedra sp.	15
Larrea tridentata	2
Acacia gregii	1
Ambrosia salsola	2
Psorothamnus spinosus	2
Ericameria sp.	1

Project Iron Age Mine **Transect** 7W **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Bebbia juncea	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Ephedra sp.	Plant: Krameria bicolor	Plant:	Plant:
0.50									
1.00		x							
1.50		x							
2.00									
2.50									
3.00			x						
3.50			x						
4.00			x						
4.50									
5.00									
5.50									
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00				x	x				
10.50				x	x				
11.00				x	x				
11.50				x	x				
12.00				x	x				
12.50				x	x				
13.00					x				
13.50					x				
14.00					x				
14.50					x				
15.00					x				
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Bebbia juncea	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Ephedra sp.	Plant: Krameria bicolor	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
20.00									
20.50									
21.00									
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22.00									
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28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00		x				x	x		
33.50		x				x	x		
34.00		x				x	x		
34.50		x				x	x		
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Larrea tridentata	Plant: Bebbia juncea	Plant: Ambrosia salsola	Plant: Acacia gregii	Plant: Ephedra sp.	Plant: Krameria bicolor	Plant:	Plant:
35.50									
36.00									
36.50									
37.00									
37.50							x		
38.00							x		
38.50							x		
39.00							x		
39.50		x							
40.00		x							
40.50		x							
41.00		x							
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									
Percent Cover:		10	3	6	11	4	8		**28%**

Transect : 7W
Plot Size: 100 square meters
Total Density: 14
Total Diversity: 7

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	5
Krameria bicolor	2
Ephedra sp.	1
Acacia gregii	1
Ambrosia dumosa	1
Ericameria sp.	1
Ambrosia salsola	1

Project Iron Age Mine **Transect** 8W **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
4.00									
4.50									
5.00									
5.50									
6.00									
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13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50									
19.00									
19.50									
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28.00									
28.50									
29.00									
29.50									
30.00									
30.50									
31.00									
31.50									
32.00									
32.50									
33.00									
33.50									
34.00		x							
34.50		x							
35.00		x							

Point # Meters	Bare Ground,Rocks, Debris	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant:	Plant:	Plant:	Plant:	Plant:
35.50		x							
36.00									
36.50									
37.00									
37.50									
38.00									
38.50			x						
39.00			x						
39.50			x						
40.00			x						
40.50			x						
41.00									
41.50									
42.00									
42.50				x					
43.00									
43.50									
44.00			x						
44.50			x						
45.00			x						
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	4	8	1	**13%**

Transect : 8W
Plot Size: 100 square meters
Total Density: 13
Total Diversity: 5

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Krameria bicolor	5
Ambrosia dumosa	2
Larrea tridentata	3
Ericameria sp.	1
Acacia gregii	2

Project Iron Age Mine	**Transect** 9W	**Date** 5-1-2012	

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	**Bare Ground,Rocks, Debris**	**Plant:** Acacia gregii	**Plant:** Ericameria sp.	**Plant:** Larrea tridentata	**Plant:** Krameria bicolor	**Plant:**	**Plant:**	**Plant:**	**Plant:**
0.50									
1.00									
1.50									
2.00									
2.50									
3.00		x							
3.50		x							
4.00		x							
4.50		x							
5.00		x							
5.50		x							
6.00									
6.50									
7.00									
7.50									
8.00									
8.50									
9.00									
9.50									
10.00									
10.50									
11.00									
11.50									
12.00									
12.50									
13.00									
13.50									
14.00									
14.50		x							
15.00		x							
15.50		x							
16.00		x							
16.50		x							
17.00		x	x						

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant:	Plant:	Plant:	Plant:
17.50		x	x						
18.00		x	x						
18.50		x							
19.00		x							
19.50		x							
20.00		x							
20.50									
21.00									
21.50									
22.00									
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31.50									
32.00									
32.50									
33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant: Krameria bicolor	Plant:	Plant:	Plant:	Plant:
35.50									
36.00									
36.50			x	x					
37.00			x	x					
37.50			x	x					
38.00			x	x					
38.50		x		x					
39.00		x							
39.50		x							
40.00		x							
40.50		x							
41.00		x							
41.50									
42.00									
42.50									
43.00									
43.50									
44.00									
44.50									
45.00									
45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50					x				
49.00									
49.50									
50.00									

Percent Cover:	24	7	5	1	**32%**

Transect : 9W
Plot Size: 100 square meters
Total Density: 15
Total Diversity: 5

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Krameria bicolor	3
Ambrosia dumosa	2
Acacia gregii	6
Larrea tridentata	2
Ericameria sp.	2

Project Iron Age Mine **Transect** 10W **Date** 5-1-2012

Point Intercept Data Sheet-Cover, Density, Diversity **Page** **of**

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:
0.50									
1.00									
1.50									
2.00									
2.50									
3.00									
3.50									
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5.50									
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13.50									
14.00									
14.50									
15.00									
15.50									
16.00									
16.50									
17.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:
17.50									
18.00									
18.50		x							
19.00		x							
19.50		x							
20.00		x							
20.50		x							
21.00									
21.50									
22.00									
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33.00									
33.50									
34.00									
34.50									
35.00									

Point # Meters	Bare Ground,Rocks, Debris	Plant: Acacia gregii	Plant: Ericameria sp.	Plant: Larrea tridentata	Plant:	Plant:	Plant:	Plant:	Plant:
35.50			x						
36.00			x						
36.50									
37.00									
37.50									
38.00									
38.50				x					
39.00									
39.50									
40.00									
40.50									
41.00									
41.50									
42.00									
42.50									
43.00									
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45.50									
46.00									
46.50									
47.00									
47.50									
48.00									
48.50									
49.00									
49.50									
50.00									

Percent Cover:	5	2	1	**8%**

Transect : 10W
Plot Size: 100 square meters
Total Density: 4
Total Diversity: 4

Plant Count/Density (#Shrubs per plant): **Herbs Recorded:**

Plant Name	Plant Count
Larrea tridentata	1
Krameria bicolor	1
Ericameria sp.	1
Acacia gregii	1

EXHIBIT C

Initial Study/Mitigated Negative Declaration

SAN BERNARDINO COUNTY
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
ENVIRONMENTAL CHECKLIST FORM

This form and the descriptive information in the application package constitute the contents of Initial Study pursuant to County Guidelines under Ordinance 3040 and Section 15063 of the State CEQA Guidelines.

PROJECT LABEL:

APNs:	0571-191-06 and 0571-181-03	***USGS Quad:***	New Dale Lake Quadrangle
Applicant:	Iron Age Mine, LLC	***T, R, Section:***	**T1S, R13E, Section 7, 17, 18, 20, 29**
Location	The site is located on both unpatented claims and patented lands approx-imately 18 miles east/southeast of the City of Twentynine Palms, California. The site is in the historic Dale Mining District in the Northern Pinto Mountains .	***Thomas Bros***	San Bernardino and Riverside County 2005 Book, Page 390, Grid L-2
Project No:	PROJ-2021-00009	***Community Plan:***	NA
		Land Use Category:	Resource Land Management (RLM)
Rep	Lilburn Corporation	***Zoning District:***	Resource Conservation (RC) including BLM Land
Proposal:	Iron Age Mine, LLC has submitted a Mining and Reclamation Plan to remove historical iron ore tailings on 71 acres of public (BLM) lands and 34 acres of patented (private) lands. The project will reclaim and revegetate 70 acres of prior disturbed land after tailings removal, and backfill 8 acres of the existing quarry.	***Overlays:***	None

PROJECT CONTACT INFORMATION:

Lead agency: County of San Bernardino
Land Use Services Department
385 N. Arrowhead Avenue, 1st Floor
San Bernardino, CA 92415-0182

Contact person: Reuben J. Arceo, Planner
Phone No: (909) 387-4374 ***Fax No:*** (909) 387-3223
E-mail: Reuben.Arceo@lus.sbcounty.gov

PROJECT DESCRIPTION:

Summary

Iron Age Mine, LLC (Iron Age) has submitted a Mining and Reclamation Plan (Plan) for the Iron Age Mine. The Iron Age Mine is an iron ore deposit that has been explored and mined prior to the enactment of the Surface Mining and Reclamation Act of 1975 ("SMARA") and has been closed and un-reclaimed for over 50 years. It is located in the northern Pinto Mountains, approximately

18 miles east/southeast of the City of Twentynine Palms, California and approximately 3.4 miles south of State Route 62 (SR 62) in San Bernardino County, California (see Figure 1 - Regional Map). The site is accessed from SR 62 east of Twentynine Palms via Iron Age Mine Road (see Figure 2 - Vicinity Map).

The Proposed Project will remove, crush, and transport offsite the iron ore tailings deposited prior to the enactment of SMARA and then reclaim areas disturbed by the removal activities. There will be no new mining. The iron ore tailings are a lower grade iron previously stockpiled as an overburden or waste material that is now economical to utilize. The Plan is prepared in accordance with SMARA (Public Resources Code [PRC] 2710 et seq.) and San Bernardino County (County) Development Code requirements for implementing SMARA. The Iron Age Mine project totals 105 acres, of which 76 acres are currently disturbed. The site consists of approximately 71 acres of U.S. Bureau of Land Management (BLM) unpatented (public) lands and 34 acres of patented (private) land. The BLM lands consist of approximately 37.5 acres of recoverable tailings piles, 25 acres of re-construction and re-alignment of the existing roadways (Iron Age Mine Road) on BLM designated routes, and 8.5 acres of the 10-acre mill site claims. Approximately 34 of the 60.6 patented acres will be impacted by tailings removal, quarry backfill, a plant site, and access roads (see Table 1). Reclamation will be implemented on the 8.5 acres of disturbance at the mill site claims, 37.5 acres of tailings on unpatented land, and 32 acres of tailings and quarry areas on patented lands. The roadways will be left in place as these are designated BLM routes. Unlike most reclamation plans, which typically address areas planned for mining, the Iron Age Reclamation Plan includes reclamation of approximately 70 acres of land currently covered with historic iron ore tailings back to the original grade and establishes native vegetation and backfills approximately 8 acres of the old quarry.

Table 1
Iron Age Mine
Operations Phasing, Areas and Approximate Schedule

Operational Phases	Unpatented Acres	Patented Acres	Total Acres (approx.)	Tons Removed (Millions)	Approx. Years
1A	33.5	7.0	40.5	0.5	1
1B	22.8	8.0	30.8	5.5	7
2	0	19.0	19.0	2.4	3
3	14.7	0	14.7	3.6	4
Phase 4 Final Reclamation[1]			---	---	16 – 20[1]
Total	**71.0**	**34.0**	**105.0[2]**	**12**	**15 (operations) 5 (reclamation)[1]**

Areas and tons are rounded and approximate.
[1] Active reclamation for approximately 5 years and monitoring and remediation as necessary until revegetation success criteria achieved.
[2] 84 acres currently disturbed; 78 acres to be reclaimed, approximately 27 acres of roads will be left in place per BLM direction as these are BLM designated routes and to maintain access to site for monitoring.

Note that the BLM has approved the Plan of Operations (POO) for the project and selected an alternative route that maintains the access entirely on BLM designated routes. The selected access route adds approximately 1.5 miles to the access route and approximately 8 acres. The BLM approved alignment areas have been incorporated in the discussion throughout this

document. The discussion on the BLM decision and the Environmental Assessment are discussed under Project Understanding starting on page 10 below.

The removal of the tailings will provide a marketable product and subsequently reclaim a heavily disturbed area back to open space and wildlife habitat. Based on an aerial photo reconnaissance and sampling of existing tailings stockpiles, the site has an estimated reserve of 12 million tons of iron ore with an average concentration of 62 percent iron. Maximum throughput at the plant will be approximately 2.3 million tons per year; 920,00 tons of product and approximately 1.4 million tons per year of waste rock and low-grade ore, which will be utilized for site reclamation.

The site will be mined at a maximum average production rate of 920,000 tons annually, which is expected to provide reserves for up to 13 years (through year 2027). Crushed iron ore concentrate will primarily be shipped by haul truck to the Long Beach/San Pedro port for overseas shipment as well as other markets. At the maximum proposed production rate of 2.3 million tons per year, the mine would be operated for approximately 8 years taking into account a construction and start-up period for two years. To account for variable production rates dependent on market demand, an operating life of 15 years, through 2036, is estimated. Concurrent and final reclamation is anticipated to conclude by 2041.

The mining operation would consist of excavating, drilling, and occasional blasting of the tailings faces and loading the broken iron rock into a feeder, screen sorter, and magnetic separator designed to increase iron concentration to exceed 60% iron. Upon separation, off-road haul trucks will transport the iron ore, via the mine access road, to a proposed mill site facility located south of SR 62. The mill site would be located approximately 3.4 miles north of the tailings area; iron ore transported from the tailings area to the mill site would be stockpiled and ultimately transferred to market. Waste rock and low-quality iron ore will be backfilled into the existing quarry. The tailings area will be graded back to the original surface and revegetated per the Reclamation Plan. Reclamation will include the removal of all equipment, structures, tanks, and debris from the site. Compacted surface material in the processing area, roads, and the former stockpile areas will be loosened and ripped to a depth of 18 to 36 inches by mechanical means and seeded with native plant species.

Elevation at the site ranges from 1,975 to 2,250 feet above mean sea level (amsl), a 275-foot difference. Approximately 100 acres of the site have been previously disturbed from previous mining activities conducted before 1965. The mine was not reclaimed but exhibits a moderate level of natural revegetation. The Project Site vegetation is characterized as Creosote Bush and Brittlebush series habitat types. The tailings and quarry area are mostly barren with scattered vegetation.

Operational water demand will be provided by an onsite well to be drilled at the plant site or at the mill site depending on anticipated drilling results. Process water will be recycled through a lined holding pond. A 10,000-gallon water storage tank will be placed at the plant site and/or the mill site. A water truck will be available for mobile use.

The operations will take place on two tailings disposal areas that extend to the south and north of the historic mine quarry and occupy approximately 54 acres. The operations will begin in the south tailings area on the patented property then extend further south to the adjacent unpatented claims. The next phase will extend to the north patented property then onto the unpatented claims (see Figure 3 – Plan of Operations Map). The phased operations, the processing area, and reclamation

with phased slopes and contours are depicted on the Mine Reclamation Plan sheets. The Proposed Plan was prepared with the following objectives:

- To remove an existing historic iron ore resource of stockpiled tailings that meets the Federal regulations and the State's and County's SMARA requirements;
- To provide adequate crushed iron ore reserves from a closer source to meet the increasing demand for high grade iron ore for overseas and cement manufacturing market needs;
- To reduce the distance traveled for hauling of the iron ore to market resulting in decreased truck mileage and related diesel fuel consumption and air pollutant emissions;
- To provide reclamation and revegetation to impacted mining sites to mitigate historic visual, biological, safety, and hydrological impacts;
- To partially backfill the existing quarry with waste rock to the extent feasible; and
- To reclaim the site for an end use that will support open space and wildlife habitat.

Reclamation will be concurrent with phased mining and completed as the tailings piles are depleted. Removed stockpile areas will be ripped and revegetated. At the completion of operations and within one year, all equipment and stockpiles will be removed and any remaining refuse will be disposed of at an appropriate offsite disposal site. The surface material will be re-graded to approximate natural contours. On BLM lands, approximately 46 acres of former tailings piles and the mill sites will be reclaimed and revegetated. The access road (25 acres) and the onsite roads (2 acres) will remain in place. In total, on both BLM and patented lands, approximately 78 acres will be reclaimed of which approximately 70 acres will be revegetated. Approximately 8 acres of existing quarries on patented land will be backfilled with waste rock not conducive for revegetation because of lack of available topsoil (see Figure 4 – Reclamation Plan Map).

With implementation of the reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, approximately 50 acres will be returned to desert vegetation.

Surrounding Land Uses and Setting

Surrounding land uses predominately consist of historic mines, BLM designated roads, and vacant public lands administered by the BLM and designated for open space uses, which allows cross-country off-highway vehicle usage. There are no structures or human habitation in the area.

Existing Land Use Categories and Zoning Districts

Location	Existing Land Use	Land Use Category	Zoning District
Project Site	Vacant/Stockpiled iron ore tailings, quarry, and access road	Resource Land Management (RLM)	Resource Conservation (RC)
North	Vacant BLM lands	RLM	RC
South	Vacant BLM lands	RLM	RC
East	Vacant BLM lands	RLM	RC
West	Vacant BLM lands	RLM	RC

Project Site Location, Existing Site Land Uses and Conditions

The subject property is located in an unincorporated Desert Region of San Bernardino County. The site is located on BLM managed public lands and patented private land owned by Iron Age Mine, LLC. The Project Site is located approximately 18 miles east/southeast of the City of Twentynine Palms, California and approximately 3.4 miles south of SR 62 in San Bernardino County, California (see Figure 1 - Regional Map) in the northern Pinto Mountains. The mine is within Sections 7, 17, 18, 20 and 29, Township 1 South, Range 13 East SBBM. The site is accessed from SR 62 east of Twentynine Palms via Iron Age Mine Road (unpaved road, 3.4 miles south) (see Figure 2 - Vicinity Map).

ADDITIONAL APPROVAL REQUIRED BY OTHER PUBLIC AGENCIES

Bureau of Land Management (BLM): Plan of Operations approved by BLM Barstow field office on January 7, 2021, in Finding of No Significant Impact (FONSI) and Decision Record; and Environmental Assessment (EA) (DOI-BLM-CA-D0B0-2020-0025-EA) including Formal Section 7 Consultation / Biological Opinion with U.S. Fish and Wildlife Service Carlsbad Office (3809 (P) CACA 53897)
See discussion under Project Understanding below.

County of San Bernardino: Land Use Services Department- Code Enforcement, Building and Safety, Public Health-Environmental Health Services, and County Fire

Regional: Mojave Desert Air Quality Management District (MDAQMD)

Local: None

Figure 6

Regional Map

Figure 7
Vicinity Map

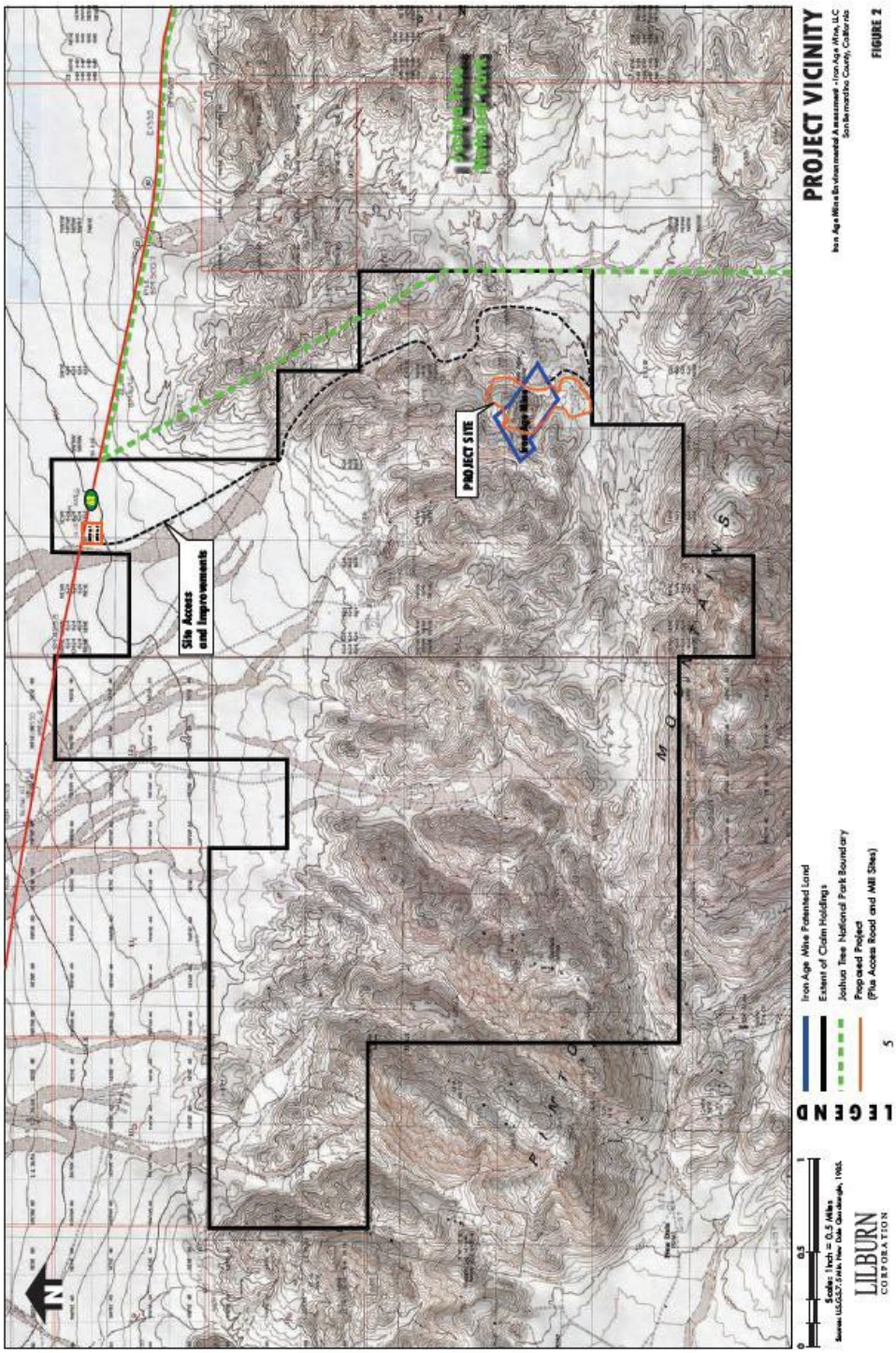


Figure 8

Plan of Operations

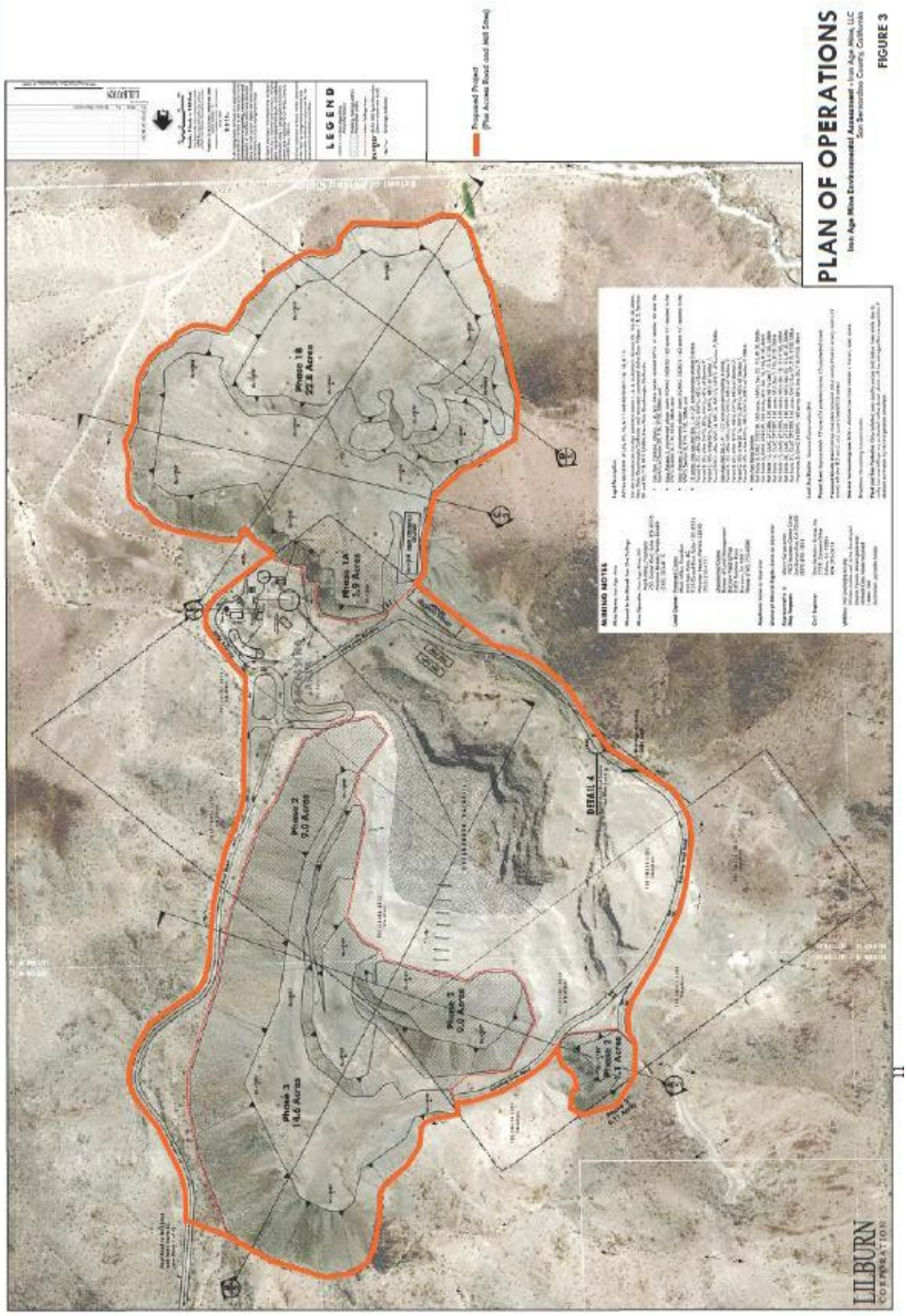


Figure 9

IRON Age Reclamation Plan

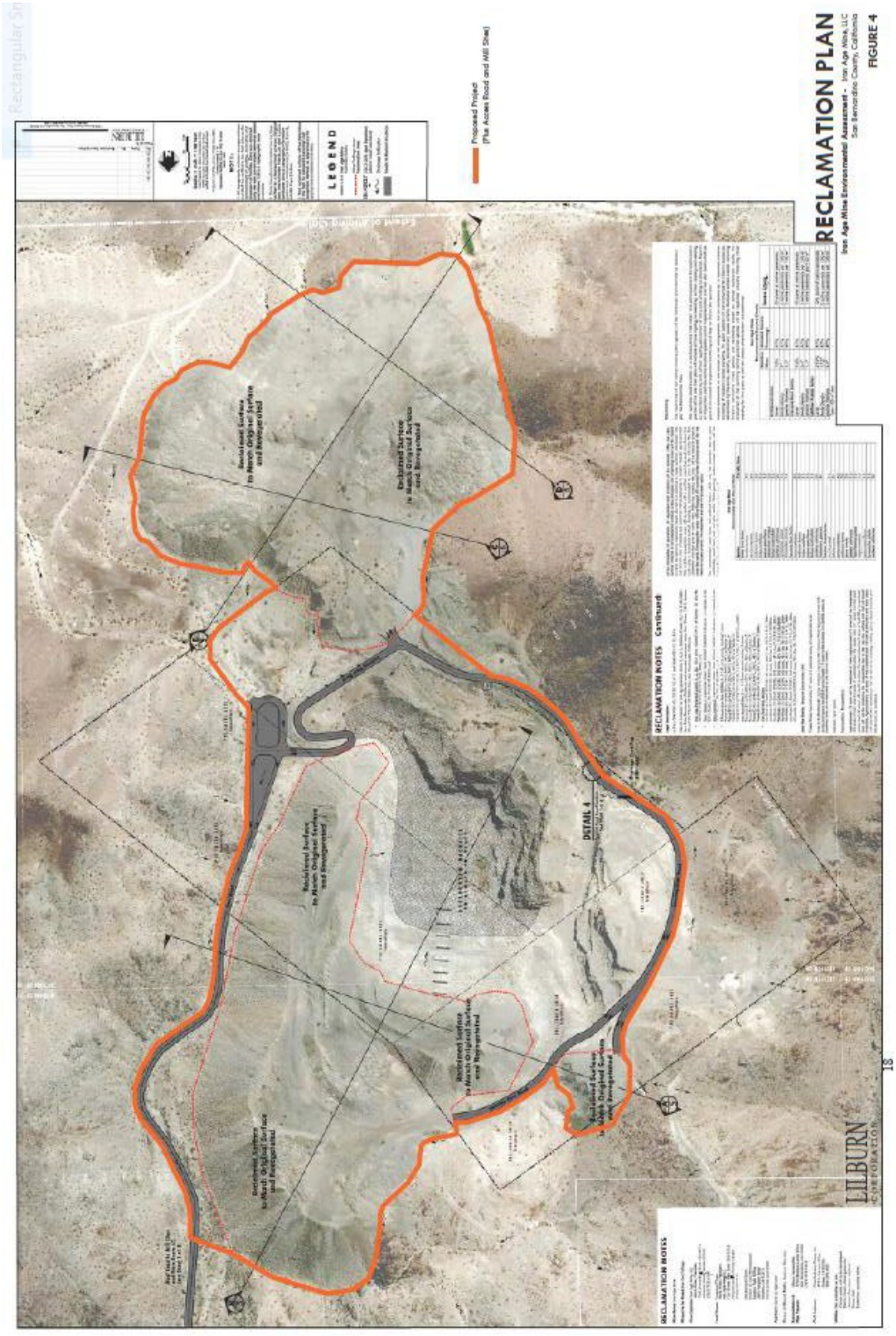
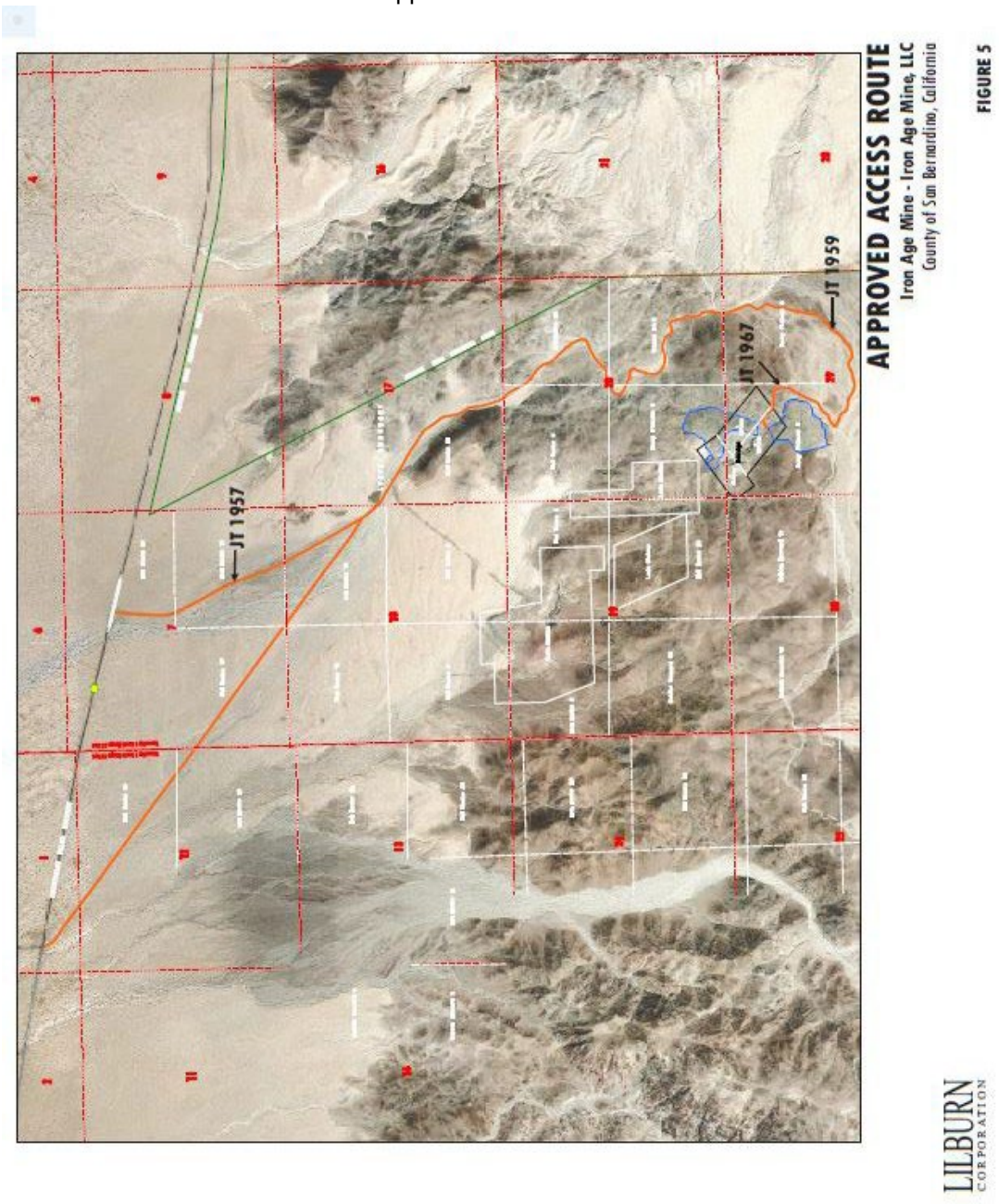


Figure 5
Approved Access Route



Project Understanding

The Iron Age holdings consist of patented (private land) and unpatented claims on public land managed by the BLM, Barstow office. The land patents were established between 1904 and 1908 to include the principal exposures of locatable iron ore. The entire iron deposit was extensively mapped by geologists in 1909. A subsequent Finding of No Significant Impact (FONSI) and Decision Record have been obtained from the BLM for the proposed use on unpatented lands.

BLM Approval-Decision Record

As required by BLM, Iron Age had submitted a Plan of Operations (POO) for the proposed use on Federal lands. On January 7, 2021, the POO was approved by the BLM Barstow field office, and a Decision Record, EA, and FONSI were issued.

Based on the National Environmental Policy Act (NEPA) analysis of potential environmental impacts contained in the BLM's EA, BLM-CA-D080-2020- 0031-EA, for the POO for Removal of Existing Iron Ore Stockpiles at the Iron Age Mine, it was concluded that the proposed use would not have a significant effect on the human environment (40 CFR 1501.61) and therefore does not require preparation of an environmental impact statement. Relevant information supporting this determination and a summary of the effects on the human environment disclosed in the BLM's Decision Record is as follows (refer to the EA for additional information):

- Air Quality: The mining operation would not have adverse air quality impacts as activities would not generate impacts in excess of de minimis levels (EA, Chapter 4.1).
- Threatened, Endangered or Candidate Species: The project area was evaluated for the potential presence of threatened, endangered, or candidate species. The desert tortoise (Gopherus agasizzii) is the only Endangered Species Act listed species that is known to occur in the action area. Surveys conducted in 2012 and 2019 did not detect any live tortoises. The Selected Alternative will implement the avoidance and minimization measures, as well as the terms and conditions of the U.S. Fish and Wildlife (FWS) Biological Opinion ((BO) 3809 (P) CACA-53897 CAD0800.31) (EA, Appendix C). The Selected Alternative will not have significant adverse effects on desert tortoise or its habitat (EA, Chapter 4.2).
- Cultural Resources: Cultural resource surveys were conducted, and it was determined that the undertaking would not have adverse effects on cultural resources (EA, Chapter 4.3).
- Visual Resources: The Selected Alternative would have visual effects, but with the implementation of design measures, the visual resource impacts will be consistent with the Visual Resource Management (VRM) classification for the area, VRM Class III (EA, Chapter 4.4).
- Hydrology: The Selected Alternative would not alter the existing drainage pattern of the project area or create additional sources of runoff. A Stormwater Pollution Prevention Plan (SWPPP) would be implemented to control runoff and sedimentation from the project disturbance. Operations will comply with a National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges and employ storm water Best Management Practices (BMP) during construction, operations, and temporary cessation of operations. In addition, a Spill Prevention Control Plan (SPCC) will be implemented to prevent effects to ephemeral surface waters. Given the project design

features, the Selected Alternative will not have significant adverse effects to surface water quality (EA, Chapter 4.5).

- Public Health and Safety: In order to protect public safety on the road, Iron Age will implement the following safety features as part of the project design: 1/ The mill site and its equipment and stockpiles will be fenced with a 6-foot high chain link fence with locking gates and warning signs; 2/ Signs will be posted at SH 62 that mine haul truck traffic utilizes the road; 3/ Mine haul trucks will be restricted to a speed limit of 15 MPH; 4/ All drivers and employees will be trained to be aware that the access road is open to public vehicles; 5/ Perimeter signs around the approved surface mine boundary shall be installed as shown on the plan sheets and shall read in English and Spanish "Danger, Keep Out" "Surface Mining Operation"; 6/ The existing quarry is currently fenced, and the fencing will be extended to include the access and processing area to prevent access by the public. Fencing will be posted "No Trespassing"; and 7/ To limit the exposure of visitors to mining activities in the recreation areas adjacent to the project area, truck traffic would not occur on Sundays and holidays. Additionally, a SPCC with BMPs will be implemented to ensure that on-site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above ground fuel containers. The diesel fuel and gasoline tanks will be placed within concrete or lined containment pads to contain the contents of the tank and a 100-year rainfall event as required. With the implementation of the design measures above, effects to public health and safety would be minimized and are not considered significant.
- Federal, State, Tribal, or Local Law: The Selected Alternative does not violate any known federal, state, tribal or local law or requirement imposed for the protection of the environment. State, local, and Tribal interests were given the opportunity to participate in the environmental analysis process. The BLM has consulted and continues to consult with Tribes regarding this undertaking. In addition, the project is consistent with the California Desert Conservation Area (CDCA) Plan (1980), as amended by the 2016 Desert Renewable Energy Conservation Plan (DRECP) and 2019 West Mojave Route Network Project. The Selected Alternative complies with the CDCA Plan's Conservation and Management Actions to the extent allowable under the mining laws and the BLM's 43 CFR 3809 mining regulations.

Access

The Selected Alternative, “Alternative C” (BLM Modification) as described in the EA was approved. The Selected Alternative would approve the Iron Age Mine POO with a modification to use existing BLM designated routes to access the Iron Age Mine. Alternative C BLM Modification will use three designated travel and transportation management system routes including JT1957, JT1959 and JT1967 to access the mine. Although this route network is approximately 1.5 miles longer than the Alternative A access, it will require less improvements due to the condition of the routes. This selected alternative route adds approximately 8 acres to the project area though these roads are all BLM designated routes which will be left in-place following completion of the project activities. Refer to **Figure 5** for the approved access route.

Section 7 Consultation

On July 16, 2015, the BLM completed its Formal Section 7 Consultation on the Iron Age Project with U.S. Fish and Wildlife Services (FWS). The FWS Biological Opinion ((BO) 3809 (P) CACA-53897 CAD0800.31) (EA, Appendix C) addresses the effects of the proposed use on the threatened desert tortoise and its designated critical habitat. The document was prepared in

accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The Selected Project Alternative will implement the avoidance and minimization measures, as well as the terms and conditions of the BO. With implementation of these measures, the BLM determined that the Selected Project Alternative will not have significant adverse effects on desert tortoise or its habitat (EA, Chapter 4.2).

The Biological Opinion was based on the biological assessment, additional information that BLM provided during consultation, and information on file. A complete record of this consultation is available at the Carlsbad Fish and Wildlife Office and at the BLM Barstow field office. The findings and avoidance and minimization measures are detailed in the BO and included in Section IVa below as Mitigation Measure BIO-1.

CONSULTATION WITH CALIFORNIA NATIVE AMERICAN TRIBES

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentially, etc.?

On January 29, 2021, the County of San Bernardino mailed notification pursuant to AB52 to the following tribes: San Manuel Band of Mission Indians, Colorado River Indian Tribes, Twenty-Nine Palms Band of Mission Indians, AhaMakav Cultural Society, Morongo Band of Mission Indians, San Gabriel Band of Mission Indians, and Soboba Band of Luiseno Indians. Table 2 – *AB 52 Consultation Results*, shows a summary of comments and responses.

Table 2
AB 52 Consultation

Tribe	Comment Letter Received	Summary of Response	Conclusion
San Manuel Band of Mission Indians	February 1, 2021	None	Concluded
Colorado River Indian Tribe	None	None	Concluded
AhaMakav Cultural Society	None	None	Concluded
Twenty-Nine Palms Band of Mission Indians	None	None	Concluded
Morongo Band of Mission Indians	None	None	Concluded
San Gabriel Band of Mission Indians	None	None	Concluded
Soboba Band of Luiseno Indians	None	None	Concluded

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

EVALUATION FORMAT

This Initial Study is prepared in compliance with the California Environmental Quality Act (CEQA) pursuant to Public Resources Code Section 21000, et seq. and the State CEQA Guidelines (California Code of Regulations Section 15000, et seq.). Specifically, the preparation of an Initial Study is guided by Section 15063 of the State CEQA Guidelines. This format of the study is presented as follows. The project is evaluated based on its effect on 20 major categories of environmental factors. Each factor is reviewed by responding to a series of questions regarding the impact of the project on each element of the overall factor. The Initial Study checklist provides a formatted analysis that provides a determination of the effect of the project on the factor and its elements. The effect of the project is categorized into one of the following four categories of possible determinations:

Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant	No Impact

Substantiation is then provided to justify each determination. One of the four following conclusions is then provided as a summary of the analysis for each of the major environmental factors.

1. **No Impact**: No impacts are identified or anticipated, and no mitigation measures are required.
2. **Less than Significant Impact**: No significant adverse impacts are identified or anticipated, and no mitigation measures are required.
3. **Less than Significant Impact with Mitigation Incorporated**: Possible significant adverse impacts have been identified or anticipated and the following mitigation measures are required as a condition of project approval to reduce these impacts to a level below significant. The required mitigation measures are: (List of mitigation measures)
4. **Potentially Significant Impact**: Significant adverse impacts have been identified or anticipated. An Environmental Impact Report (EIR) is required to evaluate these impacts, which are (List of the impacts requiring analysis within the EIR).

At the end of the analysis the required mitigation measures are restated and categorized as being either self- monitoring or as requiring a Mitigation Monitoring and Reporting Program.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION: Based on this initial evaluation, the following finding is made:

☐	The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION shall be prepared.
☒	Although the proposed project could have a significant effect on the environment, there shall not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION shall be prepared.
☐	The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature: (Reuben J. Arceo, Planner) Date:July1,2021_

David Prusch

Signature: (Dave Prusch), Supervising Planner Date July 1, 2021

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
I.	***AESTHETICS*** – Except as provided in Public Resources Code Section 21099, would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b)	Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare, which will adversely affect day or nighttime views in the area?	☐	☒	☐	☐

SUBSTANTIATION: *(Check ☐ if project is located within the view-shed of any Scenic Route listed in the General Plan):*

San Bernardino Countywide Policy Plan; Submitted Project Materials

a) Have a substantial adverse effect on a scenic vista?

The Project Site is located in the eastern desert region, as described in the San Bernardino Countywide Policy Plan, and is not located within a scenic vista.[1] The proposed mineral extraction use is acceptable within the Resource Conservation land use zoning designation. Therefore, no impact is anticipated, and no mitigation measures are required.

No Impact

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

Figure 5.1-1-*County Designated Scenic Routes* of the San Bernardino Countywide Policy Plan depicts scenic routes to be protected for their scenic vistas and other scenic

[1] San Bernardino Countywide Plan. Chapter 5.1-Aesthetics, Page 4.

and aesthetic qualities that have been found to add beauty to the County. The Proposed Project occurs more than 30 miles east of the nearest scenic route (Park Blvd./Quail Springs Road from SR 62 southeast to Joshua Tree National Park) as identified in the Countywide Policy Plan. No impact is anticipated, and no mitigation measures are required.

No Impact

c) *In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

The Project Site is located approximately 18 miles east/southeast of the City of Twentynine Palms, California, and approximately 3.4 miles south of SR 62 (see Figures 1 and 2). There are no permanent residences or views of the mine site from SR 62, except for the loading area directly along the highway. Joshua Tree National Park is located about one mile to the east with designated Joshua Tree wilderness located 1.5 miles east. There are no designated recreational areas, roads, or hiking trails located in this portion of the Park from which recreational users could view the Proposed Project area.

Impacts to visual resources are based on changes to the existing character of the landscape, viewer sensitivity, and the number of viewers that may view the project activities. The site is an existing mine with large tailings piles and an access in disrepair. Removal of tailings and reconstruction/realignment of the existing access road associated with the Proposed Project may potentially affect the form, lines, and color of the landscape but the change would be minimal. The Proposed Project would result in short-term (15-year) visual impacts principally affecting the visual elements of color through the removal of existing tailings. In addition, impacts would occur with the placement and operation of mining equipment onsite and the potential for visible dust. Operations would be required to comply with Mojave Desert Air Quality Management District (MDAQMD) Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requirements for controlling fugitive dust within the Mojave Desert Panning Area). These are listed under Section III, Air Quality below.

Removal of material at the site would return the area to typical desert surfaces and topography that surrounds the site. Reclamation would include removal of all equipment and structures, grading areas to natural contours, and reseeding with a BLM-approved seed mix followed by vegetation monitoring and remediation to ensure achievement of success criteria. Impacts are considered temporary and less than significant with implementation of the Reclamation Plan.

Less Than Significant Impact

d) Create a new source of substantial light or glare, which will adversely affect day or nighttime views in the area?

The Proposed Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. No new light sources are proposed at the operations site as material removal would occur during daylight hours only. The loading and trucking of material from the mill site along SR 62 would be allowed 24 hours/day except Sundays and holidays.

The BLM EA determined that lighting could potentially affect night sky values at the adjacent national park and required the mitigation measures listed below to be implemented. In addition, all lighting at this site shall comply with County Development Code Chapter 83.07.040; Glare and Outdoor Lighting – Mountain and Desert Regions requirements. This includes fully shielding all lights as required to preclude light pollution or light trespass on adjacent property, other property directly or reflected, and members of the public on adjacent roads. With compliance with the BLM measures and existing County regulations, less than significant impacts are anticipated.

Less than Significant with Mitigation

Mitigation Measure:

AES-1 1. Full cut-off (glare resistant/shielded) luminaires that prevent the upward escape of light.
2. Light fixtures that are pointed less than 45 degrees in direction.
3. Area and security lighting should be yellow or amber with a color temperature less than 2500 degrees K.
4. Motion activated security lighting when the site is in operation at night.
5. Water storage tanks shall be painted as to blend into the environment.

Therefore, potentially significant impacts are identified or anticipated, and mitigation measures are required to reduce impacts to less than significant.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
II.	**AGRICULTURE AND FORESTRY RESOURCES** - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				

a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

SUBSTANTIATION: *(Check ☐ if project is located in the Important Farmlands Overlay):*

County of San Bernardino Countywide Policy Plan; Submitted Project Materials

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is identified in the California Important Farmland Finder.[2] The Proposed Project would have no impact to agricultural resources, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. There are no agricultural land uses within the subject property or in the vicinity. No impacts are identified or anticipated.

No Impact

[2]California Department of Conservation Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/ Accessed 4/21/2021.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

The Project Site is not designated or zoned as agricultural land use or Williamson Act land. Therefore, the Proposed Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. No impacts are identified or anticipated.

No Impact

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

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

The Project Site and surrounding area does not occur within forest land, timberland, or timberland zoned production. No impacts to these resource lands would result with implementation of the Proposed Project. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

No Impact

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The Proposed Project would not have any direct or indirect impacts to agricultural resources in the County including the conversion of Farmland to non-agricultural uses. No impacts are identified or anticipated.

No Impact

No impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
III.	**AIR QUALITY -** Where available, the significance criteria established by the applicable air quality management district or air pollution control district might be relied upon to make the following determinations. Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒

d)	Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?	☐	☐	☐	☒

SUBSTANTIATION: *(Discuss conformity with the Mojave Desert Air Quality Management Plan, if applicable):*

County of San Bernardino Countywide Policy Plan; Submitted Project Materials

Background - The Project Site is located in the Mojave Desert Air Basin (MDAB). The MDAQMD has jurisdiction over air quality issues and regulations within the MDAB. To assist local agencies to determine if a project's emissions could pose a significant threat to air quality, the MDAQMD has prepared *the California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, February 2020*. The air and dust emissions from the operational use of the Proposed Project were evaluated and compared to the MDAQMD standards and evaluated against the most recent thresholds applicable.

Air quality is determined primarily by the types and amounts of contaminants emitted into the atmosphere, the size and topography of the local air basin and the pollutant-dispersing properties of local weather patterns. When airborne pollutants are produced in such volume that they are not dispersed by local meteorological conditions, air quality problems result. Dispersion of pollutants in the MDAB is influenced by periodic temperature inversions, persistent meteorological conditions and the local topography. As pollutants become more concentrated in the atmosphere, photochemical reactions occur, producing ozone and other oxidants.

Air emissions from the Proposed Project are subject to federal, State and local rules and regulations implemented through provisions of the federal Clean Air Act, California Clean Air Act and the rules and regulations of the California Air Resources Board (CARB) and MDAQMD. Under the provisions of the federal and California Clean Air Acts, air quality management districts with air basins not in attainment of the air quality standards are required to prepare an Air Quality Management Plan (AQMP). An AQMP establishes an area-specific program to control existing and proposed sources of air emissions so that the air quality standards may be attained by an applicable target date.

The federal Clean Air Act and California Clean Air Act were established in an effort to assure that acceptable levels of air quality are maintained. These levels are based upon health-related exposure limits and are referred to as National Ambient Air Quality Standards (NAAQS) California Ambient Air Quality Standards (CAAQS). The ambient air quality standards establish maximum allowable concentrations of specific pollutants in the atmosphere and characterize the amount of exposure deemed safe for the public. The primary and secondary ambient air quality standards are shown in Table 2. Primary federal standards reflect levels of air quality deemed necessary by the federal EPA to provide an adequate margin of safety to protect public health. Areas that meet the standards are designated attainment and if found to be in violation of primary standards are designated as nonattainment areas. Secondary standards reflect levels of air quality necessary to protect public welfare from known or anticipated adverse effects of a pollutant.

Table 2
State and Federal
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	---	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})[8]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 µg/m^3		---		
Fine Particulate Matter ($PM_{2.5}$)[8]	24-Hour	---		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1-Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)		Non-Dispersive Infrared Photometry (NDIR)
	8-Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–		
Nitrogen Dioxide (NO_2)[9]	1-Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	---	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1-Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppd (196 µg/m^3)	–	Ultraviolet Flourescence, Spectrophotometry (Pararosaniline Method)
	3-Hour	---		--	0.5 ppm (1300 µg/m^3)	
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	---	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[10]	–	
Lead[11,12]	30-day average	1.5 µg/m^3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average[11]	--		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Calendar Quarter	–		0.15 µg/m^3		
Visibility-Reducing Particles[13]	8-Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	**No Federal Standards**		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: ARB, 2021.

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
8. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) was retained at 25 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards in the annual mean, averaged over 3 years.
9. To attain the 1-hour national standard, the 3-year average of the 98th percentile of the 1-hour daily maximum concentration at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
10. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
11. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
12. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
13. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

The USEPA and the CARB have designated portions of the District as nonattainment for a variety of pollutants, and some of those designations have an associated classification. Table 3. lists these designations and classifications. The MDAQMD has adopted attainment plans for a variety of nonattainment pollutants.

The MDAQMD has rules that apply to this project along with permitting requirements. MDAQMD regulates emissions from stationary sources through the permitting process and requires permits to Construct/Operate for all stationary equipment with the potential to release air contaminants. The site’s processing equipment would be operated under a permit to construct and operate from the MDAQMD. Operations and permits are inspected and renewed annually. Haul trucks and diesel equipment must meet requirements of the CARB’s Off-road Diesel Vehicles Regulations to reduce diesel pollutants. Operations would be required to comply with MDAQMD Rules 401 (limiting visible emissions from exhaust); 402 (avoid nuisance emissions); 403 prohibits visible dust from crossing property lines); and 403.2 (requirements for controlling fugitive dust).

Table 3
State and Federal Air Quality
Designations and Classifications

Ambient Air Quality Standard	Status
Eight-hour Ozone (Federal)	Non-attainment, classified Moderate (portion of MDAQMD in Riverside County is attainment)
Ozone (State)	Non-attainment; classified Moderate
PM_{10} (Federal)	Non-attainment; classified Moderate (portion of MDAQMD in Riverside County is attainment)
$PM_{2.5}$ (Federal)	Unclassified/attainment
$PM_{2.5}$ (State)	Non-attainment (portion of MDAQMD outside of Western Mojave Desert Ozone)
PM_{10} (State)	Non-attainment
Carbon Monoxide (State and Federal)	Attainment
Nitrogen Dioxide (State and Federal)	Attainment/unclassified
Sulfur Dioxide (State and Federal)	Attainment/unclassified
Lead (State and Federal)	Attainment
Particulate Sulfate (State)	Attainment
Hydrogen Sulfide (State)	Unclassified (Searles Valley Planning Area is non-attainment)
Visibility Reducing Particles (State)	Unclassified

Source: MDAQMD CEQA and Federal Conformity Guidelines, February 2020

a) Conflict with or obstruct implementation of the applicable air quality plan?

Operations are considered the removal of the iron ore tailings on approximately 54 acres deposited historically prior to the enactment of SMARA for a period of 15 years. Reclamation of the site after the removal of the tailings would involve the final grading/revegetation of 78 acres within a 105-acre site including 8.5 acres of mill site. The Project Site is within the MDAB and under the jurisdiction of the MDAQMD. The MDAQMD is responsible for updating the Air Quality Management Plan (AQMP). The AQMP was developed for the primary purpose of controlling emissions to maintain all federal and state ambient air standards for the district. A project is non-conforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable District rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast.

The Proposed Project is consistent with the zoning and land use classifications that were used to prepare the Mojave Desert AQMP (Resource Conservation/RC). In addition, based on Table 4 below, Project-generated emissions would not exceed emission thresholds.

Therefore, the Project 's emissions are in compliance with the thresholds established by the MDAQMD. The Proposed Project would not significantly increase local air emissions and therefore would not conflict with or obstruct implementation of the AQMP. Therefore, a less than significant impact is anticipated.

Table 4
Operational Emissions Summary
(Pounds Per Day)

Source/Phase	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Crushing/Screening Plant including conveyors & stackers	---	---	---	18.5	5.5
Haul Road Dust	---	---	---	34.7	7.4
Generators	1.7	15.0	9.5	0.5	0.4
Mobile Equipment (ore removal & transport)	7.8	47.4	35.7	1.8	1.7
Totals	**9.5**	**62.4**	**45.2**	**55.5**	**15.0**
MDAQMD Threshold	137	137	548	82	65
Significant	**No**	**No**	**No**	**No**	**No**

Emission Sources: SCAQMD OFF-ROAD Emissions Model, 2021 and AP-42.

Less Than Significant Impact

b) *Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?*

The Proposed Project would include removal of existing tailings, transfer of tailings to the plant by conveyor, crushing and screening, loading and transfer of sized ore to the mill site along SR 62, and loading onto highway trucks for transport. Exhaust or criteria pollutants would be produced from the onsite generators and the mobile equipment. Dust would be produced from tailings removal, loading and unloading, crushing and screening, and truck travel on graveled access roads. Operations would be required to comply with the PM_{10} State Implementation Plan and the MDAQMD regulations for stationary and mobile equipment and to reduce fugitive dust.

To determine if a potential project may significantly impact the ambient air quality, the MDAQMD utilizes the following net daily emissions increase as CEQA thresholds of significance. If the potential emissions exceed these thresholds, then the project may have a significant air quality impact and requires additional analysis.

Carbon Monoxide (CO)	548 lbs/day
Nitrogen Dioxide (NO_2)	137 lbs/day
Reactive Organic Gases (ROG)	137 lbs/day
Sulfur Dioxide (SO_2)	137 lbs/day
Particulate Matter (PM_{10})	82 lbs/day
Particulate Matter ($PM_{2.5}$)	65 lbs/day

Operational emissions for the stationary plant and generators, mobile equipment, and dust emissions were estimated utilizing the South Coast Air Quality Management District Offroad Model – Mobile Source Emission Factors model and emissions factors from AP-42

Compilation of Air Pollutant Emission Factors (as updated) for Crushed Stone Processing and for unpaved roads. Table 4 above provides the estimated emissions for the tailing's removal, processing, and shipping operations. Operational emissions would not exceed MDAQMD significance thresholds.

Reclamation activities would require earthmoving, and other activities typically associated with final grading and revegetation for an approximate two-to-three-week period. The Proposed Project was screened for emissions generation as discussed above. Typically, daily reclamation activities were screened for the following: a water truck, a scraper/grader, and a miscellaneous material handling equipment. This would occur for approximately 14 days. Reclamation emissions would not exceed MDAQMD significance thresholds.

As shown in Tables 4 and 5, operational and reclamation emissions would not exceed MDAQMD thresholds and less than significant air quality impacts are expected with implementation of existing regulations.

Table 5
Reclamation Activities Emissions
(Pounds per Day)

Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Water Truck	0.4	2.5	2.8	0.1	0.1
Scraper/Grader	1.5	9.8	6.2	0.4	0.4
Other Material Handling Equipment	0.7	4.6	3.5	0.2	0.2
Totals (lbs/day)	**2.6**	**16.9**	**12.5**	**0.7**	**0.7**
MDAQMD Threshold (lbs/day)	137	137	548	82	65
Significant	**No**	**No**	**No**	**No**	**No**

Emission Sources: SCAQMD OFF-ROAD Emissions Model, 2021

Compliance with MDAQMD Regulation II and Rules 402 and 403

Although the Proposed Project does not exceed MDAQMD thresholds, the Applicant is required to comply with all applicable MDAQMD rules and regulations as the MDAB is in non-attainment status for ozone and suspended particulates (PM_{10} and $PM_{2.5}$ (state)). Stationary equipment including the crushing and screening plant and the generators must comply with Regulation II and obtain Permits to Construct and Operate which limit emissions to current regulatory thresholds and are renewed annually.

To limit dust production, the Applicant must comply with Rules 402 nuisance and 403 fugitive dust, which require the implementation of Best Available Control Measures (BACM) for each fugitive dust source. This would include, but not be limited to the following BACMs:

1. The Project proponent shall ensure that any portion of the site to be graded shall be pre-watered prior to the onset of grading activities.

    I. The Project proponent shall ensure that watering of the site or other soil stabilization method shall be employed on an on-going basis after the initiation of any grading and mining activity on the site. Portions of the site that are actively being worked shall be watered to ensure that a crust is formed on the ground surface and shall be watered at the end of each workday.

II. The Project proponent shall ensure that all disturbed areas are treated to prevent erosion.

III. The Project proponent shall ensure that all operational and processing activities are suspended when winds exceed 25 miles per hour.

Exhaust emissions from vehicles and equipment and fugitive dust generated by equipment traveling over exposed surfaces, would increase NO_X and PM_{10} levels in the area. Although the Proposed Project would not exceed MDAQMD thresholds during operations, the Applicant would be required to implement the following conditions as required by MDAQMD:

2. All equipment used for mining and construction must be tuned and maintained to the manufacturer's specification to maximize efficient burning of vehicle fuel.

3. The operator shall maintain and effectively utilize and schedule on-site equipment and on-site and off-site haul trucks in order to minimize exhaust emissions from truck idling.

4. The operator shall comply with all existing and future CARB off-road and on-road diesel vehicle and MDAQMD regulations, which may include among others: (1) meeting more stringent emission standards; (2) retrofitting existing engines with particulate traps; (3) use of low sulfur fuel; and (4) use of alternative fuels or equipment.

5. The aggregate crusher must obtain permits to construct and annually renew permits to operate from the MDAQMD and be in compliance with such permits.

MDAQMD rules for diesel emissions from equipment and trucks are embedded in the compliance for all diesel fueled engines, trucks, and equipment with the statewide CARB Off-Road Diesel Vehicle Regulations. These measures would be implemented by CARB in phases with new rules imposed on existing and new diesel-fueled engines and truck and equipment fleets.

With compliance with existing rules and regulations and mitigation measures above, operational emissions are expected to be less than significant.

The project area is within the Mojave Desert PM_{10} Planning Area and the Western Desert Ozone non-attainment area. The State Implementation Plan (SIP) identifies sources of PM_{10} emissions and control measures to reduce emissions. The EPA requires the application of reasonable available control technology (RACT) to stationary emission sources and reasonable available control measures (RACM) to mobile sources, and new source review and permitting. These would be incorporated through compliance with regulations described above. No new mining or excavation of the existing quarry is proposed at this time; the Proposed Project only includes the removal, screening and transporting of iron material from the site. As shown in Table 4, the thresholds for the above referenced criteria pollutants would not be exceeded by the Project. The mine is located in a very sparsely populated desert region and no development is proposed in the vicinity. Therefore, no air quality cumulative impacts are anticipated.

Less Than Significant Impact

c) *Expose sensitive receptors to substantial pollutant concentrations?*

The Proposed Project is located in a remote area of northeastern San Bernardino County, east of the San Bernardino Mountains. No sensitive receptors are located within the project vicinity. Therefore, no impacts are anticipated.

No Impact

d) *Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?*

The Proposed Project is the removal, processing, and reclamation of iron ore tailings stockpiled on 54 acres. The generation of objectionable odors is not associated with this type of mining and reclamation activities and there are no sensitive receptors within the project vicinity. Therefore, no impact is anticipated.

No Impact

Therefore, less than significant adverse impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
IV.	**BIOLOGICAL RESOURCES –** Would the project:				
a)	Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☒	☐	☐

SUBSTANTIATION: *(Check if project is located in the Biological Resources Overlay or contains habitat for any species listed in the California Natural Diversity Database ☐):*

San Bernardino Countywide Policy Plan; BLM EA, FWS BO, Submitted Project Materials

a) Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The following reports were reviewed: A *Biological Resources Assessment (BRA) for the Iron Age Mine* (Lilburn Corporation, July 2014; see Appendix B of the Mine Reclamation Plan), a *Desert Tortoise Pre-Project Survey Report for the Alternative Mine Road* (ADT, May 2019, BLM's *EA* January 2021, and the FWS *Biological Opinion* (July 2015).

Listed or Sensitive Plants - Focused botanical surveys of the haul road right-of-way, mill site, and tailings area were conducted in April and May 2012, and May 2019. No sensitive plant species were observed within the survey area at that time.

Per notice dated September 24, 2020, the California Fish and Game Commission determined that the listing of the western Joshua tree (*Yucca brevifolia)* as threatened or endangered under the California Endangered Species Act (CESA) may be warranted. This commences a one-year status review of the species; the Commission will make a final decision at a future meeting. During the status review, the western Joshua tree is protected under CESA as a candidate species. Joshua trees were recorded to the north along the access road and along the BLM selected alternative route. No Joshua trees are on the tailings piles to be removed or within the Iron Age Quarry to be partially backfilled.

Listed Wildlife Species - The BRA identified one candidate, sensitive, or special status species, desert tortoise (*Gopherus agassizii*), to have the potential to occur within the Project Site and vicinity. The desert tortoise was determined to have a moderate potential to occur south of the tailings area. Additionally, a Pre-Project Desert Tortoise

Survey was conducted along the alternative access route to the south and recorded no live desert tortoise or sign within the study area or along the road alignment. Two burrows that could have been used by desert tortoise at one time were observed south of the proposed tailings recovery area.

The Proposed Project would impact a total of approximately 21 acres of suitable desert tortoise habitat; 15.7 of those acres occur within the Pinto Mountains critical habitat unit / Desert Wildlife Management Area (DWMA) and 5.3 acres occur outside of the critical habitat unit/DWMA. The remainder of the Project Site (approximately 76 acres) is heavily impacted by the tailing's piles, quarry, and roadway and is unsuitable for desert tortoise habitat. Note that with implementation of the required reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, approximately 50 acres would be returned to desert vegetation and suitable desert tortoise habitat as compared to existing conditions.

On July 16, 2015, the BLM completed its Formal Section 7 Consultation on the Iron Age Project with FWS. The FWS Biological Opinion ((BO) 3809 (P) CACA-53897 CAD0800.31) (EA, Appendix C) addresses the effects of the proposed use on the threatened desert tortoise and its designated critical habitat. The document was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The Selected Project Alternative will implement the avoidance and minimization measures, as well as the terms and conditions of the BO. With implementation of these measures, the BLM determined that the Selected Project Alternative will not have significant adverse effects on desert tortoise or its habitat (EA, Chapter 4.2).

The opinion was based on the biological assessment, additional information that BLM provided during consultation, and information on file. A complete record of this consultation is available at the Carlsbad Fish and Wildlife Office and at the BLM Barstow field office. The findings and avoidance and minimization measures are detailed in the BO and included in Section IV a below as Mitigation Measure BIO-1. In addition, Iron Age must notify the CDFW for determination of consistency of the BO with CESA (Fish and Game Code section 2080.1).

Sensitive Wildlife – The following species have been designated by the CDFW as "Special Animals." The CDFW defines "Special Animals" as a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. The CDFW considers the taxa in its latest list (January 2012) to be those of greatest conservation need. The following species from the Special Animal list either have a probability to occur at the subject site or were observed to be present in the course of biological surveys: Pallid Bat (*Antrozous pallidus*); California Leaf-nosed Bat (*Macrotus californicus*); Coast Horned Lizard *(Phrynosoma blainvilii*); American Badger (*Taxidea taxus*); and Mojave Fringe-toed Lizard (*Uma scoparia*). Note that the northern portion of the project area overlies a Mojave Fringe-toed Lizard Area of Critical Environmental Concern (ACEC) established by the BLM. This is discussed under IV f and Mitigation Measure BIO-2 is listed below to reduce impacts to less than significant.

Migratory Birds - "Migratory bird" means any bird listed in 50 CFR 10.13. All native birds found commonly in the United States, with the exception of native resident game birds, are protected under the Migratory Bird treaty Act (MBTA). The MBTA prohibits taking of

migratory birds, their parts, nests, eggs, and nestlings. EO 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices.

Six special status migratory birds were observed in the Project Area, including the following: Golden eagle (*Aquila chrysaetos*); Prairie falcon (*Falco mexicanus*); Burrowing owl (*Athene cunicularia*); Le Conte's thrasher (*Toxostoma lecontei*); California thrasher (*Toxostoma redivivum*); and Loggerhead shrike (*Lanius ludovicianus*). The Le Conte's thrasher (*Toxostoma lecontei*), designated a "Special Animal" by the CDFW was the only non-special status migratory bird species that was found to have a moderate probability to occur within the Project Site. Possible significant adverse impacts to bird species would be reduced to a level less than significant per implementation of Mitigation Measure BIO-3 listed below.

Less than Significant with Mitigation

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?

The BRA did not find any riparian vegetation or wetlands on the project areas or along the road alignment. Catclaw acacia and streambed was observed along portions of the access roads. Catclaw acacia is described as occurring in uplands and rarely flooded margins of arroyos and washes. Streambeds are described as unvegetated and characterized by sandy beds with no vegetation or dominated by upland species vegetation.

The BLM's Selected Alternative, as described in the EA and under the Project Understanding above, approved the Iron Age Mine POO with a modification to utilize existing BLM designated routes to access the mine. The existing three designated travel and transportation management system (and motorized) routes include JT1957, JT1959 and JT1967. This route network will require less improvements due to the condition of the routes and be consistent with the existing BLM designated routes, which will be left in-place following completion of the project activities.

Biological and cultural surveys were conducted on these routes in 2019. The improvements and utilization of these routes will comply with BM guidelines and implement the avoidance and minimization measures in the EA, as well as the terms and conditions of the FWS BO. The Selected Alternative will not have significant adverse effects on desert tortoise or its habitat (EA, Chapter 4.2).

With adherence to the regulatory permitting requirements and guidelines including mitigation as applicable, the Proposed Project is not anticipated to have a significant effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

Less than Significant with Mitigation

c) *Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

The BRA did not identify riparian vegetation or wetland resources as defined by Section 404 of the Clean Water Act within the study area. No impact would occur.

No Impact

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Iron Age Mine is located adjacent to Joshua Tree National Park to the east and south, to Humbug Mountains to the West, and to the Pinto Mountains to the southwest. The general location of the mine site has a wildlife corridor function for species moving to and from these locations. The large wash adjacent to the prosed mine access road serves as a wildlife corridor for species moving from the rocky areas of brittlebush series habitat, to the big galleta habitat and creosote bush habitat. The washes may be used by various mammals, reptiles, and bird species to forage, seek shelter, and migrate. In order to reduce potential impacts to less than significant, the approved Reclamation Plan and Mitigation Measure BIO-4 shall be implemented.

Less than Significant with Mitigation

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

The San Bernardino County Native Plant Protection policy (1989) provides protection for all trees greater than 6 inches diameter at breast height (dbh), smoke trees, mesquite, creosote rings, and all plants in the agave family, including Joshua trees. The Proposed Project is not anticipated to conflict with any local policies or ordinances protecting native plants or other biological resources because the site is predominately devoid of any vegetation and will implement a revegetation plan. As discussed above, the Joshua tree is a protected CESA candidate species. If surveys locate any Joshua trees, they must be avoided or if any Joshua trees will be impacted, an Individual Take Permit (ITP) with CDFW will need to be prepared and processed. See Mitigation Measure BIO-4. With mitigation, potential impact of Joshua trees will be reduced to a less than significant impact.

Less than Significant with Mitigation

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?*

In their Decision Record and FONSI, the BLM determined that the proposed project is consistent with the CDCA Plan (1980), as amended by the 2016 Desert Renewable Energy Conservation Plan (DRECP) and 2019 West Mojave Route Network Project. The Selected Alternative complies with the CDCA Plan's Conservation and Management Actions to the extent allowable under the mining laws and the BLM's 43 CFR 3809 mining regulations.

Iron Age Mine is located within the planning area for the West Mojave Plan (WMA). The West Mojave Plan consists of two components: A Federal component that would amend the existing 1980 California Desert Conservation Area Plan, and a Habitat Conservation Plan (HCP) component that would cover development in private lands. A Biological Opinion was finalized for the federal portion of the Plan.

The Project Site overlies two BLM designated habitat management areas established by the West Mojave Plan; these include the Mojave fringe-toed lizard Area of Critical Environmental Concern (ACEC) and the Pinto Mountain DWMA for desert tortoise. Approximately 8 acres of the Mojave fringe-toed lizard ACEC would be impacted. Approximately 84.2 acres of the Project Site are within the DWMA, of these approximately 68.5 have been determined to be currently impacted and unsuitable for desert tortoise habitat; 15.7 acres have been determined to be viable desert tortoise habitat. Potential impacts to these areas and species would be mitigated as discussed in Section IVa above and by measures listed below.

Note that with implementation of the required reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, approximately 50 acres would be returned to desert vegetation and suitable desert tortoise habitat within the DWMA as compared to existing conditions.

Less than Significant with Mitigation

Possible significant adverse impacts have been identified or anticipated and the following mitigation measures are required as a conditions of project approval to reduce these impacts to a level less than significant.

BIO-1

- The Bureau and Iron Age will designate a person to act as the field contact representative with specific experience in the implementation of environmental compliance programs. The field contact representative will serve as the environmental compliance monitor and will be present throughout the construction of the mill site and access road, mining operations, and reclamation. This individual will serve as liaison among the Service, Bureau, construction workers, truck drivers, authorized biologist(s), and biological monitor(s). The field contact representative, working with an authorized biologist, will ensure compliance with the conditions and requirements of project permits and approvals set forth in this biological opinion and supporting plans appended to the biological assessment.
- The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented. This would include enforcing the 15-mile-per-hour speed limit through desert tortoise habitat along the access road and ensuring that project personnel do not travel cross country with motorized vehicles.
- During the construction of the mill site and access road, Iron Age will use authorized biologists approved by the Service and biological monitors approved by an authorized biologist to ensure compliance with the protective measures for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date Service guidance and

will be required for monitoring of any construction activities that may injure or kill desert tortoises.

The authorized biologist must have thorough and current knowledge of desert tortoise l behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to conduct their required duties safely and successfully. Authorized biologists arc approved to monitor project activities and are responsible for locating desert tortoises and their sign (i.e., conducting clearance surveys). Authorized biologists must ensure proper implementation of protective measures and make certain that the effects or the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or incidental take permit. All incidents of noncompliance in accordance with the biological opinion or permit must be recorded and reported.

Biological monitors will be approved by the authorized biologist to monitor project activities, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol. They will report incidents of noncompliance in accordance with a biological opinion or permit, move desert tortoises from harm's way when desert tortoises enter project sites and place these animals in "safe areas" pre-selected by authorized biologists or maintain the desert tortoises in their immediate possession until an authorized biologist assumes care of the animal. Monitors assist authorized biologists during surveys and serve as "apprentices" to acquire experience. Monitors should not conduct clearance surveys or other specialized duties of the authorized biologist unless directly supervised by an authorized biologist; "directly supervised" means the authorized biologist has direct voice and sight contact with the monitor. Refer to the following of additional information: http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html.

- The use of authorized biologists during mining operations and reclamation activities will be on an as-needed basis. In this case, the field contact representative will consult authorized biologists approved by the Bureau and the Service to determine the most appropriate course of action when a desert tortoise enters the project site, is found along the access road, or has established burrows within the project area that may be affected by the mining operations and may need to be moved out of harm's way.
- The Bureau will review the credentials of all individuals seeking approval as authorized biologists. The Bureau will provide the credentials of appropriate individuals to the Service for approval at least 30 days prior to the time they are needed in the field.
- The authorized biologists will be responsible for all aspects of clearance surveys, monitoring, developing, and implementing the worker environmental awareness program, communication with agency personnel, reporting, and be present, along with biological monitors, during construction of the mill site and access road. An authorized biologist will be available during the mining operations and reclamation, as needed, when activities are likely to affect desert tortoises such that a more highly skilled biologist is needed (e.g., conducting surveys to ensure desert tortoises are not present in vegetated areas, excavating burrows, etc.). The authorized biologists will

supervise and train the biological monitors. Training by authorized biologists will include ensuring biological monitor and the field contact representative are qualified to capture, handle, and move desert tortoises in situations where an authorized biologist is unavailable or for less complicated tasks (e.g., moving a desert tortoise from under a vehicle or off the access road, etc.).

- The field contact representative will act on the advice of the authorized biologist(s) and biological monitor(s) to ensure conformance with the protective measures set forth in this biological opinion. Additionally, the authorized biologist(s) will have the authority to immediately stop any activity that is not in compliance with these conditions.
- The Bureau will ensure that all workers associated with the proposed Iron Age Project receive worker environmental awareness training to ensure protection of the desert tortoise and its habitat The field contact representative and authorized biologist will administer the training at the onset of the project, annually, and when new employees are hired to all onsite personnel and anyone else (e.g., contractors, truck drivers, etc.) who needs to travel to the mine site. The worker environmental awareness training will:
    - Be developed by or in consultation with the authorized biologist and consist of a presentation in which supporting written material and electronic media, including photographs of protected species, are made available to all participants;
    - Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them;
    - Inform workers that the field contact representative and the authorized biologists have the authority to halt work in any area where an unauthorized adverse impact to biological resources may occur if the activities continued;
    - Discuss general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures;
    - Provide an explanation of the sensitivity and locations of the vegetation, biological resources, and habitat within and adjacent to work areas, and proper identification of these resources;
    - Place special emphasis on the desert tortoise, including information on physical characteristics, photographs, distribution, behavior, ecology, sensitivity to human activities, legal protection. reporting requirements. and protective measures required for the project;
    - Provide contact information for the authorized biologist(s) and biological monitor(s) to handle late comments and questions about the material discussed in the program. as well as notification of any dead or injured wildlife species encountered during project-related activities.
    - Direct all workers to report all observations of listed species and their sign to an authorized biologist for inclusion in the yearly compliance report;

  - Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and
  - Provide information regarding the effects of predation on the desert tortoise by common ravens (Corvus corax) and other predators and the measures that have been developed to reduce the likelihood that predators will be attracted to the project area.

- Prior to construction of the mill sites at State Route 62, Iron Age will install fencing to exclude desert tortoises from entering the site. The fence will be constructed according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (Service 2009). If desert tortoises are encountered during installation of the fence, the authorized biologist will move the individual the shortest distance possible to an area outside the fence on public land where it will be safe. The authorized biologist will use his or her judgment regarding the best measures to use to ensure the desert tortoise does not immediately return to the area inside of the fence or be placed in a location where it could enter State Route 62. The authorized biologist may contact the Service to discuss specific situations if the need arises.
- After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized biologist will follow established survey protocols and remove all desert tortoises from within the fenced area. All desert tortoises will be considered to have been removed once a complete survey of the work area is conducted without finding any additional animals. Desert tortoises that are found inside the fenced area will be placed on the other side of the exclusion fence. The authorized biologist will use his or her best judgment to determine the optimal location for placement of desert tortoises, which would include ensuring the animals are not relocated into areas that may isolate them from the desert tortoise population in the area or enable them to access the highway.
- Iron Age will maintain the integrity of the fence for the duration of the proposed project to ensure that desert tortoises are excluded from the mill site during construction and until all mining operations and activities, including reclamation efforts, related to this proposed action are concluded. The fence will be inspected regularly and repaired when necessary; initially, it will be inspected monthly, but Iron Age may adopt a different schedule, based on acquired experience.
- An appropriate number of authorized biologists and biological monitors will be available during construction of the mill sites and access road for the protection of the desert tortoise. Authorized biologists will monitor each activity where conditions exist that may result in injury or mortality of desert tortoise (e.g., clearing, grading, re-contouring, and restoration activities).
- For the construction of the access road, the authorized biologist or a qualified biological monitor will survey ahead of the project activities and halt construction if he or she finds a desert tortoise in the path of construction equipment. Project activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist has relocated it.
- During mining operations, the field contact representative will inspect all excavations, trenches, and areas that are not within desert tortoise exclusion

fencing on a regular basis (several times per day). If a desert tortoise is discovered in an area planned for excavation or an area where the animal may be injured or killed, the field contact representative will coordinate with an authorized biologist to determine the best course of action to protect or move the animal to a safe location in accordance with the field manual (Service 2009). The field contact representative will also monitor vehicle speeds along the access road and ensure that drivers maintain a speed limit of 15 miles per hour when temperatures are between 50 and 100° F.

- Iron Age will survey for invasive weeds at the earliest spring season following the letter of authorization to proceed issued by the Bureau. It will provide to the Bureau a list of surveyors and their qualifications, and a work plan that describes a proposed survey methodology. No surveys may be conducted without the approval of the authorized officer. Invasive weed surveys will be repeated every 5 years until reclamation is complete. The goals of this effort are to detect and remove any non-native invasive weed that was not present prior to the onset of the proposed action and to prevent Sahara mustard (*Brassica tourneforlii*) from becoming the dominant annual plant in the action area. Non-native invasive species will be removed through manual, mechanical or chemical methods depending on the specific circumstances and as approved by the Bureau's authorized officer. If a new species of non-native weed is observed prior to the 5-year survey, Iron Age will contact the Bureau for authorization to remove the infestation.
- During reclamation or erosion control, the mine operator will use only certified weed free straw, mulch, and seed native soils unless approved by the authorized officer.
- Desert tortoises found in the project area will be handled and moved by an authorized biologist in accordance with the most current Service protocol. If a desert tortoise is found in harm's way, all potentially harmful activity will cease until the desert tortoise moves or is moved out of harm's way by an authorized biologist, biological monitor, or field contact representative; as described in measure 6, biolo81cal monitors and the field contact representative may move desert tortoises from harm's way in less complicated situations. Desert tortoises that need to be moved from harm's way will be placed on adjacent Bureau land, using techniques described in the field manual (Service 2009).
- Desert tortoises that are moved offsite and released into undisturbed habitat on public lands will be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibemaculum in which it was found, or in an artificially constructed burrow in accordance with techniques described in the field manual (Service 2009).
- Desert tortoises excavated from burrows will be moved to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or unoccupied natural burrows will be 150 to 300 feet from the original burrow. Relocated desert tortoises will not be placed in existing occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the authorized biologist will construct one. Desert tortoises moved during inactive periods will be monitored for at least 2 days after placement in the new burrows to ensure their safety.

- Iron Age will clearly mark, sign, or flag all project activity areas at the outer boundaries before the onset of construction and during mining operations. All activities will be confined to designated areas.
- Iron Age will not create any new unpaved or additional paved roads. If unforeseen circumstances require disturbance beyond the project area limits, Iron Age will contact the Bureau.
- The field contact representative (with input from an authorized biologist) will inform workers at regular briefings if desert tortoises are likely to be active that day or in the foreseeable future. When desert tortoises are expected to be active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within habitat of desert tortoises prior to moving the vehicle. If the desert tortoise does not move out of harm's way of its own volition or is in any other situation where it is at risk of being killed, the worker will contact the field contact representative, authorized biologist or biological monitor to move it.
- The Bureau will ensure that workers do not bring firearms and pets into the project area This measure does not apply to law enforcement personnel and working dogs.
- To reduce the attractiveness of the project area to common ravens and coyotes, Iron Age will place trash in sealed containers and empty the containers at a commercial facility on a weekly basis. The project area will be kept as clean of debris as possible.

Compensation

Iron Age committed to offsetting the loss of desert tortoise habitat by paying compensation at a rate of 5 to 1 for impacts on undisturbed areas within the desert wildlife management area (15.7 x 5 = 78.5 acres) and 1 to 1 for impacts on undisturbed areas outside desert wildlife management area (5.3 acres). The boundaries of the desert wildlife management area and critical habitat coincide in the project area. Alternatively, Iron Age may transfer 83.8 acres of land to the Bureau.

Sensitive Wildlife

BIO-2 In order to mitigate potential impacts to specific species that may occur within the project impact area, the following measures are recommended:

American Badger:

- 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 which have been flagged to avoid adverse impacts to the badger. All workers shall be instructed that their activities are restricted to flagged and cleared areas; and
- An on-call biological monitor will be available to help identify any potential impacts to the badger.

Le Conte's Thrasher

- If mining activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to

identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the Migratory Bird Treaty Act, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed;

- All project activities will remain within the established project area and unnecessary vehicle or personnel activity will be avoided outside the project area. Potential direct impacts to the species include being hit by vehicles on access roads, grading of new access roads, preparation of staging locations, and general disturbance due to increased human activity.

Coast horned lizard and Mojave fringe-toed lizard:

- Conducting clearance surveys prior to the commencement of any ground disturbing activities;
- Worker environmental training; and
- Maintaining a speed limit of 20 mph on all access roads.

Burrowing Owl:

- The project impact area should be surveyed for the presence of burrowing owl no more than thirty days prior to ground disturbing activities;
- If the burrowing owl is found or the presence or burrowing owl is confirmed, and the proposed reconstruction and realignment of the existing roadway will occur during the breeding season (February 15 to August 15), then the active owl burrows on-site and within 500 feet of the project activities shall be identified, and physically marked before the start of any construction activities. A survey to mark the burrows shall be undertaken no earlier than February 15. During the construction period, active burrows that are not going to be removed by construction activities will be afforded a minimum 250-foot buffer to protect foraging habitat and owls. A biological monitor will be present to ensure that adequate avoidance of impacts to owls and their burrows is maintained. The monitor will have the authority to modify the buffer zone in order to protect the owls from harm; and
- If necessary, passive relocation techniques should adhere to those described in the *Burrowing Owl Consortium Survey Protocol & Mitigation Guidelines*.

BIO-3 **Migratory Birds**

If construction or land clearing activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the MBTA, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed.

BIO-4 **Sensitive Plants (Joshua Tree)**

Joshua tree surveys will be conducted to mark any Joshua trees found within the road alignment and in mining areas. If any Joshua trees will be impacted, compliance with CESA will be required and an Individual Take Permit (ITP) with CDFW will need to be prepared and processed.

Therefore, potentially significant impacts are identified or anticipated, and mitigation measures are required to reduce impacts to less than significant.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
V.	**CULTURAL RESOURCES** – Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those outside of formal cemeteries?	☐	☒	☐	☐

SUBSTANTIATION: (Check if the project is located in the Cultural ☐ or Paleontologic ☐ Resources overlays or cite results of cultural resource review):

San Bernardino Countywide Policy Plan; Submitted Project Materials

a-c) *Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Disturb any human remains, including those outside of formal cemeteries?

A cultural resources report for the Iron Age Mine was prepared and is available at the County of San Bernardino Planning Department. McKenna et al. completed a Class III cultural resources investigation for the BLM Barstow Field Office, San Bernardino County, California. The study was completed under Field Authorization No. CA-680-13-22 (BLM State Permit No. CA-10-26), by Jeanette A. McKenna, M.A. and R.P.A., Principal Investigator for McKenna et al. The studies were initiated in February 2013 and completed in June 2013. The field survey was conducted between March 20 and March 24, 2013, also by Jeanette A. McKenna. **Note that data presented in the cultural resource's investigation is confidential and not for public review.** Only a summary of the findings, conditions and mitigation measures in order to mitigate any potential significant cultural impacts are included herein.

The cultural resources investigation included: 1) an archeological records search through the San Bernardino County Museum, Archaeological Information Center, Redlands and supplementary research through the BLM Barstow Field Office, 2) Native American Consultation, 3) historic background research of the general area and the potential for identifying prehistoric and/or historic cultural resources, 4) a paleontological overview from the Natural History Museum of Los Angeles County, and 5) field studies.

The Area of Potential Impact (APE) was approved through consultation with James Shearer, BLM Archaeologist, Barstow Field Office. As approved, the Iron Age Mine APE consists of a corridor involving 50 feet on either side of the center line of the existing roadways (early and recent Iron Age Road alignments), the 97-acre Iron Age Mine Project Site itself, and ten acres of land identified as the "mill site" on SR 62. The 100-foot-wide roadway corridor would provide the necessary width to re-establish a direct road between SR 62 and the Iron Age Project Site.

The project area is within the historic Dale Mining District having been explored and occasionally mined since the 19th century. Previous research identified six cultural resources within one mile of the APE. Of these, two were roadways (Route 62 and Iron Age Road); two historic/modern refuse scatters; one USGS benchmark; and one mining camp. Only the roadways were within the APE. The remaining resources are not in areas of primary or secondary impacts.

As a result of the recent studies, McKenna et al. recorded updates for SR 62 and Iron Age Road. McKenna et al. has also recorded the Iron Age Mine as a resource. Despite these recordings, McKenna et al. concluded that none of these resources is considered significant or important and the proposed undertaking will not result in any adverse environmental impacts with respect to cultural resources. Mitigation measures are required to protect and avoid unknown and possible buried prehistoric and historic archaeological sites that could be uncovered during operations.

The Proposed Project will be removing iron tailings stockpiles and the surficial nature of the disturbance would minimize potential impacts to paleontological resources. The area is also not considered sensitive for paleontological resources and no impacts to paleontological resources are anticipated.

Less than Significant with Mitigation

MM#	Mitigation Measures
CR-1	A qualified archaeologist approved by the BLM and County will conduct a pre-construction survey for cultural resources to mark sensitive resources for avoidance. Operations shall not knowingly disturb, alter, or destroy any historical or archaeological resource. The employees and contractors involved in the project will receive cultural resources awareness training, which will be directed towards recognizing and avoiding these features. Access roads and operation areas will set back from any historical or archaeological features which will be prominently flagged in the field to avoid disturbance.
CR-2	

The following procedures shall be implemented in the event that potentially sensitive cultural resources are uncovered during construction and grading activities:

- In the event archaeological, paleontological and/or historical resources, including pottery, rock art, middens or human remains, are uncovered during earthmoving activities, all work in that area shall cease immediately and a qualified archeologist shall be retained to access the findings, and if necessary, provide appropriate disposition of the resources. Earthmoving shall be diverted temporarily around the deposits until they have been evaluated, recorded, excavated, and/or recovered as necessary. Earthmoving shall be allowed to proceed on the site when the archaeologist, in consultation with the appropriate Native American Tribe(s) and the County of San Bernardino Museum, determines the resources are recovered to their satisfaction.

- If possible human remains are encountered during any earthmoving activities, all work shall stop in the area in which the find(s) are present, and the San Bernardino County Coroner must be notified. The appropriate land manager (BLM or County) and the owner of the site shall also be called and informed of the discovery. If the remains are located on federal public lands, the BLM land managers/federal law enforcement/federal archaeologist is to be informed as well because of complementary jurisdiction issues. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. The Coroner will determine if the bones are historic/archaeological or a modern legal case.

- State law dictates that the Native American Heritage Commission (NAHC) shall be notified in the event that remains are determined to be human and of Native American decent, in accordance with California Public Resources Code Section 5097.98.

- All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA)16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the state of California regardless of the remains are modern or archaeological.

- Modern Remains - If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area.

- Archaeological Remains - If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands.

- Remains discovered on federally owned/managed lands - After the Coroner has determined the remains are archaeological or historic and there is no legal question, the BLM Barstow Field Office Archaeologist must be called. The

archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 Inadvertent discoveries, must be followed.

- Remains discovered on non-Federally owned/managed lands - After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American, he/she shall contact by telephone within 24 hours, the California NAHC. The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the landowner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the descendant's recommendations, the owner or the descendent may request mediation by the NAHC.

Therefore, potentially significant impacts are identified or anticipated, and mitigation measures are required to reduce impacts to less than significant.

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

SUBSTANTIATION: ***San Bernardino Countywide Policy Plan; Submitted Project Materials***

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

Fuel

During operations, transportation energy consumption is dependent on the type of vehicles used, number of vehicle trips, fuel efficiency of vehicles, and travel mode. Transportation fuel use such as gasoline and diesel during operations would result from the use of trucks, heavy equipment, and employee vehicles. The Proposed Project

would not generate additional fuel consumption as operation fleet and equipment would remain the same.

The Proposed Project does not include uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT or associated wasteful vehicle energy consumption. It is not expected to result in a substantial demand for energy that would require expanded supplies or the construction of other infrastructure or expansion of existing facilities. Therefore, the Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

Less Than Significant Impact

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Project design and operation would comply with the County of San Bernardino Greenhouse Gas Emissions Reduction Plan, and the State Building Energy Efficiency Standards related to appliance efficiency regulations, and green building standards. Project development would not cause inefficient, wasteful and unnecessary energy consumption, and no adverse impact would occur.

The Proposed Project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce GHG emissions, including Title 24, AB 32, and SB 32; therefore, the Project is consistent with AB 32, which aims to decrease emissions statewide to 1990 levels by to 2020. The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are recommended.

Less Than Significant Impact

Therefore, less than significant impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
VII.	**GEOLOGY AND SOILS** – Would the project:				
a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map Issued by the State Geologist for the area or based on other substantial evidence of	☐	☐	☐	☒

	a known fault? Refer to Division of Mines and Geology Special Publication 42.				
	ii. Strong seismic ground shaking?	☐	☐	☐	☒
	iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
	iv. Landslides?	☐	☐	☐	☒
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

SUBSTANTIATION: *(Check ☐ if project is located in the Geologic Hazards Overlay District):*

San Bernardino Countywide Policy Plan; Submitted Project Materials

a) i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map Issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

The site is not located within an Alquist-Priolo Earthquake Fault Zone according to Figure 5.6-1-*Alquist-Priolo Fault Zones and County Fault Hazard Zones* of the San Bernardino Countywide Policy Plan.[3] No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

[3] San Bernardino Countywide Plan. Chapter 5.6, Page 5.6-9/Figure 5.61-1.

No Impact

ii) Strong seismic ground shaking?

Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. The site Is not located in the vicinity of an earthquake fault and the Proposed Project site is to be used for a mining operation and does not contain habitable structures. No significant adverse impacts are identified or anticipated, and no mitigation measures are required.

No Impact

iii) Seismic-related ground failure, including liquefaction?

The Project Site is not mapped within a region known for liquefaction susceptibility as shown on Figure 5.6-3-*Liquefaction and Landslide Susceptibility* of the San Bernardino County Countywide Policy Plan.[4] The Countywide Policy Plan does not identify the site to occur in an area susceptible to liquefaction. As noted, the Proposed Project would not build permanent structures or construct facilities with foundations that could fail as a result of liquefaction during an earthquake. Therefore, no impacts are expected, and no mitigation measures are required.

No Impact

iv) Landslides?

The Project Site is not mapped within a region known for landslide susceptibility as shown on Figure 5.6-3-*Liquefaction and Landslide Susceptibility* of the San Bernardino County Countywide Policy Plan. The Countywide Policy Plan does not identify the site to occur in an area susceptible to landslides. Therefore, the Project Site would not be exposed to landslide hazard. No impacts are expected, and no mitigation measures are required.

No Impact

b) Result in substantial soil erosion or the loss of topsoil?

During the removal of the tailings, drainage patterns would not be altered from existing conditions. The tailings are porous and heavy and are not susceptible to erosion. After removal of the tailings, the site would be re-graded to near the original contours as shown on the Reclamation Plan sheet. Sheet flow would drain towards the east and eventually enter the drainage that is located along the southeast portion of the site and continue downgradient. It is expected that the onsite runoff would eventually create its own natural drainage channels to the east. The site would also be stabilized through revegetation. Therefore, less than significant impact is anticipated.

Less Than Significant Impact

[4] San Bernardino Countywide Plan. Chapter 5.6, Page 5.6-17/Figure 5.61-3.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

The Proposed Project is the removal and transport of iron ore tailings and reclamation of the tailing's removal site. The removal of the stockpiled tailing is not located in an area that is geologically unstable or would become unstable as a result of the removal of the stockpile. Therefore, no significant adverse impacts are identified or anticipated, and mitigation measures are required.

Less Than Significant Impact

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

Expansive soils are typically characterized by clayey material that shrinks as it dries and swells as it becomes wet. Collapsible soils consist of loose, dry, low-density materials that are weakly cemented and that thus can collapse or be compressed with the addition of water or weight. Collapsible soils include young fine-grained alluvial materials, wind-deposited soils, and soils with salts. Much of the Desert Regions has low to moderately expansive soils.

According to the Swelling Clays Map of the Conterminous United States, the Project Site is identified as containing little or no welling clay.[5] Furthermore, the Proposed Project would not build permanent structures or construct facilities with foundations that could fail as a result of expansive soils. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

No Impact

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Septic tanks and/or alternative wastewater systems are not proposed as part of the Proposed Project. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

No Impact

f) *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

As discussed in Section V of this Initial Study, the Proposed Project would be removing iron tailings stockpiles and the surficial nature of the disturbance would minimize potential impacts to paleontological resources. The area is also not considered sensitive for paleontological resources and no impacts to paleontological resources are anticipated. In the event paleontological resources are uncovered during earthmoving activities, implementation of Mitigation Measures CR-1 and CR-2 would reduce impacts to paleontological resources to a less than significant impact. No additional mitigation measures are required.

[5] U.S. Geological Survey. *Swelling Clays Map of the Conterminous United States*. 1989.

Less Than Significant Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
VIII.	**GREENHOUSE GAS EMISSIONS –** Would the project:				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

SUBSTANTIATION:
San Bernardino Countywide Policy Plan; County GHG Reduction Plan, Submitted Project Materials

Greenhouse Gas Emissions Interim Measures
According to CEQA Guidelines section 15064.4, when making a determination of the significance of greenhouse gas emissions, the "lead agency shall have discretion to determine, in the context of a particular project, whether to (1) use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use." Moreover, CEQA Guidelines section 15064.7(c) provides that "a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts" on the condition that "the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

San Bernardino County GHG Reduction Plan

In September 2011, the County of San Bernardino adopted a Greenhouse Gas Emissions (GHG) Reduction Plan (September 2011, updated March 2015) ("GHG Plan"). The GHG Plan presents a comprehensive set of actions to reduce the County's GHG emissions to 15% below current levels (2007 levels) by 2020, consistent with the AB 32 Scoping Plan. GHG emissions impacts are assessed through the GHG Development Review Process (DRP) by applying appropriate reduction requirements as part of the discretionary approval of new development projects. Through its development review process, the County would implement CEQA requiring new development projects to quantify project GHG emissions and adopt feasible mitigation to reduce project emissions below a level of significance. A review standard of 3,000 metric tons of CO_2 equivalent ($MTCO_2e$) per year is used to identify projects that require the use of Screening Tables or a project-specific technical analysis to quantify and mitigate project emissions. However, specific requirements for mining projects to reduce emissions of GHGs have not been adopted and so the Amended Plan would not conflict with the County's Greenhouse Gas Reduction Plan. Note that the MDAQMD has a threshold of 100,000 tons of CO_2e per year (MDAQMD 2020).

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

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

Per CEQA guidelines, new project emissions are treated as standard emissions, and air quality impacts are evaluated for significance on an air basin or even at a neighborhood level. Greenhouse gas emissions are treated differently, in that the perspective is global, not local. Therefore, emissions for certain types of projects might not necessarily be considered as new emissions if the project is primarily population driven. Many gases make up the group of pollutants that are believed to contribute to global climate change. However, three gases are currently evaluated Carbon dioxide (CO_2) Methane (CH_4) and Nitrous oxide (N_2O). South Coast Air Quality Management District (SCAQMD) provides guidance methods and/or Emission Factors. MDAQMD allows the use of this methodology.

GHG is inherently a cumulative issue, because no single project would be expected to result in a measurable change in global climate. The cumulative nature of GHG is considered by agencies in adopting significance thresholds and adopted significance thresholds represents levels at which a project is considered cumulatively significant.

The GHG emissions were calculated and compared to the MDAQMD's 100,000 $MTCO_2e$ screening threshold to determine if potentially significant to anticipated global warming. Utilizing the South Coast Air Quality Management District's (SCAQMD) Off-road Model - Mobile Source Emission Factors model (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html), annual operation GHG emissions amount to approximately 9.3 tons per day or 2,894.2 $MTCO_2e$ per year based on a worst case of 312 days of operations per year (see Table 6). Operations would not exceed the MDAQMD's thresholds.

Due to the estimated minimal GHG emissions from the Proposed Project to be less than the County threshold, effects on climate change are expected to be less than significant.

Table 6
Greenhouse Gas Emissions

Source/Phase	CO_2	CH_4	N_20
Mobile Equipment	13,140	0.71	Neg.
Generator	5,392	0.05	Neg.
Total Lbs. per Day	18,532	0.76	Neg.
Total Per Year (tons)	2,890.9	3.3	Neg.
MTCO2e per Year	2,894.2		
MDAQMD Threshold (MTCO2e)	100,000		
Significant (Yes/No)	No		

Note: Assumes 312 working days/year, up to 6 days a week.
Neg: less than 0.01
1 Off-Road Mobile Source Emissions Factors, 2021
2 San Bernardino County threshold, 3,000 MTCO2e/year

Required Conditions

The project emissions are less than significant. However, the applicant would be required to implement GHG reduction performance standards. The GHG reducing performance standards were developed by the County to improve the energy efficiency, water conservation, vehicle trip reduction potential, and other GHG reducing impacts from all new development approved within the unincorporated portions of San Bernardino County. As such, the following Performance Standards establish the minimum level of compliance that development must meet to assist in meeting the 2020 GHG reduction target identified in the in the County GHG Emissions Reduction Plan. These Performance Standards apply to all Projects, including those that are emit less than 3,000 MTCO2e per year, and would be included as Conditions of Approval for development projects.

The following are the Performance Standards (Conditions of Approval) that are applicable to the Project:

1. The "developer" shall submit for review and obtain approval from County Planning of a signed letter agreeing to include as a condition of all construction contracts/subcontracts requirements to reduce GHG emissions and submitting documentation of compliance. The developer/construction contractors shall do the following:

a) Select construction equipment based on low GHG emissions factors and high-energy efficiency. All diesel/gasoline-powered construction equipment shall be replaced, where possible, with equivalent electric or CNG equipment.

b) All construction equipment engines shall be properly tuned and maintained in accordance with the manufacturers specifications prior to arriving on site and throughout construction duration.

c) All construction equipment (including electric generators) shall be shut off by work crews when not in use and shall not idle for more than 5 minutes.

Less Than Significant Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
IX.	**HAZARDS AND HAZARDOUS MATERIALS –** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

SUBSTANTIATION:
San Bernardino Countywide Policy Plan; Submitted Project Materials

a), b) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The Proposed Project involves the use of materials common to the mining industry and includes the transport, storage and use of fuels, and lubricants. The operator would continue to comply with all applicable federal and state safety rules and regulations regarding hazardous materials.

Regular maintenance would be performed on-site using a lube truck. All oil and grease would be stored and dispensed using a lube truck. The lube truck, service truck, and the mine foreman's pickup truck are all outfitted with appropriate diesel fuel tanks to transport fuel from bulk storage and fuel equipment at the mine site. Per the County of San Bernardino, the mine is required to submit a business plan, spill prevention control and counter measure plan (SPCC) with Best Management Practices (BMPs) to ensure that on-site materials are stored appropriately and contained in the event of uncontrolled release. Fuel storage specifications apply to all above ground fuel containers. The diesel fuel and gasoline tanks would be placed within concrete or lined containment pads to contain the contents of the tank and a 100-year rainfall event as required. Fuel would be transferred to the site by tanker trucks.

All refuse generated by Project activities would be transported offsite and would be disposed of at an authorized offsite landfill facility. With the implementation of the SPCC and BMPs, less than significant impacts from hazardous and solid wastes are anticipated.

Less Than Significant Impact

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

The Proposed Project involves the use of materials common to the mining industry and includes the transport, storage and use of fuels, and lubricants. The operator would continue to comply with all applicable federal and state safety rules and regulations regarding hazardous materials. During operation, diesel exhaust would be generated by heavy construction equipment; however, no school facilities or proposed school facilities are located within one-quarter mile radius of the Project Site. Therefore, no impact is anticipated.

No Impact

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

The Project Site is not identified on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[6] The operator would comply with all applicable federal and state safety rules and regulations regarding hazardous materials. Therefore, no impact is anticipated.

No Impact

[6] https://www.envirostor.dtsc.ca.gov/public/map/?assembly=42 Accessed 4/21/21.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

The Project Site is not identified as being within a public or private airport influence area as shown on Figure 5.8-2-*Airport Safety Zones* of the San Bernardino Countywide Policy Plan.[7] The nearest airport to the Project Site is the Twentynine Palms Airport located approximately 20 miles north/northwest of the site. No impacts are identified or anticipated and no mitigation measures are required.

No Impact

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Activities associated with the Proposed Project would not impede existing emergency response plans for the Project Site and/or other land uses in the project vicinity. All vehicles and stationary equipment would be staged off public roads and would not block emergency access routes. Therefore, implementation of the Proposed Project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. No impact is anticipated.

No Impact

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The Project Site is not mapped within a High or Very High Fire Severity Zone as shown on Figure 5.8-6-*Fire Severity Zones and Potential Growth Areas in the East Desert Region* of the San Bernardino Countywide Policy Plan[8]. The Countywide Policy Plan does not identify the site to occur in a Fire Safety Overlay District. The Proposed Project is not anticipated to result in any safety hazards impacts from wildfires to people or structures due to its isolated location. No Impact is anticipated.

No Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
X.	**HYDROLOGY AND WATER QUALITY -** Would the project:				
a)	Violate any water quality standards or waste discharge requirements or otherwise	☐	☐	☒	☐

[7] San Bernardino Countywide Plan. Chapter 5.8, Page 5.8-25/Figure 5.8-2.
[8] San Bernardino Countywide Plan. Chapter 5.8, Page 5.8-41/Figure 5.8-6.

	substantially degrade surface or ground water quality?				
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or are a, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;	☐	☐	☒	☐
	iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of runoff; or	☐	☐	☒	☐
	iv. impede or redirect flood flows?	☐	☐	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a), b), e) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

A Jurisdictional Delineation for the Iron Age Mine was prepared by Lilburn Corporation in June 2012. The report found that the Proposed Project has the potential to impact 6.3 acres of ephemeral drainages subject to Waste Discharge Requirements (WDRs) from the Colorado River Basin Regional Water Quality Control Board (RWQCB) and Fish and Game Code Section 1602 for a Streambed Alteration Agreement from the CDFW. Compliance with WDRs and 1602 conditions would reduce project impacts to less than significant.

In addition, the site operations would be required to obtain a Stormwater Pollution Prevention Plan (SWPPP) to control runoff and sedimentation from the Project disturbance. In addition, a SPCC plan would be implemented to prevent impacts to ephemeral surface waters.

The Iron Age Mine is located within the Pinto Mountains, a nonwater-bearing rock formation. The nearest groundwater basin is the Dale Valley Groundwater Basin within the Colorado River Hydrologic Region. The California Department of Water Resources (DWR), Bulletin 118 identifies the surface area of the Dale Valley Ground Water Basin ("basin") as 213,000 acres (333 square miles). The basin underlies Dale Valley and is bounded by nonwater-bearing rocks of the Bullion Mountains on the north, of the Pinto Mountains on the south, of the Sheephole Mountains on the East, and by the Mesquite fault on the West (Bishop 1963). Surface runoff drains toward Dale (dry) Lake in the southeastern part of the valley. Groundwater movement is also to the lake. Recharge to the basin is by percolation of runoff from the slopes of the surrounding mountain and precipitation to the valley floor and by underflow past the Mesquite fault from the west (DWR 1961, 1979). The basin's total storage capacity has previously been estimated by DWR to be 2,000,000 acre-feet (1975) and 3,500,000 acre-feet (1979).

Analyses of water from 11 wells in the basin show high total dissolved solid (TDS) content. Water below Dale Lake is saline and has been mined for salts. TDS is generally less away from the lakebed. Fluoride concentration is commonly high. The water quality in this basin is generally unsuitable for domestic and agricultural uses (DWR 1979).

Operation water would be provided by an on-site well to be drilled at the plant site or at the mill site depending on drilling results. Process water would be recycled through a lined holding pond. Approximately 60% of the water used for wet cycle processing would be recycled through a lined settling pond. A 10,000-gallon water tank would be placed at the plant site. A water truck would be available for mobile use. Water would be used for product screening, dust control, and road dust suppression; water used for dust control would evaporate. Water demand is estimated at 9 million gallons annually with approximately 3.6 million gallons (11 acre-feet) of makeup water due to product loss and evaporation.

The Proposed Project is not within the service area of a water supplier, a State Water Project contractor, or a regional groundwater management agency. No water purveyor exists within approximately 17 miles of the Project Site and therefore an Urban Water Management Plan is not available.

The Proposed Project's estimated demand of 11 acre-feet per year would not adversely affect the water balance of the Dale Valley Groundwater Basin vicinity. The Proposed Project's consumptive use for operations or dust control is not expected to be affected by water quality. Less than significant impact is anticipated.

Less Than Significant Impact

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

i) Result in substantial erosion or siltation on- or off-site;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;

There is an ephemeral wash located to the east of the Project Site that flows north along the existing haul road and broadens into an alluvial fan as it nears SR 62. A second drainage drains the Project Site north through a canyon and along the existing haul road for approximately 0.75 miles where it intersects the main drainage described above. The onsite drainage was cut off by the large tailings pile on the south. After removal of this tailings stockpile, the drainage would be reclaimed back to its natural flow through the south end of the site.

During the removal of the tailings, drainage patterns would not be altered from existing conditions. The tailings are porous and heavy and are not susceptible to erosion. After removal of the tailings, the site would be re-graded to near the original contours as shown on the Reclamation Plan sheet. Sheet flow would drain towards the east and eventually enter the drainage that is located along the southeast portion of the site and continue downgradient. It is expected that the onsite runoff would eventually create its own natural drainage channels to the east. The site would also be stabilized through revegetation.

Less Than Significant Impact

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of runoff; or

iv) Impede or redirect flood flows?

The Project Site is located within the Dale Lake Watershed (HUC 1810010024) in the Southern Mojave sub-basin. The Dale Lake watershed is approximately 135 square miles. The watershed captures hydrologic flow from the Pinto Mountains. Surface water in the vicinity is limited to storm flows as sheet flow and ephemeral drainages. There are no surface waters that provide a source of supply. There are no springs, seeps, perennial drainages, wetlands, or riparian areas within or adjacent to the Project Site.

Surface water in the vicinity of the Project is dependent on seasonal precipitation. The Project Site does not receive much precipitation, with average rainfall of 4.24 inches per year (WRCC 2012) as measured at Twentynine Palms. Cool-season precipitation is the most extensive source of rain in the Mojave Desert region and is widespread with a relatively long duration. Warm-season precipitation results from convective thunderstorms.

The Proposed Project is not within the service area of a water supplier, a State Water Project contractor, or a regional groundwater management agency. Neither is it within an adjudicated groundwater basin. The Proposed Project is located east of the City of Twentynine Palms. The Twentynine Palms Water District provides water to the city and surrounding area; the service area is approximately 87 square miles. The District is the nearest

public water supplier (PWS) to the Project Site and their easternmost service lateral is located in Wilshire Road, approximately 25 miles west of the Project Site. A PWS does not serve the area of the Proposed Project.

Water for operations would be obtained from a well to be drilled onsite as described in Section X above and the Proposed Project would not generate runoff water. Additionally, the Proposed Project would implement an SPCC and BMPs as discussed in Section 8 to avoid and prevent contamination by hazardous materials used onsite. All refuse generated by Project activities would be transported offsite and would be disposed of at an authorized offsite landfill facility. No impacts are anticipated.

Less Than Significant Impact

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

A seiche is an oscillating surface wave in a restricted or enclosed body of water generated by ground motion, usually during an earthquake. Inundation from a seiche can occur if the wave overflows a containment wall or the banks of a water body. As the Project Site is not located adjacent to any body of water that has the potential of seiche or tsunami, no impacts are anticipated.

Less Than Significant Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
XI.	**LAND USE AND PLANNING** - Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a) *Physically divide an established community?*

The Project Site is surrounded by open space lands. The Proposed Project is consistent with the Countywide Policy Plan and would not physically divide an established community. No impact is anticipated.
No Impact

b) *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The Proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Proposed Project as the Proposed Project is consistent with all applicable land use policies and regulations of the San Bernardino Countywide Policy Plan. No impact is anticipated.

No Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
XII.	**MINERAL RESOURCES** - Would the project:				
a)	Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

SUBSTANTIATION: *(Check ☐ if project is located within the Mineral Resource Zone Overlay):*

San Bernardino Countywide Policy Plan; Submitted Project Materials

a), b) *Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state?*

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

The State's Guidelines for Classification and Designation of Mineral Lands help implement SMARA by providing the State Geologist with direction in carrying out mineral resource classification of lands in California that are threatened by uses that would be incompatible with or would preclude access to significant mineral resources. These guidelines describe how the State Mining and Geology Board (SMGB) may elect to designate mineral-bearing areas of statewide or regional significance.

The Mineral Lands Classification System (MLCS) is the process of identifying lands containing significant mineral deposits. Designation is the formal recognition by the SMGB, after consultation with lead agencies and other interested parties, of areas containing mineral deposits of regional or statewide significance. The objective of classification and designation processes is to ensure, through appropriate lead agency mineral resource management policies and procedures, that mineral deposits of statewide or of regional significance are available when needed. Classification is completed by the State Geologist in accordance with the SMGB's priority list, into Mineral Resource Zones (MRZ). Classification is based on geologic and economic factors without regard to existing land use and land ownership. Within the classifications, "MRZ-2" is defined as areas that contain identified mineral resources.

The Department of Conservation, California Geological Survey (formerly the Division of Mines and Geology) has not included the Iron Age ore deposit within the MLCS. However, mining claims have been maintained to access the iron ore deposit. The Proposed Project would supply iron ore to the region. Therefore, the Proposed Project would not result in the loss of availability but would provide a mineral resource that would be of value to the region and the residents of the State. Therefore, no impacts are anticipated.

No Impact

No impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
XIII.	**NOISE** - Would the project result in:				
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted,	☐	☐	☐	☒

within two miles of a public airport or public use airport, would the Project expose people residing or working in the project area to excessive noise levels?

SUBSTANTIATION: *(Check if the project is located in the Noise Hazard Overlay District ☐ or is subject to severe noise levels according to the General Plan Noise Element ☐):*

San Bernardino Countywide Policy Plan; Submitted Project Materials

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

The San Bernardino Countywide Policy Plan Noise Element does not identify specific goals or policies for the desert region. Noise regulations are identified in Section 83.01 of the County Development Code. Iron Age Mine is relatively isolated. The nearest sensitive receptors occur at the Cottonwood, Belle and White Tank designated camping areas of Joshua Tree National Park; the camping areas are located approximately 20 miles away from the Project Site. No impacts are anticipated.

No Impact

b) Generation of excessive groundborne vibration or groundborne noise levels?

Approval of the Proposed Project would require operations to conform to all applicable noise control regulations as outlined in Section 83.01 of the County Development Code. No sensitive noise receptors occur in the vicinity of the Project Site. Removal of the tailings would not expose persons to generation of excessive groundborne vibration or groundborne noise levels. Therefore, less than significant impact is anticipated.

Less Than Significant Impact

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the project area to excessive noise levels?

The Project Site is not located within an airport land use plan nor within two miles of a public airport or public use airport, or within the vicinity of a private airstrip, that would expose people at the Project Site to excessive noise levels. Therefore, impacts from airport-related noise are not anticipated.

No Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

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

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a) *Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

The Proposed Project would not induce substantial population growth in the area either directly or indirectly because the Proposed Project would not generate major job opportunities. The site would operate with approximately 6 to 8 employees. The site would operate year-round approximately 6 days/week, 312 days annually. In addition, the duration of the operation is approximately 15 years after which time the site would be reclaimed and returned to open space use. No impacts are anticipated.

No Impact

b) *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The proposed use would not displace substantial numbers of existing housing units or people, or require the construction of replacement housing, as no housing units are proposed to be demolished as a result of this project. No impacts are anticipated.

No Impact

No impacts are identified or anticipated and no mitigation measures are required.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
XV.	**PUBLIC SERVICES**				
a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Fire Protection?	☐	☐	☐	☒
	Police Protection?	☐	☐	☐	☒
	Schools?	☐	☐	☐	☒
	Parks?	☐	☐	☐	☒
	Other Public Facilities?	☐	☐	☐	☒

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

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

Fire Protection?
Police Protection?
Schools?
Parks?
Oher Public Facilities?

The Proposed Project would not result substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, or hinder acceptable service ratios, response times or other performance objectives for any of the public services, including fire and police protection, schools, parks or other public facilities. The Proposed Project consists of a mining operation to remove exiting iron tailings, no permanent improvements are proposed. After mining operations, the site would be reclaimed to open space. No impacts are anticipated.

No Impact

No impacts are identified or anticipated and no mitigation measures are required.

	Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
XVI.	**RECREATION**				
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a), b) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated?*

Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Approval of the Proposed Project would not generate new jobs or housing which would induce population growth in adjacent areas, and ultimately increase the use of park facilities or other recreational facilities in the region.

BLM property in the vicinity of the Project Site is identified within the CDCAP as amended as being Multiple Use Class L (Limited Use) Area. Class L areas allow vehicle travel on designated routes as posted and recreational opportunities including biking, camping, climbing, and hiking. There are no designated recreational facilities in the immediate vicinity of the Project. The Project Site is located within the historic Dale Mining District and numerous old mining sites are found in the area. This area of the Mojave Desert is very isolated, and any recreational use is minimal and limited to four-wheel drive vehicles using designated roads, primitive camping, hiking, and rock hounding.

The 3.4 miles of the historic mine access road is designated as BLM Rout JT1957, JT1959, and JT 1967 open to all vehicles. The Proposed Project would re-align and reconstruct portions of this access road and utilize it to transport sized iron ore approximately 3.4 miles to the planned mill sites adjacent to SR 62. In order to protect public safety on the road, the BLM would designate the road as a “limited route” for mine operations during the operational period after which it would be re-opened for public access. Iron Age would implement the safety features as part of the project design. No impacts to recreational facilities are anticipated.

No Impact

No impacts are identified or anticipated and no mitigation measures are required.

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

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a), d) *Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

Result in inadequate emergency access?

Activities associated with the Proposed Project would not impede existing emergency response plans for the Project Site and/or other land uses in the project vicinity. All vehicles and stationary equipment would be staged off public roads and would not block emergency access routes. In addition, no road closures would be required. The Proposed Project would not involve any long-term increase in traffic that would conflict with adopted policies, plans, or programs supporting alternative transportation. No impacts would result.

No Impact

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?*

Total available iron tailings are estimated at approximately 12 million tons. Iron Age is requesting a 15-year operation period through 2027 due to variable production rates based on demand. The site would operate year-round approximately 6 days/week, 312 days/year. Loading and trucking may occur 24 hours/day, six days/week (not including holidays), and removal operations would be daytime hours only. Iron Age has located two 5-acre mill site claims at the junction of Iron Age Mine Road and SR 62; off-road mine haul trucks would deposit ore at the mill sites for transfer to licensed highway haul trucks or shipping containers for shipment to market or transfer to rail. Each truck would hold approximately 25 tons. A maximum of 920,000 tons of product suitable for market would be mined per year and this equates to approximately 120 truck round trips per day or about 24 one-way truck trips ingressing/egressing the site per hour based on a 10-hour operational timeframe. Note that loading of material may occur 24 hours/day.

SR 62 is identified in the San Bernardino Countywide Policy Plan as a State Highway. It is not identified in the Congestion Management Plan as a segment of concern. Caltrans traffic data on SR 62 for 2011 in the vicinity of the site access is 780 annual average daily traffic (AADT). The Proposed Project is not anticipated to cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of SR 62 (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ration on roads, or congestion at intersections), or exceed, either individually or cumulatively, a level of service standard. The access intersection would be designed per Caltrans Highway Manual and reviewed and approved by Caltrans prior to construction to meet safety requirements. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

Less Than Significant Impact

c) *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

The Material would be transferred to street licensed trucks at the mill sites where the trucks would enter onto SR 62. The intersection with SR 62 would be improved with acceleration and deceleration lanes to the west; the direction where nearly 100 percent of trucks would be traveling, appropriate line-of-sight distances and warning signage as required by Caltrans. The design would be reviewed and approved with Caltrans prior to any construction. Therefore, no significant adverse impacts are identified or anticipated, and no mitigation measures are required.

Less Than Significant Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

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

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a) *i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or;*

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

California Assembly Bill 52 (AB52) was approved by Governor Brown on September 25, 2014. AB52 specifies that CEQA projects with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment. As such, the bill requires lead agency consultation with California Native American tribes traditionally and culturally affiliated with the geographic area of a proposed project, if the tribe requested to the lead agency, in writing, to be informed of proposed projects in that geographic area. The legislation further requires that the tribe-requested consultation be completed prior to determining whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

Senate Bill 18 (SB 18) was approved by Governor Schwarzenegger on September 29, 2004. SB 18 changed the California Government Code and requires local

government agencies to contact and consult with California Native American Tribes prior to amendment or, or adoption of General Plans, Specific Plans, or designation of Open Space.

As mentioned in Section V of this document, McKenna et al. reviewed archeological records through the San Bernardino County Museum, Archaeological Information Center, Redlands, supplementary research through the BLM Barstow Field Office and historic background research of the general area and the potential for identifying prehistoric and/or historic cultural resources and a paleontological overview from the Natural History Museum of Los Angeles County. McKenna et al. concluded that none of the resources are considered significant or important and the proposed undertaking would not result in any adverse environmental impacts with respect to cultural resources.

The County also initiated Native American consultation through the Native American Heritage Commission (NAHC) to inquire into any recorded sacred or religious sites in the area and to obtain a listing for local Native American representatives wishing to be notified of projects in the area. McKenna et al. sent letters and the records search data to the named tribal representatives.

According to CEQA Guidelines, the identification of potential "tribal cultural resources" needs to be addressed through government- to-government consultations between the County of San Bernardino and the pertinent Native American groups pursuant to AB52. As such, tribes' requests for additional project information, coordination, or consultation with the Lead Agency, and/or Native American monitoring, shall be acknowledged through implementation of appropriate Conditions of Approval, at the County of San Bernardino's discretion. Given that the possibility of discovering a significant unanticipated tribal cultural resource remains, mitigation measures CR-1 and CR-2 listed in Section V of this document, shall be implemented to ensure that less than significant impacts occur. No additional mitigation measures are required.

Less Than Significant Impact

No significant adverse impacts are identified or anticipated and no mitigation measures are required at this time.

	Issues	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant*	*No Impact*
XIX.	**UTILITIES AND SERVICE SYSTEMS -** Would the project:				
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

b)	Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c)	Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d)	Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

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

Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?

Water for operations would be obtained from a well to be drilled on-site as described in Section X. No wastewater would be generated as a result of excavation or plant operations. Process water would be recycled through a lined settling pond. Water used for dust control would evaporate. Domestic water for drinking would be imported for employees. Domestic wastewater and septage would be collected via portable facilities. No impacts are identified or anticipated, and no mitigation measures are required.

No Impact

c) *Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?*

The Proposed Project would not require sewer collection or treatment services and therefore no off-site discharge of treated wastewater would occur. There is no wastewater treatment provider in the remote area. Sanitation needs would be met with portable facilities. No impacts related to wastewater treatment are anticipated.

No Impact

d), e) *Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

All refuse would be kept in closed containers and removed from the site to permitted facilities as needed. No trash would be allowed to collect on the site. No impact is anticipated.

No Impact

Therefore, no impacts are identified or anticipated and no mitigation measures are required.

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

SUBSTANTIATION:

San Bernardino Countywide Policy Plan; Submitted Project Materials

a) *Substantially impair an adopted emergency response plan or emergency evacuation plan?*

The Project Site is approximately 30 miles north of I-15 and 25 miles east of SR-127, which both serve as evacuation routes. The Project Site has right of way access to the Excelsior Mine Road. Large equipment traffic accessing and egressing the Project Site would follow one way traffic flow procedures along Excelsior Mine Road (Access). Roads would be maintained at the current state. Light vehicles would be able to travel in either direction; only semis and large mine equipment would have to adhere to the one-way traffic flow. Activities associated with the Proposed Project would not impede existing emergency response plans for the Project Site and/or other land uses in the project vicinity. All vehicles and stationary equipment would be staged off public roads and would not block emergency access routes. Implementation of operational activities would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Therefore, no impacts are identified or are anticipated, and no mitigation measures are required.

No Impact

b) *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from wildfire or the uncontrolled spread of a wildfire?*

The Project Site is not located within a High or Very High Fire Hazard Severity Zone. Therefore, risks associated with exposing project employees to pollutant concentrations from wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors, to exacerbate wildfire risks is unlikely. Furthermore, the Proposed Project does not include construction of habitable structures or permanent facilities. There are no surrounding structures or occupied structures. Therefore, less than significant impacts are identified or anticipated, and no mitigation measures are required.

Less Than Significant Impact

c) *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water resources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Most equipment would run on diesel fuel and electricity. Power would be produced by diesel fueled generators. The Proposed Project does not require the installation or maintenance of infrastructures that would exacerbate fire risk or that may result in temporary ongoing impacts to the environment. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

No Impact

d) *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The Project Site is not within a 100-Year Federal Emergency Management Agency (FEMA) flood zone, 100-year Department of Water Resources Awareness Zone, or a 500-year FEMA flood zone. The Proposed Project does not include construction of habitable structures or permanent facilities. There are no surrounding structures or

occupied structures. Therefore, no impacts are identified or anticipated, and no mitigation measures are required.

No Impact

Therefore, no significant adverse impacts are identified or anticipated and no mitigation measures are required.

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

a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?*

Based on the analysis contained in this Initial Study, impacts to Agriculture and Forestry Resources, Air Quality, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and Transportation and Traffic are considered as having a less than significant or no impact on the environment.

The results of the Initial Study show that there are potentially significant impacts to Aesthetics, Biological Resources, and Cultural Resources. These impacts would be reduced to less than significant after incorporation of mitigation measures and compliance with existing rules and regulations.

Therefore, the Proposed Project would not substantially degrade the quality of the environment and impacts to habitat, wildlife populations, plant and animal communities, rare and endangered species, or important examples of the major periods of California history or prehistory, would be less than significant with mitigation. No significant adverse impacts are identified or anticipated and no additional mitigation measures are required.

Less than Significant with Mitigation

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

None of the proposed mining activities would substantially contribute to any cumulatively significant impact on the evaluated resources. Due to the remoteness of the project area and the protected habitat within the critical habitat unit, the DWMA and Joshua Tree National Park, it is unlikely that any future State or private activities would occur in the area. Therefore, cumulative effects from other activities are not expected.

The Proposed Project would not result in any unmitigated adverse project effects on air quality, biological resources, drainage, or water quality, and there would be no contribution to any cumulatively considerable impacts in these issue areas. There would be no long-term loss of agricultural or forestry resources or loss of availability of a mineral resource of value to the state, region, or locally, so there would be no cumulative effect. The implementation of the reclamation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, would return approximately 50 acres to desert vegetation and suitable desert tortoise habitat. Thus, the long-term biological impacts of the Proposed Project would be beneficial. There would not be an adverse change in scenic value or visual quality or noise levels that could contribute to a cumulative impact. No impacts on services or utility systems would occur as a result of project implementation that could combine with cumulative effects in the area surrounding the project.

In addition, the analysis in this Initial Study Checklist demonstrated that the Proposed Project is in compliance with all applicable regional plans including but not limited to, land use plans, air quality maintenance plan, biological resource plans, and plans or regulations for the reduction of greenhouse gas emissions. Compliance with these regional plans serves to reduce impacts on a regional basis so that the Proposed Project would not produce impacts, that considered with the effects of other past, present, and probable future projects, would be cumulatively considerable.

Less Than Significant Impact

c) *Does the project have environmental effects, which would cause substantial adverse effects on human beings, either directly or indirectly?*

All potential impacts have been thoroughly evaluated and have been deemed to be neither individually significant nor cumulatively considerable in terms of any adverse effects upon the region, the local community or its inhabitants with implementation of mitigation measures and compliance with existing rules and regulations. The remoteness of the site and activities further limits any potential impacts to human beings.

As discussed in this Initial Study Checklist, the Proposed Project would not expose persons to adverse impacts related to Air Quality, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Land Use and Planning, Noise, Population and Housing, or Transportation/Traffic hazards. These impacts were identified to have no impact or a less than significant impact.

The implementation of the existing rules and regulations, conditions from permit approvals and the mitigation measures identified in this Initial Study Checklist and listed below would result in a less than significant impact. There would be no substantial adverse effects on human beings, either directly or indirectly.

Less Than Significant Impact

Therefore, potentially significant impacts are identified or anticipated, and mitigation measures are required to reduce impacts to less than significant.

XXII. MITIGATION MEASURES

(Any mitigation measures, which are not 'self-monitoring', shall have a Mitigation Monitoring and Reporting Program prepared and adopted at time of project approval)

1. AESTHETICS

AES-1 1. Full cut-off (glare resistant/shielded) luminaires that prevent the upward escape of light.
2. Light fixtures that are pointed less than 45 degrees in direction.
3. Area and security lighting should be yellow or amber with a color temperature less than 2500 degrees K.
4. Motion activated security lighting when the site is in operation at night.
5. Water storage tanks shall be painted as to blend into the environment.

IV BIOLOGICAL RESOURCES

BIO-1 •
The Bureau and Iron Age will designate a person to act as the field contact representative with specific experience in the implementation of environmental compliance programs. The field contact representative will serve as the environmental compliance monitor and will be present throughout the construction of the mill site and access road, mining operations, and reclamation. This individual will serve as liaison among the Service, Bureau, construction workers, truck drivers, authorized biologist(s), and biological monitor(s). The field contact representative, working with an authorized biologist, will ensure compliance with the conditions and requirements of project permits and approvals set forth in this biological opinion and supporting plans appended to the biological assessment.

- **The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented. This would include enforcing the 15-mile-per-hour speed limit through desert tortoise habitat along the access road and ensuring that project personnel do not travel cross country with motorized vehicles.**
- **During the construction of the mill site and access road, Iron Age will use authorized biologists approved by the Service and biological monitors approved by an authorized biologist to ensure compliance with the protective measures for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date Service guidance and will be required for monitoring of any construction activities that may injure or kill desert tortoises.**

The authorized biologist must have thorough and current knowledge of desert tortoise l behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to conduct their required duties safely and successfully. Authorized biologists arc approved to monitor project activities and are responsible for locating desert tortoises and their sign (i.e., conducting clearance surveys). Authorized biologists must ensure proper implementation of protective measures and make certain that the effects or the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or incidental take permit. All incidents of noncompliance in accordance with the biological opinion or permit must be recorded and reported.

Biological monitors will be approved by the authorized biologist to monitor project activities, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol. They will report incidents of noncompliance in accordance with a biological opinion or permit, move desert tortoises from harm's way when desert tortoises enter project sites and place these animals in "safe areas" pre-selected by authorized biologists or maintain the desert tortoises in their immediate possession until an authorized biologist assumes care of the animal. Monitors assist authorized biologists during surveys and serve as "apprentices" to acquire experience. Monitors should not conduct clearance surveys or other specialized duties of the authorized biologist unless directly supervised by an authorized biologist; "directly supervised" means the authorized biologist has direct voice and sight contact with the monitor. Refer to the following of additional information: http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html.

- **The use of authorized biologists during mining operations and reclamation activities will be on an as-needed basis. In this case, the field contact representative will consult authorized biologists approved by the Bureau and the Service to determine the most appropriate course of action when a desert tortoise enters the project site, is found along the access road, or has established burrows within the project area that may be affected by the mining operations and may need to be moved out of harm's way.**
- **The Bureau will review the credentials of all individuals seeking approval as authorized biologists. The Bureau will provide the credentials of appropriate individuals to the Service for approval at least 30 days prior to the time they are needed in the field.**
- **The authorized biologists will be responsible for all aspects of clearance surveys, monitoring, developing, and implementing the worker environmental awareness program, communication with agency personnel, reporting, and be present, along with biological monitors, during construction of the mill site and access road. An authorized**

biologist will be available during the mining operations and reclamation, as needed, when activities are likely to affect desert tortoises such that a more highly skilled biologist is needed (e.g., conducting surveys to ensure desert tortoises are not present in vegetated areas, excavating burrows, etc.). The authorized biologists will supervise and train the biological monitors. Training by authorized biologists will include ensuring biological monitor and the field contact representative are qualified to capture, handle, and move desert tortoises in situations where an authorized biologist is unavailable or for less complicated tasks (e.g., moving a desert tortoise from under a vehicle or off the access road, etc.).

- **The field contact representative will act on the advice of the authorized biologist(s) and biological monitor(s) to ensure conformance with the protective measures set forth in this biological opinion. Additionally, the authorized biologist(s) will have the authority to immediately stop any activity that is not in compliance with these conditions.**
- **The Bureau will ensure that all workers associated with the proposed Iron Age Project receive worker environmental awareness training to ensure protection of the desert tortoise and its habitat The field contact representative and authorized biologist will administer the training at the onset of the project, annually, and when new employees are hired to all onsite personnel and anyone else (e.g., contractors, truck drivers, etc.) who needs to travel to the mine site. The worker environmental awareness training will:**
  - **Be developed by or in consultation with the authorized biologist and consist of a presentation in which supporting written material and electronic media, including photographs of protected species, are made available to all participants;**
  - **Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them;**
  - **Inform workers that the field contact representative and the authorized biologists have the authority to halt work in any area where an unauthorized adverse impact to biological resources may occur if the activities continued;**
  - **Discuss general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures;**
  - **Provide an explanation of the sensitivity and locations of the vegetation, biological resources, and habitat within and adjacent to work areas, and proper identification of these resources;**
  - **Place special emphasis on the desert tortoise, including information on physical characteristics, photographs, distribution, behavior, ecology, sensitivity to human activities, legal protection. reporting requirements. and protective measures required for the project;**
  - **Provide contact information for the authorized biologist(s) and biological monitor(s) to handle late comments and questions about the material discussed in the program. as well as notification of any dead or injured wildlife species encountered during project-related activities.**
  - **Direct all workers to report all observations of listed species and their sign to an authorized biologist for inclusion in the yearly compliance report;**
  - **Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and**
  - **Provide information regarding the effects of predation on the desert tortoise by common ravens (Corvus corax) and other predators and the measures that have been developed to reduce the likelihood that predators will be attracted to the project area.**
- **Prior to construction of the mill sites at State Route 62, Iron Age will install fencing to exclude desert tortoises from entering the site. The fence will be constructed**

according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (Service 2009). If desert tortoises are encountered during installation of the fence, the authorized biologist will move the individual the shortest distance possible to an area outside the fence on public land where it will be safe. The authorized biologist will use his or her judgment regarding the best measures to use to ensure the desert tortoise does not immediately return to the area inside of the fence or be placed in a location where it could enter State Route 62. The authorized biologist may contact the Service to discuss specific situations if the need arises.

- **After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized biologist will follow established survey protocols and remove all desert tortoises from within the fenced area. All desert tortoises will be considered to have been removed once a complete survey of the work area is conducted without finding any additional animals. Desert tortoises that are found inside the fenced area will be placed on the other side of the exclusion fence. The authorized biologist will use his or her best judgment to determine the optimal location for placement of desert tortoises, which would include ensuring the animals are not relocated into areas that may isolate them from the desert tortoise population in the area or enable them to access the highway.**
- **Iron Age will maintain the integrity of the fence for the duration of the proposed project to ensure that desert tortoises are excluded from the mill site during construction and until all mining operations and activities, including reclamation efforts, related to this proposed action are concluded. The fence will be inspected regularly and repaired when necessary; initially, it will be inspected monthly, but Iron Age may adopt a different schedule, based on acquired experience.**
- **An appropriate number of authorized biologists and biological monitors will be available during construction of the mill sites and access road for the protection of the desert tortoise. Authorized biologists will monitor each activity where conditions exist that may result in injury or mortality of desert tortoise (e.g., clearing, grading, re-contouring, and restoration activities).**
- **For the construction of the access road, the authorized biologist or a qualified biological monitor will survey ahead of the project activities and halt construction if he or she finds a desert tortoise in the path of construction equipment. Project activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist has relocated it.**
- **During mining operations, the field contact representative will inspect all excavations, trenches, and areas that are not within desert tortoise exclusion fencing on a regular basis (several times per day). If a desert tortoise is discovered in an area planned for excavation or an area where the animal may be injured or killed, the field contact representative will coordinate with an authorized biologist to determine the best course of action to protect or move the animal to a safe location in accordance with the field manual (Service 2009). The field contact representative will also monitor vehicle speeds along the access road and ensure that drivers maintain a speed limit of 15 miles per hour when temperatures are between 50 and 100° F.**
- **Iron Age will survey for invasive weeds at the earliest spring season following the letter of authorization to proceed issued by the Bureau. It will provide to the Bureau a list of surveyors and their qualifications, and a work plan that describes a proposed survey methodology. No surveys may be conducted without the approval of the authorized officer. Invasive weed surveys will be repeated every 5 years until reclamation is complete. The goals of this effort are to detect and remove any non-native invasive weed**

that was not present prior to the onset of the proposed action and to prevent Sahara mustard (Brassica tourneforlii) from becoming the dominant annual plant in the action area. Non-native invasive species will be removed through manual, mechanical or chemical methods depending on the specific circumstances and as approved by the Bureau's authorized officer. If a new species of non-native weed is observed prior to the 5-year survey, Iron Age will contact the Bureau for authorization to remove the infestation.

- **During reclamation or erosion control, the mine operator will use only certified weed free straw, mulch, and seed native soils unless approved by the authorized officer.**
- **Desert tortoises found in the project area will be handled and moved by an authorized biologist in accordance with the most current Service protocol. If a desert tortoise is found in harm's way, all potentially harmful activity will cease until the desert tortoise moves or is moved out of harm's way by an authorized biologist, biological monitor, or field contact representative; as described in measure 6, biolo81cal monitors and the field contact representative may move desert tortoises from harm's way in less complicated situations. Desert tortoises that need to be moved from harm's way will be placed on adjacent Bureau land, using techniques described in the field manual (Service 2009).**
- **Desert tortoises that are moved offsite and released into undisturbed habitat on public lands will be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibemaculum in which it was found, or in an artificially constructed burrow in accordance with techniques described in the field manual (Service 2009).**
- **Desert tortoises excavated from burrows will be moved to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or unoccupied natural burrows will be 150 to 300 feet from the original burrow. Relocated desert tortoises will not be placed in existing occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the authorized biologist will construct one. Desert tortoises moved during inactive periods will be monitored for at least 2 days after placement in the new burrows to ensure their safety.**
- **Iron Age will clearly mark, sign, or flag all project activity areas at the outer boundaries before the onset of construction and during mining operations. All activities will be confined to designated areas.**
- **Iron Age will not create any new unpaved or additional paved roads. If unforeseen circumstances require disturbance beyond the project area limits, Iron Age will contact the Bureau.**
- **The field contact representative (with input from an authorized biologist) will inform workers at regular briefings if desert tortoises are likely to be active that day or in the foreseeable future. When desert tortoises are expected to be active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within habitat of desert tortoises prior to moving the vehicle. If the desert tortoise does not move out of harm's way of its own volition or is in any other situation where it is at risk of being killed, the worker will contact the field contact representative, authorized biologist or biological monitor to move it.**
- **The Bureau will ensure that workers do not bring firearms and pets into the project area This measure does not apply to law enforcement personnel and working dogs.**
- **To reduce the attractiveness of the project area to common ravens and coyotes, Iron Age will place trash in sealed containers and empty the containers at a commercial facility on a weekly basis. The project area will be kept as clean of debris as possible.**

Compensation

Iron Age committed to offsetting the loss of desert tortoise habitat by paying compensation at a rate of 5 to 1 for impacts on undisturbed areas within the desert wildlife management area (15.7 x 5 = 78.5 acres) and 1 to 1 for impacts on undisturbed areas outside desert wildlife management area (5.3 acres). The boundaries of the desert wildlife management area and critical habitat coincide in the project area. Alternatively, Iron Age may transfer 83.8 acres of land to the Bureau.

BIO -2 Sensitive Wildlife

In order to mitigate potential impacts to specific species that may occur within the project impact area, the following measures are recommended:

American Badger:

- 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 which have been flagged to avoid adverse impacts to the badger. All workers shall be instructed that their activities are restricted to flagged and cleared areas; and
- An on-call biological monitor will be available to help identify any potential impacts to the badger.

Le Conte's Thrasher

- If mining activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the Migratory Bird Treaty Act, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed.
- All project activities will remain within the established project area and unnecessary vehicle or personnel activity will be avoided outside the project area. Potential direct impacts to the species include being hit by vehicles on access roads, grading of new access roads, preparation of staging locations, and general disturbance due to increased human activity.

Coast horned lizard and Mojave fringe-toed lizard:

- Conducting clearance surveys prior to the commencement of any ground disturbing activities;
- Worker environmental training; and
- Maintaining a speed limit of 20 mph on all access roads.

Burrowing Owl:

- The project impact area should be surveyed for the presence of burrowing owl no more than thirty days prior to ground disturbing activities;

- If the burrowing owl is found or the presence or burrowing owl is confirmed, and the proposed reconstruction and realignment of the existing roadway will occur during the breeding season (February 15 to August 15), then the active owl burrows on-site and within 500 feet of the project activities shall be identified, and physically marked before the start of any construction activities. A survey to mark the burrows shall be undertaken no earlier than February 15. During the construction period, active burrows that are not going to be removed by construction activities will be afforded a minimum 250-foot buffer to protect foraging habitat and owls. A biological monitor will be present to ensure that adequate avoidance of impacts to owls and their burrows is maintained. The monitor will have the authority to modify the buffer zone in order to protect the owls from harm; and
- If necessary, passive relocation techniques should adhere to those described in the *Burrowing Owl Consortium Survey Protocol & Mitigation Guidelines*.

BIO-3 Migratory Birds

If construction or land clearing activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the MBTA, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed.

BIO-4 Sensitive Plants (Joshua Tree)

Joshua tree surveys will be conducted to mark any Joshua trees found within the road alignment and in mining areas. If any Joshua trees will be impacted, compliance with CESA will be required and an Individual Take Permit (ITP) with CDFW will need to be prepared and processed.

V. CULTURAL RESOURCES

CR-2 Mitigation Measures

A qualified archaeologist approved by the BLM and County will conduct a pre-construction survey for cultural resources to mark sensitive resources for avoidance. Operations shall not knowingly disturb, alter, or destroy any historical or archaeological resource. The employees and contractors involved in the project will receive cultural resources awareness training, which will be directed towards recognizing and avoiding these features. Access roads and operation areas will set back from any historical or archaeological features which will be prominently flagged in the field to avoid disturbance.

CR-2 Mitigation Measures

A qualified archaeologist approved by the BLM and County will conduct a pre-construction survey for cultural resources to mark sensitive resources for avoidance. Operations shall not knowingly disturb, alter, or destroy any historical or archaeological resource. The employees and contractors involved in the project will receive cultural resources awareness training, which will be directed towards recognizing and avoiding these features. Access roads and operation areas will set back from any historical or archaeological features which will be prominently flagged in the field to avoid disturbance.

The following procedures shall be implemented in the event that potentially sensitive cultural resources are uncovered during construction and grading activities:

- **In the event archaeological, paleontological and/or historical resources, including pottery, rock art, middens or human remains, are uncovered during earthmoving activities, all work in that area shall cease immediately and a qualified archeologist shall be retained to access the findings, and if necessary, provide appropriate disposition of the resources. Earthmoving shall be diverted temporarily around the deposits until they have been evaluated, recorded, excavated, and/or recovered as necessary. Earthmoving shall be allowed to proceed on the site when the archaeologist, in consultation with the appropriate Native American Tribe(s) and the County of San Bernardino Museum, determines the resources are recovered to their satisfaction.**

- **If possible human remains are encountered during any earthmoving activities, all work shall stop in the area in which the find(s) are present, and the San Bernardino County Coroner must be notified. The appropriate land manager (BLM or County) and the owner of the site shall also be called and informed of the discovery. If the remains are located on federal public lands, the BLM land managers/federal law enforcement/federal archaeologist is to be informed as well because of complementary jurisdiction issues. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. The Coroner will determine if the bones are historic/archaeological or a modern legal case.**

- **State law dictates that the Native American Heritage Commission (NAHC) shall be notified in the event that remains are determined to be human and of Native American decent, in accordance with California Public Resources Code Section 5097.98.**

- **All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA)16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the state of California regardless of the remains are modern or archaeological.**

- **Modern Remains - If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area.**

- **Archaeological Remains - If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands.**

- **Remains discovered on federally owned/managed lands - After the Coroner has determined the remains are archaeological or historic and there is no legal question, the BLM Barstow Field Office Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 Inadvertent discoveries, must be followed.**

- **Remains discovered on non-Federally owned/managed lands - After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American, he/she shall contact by telephone within 24 hours, the California NAHC. The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the landowner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the descendant’s recommendations, the owner or the descendent may request mediation by the NAHC.**

GENERAL REFERENCES

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County of San Bernardino. *Countywide Policy Plan*, November 2020.

County of San Bernardino *Development Code*, 2007 as updated

County of San Bernardino. *Greenhouse Gas Emissions Reduction Plan*, September 2011, updated March 2015.

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MDAQMD. *Emissions Inventory Guidance for Mineral Handling and Processing Industries*, April 2000.

South Coast Air Quality Management Districts (SCAQMD) Greenhouse Gas Assessment and Off-road Model – Mobile Source Emission Factors Model (http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html)

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U.S. Geological Survey. *Swelling Clays Map of the Conterminous United States*. 1989.
Western Region Climate Center, Climate Summaries, 2012.

EXHIBIT D

Conditions of Approval

CONDITIONS OF APPROVAL

Iron Age Mine
MINING/RECLAMATION PLAN
RECLAMATION PLAN 2022M-01

Operation and Reclamation Procedures

LAND USE SERVICES DEPARTMENT– Planning Division (909) 387-8311

1. Project Description. Mining and Reclamation Plan to remove historical iron ore tailings on 71 acres of public (BLM) lands and 34 acres of patented (private) lands.

2. Project Location. The site is located on both unpatented claims and patented lands approximately 18 miles east/southest of the City of Twentynine Palms, California. The site is in the historic Dale Mining District in the Northern Pinto Mountain Range.

3. Effective Dates. The Iron Age Mine Mining/Reclamation Plan approval (project account # PROJ-2021-00009) shall be effective from the time of approval for 15 years until **December 31, 2037**. At the conclusion of all mining activities, the site will be reclaimed by **December 31, 2042** for Open Space habitat.

4. Reclamation Plan Recordation. Pursuant to Public Resources Code Section 2772.7, Planning will prepare a "Notice of Reclamation Plan Approval" on a form to be approved by the County Recorder's Office. The operator shall be responsible for review costs and recording fees.

5. Revisions/Amendments. Any substantial deviation or increase in the developed area of the site from that shown on the final approved Mining and Reclamation Plan will require submission of an additional application for review and approval. If Mining and Reclamation Plan procedures change from those outlined in the Mine Reclamation Plan for Iron Age Mine dated Finalized August 2021, the applicant/operator shall file an amendment and secure approval before such changes can be made effective.

6. Continuous Effect/Revocation. All conditions of the Iron Age Mine Reclamation Plan are continuing conditions. Failure of the applicant/operator to comply with any or all of said conditions at any time could result in the notice of a public hearing before the Planning Commission to consider corrective measures and/or revocation of the Mining Conditional Use Permit. If revocation is confirmed, the Planning Commission may provide for a reasonable period of time to amortize any lawful existing uses and require the commencement of reclamation in accordance with approved **Mining/Reclamation Plan 2022M-01**.

7. Written Notification. The Land Use Services Department shall be notified in writing, within 30 days, regarding any:
   a. Change in operating procedures, or inactive periods of operation for one (1) year or more.
   b. Changes of Company ownership, address, or telephone number during the life of the Reclamation Plan.
   c. Changes to provisions in lease agreements or real property having any effect on the approved Reclamation Plan.

8. SMARA and State Regulations. The provisions of the California Surface Mining and Reclamation Act of 1975 ("SMARA", Public Resources Code Section 2710 et seq.), Public Resources Code

Section 2207, and the regulations implementing SMARA ("State Regulations", California Code of Regulations Section 3500 et seq.) are made a part of the Reclamation Plan. In the event that the State amends SMARA to the extent it adds to or conflicts with the Conditions of Approval, State law shall prevail.

9. Mining and Reclamation Plan. The approved Mining/Reclamation Plan 2022M-01 and these corresponding Conditions of Approval shall be kept at the site at all times during active operations and be presented to the inspector upon request.

10. Blasting. Blasting shall be conducted in compliance with the Mine Safety and Health Administration (MSHA) and California Safety and Health Administration (Cal OSHA) requirements.

11. Interim Management Plan. The applicant shall implement measures to stabilize and secure the site during periods of inactivity as per the approved Reclamation Plan. An Interim Management Plan (IMP) as required by SMARA Section 2770(h)(1) shall be submitted to Planning for review and approval within 90 days of the mining operation becoming idle.

12. Additional Permits/Approvals. The applicant/operator shall ascertain and comply with requirements of all County, State, and Federal agencies as may be applicable to the Project. These include, but are not limited to the following: San Bernardino County Departments of Land Use Services, Public Health, Environmental Health Services, Public Works, Fire Department, Mojave Desert Air Quality Management District (MDAQMD), Colorado Regional Water Quality Control Board (LRWQCB) Region 6, State Fire Marshal, Environmental Health Services, California Department of Fish and Wildlife (CDFW) Region 6, U.S Fish and Wildlife, Army Corp of Engineers, State Mining and Geology Board, California Department of Conservation, California Occupational Safety and Health Administration (OSHA), and the Mine Safety and Health Administration (MSHA).

13. Indemnification. In compliance with SBCC §81.01.070, the developer shall agree, to defend, indemnify, and hold harmless the County or its "indemnitees" (herein collectively the County's elected officials, appointed officials (including Planning Commissioners), Zoning Administrator, agents, officers, employees, volunteers, advisory agencies or committees, appeal boards or legislative body) from any claim, action, or proceeding against the County or its indemnitees to attack, set aside, void, or annul an approval of the County by an indemnitee concerning a map or permit or any other action relating to or arising out of County approval, including the acts, errors or omissions of any person and for any costs or expenses incurred by the indemnitees on account of any claim, except where such indemnification is prohibited by law. In the alternative, the developer may agree to relinquish such approval.

Any condition of approval imposed in compliance with the County Development Code or County General Plan shall include a requirement that the County acts reasonably to promptly notify the developer of any claim, action, or proceeding and that the County cooperates fully in the defense. The developer shall reimburse the County and its indemnitees for all expenses resulting from such actions, including any court costs and attorney fees, which the County or its indemnitees may be required by a court to pay as a result of such action.

The County may, at its sole discretion, participate at its own expense in the defense of any such action, but such participation shall not relieve the developer of their obligations under this condition to reimburse the County or its indemnitees for all such expenses.

This indemnification provision shall apply regardless of the existence or degree of fault of indemnitees. The developer's indemnification obligation applies to the indemnitees' "passive"

negligence but does not apply to the indemnitees' "sole" or "active" negligence or "willful misconduct" within the meaning of Civil Code Section 2782.

14. Financial Assurances. The applicant/operator shall maintain an acceptable form of Financial Assurance to ensure reclamation in accordance with Reclamation Plan 2022M-01. The Financial Assurance mechanism shall identify the County of San Bernardino and the California Department of Conservation (DOC) as the beneficiaries.

    The Financial Assurance shall be calculated based on a cost estimate submitted by the applicant/operator and approved by the County and DOC, Division of Mine Reclamation (DMR) for the approved reclamation procedures.

    Within 30 days following the mine site inspection, a Financial Assurance Cost Estimate (FACE) shall be provided to the Land Use Services Department. The assurance amount shall be reviewed and, if necessary, adjusted to account for new lands disturbed by surface mining operations, inflation and reclamation of lands accomplished in accordance with approved Reclamation Plan.

    The Financial Assurance is not established to replace the applicant's/operator's responsibility for reclamation, but to assure adequate funding to complete reclamation per the Reclamation Plan and Conditions of Approval. Should the applicant/operator fail to perform or operate within all of the requirements of the approved Reclamation Plan, the County or DOC will follow the procedures outlined in Sections 2773.1 and 2774.1 of SMARA regarding the encashment of the assurance and applicable administrative penalties, to bring the applicant/operator into compliance. The requirements for the assurance will terminate when reclamation of the site has been completed in compliance with the approved Mining/Reclamation Plan and accepted by the County and DMR pursuant to California Code of Regulations (CCR), Section 3805.5.

15. Annual Reporting and Inspection. The applicant/operator shall provide a Mining Operation Annual Report to DMR and to the Land Use Services Department on a date established by the DOC, using forms furnished by the State Mining and Geology Board. The County is required to conduct an inspection within intervals no greater than 12 months to determine if the operation is in compliance with the approved Conditions of Approval, Reclamation Plan, and SMARA statutes and regulations. The County is required to notify DMR upon completion of the inspection that the inspection has been conducted and provide a statement regarding the status of compliance of the operation within 90 days after completion of the inspection. The operator of the mining operation is responsible for filing an application with the County to request an inspection and shall be responsible for paying the County's costs in conducting the mine site inspection.

16. Applicant/Operator. Requirements extend to the property owner and any person, lessee, tenant or sub-tenant, operator, individual, firm, association, corporation, organization, limited liability company or partnership, or any city, county, district, or the state or any department or agency thereof for any disturbance or improvements to the mined lands. The applicant/operator may include an agent or other interested party, and any heir or successor in interest in the project land use by sale or by lease of all or of a portion of the mine site including land use within any or all of the mine structures or areas on the mine site.

17. Disturbance Limits. Prior to any new ground disturbance, a Licensed Land Surveyor shall be employed to determine and permanently monument the mine boundary and limits of each road right-of-way. For each corner, GPS coordinates shall be provided in a format acceptable to Land Use Services. A final report shall be provided to Land Use Services.

Definitions

18. Minerals. Include any naturally occurring chemical element or compound, or groups of elements and compounds, formed from organic and inorganic processes. Clay, sand, gravel, rock, decomposed granite, salts, alumina, silica, alkali, topsoil or growth medium, organic humus and gems represent the aggregate of different minerals.

19. Aggregate Removal. The applicant shall not sell or otherwise move off the mine site any sand, gravel, or other produced minerals to a public agency unless the operator certifies, under penalty of perjury, that the mining operation is identified in the AB 3098 List published pursuant to PRC Section 2717(b).

20. Construction and Demolition (C&D). Materials left on site or produced in the process of site clearing activities, construction, renovation, or demolition of structures of all types to include roads and bridges shall be deemed as waste material. Waste materials include, but is not limited to concrete, asphalt, wood, metals, gypsum wallboard and brick. The Financial Assurance Cost Estimate shall include costs to remove C&D materials to an approved facility that is permitted to receive such materials.

21. Exploration or Prospecting. Includes the activities in search for minerals by geological, geophysical, geochemical or other techniques, including, but not limited to, sampling, assaying, drilling, or any surface or underground works needed to determine the type, extent, or quantity of minerals present.

22. Project Design Features: Project Design Features (PDFs) are aspects of the proposed project that have been designed into the mining operations.

23. Mitigation Measures: Mitigation Measures (MMs) are environmental protection measures developed during the CEQA process (in addition to the proposed PDFs) that have been determined necessary to further protect the environment.

24. Ownership. The person(s) involved in the ownership of the property include all persons having interest in the ownership of the surface and subsurface property, including mineral rights. If the applicant/operator is not the recorded owner(s) of the property, must submit a signed statement by the property and mineral rights owner(s) authorizing the applicant to act on their behalf.

25. Operator. The Operator includes the applicant and any person who is engaged in surface mining operations, and others contracted to conduct operations on his or her behalf, except a person who is engaged in surface mining operations as an employee with wages as his or her sole involvement and compensation.

26. Operations. Surface mining operations include all, or any part of, the process involved in the mining of minerals on mined lands, borrow pitting, segregation and stockpiling of mined materials (and recovery of same).

27. Mined Lands. Include the surface, subsurface, and groundwater of an area in which surface mining operations will be, are being, or have been conducted, including private ways and roads appurtenant to any such area, land excavations, workings, mining waste, and areas in which structures, facilities,

equipment, machines, tools, or other materials or property which result from, or are used in, surface mining operations are located.

28. Parcel Map. The applicant/operator shall, prior to final inspection for reclamation and release of the financial assurance, record a parcel map for any and all affected parcels where unconsolidated fill is part of the final reclamation. The parcel map shall indicate those areas backfilled with uncompacted material and designate said areas as unbuildable. At such time a California Building Code (CBC) compaction report has been approved by Building and Safety before that particular area can have the building restriction removed.

29. Produced Minerals. As defined in CCR Section 3501 includes all minerals sold, given or otherwise moved off the site of the operation, as defined in the approved reclamation plan. Recycled products (e.g. broken concrete, bricks, asphaltic concrete, etc.) or stockpiles of mineral products that remain on the site are not produced minerals for purposes of CCR Section 3695(b).

30. Transplanting. Transplanted or propagated plants will be maintained for a minimum of three years, or until a qualified biologist(s) determine that the plants have been successfully established (e.g., plants are vigorous, flower, and produce seed). Successful re-establishment of the plants will be based on the replanted areas achieving density and diversity standards based on control plots.

31. Special-status Plant Protection. Special-status plants (as listed in the SBCC Section 88.01.060 (et al.), Desert Native Plant Protection, and those species identified/listed in Revegetation Plan and growing within the disturbed areas will be salvaged and/or propagules will be relocated to an appropriate location within the mine site that will not be disturbed by future mine activities. Prospective transplanting sites will be inspected and approved by a qualified botanist prior to removal of vegetation for the project. Transplanting efforts will be consistent with the revised Revegetation Plan.

32. Joshua Trees. On September 22, 2020, the California Fish and Game Commission determined that the Western Joshua tree *(Yucca brevifolia)* is a potentially threatened or endangered species and should be protected under the California Endangered Species Act (CESA). This commenced a status review of the species and the Commission will make a final decision whether or not to require permanent protection status under CESA after the review; therefore, during the status review period, the Western Joshua tree is protected under CESA. The County does not have authority to authorize removal of Western Joshua trees pursuant to Development Code sections 88.01.040 through 88.01.060. Therefore, during the status review period or if the Western Joshua tree is ultimately listed and protected under CESA, removal shall require authorization from the California Department of Fish and Wildlife.

33. Project Account. As determined necessary on a case-by-case basis, the applicant/operator shall deposit funds with the County necessary to compensate staff time and expenses for review of compliance monitoring reports and site inspections. The project account number for this Mining/Reclamation Plan 2022M-01 approval is PROJ-2021-00009. This is an actual cost project with a deposit account to which hourly charges are assessed by various county agency staff, including but not limited to: Land Use Services, Public Works, and County Counsel.

    Upon notice, the applicant shall deposit additional funds to maintain or return the account to a positive balance. The applicant/operator is responsible for all expenses charged to this account.

LAND USE SERVICES DEPARTMENT – Building and Safety (909) 387-4421

34. Geology Report Required Before Grading. If construction of inhabited structures is proposed, a geology report shall be submitted to the Building and Safety Division for review and approval by the County Geologist and fees paid for the review prior to issuance of grading permits or land disturbance.

35. Geotechnical (Soil) Report Required Before Grading. If construction of inhabited structures is proposed, a geotechnical (soil) report shall be submitted to the Building and Safety Division for review and approval prior to issuance of grading permits or land disturbance.

36. Temporary Use Permit: A Temporary Structures (TS) permit for non-residential structures for use as office, retail, meeting, assembly, wholesale, manufacturing, and/ or storage space will be required. A Temporary Use Permit (PTUP) for the proposed structure by the Planning Division must be approved prior to the TS Permit approval. A TS permit is renewed annually and is only valid for a maximum of five (5) years.

COUNTY FIRE DEPARTMENT – Community Safety Division (760) 254-5474

37. Additional Requirements: In addition to the Fire requirements stated herein, other onsite and offsite improvements may be required which cannot be determined from tentative plans at this time and would have to be reviewed after more complete improvement plans and profiles have been submitted to this office.

MINING OPERATIONS

LAND USE SERVICES DEPARTMENT – Planning Division (909) 387-8311

General

38. Operations. Extraction and processing operations shall proceed in accordance with the Mine Reclamation Plan for Iron Age Mine dated Finalized August 2021. Mineral extraction and stockpiling will adhere to the mining operations outlined in the application.

39. Best Management Practices (BMP's). The operator shall implement BMP's procedures. BMP provisions shall include, but not limited to, the following:
- Good Housing Keeping – Dust minimization, waste spills, discharges.
- Preventive Maintenance – Minimize spills, and on-site leaks, prompt maintenance.
- Spill and Leak Preventive Response – In place spill procedures and controls.
- Material Handling and Waste Mgmt. – Waste covering, storm water diversion practices, waste clean ups.
- Implement Erosion and Sediment Controls – Sediment and Erosion Stabilization.
- Employee Training Program- BMP Training.
- Exposure Minimization – Storm resistant shelters to prevent contact of storm water with mining materials, as feasible.
- Storm Water Containment & Discharge Reduction – BMP's that divert, reuse, contain or reduced volume of storm water runoff.

40. Storm Water Pollution Prevention Program (SWPPP). The operator shall prepare a SWPPP outlining how storm water shall be conveyed or directed on and off-site during operations to avoid impacts to groundwater and surface water quality. Within the SWPPP, the operator shall list Best Management Practices (BMPs) to be implemented on site to avoid water quality impacts. The SWPPP shall be submitted to the Lahontan Regional Water Quality Control Board and a copy submitted to Planning or provide evidence from LRWQCB that the SWPPP is not needed.

41. Employee Training. Develop an Employee Training Awareness Plan that addresses training requirements, as necessary to comply with relevant regulations and approval conditions and mitigations.

42. Additional Environmental Control Measures. In addition to the BMPs, MMs, and PDFs stated herein, the Operator shall implement the environmental control measures identified below in the specific resource sections of these COAs.

43. Trackout and Spills. The mine operator shall take actions sufficient to prevent project-related trackout onto paved surfaces and while operating on publicly maintained paved surfaces. The mine operator shall immediately clean-up project-related trackout or spills on publicly maintained paved surfaces.

44. Chemical Spills/Leakage. All chemical spills or leakage of petroleum products during mining or reclamation activities shall be remediated in compliance with applicable state and local regulations regarding cleanup and disposal of the contaminant released. Contaminated wastes shall be collected and disposed of at an appropriately licensed disposal or treatment facility.

    In the event of any soil contamination on-site, the applicant/operator shall remove any soils that become chemically contaminated to a County-approved disposal site so as to preclude any chemical leaching into the local ground water supply over time.

Air Quality

45. Air Quality – General. Comply with all relevant MDAQMD regulations and permit conditions to minimize air emissions.

46. Dust Control Plan. Prepare and implement a Dust Control Measures pursuant to SBCC Chapter 88.02 and Section 88.02.040 and the Mojave Desert Air Quality Management District (MDAQMD) Rule 403(C).

47. Equipment Emission Reduction and Idling. Maintain and operate construction equipment to minimize exhaust emissions. During mining, trucks and vehicles in loading and unloading shall comply with the California Air Resources Board's written idling policy, dated December 2015, when not in use, to reduce vehicle emissions.

48. Exhaust Control Measures. Comply with all existing and future EPA (Clean Air Non-road Diesel Rule-May 2004), CARB and MDAQMD regulations related to diesel-fueled trucks and equipment, which may include among others: (1) meeting more stringent emission standards; (2) retrofitting existing engines with particulate traps; (3) use of low sulfur fuel; and (4) use of alternative fuels or equipment.

Operation of all off-road and on-road diesel vehicles/equipment shall comply with the County Diesel Exhaust Control Measures (SBCC, Section 83.01.040 (c)) including but not limited to:

a) Equipment/vehicles shall not be left idling for period in excess of five minutes;
b) Engines shall be maintained in good working order to reduce emissions;
c) Onsite electrical power connections shall be made available where feasible;
d) Ultra-low-sulfur diesel fuel shall be utilized;
e) Electric and gasoline powered equipment shall substitute for diesel powered equipment where feasible; and
f) Signs shall be posted requiring all vehicle drivers and equipment operators to turn off engines when not in use.

Hazardous and Hazardous Materials; Geology Slope Stability

49. Hazardous Materials Business Plan / Emergency/Contingency Plan. The operator shall establish a Business Emergency/Contingency Plan to establish protocol in the event of release or threatened release of hazardous materials and wastes. Contact Office of the Fire Marshall, Hazardous Materials Division at (909) 386-8401.

50. Hazardous Materials Handling. The operator shall be required to apply for one or more of the following permits: Hazardous Materials Permit, a Hazardous Waste Permit, and/or an Aboveground Storage Tank Permit, as appropriate.

51. Compliance. Comply with the Hazardous Materials Business Plan, SWPPP, SPCC Plan and BMPs as required and applicable by these plans and hazardous materials and waste regulatory requirements.

52. Management of Hazardous Materials. Ensure that the use, transport, management, storage and disposal of fuels (i.e. diesel and gasoline) and other hazardous materials used for mining operations (i.e. motor oil, transmission fluids, hydraulic fluids, lubricating greases, brake fluids and/or antifreeze) are in accordance with federal, state and local hazardous materials and waste management regulations and BMPs.

53. Above Ground Storage Tank. Inspect and maintain any above ground fuel storage tank to ensure that the secondary containment (i.e. double wall tank) and spill prevention controls and countermeasures are present and/or operating as required.

54. Hazardous Materials Business Plan. Maintain an updated Hazardous Materials Business Plan and hazardous materials inventory per CUPA requirements as applicable.

55. Emergency Response Equipment. Maintain all emergency and spill response equipment in proper operating condition and have available at areas where hazardous materials and waste are used, transported and/or stored.

56. Hazardous Material/Waste Training. Ensure all personnel are appropriately trained in hazardous materials and waste management, including spill prevention and response procedures.

57. Slope Design. Implement overburden slope designs and procedures as identified in Mine Reclamation Plan and per SMARA requirements.

Mitigation Measure Aesthetics

58. *Mitigation Measure Aesthetics 1*
1. *Full cut-off (glare resistant/shielded) luminaires that prevent the upward escape of light.*
2. *Light fixtures that are pointed less than 45 degrees in direction.*
3. *Area and security lighting should be yellow or amber with a color temperature less than 2500 degrees K.*
4. *Motion activated security lighting when the site is in operation at night.*
5. *Water storage tanks shall be painted as to blend into the environment.*

Mitigation Measure Biological Resources

59. *Mitigation Measure BIO-1: The Bureau and Iron Age will designate a person to act as the field contact representative with specific experience in the implementation of environmental compliance programs. The field contact representative will serve as the environmental compliance monitor and will be present throughout the construction of the mill site and access road, mining operations, and reclamation. This individual will serve as liaison among the Service, Bureau, construction workers, truck drivers, authorized biologist(s), and biological monitor(s). The field contact representative, working with an authorized biologist, will ensure compliance with the conditions and requirements of project permits and approvals set forth in this biological opinion and supporting plans appended to the biological assessment.*

- *The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented. This would include enforcing the 15-mile-per-hour speed limit through desert tortoise habitat along the access road and ensuring that project personnel do not travel cross country with motorized vehicles.*

- *During the construction of the mill site and access road, Iron Age will use authorized biologists approved by the Service and biological monitors approved by an authorized biologist to ensure compliance with the protective measures for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date Service guidance and will be required for monitoring of any construction activities that may injure or kill desert tortoises. The authorized biologist must have thorough and current knowledge of desert tortoise I behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to conduct their required duties safely and successfully. Authorized biologists arc approved to monitor project activities and are responsible for locating desert tortoises and their sign (i.e., conducting clearance surveys). Authorized biologists must ensure proper implementation of protective measures and make certain that the effects or the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or incidental take permit. All incidents of noncompliance in accordance with the biological opinion or permit must be recorded and reported.*

Biological monitors will be approved by the authorized biologist to monitor project activities, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol. They will report incidents of noncompliance in accordance with a biological opinion or permit, move desert tortoises from harm's way when desert tortoises enter project sites and place these animals in "safe areas" pre-selected by authorized biologists or maintain the desert tortoises in their immediate possession until an authorized biologist

assumes care of the animal. Monitors assist authorized biologists during surveys and serve as "apprentices" to acquire experience. Monitors should not conduct clearance surveys or other specialized duties of the authorized biologist unless directly supervised by an authorized biologist; "directly supervised" means the authorized biologist has direct voice and sight contact with the monitor. Refer to the following of additional information: http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html.

- *The use of authorized biologists during mining operations and reclamation activities will be on an as-needed basis. In this case, the field contact representative will consult authorized biologists approved by the Bureau and the Service to determine the most appropriate course of action when a desert tortoise enters the project site, is found along the access road, or has established burrows within the project area that may be affected by the mining operations and may need to be moved out of harm's way.*
- *The Bureau will review the credentials of all individuals seeking approval as authorized biologists. The Bureau will provide the credentials of appropriate individuals to the Service for approval at least 30 days prior to the time they are needed in the field.*

- *The authorized biologists will be responsible for all aspects of clearance surveys, monitoring, developing, and implementing the worker environmental awareness program, communication with agency personnel, reporting, and be present, along with biological monitors, during construction of the mill site and access road. An authorized biologist will be available during the mining operations and reclamation, as needed, when activities are likely to affect desert tortoises such that a more highly skilled biologist is needed (e.g., conducting surveys to ensure desert tortoises are not present in vegetated areas, excavating burrows, etc.). The authorized biologists will supervise and train the biological monitors. Training by authorized biologists will include ensuring biological monitor and the field contact representative are qualified to capture, handle, and move desert tortoises in situations where an authorized biologist is unavailable or for less complicated tasks (e.g., moving a desert tortoise from under a vehicle or off the access road, etc.).*

- *The field contact representative will act on the advice of the authorized biologist(s) and biological monitor(s) to ensure conformance with the protective measures set forth in this biological opinion. Additionally, the authorized biologist(s) will have the authority to immediately stop any activity that is not in compliance with these conditions.*

- *The Bureau will ensure that all workers associated with the proposed Iron Age Project receive worker environmental awareness training to ensure protection of the desert tortoise and its habitat The field contact representative and authorized biologist will administer the training at the onset of the project, annually, and when new employees are hired to all onsite personnel and anyone else (e.g., contractors, truck drivers, etc.) who needs to travel to the mine site. The worker environmental awareness training will:*
  - *Be developed by or in consultation with the authorized biologist and consist of a presentation in which supporting written material and electronic media, including photographs of protected species, are made available to all participants;*
  - *Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them;*
  - *Inform workers that the field contact representative and the authorized biologists have the authority to halt work in any area where an unauthorized adverse impact to biological resources may occur if the activities continued;*

o Discuss general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures;
o Provide an explanation of the sensitivity and locations of the vegetation, biological resources, and habitat within and adjacent to work areas, and proper identification of these resources;
o Place special emphasis on the desert tortoise, including information on physical characteristics, photographs, distribution, behavior, ecology, sensitivity to human activities, legal protection. reporting requirements. and protective measures required for the project;
o Provide contact information for the authorized biologist(s) and biological monitor(s) to handle late comments and questions about the material discussed in the program. as well as notification of any dead or injured wildlife species encountered during project-related activities.
o Direct all workers to report all observations of listed species and their sign to an authorized biologist for inclusion in the yearly compliance report;
o Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and
o Provide information regarding the effects of predation on the desert tortoise by common ravens (Corvus corax) and other predators and the measures that have been developed to reduce the likelihood that predators will be attracted to the project area.

• Prior to construction of the mill sites at State Route 62, Iron Age will install fencing to exclude desert tortoises from entering the site. The fence will be constructed according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (Service 2009). If desert tortoises are encountered during installation of the fence, the authorized biologist will move the individual the shortest distance possible to an area outside the fence on public land where it will be safe. The authorized biologist will use his or her judgment regarding the best measures to use to ensure the desert tortoise does not immediately return to the area inside of the fence or be placed in a location where it could enter State Route 62. The authorized biologist may contact the Service to discuss specific situations if the need arises.

• After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized biologist will follow established survey protocols and remove all desert tortoises from within the fenced area. All desert tortoises will be considered to have been removed once a complete survey of the work area is conducted without finding any additional animals. Desert tortoises that are found inside the fenced area will be placed on the other side of the exclusion fence. The authorized biologist will use his or her best judgment to determine the optimal location for placement of desert tortoises, which would include ensuring the animals are not relocated into areas that may isolate them from the desert tortoise population in the area or enable them to access the highway.

• Iron Age will maintain the integrity of the fence for the duration of the proposed project to ensure that desert tortoises are excluded from the mill site during construction and until all mining operations and activities, including reclamation efforts, related to this proposed action are concluded. The fence will be inspected regularly and repaired when necessary; initially, it will be inspected monthly, but Iron Age may adopt a different schedule, based on acquired experience.

• An appropriate number of authorized biologists and biological monitors will be available during construction of the mill sites and access road for the protection of the desert tortoise. Authorized biologists will monitor each activity where conditions exist that may result in injury or mortality of desert tortoise (e.g., clearing, grading, re-contouring, and restoration activities).

- *For the construction of the access road, the authorized biologist or a qualified biological monitor will survey ahead of the project activities and halt construction if he or she finds a desert tortoise in the path of construction equipment. Project activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist has relocated it.*

- *During mining operations, the field contact representative will inspect all excavations, trenches, and areas that are not within desert tortoise exclusion fencing on a regular basis (several times per day). If a desert tortoise is discovered in an area planned for excavation or an area where the animal may be injured or killed, the field contact representative will coordinate with an authorized biologist to determine the best course of action to protect or move the animal to a safe location in accordance with the field manual (Service 2009). The field contact representative will also monitor vehicle speeds along the access road and ensure that drivers maintain a speed limit of 15 miles per hour when temperatures are between 50 and 100° F.*

- *Iron Age will survey for invasive weeds at the earliest spring season following the letter of authorization to proceed issued by the Bureau. It will provide to the Bureau a list of surveyors and their qualifications, and a work plan that describes a proposed survey methodology. No surveys may be conducted without the approval of the authorized officer. Invasive weed surveys will be repeated every 5 years until reclamation is complete. The goals of this effort are to detect and remove any non-native invasive weed that was not present prior to the onset of the proposed action and to prevent Sahara mustard (Brassica tourneforlii) from becoming the dominant annual plant in the action area. Non-native invasive species will be removed through manual, mechanical or chemical methods depending on the specific circumstances and as approved by the Bureau's authorized officer. If a new species of non-native weed is observed prior to the 5-year survey, Iron Age will contact the Bureau for authorization to remove the infestation.*

- *During reclamation or erosion control, the mine operator will use only certified weed free straw, mulch, and seed native soils unless approved by the authorized officer.*

- *Desert tortoises found in the project area will be handled and moved by an authorized biologist in accordance with the most current Service protocol. If a desert tortoise is found in harm's way, all potentially harmful activity will cease until the desert tortoise moves or is moved out of harm's way by an authorized biologist, biological monitor, or field contact representative; as described in measure 6, biological monitors and the field contact representative may move desert tortoises from harm's way in less complicated situations. Desert tortoises that need to be moved from harm's way will be placed on adjacent Bureau land, using techniques described in the field manual (Service 2009).*

- *Desert tortoises that are moved offsite and released into undisturbed habitat on public lands will be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibemaculum in which it was found, or in an artificially constructed burrow in accordance with techniques described in the field manual (Service 2009).*

- *Desert tortoises excavated from burrows will be moved to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or unoccupied natural burrows will be 150 to 300 feet from the original burrow. Relocated desert tortoises will not be placed in existing occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the authorized biologist will construct one. Desert tortoises moved during inactive periods will be monitored for at least 2 days after placement in the new burrows to ensure their safety.*

- *Iron Age will clearly mark, sign, or flag all project activity areas at the outer boundaries before the onset of construction and during mining operations. All activities will be confined to designated areas.*

- *Iron Age will not create any new unpaved or additional paved roads. If unforeseen circumstances require disturbance beyond the project area limits, Iron Age will contact the Bureau.*

- *The field contact representative (with input from an authorized biologist) will inform workers at regular briefings if desert tortoises are likely to be active that day or in the foreseeable future. When desert tortoises are expected to be active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within habitat of desert tortoises prior to moving the vehicle. If the desert tortoise does not move out of harm's way of its own volition or is in any other situation where it is at risk of being killed, the worker will contact the field contact representative, authorized biologist or biological monitor to move it.*

- *The Bureau will ensure that workers do not bring firearms and pets into the project area This measure does not apply to law enforcement personnel and working dogs.*

- *To reduce the attractiveness of the project area to common ravens and coyotes, Iron Age will place trash in sealed containers and empty the containers at a commercial facility on a weekly basis. The project area will be kept as clean of debris as possible.*

Compensation

Iron Age committed to offsetting the loss of desert tortoise habitat by paying compensation at a rate of 5 to 1 for impacts on undisturbed areas within the desert wildlife management area (15.7 x 5 = 78.5 acres) and 1 to 1 for impacts on undisturbed areas outside desert wildlife management area (5.3 acres). The boundaries of the desert wildlife management area and critical habitat coincide in the project area. Alternatively, Iron Age may transfer 83.8 acres of land to the Bureau.

Mitigation Measure BIO -2 Sensitive Wildlife

60. *Mitigation Measure BIO-2. In order to mitigate potential impacts to specific species that may occur within the project impact area, the following measures are recommended:*

American Badger:

- *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 which have been flagged to avoid adverse impacts to the badger. All workers shall be instructed that their activities are restricted to flagged and cleared areas; and*
- *An on-call biological monitor will be available to help identify any potential impacts to the badger.*

Le Conte's Thrasher

- *If land clearing activities will occur in un-disturbed areas with vegetation during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the Migratory Bird Treaty Act, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed;*

- *All project activities will remain within the established project area and unnecessary vehicle or personnel activity will be avoided outside the project area. Potential direct impacts to the species include being hit by vehicles on access roads, grading of new access roads, preparation of staging locations, and general disturbance due to increased human activity.*

Coast horned lizard and Mojave fringe-toed lizard:
- *Conducting clearance surveys prior to the commencement of any new ground disturbing activities;*
- *Worker environmental training; and*
- *Maintaining a speed limit of 20 mph on all access roads.*

Burrowing Owl:
- *The project impact area should be surveyed for the presence of burrowing owl no more than thirty days prior to new ground disturbing activities;*
- *If the burrowing owl is found or the presence or burrowing owl is confirmed, and the proposed reconstruction and realignment of the existing roadway will occur during the breeding season (February 15 to August 15), then the active owl burrows on-site and within 500 feet of the project activities shall be identified, and physically marked before the start of any construction activities. A survey to mark the burrows shall be undertaken no earlier than February 15. During the construction period, active burrows that are not going to be removed by construction activities will be afforded a minimum 250-foot buffer to protect foraging habitat and owls. A biological monitor will be present to ensure that adequate avoidance of impacts to owls and their burrows is maintained. The monitor will have the authority to modify the buffer zone in order to protect the owls from harm; and*
- *If necessary, passive relocation techniques should adhere to those described in the Burrowing Owl Consortium Survey Protocol & Mitigation Guidelines.*

Mitigation Measure BIO-3 Migratory Birds

61. *Mitigation Measure BIO-3. If land clearing activities will occur in un-disturbed areas with vegetation during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the MBTA, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed.*

Mitigation Measure BIO-4 Sensitive Plants (Western Joshua Tree)

62. *Mitigation Measure BIO-4:*
Western Joshua tree surveys will be conducted to mark any Joshua trees found within the road alignment and in mining areas. If any Western Joshua trees will be impacted during the candidate status review period or if the Western Joshua tree is ultimately listed and protected under CESA, removal shall require authorization from the California Department of Fish and Wildlife.

Cultural Resources

63. *Mitigation Measure CR-1:*
A qualified archaeologist approved by the BLM and County will conduct a pre-construction survey for cultural resources to mark sensitive resources for avoidance. Operations shall not knowingly

disturb, alter, or destroy any historical or archaeological resource. The employees and contractors involved in the project will receive cultural resources awareness training, which will be directed towards recognizing and avoiding these features. Access roads and operation areas will set back from any historical or archaeological features which will be prominently flagged in the field to avoid disturbance.

64. *Mitigation Measure CR-2:*

The following procedures shall be implemented in the event that potentially sensitive cultural resources are uncovered during construction and grading activities:

- *In the event archaeological, paleontological and/or historical resources, including pottery, rock art, middens or human remains, are uncovered during earthmoving activities, all work in that area shall cease immediately and a qualified archeologist shall be retained to access the findings, and if necessary, provide appropriate disposition of the resources. Earthmoving shall be diverted temporarily around the deposits until they have been evaluated, recorded, excavated, and/or recovered as necessary. Earthmoving shall be allowed to proceed on the site when the archaeologist, in consultation with the appropriate Native American Tribe(s) and the County of San Bernardino Museum, determines the resources are recovered to their satisfaction.*

- *If possible human remains are encountered during any earthmoving activities, all work shall stop in the area in which the find(s) are present, and the San Bernardino County Coroner must be notified. The appropriate land manager (BLM or County) and the owner of the site shall also be called and informed of the discovery. If the remains are located on federal public lands, the BLM land managers/federal law enforcement/federal archaeologist is to be informed as well because of complementary jurisdiction issues. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. The Coroner will determine if the bones are historic/archaeological or a modern legal case.*

- *State law dictates that the Native American Heritage Commission (NAHC) shall be notified in the event that remains are determined to be human and of Native American decent, in accordance with California Public Resources Code Section 5097.98.*

Should human remains and/or cremations be encountered during any earthmoving activities, all work shall stop immediately in the area in which the find(s) are present (suggested 100-ft radius area around the remains and project personnel will be excluded from the area and no photographs will be permitted), and the County of San Bernardino Coroner will be notified. The County of San Bernardino and the Project Proponent shall also be informed of the discovery. The Coroner will determine if the bones are historic/archaeological or a modern legal case. The Coroner will immediately contact the Native American Heritage Commission (NAHC) in the event that remains are determined to be human and of Native American origin, in accordance with California Public Resources Code Section § 5097.98.

All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code § 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the State of California regardless if the remains are modern or archaeological.

• *Modern Remains - If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area.*

• *Archaeological Remains - If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands.*

• *Remains discovered on federally owned/managed lands - After the Coroner has determined the remains are archaeological or historic and there is no legal question, the BLM Barstow Field Office Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 Inadvertent discoveries, must be followed.*

• *Remains discovered on non-Federally owned/managed lands - After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American, he/she shall contact by telephone within 24 hours, the California NAHC. The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the landowner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the descendant's recommendations, the owner or the descendent may request mediation by the NAHC.*

Noise

65. Noise Level. Should results of a noise study indicate that operations would not comply with the County noise ordinance; the Planning Director may require modification of such operations.

66. Noise Operations. Noise levels shall be maintained at or below County Standards, SBCC Section 83.01.080.

Reclamation and Revegetation

67. Reclamation Plan. Surface mining operations shall adhere to the Mining and Reclamation Plan. Any changes from the Reclamation Plan's provisions shall not be undertaken until review by the Land Use Services Department.

68. Reclamation Time Schedule. Reclamation shall be initiated at the earliest possible time on those portions of the disturbed lands that will not be subject to further disturbance by the surface mining operation. **Estimated Reclamation Completion: December 31, 2042**

69. Reclamation and Revegetation. Reclamation and revegetation of the site shall proceed in accordance with the **Mining/Reclamation Plan 2022M-01.**

70. Plant Seeds. The operator shall provide for the collection of seed and other propagules as needed in support of the revegetation plan. Propagules shall be collected within the Project Area to the extent possible.

71. Test Plots. Test Plots shall be developed to provide data that supports successful revegetation efforts within mined areas. Additional test plots shall be established if the initial tests, as well as any active revegetation areas are not successful.

72. Barriers/Signage. Safety barriers and signage per MSHA requirements shall be maintained around the mined slopes.

73. Growth Medium Stockpiles. The operator shall salvage all topsoil, subsoil and growth media suitable for sustaining revegetation as separated layers from areas to be disturbed by mining operations. Stockpiled topsoil shall be identified with clearly labeled signs stating “Topsoil – Do Not Disturb” and stored separately from overburden material stockpiles and protected to preserve as much of the organic material and seeds as practicable. The locations for topsoil stockpiles are identified on the Mine Plan map.

74. Stockpile Maintenance. Stockpiles shall be maintained with temporary erosion control methods and shall be stabilized through establishment of temporary vegetative cover or other acceptable means of surface treatment for prolonged storage periods. At the time of reclamation, areas being reclaimed shall have the stockpiled growth medium and vegetation spread over them. Revegetation shall be supplemented by broadcast seeding with native and locally adapted seed and planting of established seedlings and/or shrubs in accordance to the approved Reclamation Plan.

75. Seed Types and Amounts. A seed mix is designed for the Project site to promote a plant community similar to that found in undisturbed areas. The seed mix will serve as a guideline for the revegetation plant community. Seed types and amounts will conform to the site’s Revegetation Plan. The seed mixes will be applied based on the seed mix plan cited in the Revegetation Plan.

76. Re-vegetation Annual Monitoring. The project biologist will document the progress of the revegetation effort at the mine site and submit Annual Maintenance and Monitoring reports to the County of San Bernardino as necessary.

77. Revegetation Attainment. Revegetation will be deemed successful by the County when all success criteria in the Reclamation Plan have been achieved. If these criteria have not been achieved, maintenance seeding and monitoring will continue annually until success criteria has been met.

78. Financial Assurances - Revegetation. Revegetation in arid areas is tenuous at best and, therefore, the applicant shall provide in the Financial Assurance Cost Estimate, the costs to monitor and report on revegetation, incidental disturbance and erosion control for a time period of five (5) years or unless the County deems the success criteria can be achieved in less time.

79. Reclaimed End Use: Open space habitat.

COUNTY FIRE DEPARTMENT – Community Safety Division (760) 254-5474

80. Access: The development shall have reasonable vehicular access for fire/emergency equipment access and for evacuation routes.

LAND USE SERVICES DEPARTMENT – Land Development Division – (909) 387-8311

81. Tributary Drainage. Adequate provisions should be made to intercept and conduct the tributary off site - on site drainage flows around and through the site in a manner, which will not adversely affect adjacent or downstream properties at the time the site is developed.

82. Natural Drainage. The natural drainage courses traversing the site shall not be occupied or obstructed.

83. Additional Drainage Requirements. In addition to drainage requirements stated herein, other "onsite" and/or "offsite" improvements may be required, which cannot be determined from tentative plans at this time and would have to be reviewed after more complete improvement plans and profiles have been submitted to this office.

DEPARTMENT OF PUBLIC WORKS – Surveyor's Office (909) 387-7910

84. If any activity on this project will disturb any land survey monumentation, including but not limited to vertical control points (benchmarks), said monumentation shall be located and referenced by or under the direction of a licensed land surveyor or registered civil engineer authorized to practice land surveying prior to commencement of any activity with the potential to disturb said monumentation, and a corner record or record of survey of the references shall filed with the County Surveyor pursuant to Section 8771(b) Business and Professions Code.

85. Pursuant to Sections 8762(b) and/or 8773 of the Business and Professions Code, a Record of Survey or Corner Record shall be filed under any of the following circumstances:
    a. Monuments set to mark property lines or corners;
    b. Performance of a field survey to establish property boundary lines for the purposes of construction staking, establishing setback lines, writing legal descriptions, or for boundary establishment/mapping of the subject parcel;
    c. Any other applicable circumstances pursuant to the Business and Professions Code that would necessitate filing of a Record of Survey.

PUBLIC HEALTH – Environmental Health Services (DEHS) (800) 442-2283

86. Refuse Storage and Disposal. All refuse generated at the premises shall at all times be stored in approved containers and shall be placed in a manner so that environmental public health nuisances are minimized. All refuse not containing garbage shall be removed from the premises at least 1 time per week, or as often as necessary to minimize public health nuisances. Refuse containing garbage shall be removed from the premises at least 2 times per week, or as often if necessary to minimize public health nuisances, by a permitted hauler to an approved solid waste facility in conformance with San Bernardino County Code Chapter 8, Section 33.0830 et. seq. For information, please call EHS/LEA at: 1-800-442-2283.

87. Septic System Maintenance. The septic system shall be maintained so as not to create a public nuisance and shall be serviced by a EHS permitted pumper. For information, please call EHS/Wastewater Section at: 1-800-442-2283. Sewage Disposal. Method of sewage disposal shall be EHS approved onsite wastewater treatment system (OWTS).

88. Water Purveyor. Water purveyor shall be EHS approved.

89. Vector Control Requirement. The project area has a high probability of containing vectors. EHS Vector Control Section will determine the need for vector survey and any required control programs. A vector clearance letter shall be submitted to EHS/Land Use. For information, contact Vector Control at (800) 442-2283.

COUNTY FIRE DEPARTMENT – Community Safety Division (760) 254-5474

90. Building Plans: Proposed building plans shall be submitted to the Fire Department for review and approval.

91. Primary Access Paved: Prior to building permits being issued to any new structure, the primary access road shall be paved or an all-weather surface and shall be installed as specified in the General Requirement conditions, including width, vertical clearance and turnouts.

92. Fire Fee: The required fire fees shall be paid to the San Bernardino County Fire Department/Community Safety Division. EZOP

PRIOR TO FINAL CLOSURE
The Following Conditions Shall Be Met

LAND USE SERVICES – Planning Division (909) 387-8311

93. Equipment. At the time of termination of the operation for any reason, all equipment, structures and refuse associated with the operation shall be removed from the site, all hazards mitigated, and reclamation initiated as per the approved Mining/Reclamation Plan 2022M-01.

94. Access Roads. All access roads on site, which will not be retained for post-operation uses or if requested to remain in-place by the BLM on public lands, shall be reclaimed at the conclusion of ground-disturbing activities.

95. Site Re-Contour. The applicant/operator shall re-contour the site at the conclusion of operations (slopes, stockpiles, roads, etc.) consistent with the reclamation plan.

96. Reclamation Verification. As portions of the site are reclaimed, they shall be identified on a map. The final map shall be provided to County Planning Division for review andapproval.

97. Reclamation Completion. Following reclamation verification and release of Financial Assurances pursuant to CCR Section 3805.5, Planning will prepare a “Notice of Completion” on a form to be approved by the County Recorder’s Office. The operator shall pay any and all review and recording fees.

98. Wells. Upon final reclamation, evidence shall be provided that all wells, exploration holes or test holes, as defined by DWR Bulletin 74-81 as revised in 1988 or the latest revision are destroyed in accordance with DEHS regulations and in such a manner that will no longer be a hazard to the health and safety of people and wildlife.

CONCLUSION OF CONDITIONS

EXHIBIT E

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Monitoring and Reporting Program
Initial Study/Mitigated Negative Declaration
Iron Age Mine, LLC

Prepared by

County of San Bernardino, Land Use Services Department
385 N. Arrowhead Avenue, 1st Floor
San Bernardino, California 92415-0182
Contact: Reuben J. Arceo Contract Planner

JUNE 23, 2022

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1 Introduction

The California Environmental Quality Act (CEQA) requires that a public agency adopting a Mitigated Negative Declaration (MND) take affirmative steps to determine that approved mitigation measures are implemented after project approval. The lead or responsible agency must adopt a reporting and monitoring program for the mitigation measures incorporated into a project or included as conditions of approval. The program must be designed to ensure compliance with the MND during project implementation (California Public Resources Code, Section 21081.6(a)(1)).

This Mitigation Monitoring and Reporting Program (MMRP) will be used by the County of San Bernardino (County) to ensure compliance with adopted mitigation measures identified in the MND for the proposed Star Point Properties Sixth Street Warehouse Project when construction begins. The County, as the lead agency, will be responsible for ensuring that all mitigation measures are carried out. Implementation of the mitigation measures would reduce impacts to below a level of significance for air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise, and tribal cultural resources.

The remainder of this MMRP consists of a table that identifies the mitigation measures by resource for each project component. Table 1 identifies the mitigation monitoring and reporting requirements, list of mitigation measures, party responsible for implementing mitigation measures, timing for implementation of mitigation measures, agency responsible for monitoring of implementation, and date of completion. With the MND and related documents, this MMRP will be kept on file at the following location:

County of San Bernardino
385 N. Arrowhead Avenue, First Floor
San Bernardino, California 92415

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2 Mitigation Monitoring and Reporting Program Table

Table 1 Mitigation Monitoring and Reporting Program

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
Aesthetics				
AES-1 Glare Resistance Shielding .	General Mining Activity	Project applicant	County of San Bernardino	
Biological Resources				
BIO-1 Environmental Awareness Training. • The Bureau and Iron Age will designate a person to act as the field contact representative with specific experience in the implementation of environmental compliance programs. The field contact representative will serve as the environmental compliance monitor and will be present throughout the construction of the mill site and access road, mining operations, and reclamation. This individual will serve as liaison among the Service, Bureau, construction workers, truck drivers, authorized biologist(s), and biological monitor(s). The field contact representative, working with an authorized biologist, will ensure compliance with the conditions and requirements of project permits and approvals set forth in this biological opinion and supporting plans appended to the biological assessment. • The field contact representative will have the authority to stop project activities if a desert tortoise is in danger or protective measures are not adequately implemented. This would include enforcing the 15-mile-per-hour speed limit through desert tortoise habitat along the access road and ensuring that project personnel do not travel cross country with motorized vehicles. • During the construction of the mill site and access road, Iron Age will use authorized biologists approved by the Service and biological monitors approved by an authorized biologist to	General Mining activity	Project applicant and their construction contractor – Survey to be completed by a Qualified Biologist	County of San Bernardino	Prior to Reclamation

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
ensure compliance with the protective measures for the desert tortoise. Use of authorized biologists and biological monitors will be in accordance with the most up-to-date Service guidance and will be required for monitoring of any construction activities that may injure or kill desert tortoises. The authorized biologist must have thorough and current knowledge of desert tortoise I behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to conduct their required duties safely and successfully. Authorized biologists arc approved to monitor project activities and are responsible for locating desert tortoises and their sign (i.e., conducting clearance surveys). Authorized biologists must ensure proper implementation of protective measures and make certain that the effects or the project on the desert tortoise and its habitat are minimized in accordance with a biological opinion or incidental take permit. All incidents of noncompliance in accordance with the biological opinion or permit must be recorded and reported. Biological monitors will be approved by the authorized biologist to monitor project activities, ensure proper implementation of protective measures, and record and report desert tortoise and sign observations in accordance with approved protocol. They will report incidents of noncompliance in accordance with a biological opinion or permit, move desert tortoises from harm's way when desert tortoises enter project sites and place these animals in "safe areas" pre-selected by authorized biologists or maintain the desert tortoises in their immediate possession until an authorized biologist assumes care of the animal. Monitors assist authorized biologists during surveys and serve as "apprentices" to acquire experience. Monitors should not conduct clearance surveys or other specialized duties of the authorized biologist unless directly supervised by an authorized biologist; "directly supervised" means the authorized biologist has direct voice and sight contact with the monitor. Refer to the	Any sightings of desert tortoises, including dead tortoises must be reported to the authorized biologist. The report shall include photos, date time cause of death. Monitors assist authorized biologists during surveys and serve as "apprentices" to acquire experience.		San Bernardino County California Fish and Wildlife	

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
following of additional information: http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise.html. • The use of authorized biologists during mining operations and reclamation activities will be on an as-needed basis. In this case, the field contact representative will consult authorized biologists approved by the Bureau and the Service to determine the most appropriate course of action when a desert tortoise enters the project site, is found along the access road, or has established burrows within the project area that may be affected by the mining operations and may need to be moved out of harm's way. • The Bureau will review the credentials of all individuals seeking approval as authorized biologists. The Bureau will provide the credentials of appropriate individuals to the Service for approval at least 30 days prior to the time they are needed in the field. • The authorized biologists will be responsible for all aspects of clearance surveys, monitoring, developing, and implementing the worker environmental awareness program, communication with agency personnel, reporting, and be present, along with biological monitors, during construction of the mill site and access road. An authorized biologist will be available during the mining operations and reclamation, as needed, when activities are likely to affect desert tortoises such that a more highly skilled biologist is needed (e.g., conducting surveys to ensure desert tortoises are not present in vegetated areas, excavating burrows, etc.). The authorized biologists will supervise and train the biological monitors. Training by authorized biologists will include ensuring biological monitor and the field contact representative are qualified to capture, handle, and move desert tortoises in situations where an authorized biologist is unavailable or for less complicated tasks (e.g., moving a desert tortoise from under a vehicle or off the access road, etc.).	The Bureau will review the credentials of all individuals seeking approval as authorized biologists	Project applicant		

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
• The field contact representative will act on the advice of the authorized biologist(s) and biological monitor(s) to ensure conformance with the protective measures set forth in this biological opinion. Additionally, the authorized biologist(s) will have the authority to immediately stop any activity that is not in compliance with these conditions. • The Bureau will ensure that all workers associated with the proposed Iron Age Project receive worker environmental awareness training to ensure protection of the desert tortoise and its habitat The field contact representative and authorized biologist will administer the training at the onset of the project, annually, and when new employees are hired to all onsite personnel and anyone else (e.g., contractors, truck drivers, etc.) who needs to travel to the mine site. The worker environmental awareness training will: o Be developed by or in consultation with the authorized biologist and consist of a presentation in which supporting written material and electronic media, including photographs of protected species, are made available to all participants; o Provide an explanation of the purpose and function of the desert tortoise avoidance and minimization measures and the possible penalties for not adhering to them; o Inform workers that the field contact representative and the authorized biologists have the authority to halt work in any area where an unauthorized adverse impact to biological resources may occur if the activities continued; o Discuss general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures; o Provide an explanation of the sensitivity and locations of the vegetation, biological resources, and habitat within and adjacent to work areas, and proper identification of these resources; o Place special emphasis on the desert tortoise, including information on physical characteristics, photographs,				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
distribution, behavior, ecology, sensitivity to human activities, legal protection. reporting requirements. and protective measures required for the project; o Provide contact information for the authorized biologist(s) and biological monitor(s) to handle late comments and questions about the material discussed in the program. as well as notification of any dead or injured wildlife species encountered during project-related activities. o Direct all workers to report all observations of listed species and their sign to an authorized biologist for inclusion in the yearly compliance report; o Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and o Provide information regarding the effects of predation on the desert tortoise by common ravens (Corvus corax) and other predators and the measures that have been developed to reduce the likelihood that predators will be attracted to the project area. • Prior to construction of the mill sites at State Route 62, Iron Age will install fencing to exclude desert tortoises from entering the site. The fence will be constructed according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (Service 2009). If desert tortoises are encountered during installation of the fence, the authorized biologist will move the individual the shortest distance possible to an area outside the fence on public land where it will be safe. The authorized biologist will use his or her judgment regarding the best measures to use to ensure the desert tortoise does not immediately return to the area inside of the fence or be placed in a location where it could enter State Route 62. The authorized biologist may contact the Service to discuss specific situations if the need arises. • After the exclusionary fencing has been installed and before the onset of ground-disturbing activities, the authorized				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
biologist will follow established survey protocols and remove all desert tortoises from within the fenced area. All desert tortoises will be considered to have been removed once a complete survey of the work area is conducted without finding any additional animals. Desert tortoises that are found inside the fenced area will be placed on the other side of the exclusion fence. The authorized biologist will use his or her best judgment to determine the optimal location for placement of desert tortoises, which would include ensuring the animals are not relocated into areas that may isolate them from the desert tortoise population in the area or enable them to access the highway. • Iron Age will maintain the integrity of the fence for the duration of the proposed project to ensure that desert tortoises are excluded from the mill site during construction and until all mining operations and activities, including reclamation efforts, related to this proposed action are concluded. The fence will be inspected regularly and repaired when necessary; initially, it will be inspected monthly, but Iron Age may adopt a different schedule, based on acquired experience. • An appropriate number of authorized biologists and biological monitors will be available during construction of the mill sites and access road for the protection of the desert tortoise. Authorized biologists will monitor each activity where conditions exist that may result in injury or mortality of desert tortoise (e.g., clearing, grading, re-contouring, and restoration activities). • For the construction of the access road, the authorized biologist or a qualified biological monitor will survey ahead of the project activities and halt construction if he or she finds a desert tortoise in the path of construction equipment. Project activities will not resume until the desert tortoise moves out of harm's way or the authorized biologist has relocated it. • During mining operations, the field contact representative will inspect all excavations, trenches, and areas				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
that are not within desert tortoise exclusion fencing on a regular basis (several times per day). If a desert tortoise is discovered in an area planned for excavation or an area where the animal may be injured or killed, the field contact representative will coordinate with an authorized biologist to determine the best course of action to protect or move the animal to a safe location in accordance with the field manual (Service 2009). The field contact representative will also monitor vehicle speeds along the access road and ensure that drivers maintain a speed limit of 15 miles per hour when temperatures are between 50 and 100° F. • Iron Age will survey for invasive weeds at the earliest spring season following the letter of authorization to proceed issued by the Bureau. It will provide to the Bureau a list of surveyors and their qualifications, and a work plan that describes a proposed survey methodology. No surveys may be conducted without the approval of the authorized officer. Invasive weed surveys will be repeated every 5 years until reclamation is complete. The goals of this effort are to detect and remove any non-native invasive weed that was not present prior to the onset of the proposed action and to prevent Sahara mustard (Brassica tourneforlii) from becoming the dominant annual plant in the action area. Non-native invasive species will be removed through manual, mechanical or chemical methods depending on the specific circumstances and as approved by the Bureau's authorized officer. If a new species of non-native weed is observed prior to the 5-year survey, Iron Age will contact the Bureau for authorization to remove the infestation. • During reclamation or erosion control, the mine operator will use only certified weed free straw, mulch, and seed native soils unless approved by the authorized officer. • Desert tortoises found in the project area will be handled and moved by an authorized biologist in accordance with the most current Service protocol. If a desert tortoise is found in harm's way, all potentially harmful activity will cease				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
until the desert tortoise moves or is moved out of harm's way by an authorized biologist, biological monitor, or field contact representative; as described in measure 6, biolo81cal monitors and the field contact representative may move desert tortoises from harm's way in less complicated situations. Desert tortoises that need to be moved from harm's way will be placed on adjacent Bureau land, using techniques described in the field manual (Service 2009). • Desert tortoises that are moved offsite and released into undisturbed habitat on public lands will be placed in the shade of a shrub, in a natural unoccupied burrow similar to the hibemaculum in which it was found, or in an artificially constructed burrow in accordance with techniques described in the field manual (Service 2009). • Desert tortoises excavated from burrows will be moved to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or unoccupied natural burrows will be 150 to 300 feet from the original burrow. Relocated desert tortoises will not be placed in existing occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the authorized biologist will construct one. Desert tortoises moved during inactive periods will be monitored for at least 2 days after placement in the new burrows to ensure their safety. • Iron Age will clearly mark, sign, or flag all project activity areas at the outer boundaries before the onset of construction and during mining operations. All activities will be confined to designated areas. • Iron Age will not create any new unpaved or additional paved roads. If unforeseen circumstances require disturbance beyond the project area limits, Iron Age will contact the Bureau. • The field contact representative (with input from an authorized biologist) will inform workers at regular briefings if desert tortoises are likely to be active that day or in the foreseeable future. When desert tortoises are expected to be				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
active, workers will inspect the ground around and underneath any vehicle or construction equipment that has been parked longer than 2 minutes within habitat of desert tortoises prior to moving the vehicle. If the desert tortoise does not move out of harm's way of its own volition or is in any other situation where it is at risk of being killed, the worker will contact the field contact representative, authorized biologist or biological monitor to move it. • The Bureau will ensure that workers do not bring firearms and pets into the project area This measure does not apply to law enforcement personnel and working dogs. • To reduce the attractiveness of the project area to common ravens and coyotes, Iron Age will place trash in sealed containers and empty the containers at a commercial facility on a weekly basis. The project area will be kept as clean of debris as possible. Compensation Iron Age committed to offsetting the loss of desert tortoise habitat by paying compensation at a rate of 5 to 1 for impacts on undisturbed areas within the desert wildlife management area (15.7 x 5 = 78.5 acres) and 1 to 1 for impacts on undisturbed areas outside desert wildlife management area (5.3 acres). The boundaries of the desert wildlife management area and critical habitat coincide in the project area. Alternatively, Iron Age may transfer 83.8 acres of land to the Bureau. .				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
BIO-2 Sensitive Wildlife In order to mitigate potential impacts to specific species that may occur within the project impact area, the following measures are recommended: American Badger: • 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 which have been flagged to avoid adverse impacts to the badger. All workers shall be instructed that their activities are restricted to flagged and cleared areas; and • An on-call biological monitor will be available to help identify any potential impacts to the badger. Le Conte's Thrasher • If mining activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify any nests. If nests are found, the nest will be flagged and avoided. In accordance with the Migratory Bird Treaty Act, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed; • All project activities will remain within the established project area and unnecessary vehicle or personnel activity will be avoided outside the project area. Potential direct impacts to the species include being hit by vehicles on access roads, grading of new access roads, preparation of staging locations, and general disturbance due to increased human activity. Coast horned lizard and Mojave fringe-toed lizard:	During Mining Activities	Project applicant and their construction contractor – Survey to be completed by a Qualified Biologist Iron Age LLC shall conduct Bio awareness training for employees including new employees and annual refresher training. The training shall include potential penalties if wildlife habits are disturbed or threatened. CDFW shall provide assistance in developing trainng programs as needed.	County of San Bernardino County of San Bernardino California Fish & Wildlife	Prior to Reclamation activities
BIO -3 Migratory Birds If construction or land clearing activities will occur during nesting season (March 15-September 15), a pre-construction survey will be conducted in the project impact area to identify	During Mining Activities		County of San Bernardino	

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
any nests. If nests are found, the nest will be flagged and avoided. In accordance with the MBTA, if an active bird nest is located, the nest site shall be fenced a minimum of 200 feet in all directions, and the area shall not be disturbed until after the nest becomes inactive. If no active nests are observed during the survey, vegetation may be removed.			County of San Bernardino California Fish & Wildlife	
Bio -4 Sensitive Plants Joshua tree surveys will be conducted to mark any Joshua trees found within the road alignment and in mining areas. If any Joshua trees will be impacted, compliance with CESA will be required and an Individual Take Permit (ITP) with CDFW will need to be prepared and processed.	Prior to Mining activities	Project applicant and their construction contractor – Survey to be completed by a Qualified Biologist	County of San Bernardino California Fish & Wildlife	
Cultural Resources				
CR-1 Grading Monitor. A qualified archaeologist approved by the County will conduct a pre-construction survey for cultural resources to mark sensitive resources for avoidance. Operations shall not knowingly disturb, alter, or destroy any historical or archaeological resource. The employees and contractors involved in the project will receive cultural resources awareness training, which will be directed towards recognizing and avoiding these features. Access roads and operation areas will set back from any historical or archaeological features which will be prominently flagged in the field to avoid disturbance. .	During Mining Activities	Project applicant and their construction contractor	County of San Bernardino	
CR-2 Inadvertent Historical Discoveries.. • In the event archaeological, paleontological and/or historical resources, including pottery, rock art, middens or human remains, are uncovered during earthmoving activities, all work in that area shall cease immediately and a qualified archeologist shall be retained to access the findings, and if necessary, provide appropriate disposition of the resources. Earthmoving shall be	During construction	Project applicant and their construction contractor	County of San Bernardino	

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
diverted temporarily around the deposits until they have been evaluated, recorded, excavated, and/or recovered as necessary. Earthmoving shall be allowed to proceed on the site when the archaeologist, in consultation with the appropriate Native American Tribe(s) and the County of San Bernardino Museum, determines the resources are recovered to their satisfaction. • If possible human remains are encountered during any earthmoving activities, all work shall stop in the area in which the find(s) are present, and the San Bernardino County Coroner must be notified. The appropriate land manager (BLM or County) and the owner of the site shall also be called and informed of the discovery. If the remains are located on federal public lands, the BLM land managers/federal law enforcement/federal archaeologist is to be informed as well because of complementary jurisdiction issues. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. The Coroner will determine if the bones are historic/archaeological or a modern legal case. • State law dictates that the Native American Heritage Commission (NAHC) shall be notified in the event that remains are determined to be human and of Native American decent, in accordance with California Public Resources Code Section 5097.98. • All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA)16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the state of California regardless of the remains are modern or archaeological.				

Mitigation Measure	Implementation Timing	Party Responsible for Implementation	Party Responsible For Monitoring	Date of Completion/Notes
• Modern Remains - If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area. • Archaeological Remains - If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands. • Remains discovered on federally owned/managed lands - After the Coroner has determined the remains are archaeological or historic and there is no legal question, the BLM Barstow Field Office Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 Inadvertent discoveries, must be followed. • Remains discovered on non-Federally owned/managed lands - After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American, he/she shall contact by telephone within 24 hours, the California NAHC. The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the landowner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the descendant's recommendations, the owner or the descendent may request mediation by the NAHC				

EXHIBIT F

Water Supply Assessment

Water Supply Assessment

for the

Proposed Iron Age Mine

Application No. AP20120018/SMAR

LILBURN
CORPORATION

1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-1818

APRIL 2014

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1.0 EXECUTIVE SUMMARY

This Water Supply Assessment (WSA) was prepared for the County of San Bernardino's use in reviewing the proposed Iron Age Mine (Application No. AP20120018/SMAR) and in preparing a California Environmental Quality Act (CEQA) Initial Study for the Proposed Project. This WSA evaluates the water supply sources that may be used to meet water demands of the proposed mine operation. The Proposed Project is not within the service area of a water supplier, a State Water Project contractor, or a regional groundwater management agency. Neither is it within an adjudicated groundwater basin.

The Iron Age Mine is an iron ore deposit that has been explored and extensively mined prior to the enactment of the Surface Mining and Reclamation Act (SMARA) and has been left un-reclaimed for over 50 years. The Iron Age Mine project totals 97 acres located approximately 18 miles east/southeast of the City of Twentynine Palms and approximately 3.4 miles south of State Highway 62 (SH 62) in the Pinto Mountains *(refer to Chapter 2 for exhibits)*.

The mine occurs within portions of Sections 20 and 29, Township 1 South, Range 13 East, San Bernardino Base and Meridian, and in portions of Sections 7, 17, 18, 20, and 29 Township 1 South, Range 13 East, SBBM. The Proposed Project will beneficiate and transport offsite the iron ore tailings deposited historically and then reclaim all areas disturbed by the removal activities. Quarrying new ore is not proposed.

Water for the mining operations is anticipated to be provided by groundwater extraction; a well is proposed to be drilled either on the Iron Age property, or nearby in the adjacent Dale Valley Groundwater Basin on the Mill Site. Daily water demand is estimated at approximately 29,000 gallons for operations with 60% of that demand being met by recycled process water. Process water will be recycled through a lined holding pond on-site. Therefore, an estimated 11 acre-feet of groundwater will be pumped annually (40% of 29,000 x 312 operating days). A water storage tank of 10,000 gallons or smaller will be placed at both the plant site and the mill site. Water will be used for product screening, dust control, and road dust suppression.

SB 610 requires a WSA in connection with the CEQA review of, among other things, any "processing plant" on more than 40 acres of land. The Proposed Project is also within the region of the County for which Ordinance No. 3872 relating to groundwater management in the unincorporated, unadjudicated desert region of the County applies. The County Standard Procedure No. 8-11 requires a Hydrogeologic Report for all projects that contemplate the extraction of underlying groundwater at a total rate equal to or greater than ten (10) acre feet per year. The County Geologist may apply a lesser threshold to projects within impaired or very limited groundwater basins.

This document examines the current condition of the groundwater supply which underlies the proposed Mill Site property and finds that the Dale Valley Groundwater basin (aquifer) and its sources of supply are adequate to supply the Proposed Project for a 20-year period.

2.0 INTRODUCTION

2.1 BACKGROUND

Iron Age Mine, LLC (Iron Age) is submitting a Mine Reclamation Plan (Plan) for the Iron Age Mine. The Iron Age Mine is an iron ore deposit that has been explored and extensively mined prior to the enactment of the Surface Mining and Reclamation Act (SMARA) and has been left un-reclaimed for over 50 years. It is located approximately 18 miles east/southeast of the City of Twentynine Palms and approximately 3.4 miles south of State Highway 62 in San Bernardino County (see Figure 1 - Regional Map) in the Pinto Mountain range. The site is accessed from State Highway 62 east of Twentynine Palms via Iron Age Mine Road, an unimproved dirt road (see Figure 2 - Vicinity Map).

The Proposed Project will beneficiate and transport off-site the iron ore tailings that were left behind prior to the enactment of SMARA and then reclaim all areas disturbed by the removal activities. The Iron Age Mine project totals 97 acres, of which 76 acres are currently disturbed. Reclamation will be implemented on a total of 78 acres; 8.5 acres of disturbance at the mill site claims, 37.5 acres of tailings on unpatented land, and 32 acres of tailings and quarry areas on patented lands. The 19 acres of roads will remain in–place. Unlike most reclamation plans, which reclaim areas planned for mining, the Mine Reclamation Plan will reclaim approximately 78 acres currently covered with iron ore tailings deposits, and the operations will restore areas back to the original grade and vegetation habitat. All mining operations and reclamation activities are anticipated to be completed within 20 years. A water supply for all activities will be required during this time frame. The prior water supply for the historic mining operations at the site is not known.

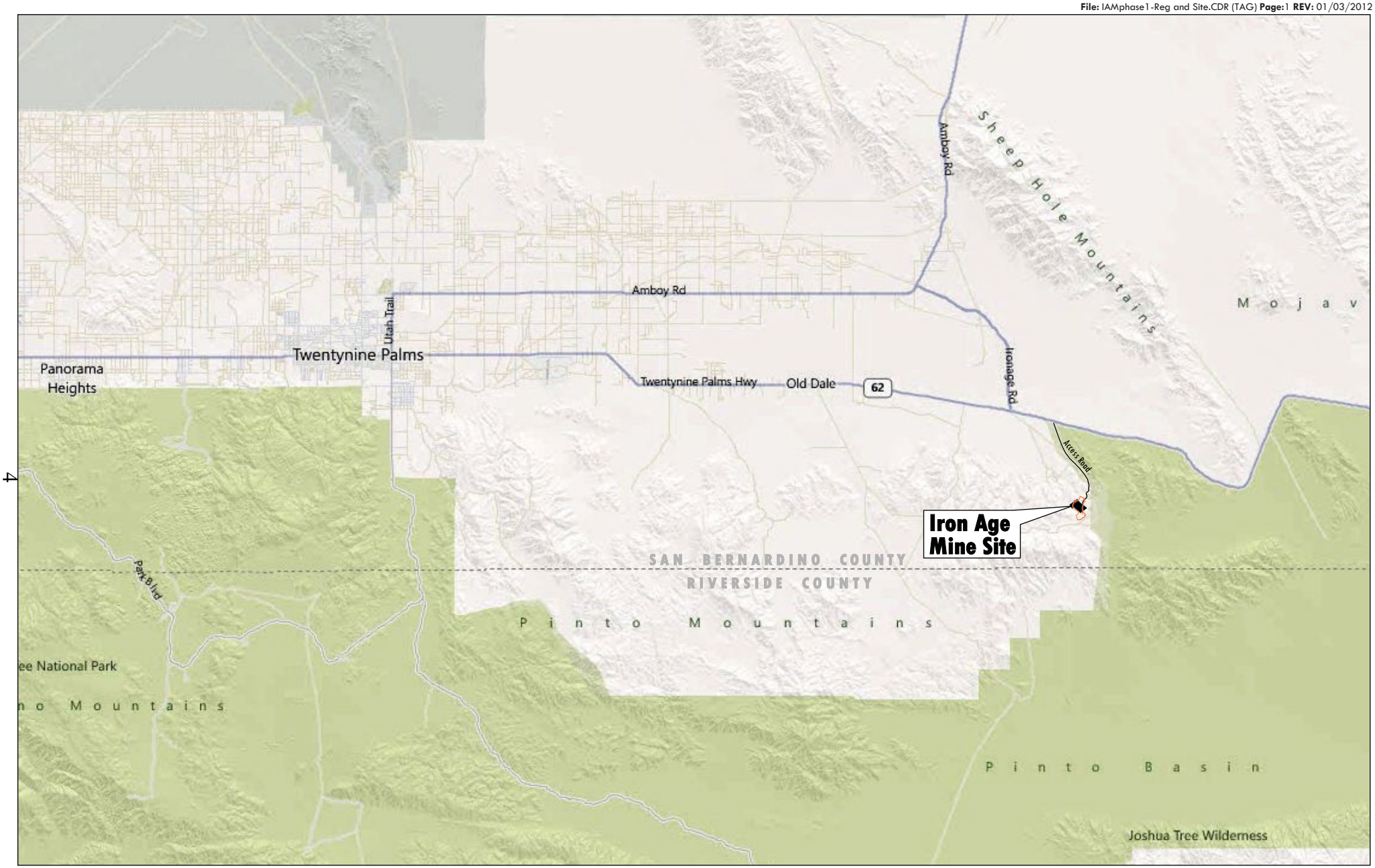
Table 1
Iron Age Mine
Operations Phasing, Areas and Schedule

Operational Phases	Unpatented Acres	Patented Acres	Total Acres[2] (approx.)	Tons Removed (Millions)	Approximate Years
1A	25.5	7.0	32.5	0.5	1 (Yr. 1)
1B	22.8	8.0	30.8	5.5	7 (Yrs. 2-8)
2	0	19.0	19.0	2.4	3 (Yrs. 9-11)
3	14.7	0	14.7	3.6	4 (Yrs. 12-15)
Phase 4 Final Reclamation[1]			---	---	5 (Yrs. 16–20)[1]
Total	**63.0**	**34.0**	**97.0[2]**	**12**	**15 (operations) 5 (reclamation)[1]**

Areas and tons are rounded and approximate.

[1] Active reclamation for approx. 5 years and monitoring and remediation as necessary until revegetation success criteria achieved.

[2] 76 acres currently disturbed; 78 acres to be reclaimed, approximately 19 acres of roads will be left in place per BLM direction and to maintain access to site for monitoring.



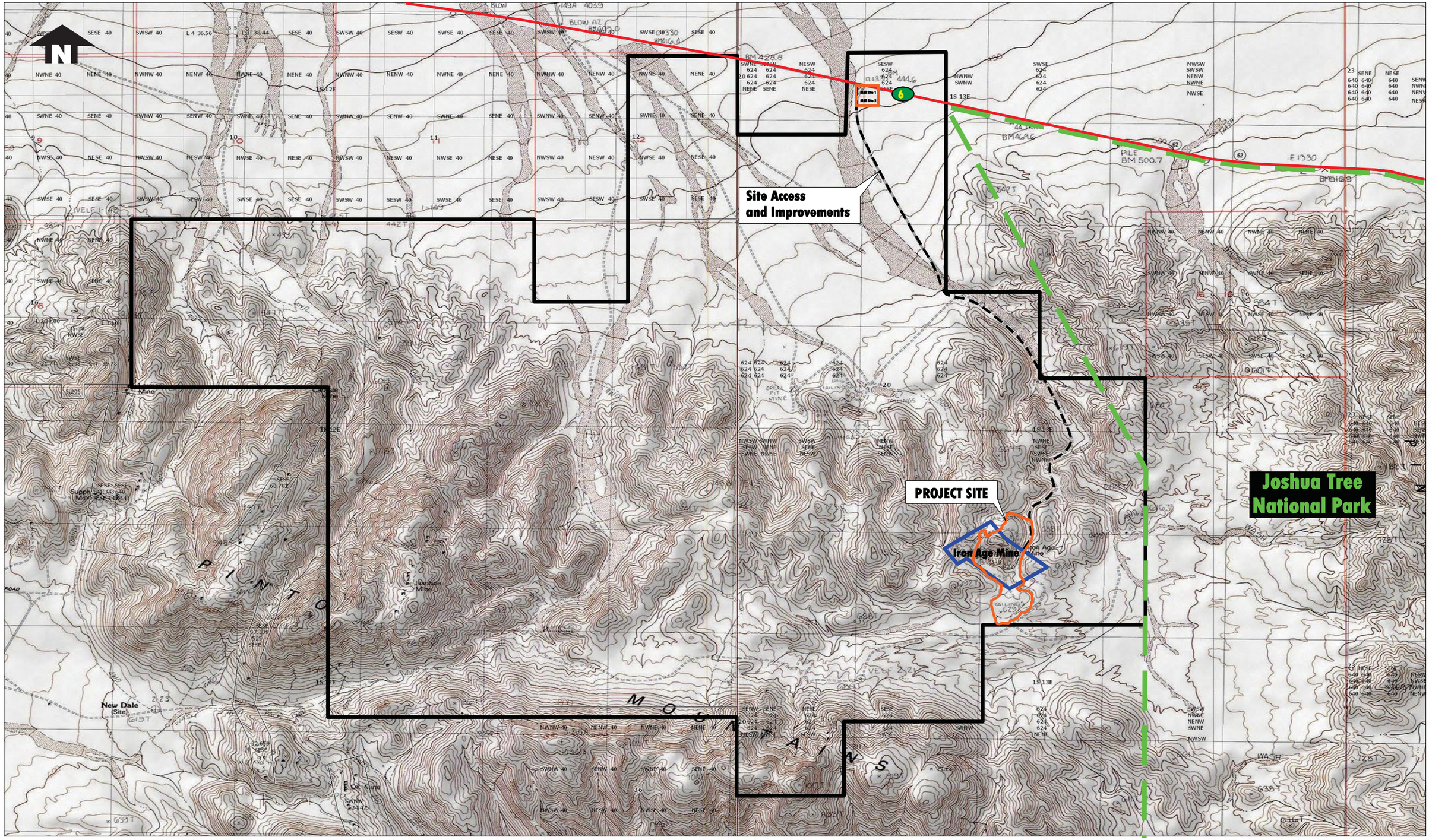
REGIONAL LOCATION

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 1

Mile 0 4

LILBURN CORPORATION



0 0.5 1

Scale: 1Inch = 0.5 Miles

Source: U.S.G.S.7.5 Min. New Dale Quadrangle, 1985.

LILBURN CORPORATION

LEGEND

- Iron Age Mine Patented Land
- Extent of Claim Holdings
- Joshua Tree National Park Boundary
- Proposed Project (Plus Access Road and Mill Sites)

PROJECT VICINITY

Iron Age Mine Environmental Assessment - Iron Age Mine, LLC
San Bernardino County, California

FIGURE 2

The removal of the tailings will provide a marketable product and provide the funds necessary to reclaim a heavily disturbed area back to vacant open space and re-establish wildlife habitat. Based on aerial photo reconnaissance and sampling of the existing tailings stockpiles, the site has an estimated reserve of 12 million tons of iron ore with an average concentration of 62 percent iron. Maximum throughput at the plant will be approximately 2.3 million tons per year; 920,00 tons of product and approximately 1.4 million tons per year of reduced-grade ore and country rock that will be utilized to reclaim unsafe conditions within the abandoned quarry. The site will be mined at a maximum average production rate of 920,000 tons annually which will provide reserves for up to 15 years. Implementation of final reclamation would occur over a five-year period and is anticipated to conclude operations in 2029 and reclamation in 2034.

The mining operation would consist of excavating, drilling, and occasional blasting of the tailings faces and loading the broken iron rock into a feeder, screen sorter, and magnetic separator designed to increase iron concentration to exceed 60% iron. Upon separation, off-road haul trucks will transport the iron ore via the mine access road to a proposed mill site facility located south of SH 62 on patented BLM land. Reclamation will include the removal of all equipment, structures, tanks and debris from the site. Compacted surface material in the processing area, roads to be closed, and the former stockpile areas will be loosened and ripped by mechanical means and seeded with native plant species. The mine was not previously reclaimed but has experienced a moderate level of natural revegetation. The project site vegetation is characterized as Creosote Bush and brittlebush series habitat types.

Reclamation will be phased concurrently at phase completion as tailing piles are depleted. Removed ore stockpile areas will be ripped and revegetated. At the completion of operations, within one year, all equipment and stockpiles will be removed and any remaining refuse will be disposed of at an appropriate offsite disposal site. The surface material will be re-graded to approximate natural-looking contours. In total on both BLM and patented lands, approximately 78 acres will be reclaimed of which approximately 70 acres will be revegetated. Reclamation activities are planned for a 5-year period.

Operation and reclamation water will be provided by groundwater. Iron Age anticipates the source to be a well drilled on or near the Iron Age Mine property, or in the alternative, in a yet-to-be identified location within the Dale Valley Groundwater Basin, adjacent to the north of the Pinto Mountains. Process water will be recycled on-site, reducing the amount of “fresh” water required, through a lined holding pond. A 10,000 gallon water storage tank will be placed at the plant site. A water truck will be available for mobile use in dust control.

2.2 PURPOSE OF DOCUMENT

Since the Proposed Project is subject to the California Environmental Quality Act process (CEQA) an Initial Study/Negative Declaration will be prepared. The County of San Bernardino, CEQA Lead Agency for the Proposed Project, has determined that a Water Supply Assessment (WSA) is necessary to complete the Proposed Project’s CEQA process and to approve the

project for development since the proposed development is a "Project" as defined by Water Code Section 10912.

Upon request of a local government, a public water supplier (PWS) is required by law to provide documentation regarding the water supply for a new project. The WSA is included in the CEQA documentation and it becomes information used in the approval process. In the case of the Proposed Project, there is no PWS within approximately 18 miles of the Project Site. The nearest PWS is the Twentynine Palms Water District which relies solely on groundwater as its source of supply.

There is no regional water purveyor or groundwater management agency that overlies the area of the Project Site and therefore an Urban Water Management Plan does not exist for use in preparation of this WSA. This document is limited to a discussion of the known available data regarding the water supply, and the Proposed Project's impact on the area's water supplies.

2.2.1 Applicability of a Water Supply Assessment

A WSA is required because the Proposed Project occupies more than 40 acres of land (Water Code Section 10912; SB 610). A June of 2010 update to SB 610 requires that a processing facility is a "project" within the meaning of SB 610 if it meets the 40-acre threshold, even if only small structures will be constructed on-site.

2.2.2 Applicability of a Water Supply Verification

A Water Supply Verification (WSV) is required prior to the approval of a tentative subdivision map, or a parcel map for which a tentative map was not required, or a development agreement for a subdivision of property of more than 500 dwelling units, except as specified, including the design of the subdivision or similar type of improvement. The purpose of the WSV is to provide the legislative body of a city, county or the designated advisory agency with written verification from the applicable public water purveyor that a sufficient water supply is available or, in addition, a specified finding is made by the local agency that sufficient water supplies are, or will be, available prior to completion of the project.

A WSV is not required in this case because the Proposed Project is not a subdivision or parcel map for more than 500 dwelling units, or a development agreement. Additionally, the Project Site is not within the service area of a PWS.

2.2.3 Application of County Ordinance No. 3872

The Proposed Project is within the region of the County for which Ordinance No. 3872 relating to groundwater management in the unincorporated, unadjudicated desert region of the County applies. The ordinance was adopted October 29, 2002 to protect groundwater resources within the Desert regions of the County that were not located within the purview of public water

districts. The Ordinance prohibits the construction of new groundwater wells, unless otherwise exempted, without receipt of a valid permit, subject to review under CEQA.

However the Proposed Project is exempt from application of the Ordinance for the following reasons:

> 33.06552 Scope and Exclusions (c) shall not apply to (3) groundwater well operations approved before the effective date of this Article; (4) groundwater wells used in conjunction with mining operations for which a currently valid and complied with mining reclamation plan has been established; and (8) groundwater wells located on Federal lands.

The County Standard Procedure No. 8-11 requires a Hydrogeologic Report for all projects that contemplate the extraction of underlying groundwater at a total rate equal to or greater than ten (10) acre feet per Year. The County Geologist may apply a lesser threshold to projects within impaired or very limited groundwater basins.

2.3 PUBLIC WATER SYSTEM

2.3.1 Description

The Proposed Project is located east of the City of Twentynine Palms. The Twentynine Palms Water District provides water to the city and surrounding area; the service area is approximately 87 square miles. The District is the nearest PWS to the Project Site and their easternmost service lateral is located in Wilshire Road, approximately 18 miles west of the Project Site. A PSW does not serve the area of the Proposed Project.

3.0 WATER DEMANDS

It is estimated that at maximum production, the dust control, product screening, and road dust suppression average daily water demand is approximately 29,000 gallons for operations with 60% of that demand being met by recycled process water. Process water will be recycled through a lined holding pond on-site. Therefore, an estimated 11 acre-feet of groundwater will be pumped annually (40% of 29,000 x 312 operating days) after the supply of recycled water is initially established. The water demand estimate for the first year's development and operations is 19 acre-feet. The mine would operate 6 days/week, 312 days/year.

No irrigation is required for the reclamation/revegetation efforts, only minor amounts for dust control during grading and road use. Requirements would likely require be substantially less than an average 11 acre-feet per year during operations.

3.1 PROJECT-SPECIFIC WATER CONSERVATION

No water conservation measures are proposed for the mine operation because water use will be limited to processing needs and dust control. There will be no landscaping irrigation requirements during operations or irrigation water revegetation as part of the reclamation plan.

In the event groundwater supplies would become limited, mining operations could be reduced because the term of the Reclamation Plan allows for a reduction or increase in processing to respond to product demands, as well as a sufficient periods of time for start-up and for end-of-mining site reclamation.

4.0 WATER SUPPLY ASSESSMENT

4.1 GENERAL

A requirement of a WSA is to identify and describe the water supply sources in the PWS that will serve the Proposed Project. Water Code Section 10910(d) requires a WSA to include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the project, and a description of the quantities of water received in prior years by the PWS.

4.2 IDENTIFICATION OF WATER SOURCES

4.2.1 Primary Water Sources

Groundwater would be the primary source of water, with three alternative locations for obtaining the water: 1) groundwater pumped from the Mill Site overlying the Dale Valley Groundwater Basin; 2) water pumped near the mine site in the Iron Mountains (not overlying a groundwater basin); and 3) groundwater pumped or purchased from nearby evaporative salt mine overlying the Dale Valley Groundwater Basin. The Iron Age Mine is located within the Pinto Mountains, a nonwater-bearing rock formation. The nearest groundwater basin, as mapped by the California Department of Water Resources (DWR), is the Dale Valley Groundwater Basin which is within the Colorado River Hydrologic Region. DWR Bulletin 118 identifies the surface area of Dale Valley Groundwater Basin ("basin") as 213,000 acres (333 square miles). The basin underlies Dale Valley and is described as being bounded by nonwater-bearing rocks of the Bullion Mountains on the north, of the Pinto Mountains on the south, of the Sheephole Mountains on the east, and by the Mesquite fault on the west (Bishop 1963). Surface runoff drains toward Dale (dry) Lake in the southeastern part of the valley. Groundwater movement is also toward the lake.

Average annual precipitation ranges to 6 inches. Recharge to the basin is by percolation of runoff from the slopes of the surrounding mountains and precipitation to the valley floor and by underflow past the Mesquite fault from the west (DWR 1961, 1979). The basin's total storage capacity has previously been estimated by DWR to be 2,000,000 acre-feet (1975) and 3,500,000 acre-feet (1979).

A well to be drilled on-site may not be adequate to supply the 11 acre-feet average annual demand because the water would be pumped from rock fractures in low-yielding formations. If the alternative sources of water supply from the Dale Valley Groundwater Basin prove to be too costly, a test well could be drilled on-site. The finding of an insufficient supply of water would cause the Applicant to utilize other permitted sources of water, which would be subject to a Supplemental Water Supply Assessment.

4.2.2 Additional Water Sources

In addition to a water supply well to be drilled at either at the mine site, or within the Dale Valley Groundwater Basin, water could be trucked from Twentynine Palms; the Proposed Project demands for wash water would require approximately three 4,000-gallon trucks daily to deliver water to the site. This source of water has not been evaluated within this Water Supply Assessment and would therefore require supplemental analysis.

4.3 ANALYSIS OF WATER SUPPLY

4.3.1 Groundwater

The groundwater source for the Iron Age Mine will be the Dale Valley Groundwater Basin or an alternative source that may be determined to exist within the low-yield formations of the Pinto Mountains, which would not be in an area overlying a groundwater basin. Water Code Section 10910(f) requires additional information when a groundwater basin is cited as a water supply source for a project. The additional information includes a description of the basin, the rights of the PWS to use the basin, the overdraft status of the basin, any past or planned overdraft mitigation efforts, historical use of the basin by the PWS, projected use of the basin by the Proposed Project, and a sufficiency analysis of the basin to supply the Proposed Project for a period of at least 20 years.

For this project, data from DWR is relied upon to determine the capability of the groundwater basin to provide a source of supply to the solar project without the threat of overdraft. Additionally, the water quality in the basin is generally unsuitable for domestic or agricultural purposes without substantial treatment. Salinity levels at one well being used by the mine operator have measured approximately 2,400 milligrams/liter (mg/L) of total dissolved solids (TDS). Groundwater quality data provided in Bulletin 118 indicate a TDS range of 1,218 to 332,000 mg/L. Levels are generally less than 2,000 mg/L north of Dale Lake and approximately 1,450 mg/L in the central part of the basin. DWR reports that TDS and fluoride concentrations impair domestic use, and boron and sodium concentrations impair agricultural uses.

4.3.1.1 Historical Groundwater Data

Two wells in the Dale Valley Groundwater Basin vicinity of the Project Site have historically been monitored and data results are posted on DWR's website. Wells are located in T1N, R12E,

Section 20. Depth to groundwater has historically averaged around 27 feet, with fluctuations averaging 5 feet (as measured between 1951 and 1984).

The groundwater budget for the Dale Valley Groundwater Basin was estimated by DWR in 1975. Natural recharge was estimated at 900 acre-feet/year (1975) and groundwater extractions from 1952 were estimated at one acre-foot. Changes in land uses have not occurred since that time. The Project Site is in a rural, desert environment that is sparsely populated. Other than the Dale Lake Salt Mine a few miles to the northwest, there are no industrial or commercial land uses.

As part of the requirements for this WSA, groundwater monitoring from the project well will be performed twice annually. Static well measurements will be collected in the Spring and Fall. Monitoring reports will be submitted to the County Geologist.

4.3.1.2 State Water Project Water

None of the 29 State Water Project (SWP) contractors are located near the Project Site. SWP water is not delivered in the vicinity of the Project Site.

4.3.1.3 Surface Water

Surface water in the vicinity is limited to storm flows as sheet flow and ephemeral drainages. There are no surface waters that provide a source of supply.

4.3.1.4 Recycled Water

No off-site recycled water is available to the project area.

4.3.2 Single and Multiple Dry Year Scenarios

The "Single and Multiple Dry Year Scenarios" are evaluated by water purveyors with more than 3,000 customers, on a 5-year basis and reported to DWR. The analysis is completed as part of updating each purveyors' Urban Water Management Plan, as required by the Urban Water Management Planning Act.

The Proposed Project is not within the service area of a water supplier, a State Water Project contractor, or a regional groundwater management agency. No water purveyor exists within approximately 17 miles of the Project Site and therefore an Urban Water Management Plan is not available.

The Proposed Project's estimated demand of 11 acre-feet per year will not adversely affect the water balance of the Dale Valley Groundwater Basin vicinity. The Proposed Project's consumptive use for operations or dust control is not expected to be affected by water quality.

5.0 IMPACTS ON OTHER PROJECTS

This Proposed Project will not have a significant impact on agricultural, potable or industrial users. Neither will this Proposed Project affect the water supply for any lower-income housing projects. DWR reports that TDS and fluoride concentrations impair the domestic use of Dale Valley Groundwater Basin water, and boron and sodium concentrations impair agricultural uses.

5.1 RIGHTS TO GROUNDWATER

The Proposed Project does not overlie an adjudicated groundwater basin and the owner has the right to drill and pump water for an overlying use. The Proposed Project has claimed two 5-acre Millsites south of SR-62 for use as a transfer and loading facility for sized and concentrated iron ore. Per 43 CFR 3844.1 “a millsite is required to be used or occupied distinctly and explicitly for mining or milling purposes in connection with the lode and placer claim with which it is associated.” A water well is considered a part of a milling purpose and incident to a mining operation if use is related to mining and milling purposes.

5.2 VERIFICATION

This document verifies the water supply for the Proposed Project as required by California Government Code 66473.7 is available.

LIST OF SUPPORTING DOCUMENTATION

A variety of supporting documentation was used in preparing this assessment. These include the following:

- California Department of Water Resources Water Data Base: www.water.ca.gov/waterdatalibrary
- California's Groundwater Bulletin 118: http://www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm
- Twentynine Palms Water District Boundary Map: http://www.29palmswater.org/pdf/District_Boundaries.pdf

EXHIBIT G

Findings

Iron Age Mine
IRON AGE MINE, LLC

Findings: Mining/Reclamation Plan 2022M-01

These Findings are for Mining/Reclamation Plan 2022M-01 for the Iron Age Mine. The proposed Project will remove historical iron ore tailings on 71 acres of public (BLM) lands and 34 acres of patented (private) lands. The project will reclaim and revegetate 70 acres of prior disturbed land after tailings removal, and backfill 8 acres of the existing quarry. The site will be reclaimed as Open Space Habitat. Pursuant to Development Code Section 88.03.060(k)(2), the following findings must be made in the affirmative in order to approve the Project's mining Reclamation Plan:

1. **THE RECLAMATION PLAN COMPLIES WITH THE CALIFORNIA SURFACE MINING AND RECLAMATION ACT (SMARA) (PUBLIC RESOURCES CODE SECTIONS 2772-2773) AND ANY OTHER APPLICABLE PROVISIONS.**

   Mining/Reclamation Plan 2022M-01 was reviewed and conditioned for compliance with SMARA. It has also been reviewed and accepted by the California Department of Conservation, Division of Mine Reclamation.

2. **THE RECLAMATION PLAN COMPLIES WITH APPLICABLE REQUIREMENTS OF STATE MINING REGULATIONS (CALIFORNIA CODE OF REGULATIONS SECTIONS 3500-3505 AND 3700-3713).**

   Mining/Reclamation Plan 2022M-01 complies with all applicable requirements of the State mining regulations and the potential end use of lands disturbed and reclaimed in compliance with the Reclamation Plan, as conditioned, are consistent with the Development Code and the Countywide Plan.

3. **THE RECLAMATION PLAN AND POTENTIAL END USE OF LANDS RECLAIMED IN COMPLIANCE WITH THE PLAN ARE CONSISTENT WITH THIS CHAPTER AND THE COUNTY WIDE PLAN AND ANY APPLICABLE RESOURCE PLAN OR ELEMENT.**

   The implementation of Mining/Reclamation Plan 2022M-01 and potential end use of lands disturbed and reclaimed in compliance with the Reclamation Plan, as conditioned, are consistent with the Development Code and Countywide Plan. No additional resource plans or elements apply.

4. **THE RECLAMATION PLAN HAS BEEN REVIEWED IN COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND THE COUNTY'S ENVIRONMENTAL REVIEW GUIDELINES, AND ALL SIGNIFICANT ADVERSE IMPACTS FROM RECLAMATION OF THE SURFACE MINING OPERATIONS ARE MITIGATED BELOW A LEVEL OF SIGNIFICANCE OR TO THE MAXIMUM EXTENT FEASIBLE.**

   A Mitigated Negative Declaration was prepared in compliance with CEQA, and all Mitigated Measures have been incorporated into Mining/Reclamation Plan 2022M-01 and Conditions of Approval.

5. **THE LAND AND/OR RESOURCES, SUCH AS WATER, WILL BE RECLAIMED TO A CONDITION THAT IS COMPATIBLE WITH, AND BLENDS IN WITH, THE SURROUNDING NATURAL ENVIRONMENT, TOPOGRAPHY, AND OTHER RESOURCES, OR SUITABLE OFF-SITE DEVELOPMENT WILL COMPENSATE FOR RELATED DISTURBANCE TO RESOURCES VALUES.**

   Affected lands will be reclaimed to a condition compatible with, and blending with, the surrounding natural environment, topography, and other open space resources as identified in Mining/Reclamation Plan 2022M-01. Financial Assurances and annual mine inspections pursuant to SMARA will take place to ensure that this occurs. Groundwater resources will also be monitored and mitigated should related disturbance to this resource occurs.

6. **THE RECLAMATION PLAN WILL RECLAIM THE MINED LANDS TO A USABLE CONDITION WHICH IS READILY ADAPTABLE FOR ALTERNATIVE LAND USES CONSISTENT WITH THE COUNTY WIDE PLAN AND APPLICABLE RESOURCE PLAN.**

   Mining/Reclamation Plan 2022M-01, as conditioned, along with annual mine inspections pursuant to SMARA will ensure reclamation of the mined lands return to a usable condition that is readily adaptable for alternative land uses consistent with Resource Conservation and Open Space.

7. **A WRITTEN RESPONSE TO THE STATE DEPARTMENT OF CONSERVATION HAS BEEN PREPARED, DESCRIBING THE DISPOSITION OF MAJOR ISSUES RAISED BY THAT DEPARTMENT. WHERE THE COUNTY'S POSITION IS AT VARIANCE WITH THE RECOMMENDATIONS AND OBJECTIONS RAISED BY THE STATE DEPARTMENT OF CONSERVATION, THE RESPONSE SHALL ADDRESS, IN DETAIL, WHY SPECIFIC COMMENTS AND SUGGESTIONS WERE NOT ACCEPTED.**

   The Project was reviewed by DMR after County staff submitted the project mining documents and reports on September 2, 2021. DMR notified the County on September 30, 2021, that the September 2, 2021 submittal was incomplete. Per the County's November 5, 2021, response to DMR, DMR notified the County on February 28, 2022, that DMR had no further comments.

ENVIRONMENTAL FINDINGS:

The environmental findings, in accordance with Chapter 85.03.040 of the Development Code, are as follows:

Pursuant to provisions of the California Environmental Quality Act (CEQA) and the San Bernardino County Environmental Review guidelines, the above-referenced Project has been determined that it will not have a significant adverse impact on the environment with the implementation of all the required mitigation measures. A Mitigated Negative Declaration (MND) is adopted and a Notice of Determination will be filed with the San Bernardino County Clerk of the Board of Supervisors. The MND represents the independent judgment and analysis of the County acting as lead agency for the Project.