

**BIOLOGICAL ASSESSMENT FOR IRON AGE MINE
SAN BERNARDINO COUNTY, CALIFORNIA**

Prepared For:

Bureau of Land Management
California Desert District
Barstow Field Office
2601 Barstow Road
Barstow, California 92311

Prepared By:

Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408
(909) 890-1818

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EXECUTIVE SUMMARY

SUMMARY

This Biological Assessment (BA) 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).

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 over 50 years ago. The Iron Age Mine site is located in the Dale Mining District in the Pinto Mountain Range, San Bernardino County, California, approximately 18 miles east/southeast of the city of Twentynine Palms. The project site consists of 34 acres of patented (private) land and 63 acres of unpatented claims under the jurisdiction of the BLM. The Proposed Action occurs in overall desert tortoise habitat and most of the site (84 of the 97-acre project site) except the northern areas is within the Pinto Mountains critical habitat unit.

The Proposed Action will take place on approximately 97 acres consisting of the removal of existing iron tailings, a plant site for screening material, a stockpile area adjacent to State Highway 62 for loading highway trucks, and a re-constructed access road. Approximately 76 acres of the 97-acre project area have been previously impacted by historic mining activities (quarry, stockpiles, and access roads). Therefore only 21 acres of undisturbed areas will be newly impacted. No new mining is proposed; only the removal of the existing tailings stockpiles.

Per the Reclamation Plan, approximately 70 of the 97-acre project area will be revegetated and returned to open space desert habitat. Upon removal of the ore stockpiles to the original ground surface, the stockpile and plant areas will be re-graded to approximate natural contours, ripped and revegetated. The access roads (19 acres) will remain in place and approximately 8 acres of backfilling will not be conducive for revegetation due to the rocky surface and lack of topsoil available. The reclaimed project site will have a net increase of approximately 50 acres returned to open space desert habitat.

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 within the Proposed Project site or along the proposed haul road re-alignment. The surveys identified two potential unoccupied desert tortoise burrows approximately 600 feet to the southeast end of the project site within the buffer areas surveyed outside of the project site. The Proposed Action would impact a total of 21 acres of undisturbed suitable desert tortoise habitat; of which 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 other 76 acres are completely disturbed by the iron ore stockpiles, the existing quarry, and the existing haul road and do not constitute suitable habitat for desert tortoise.

Based on the information presented, we conclude that the Proposed Project may adversely affect the desert tortoise.

Based on the information presented, we conclude that the Proposed Project may affect, but not likely to adversely affect the Pinto Mountains Critical Habitat Unit.

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.

SPECIES	LISTING STATUS	DETERMINATION
Mojave desert tortoise (<i>Gopherus agassizii</i>)	Threatened	Likely to adversely affect
Mojave desert tortoise - Pinto Mountains Critical Habitat Unit	Designated	May affect, but not likely to adversely affect; long-term, beneficial

Measures to minimize and avoid potential impacts to the desert tortoise are included in this assessment.

1.0 PROJECT DESCRIPTION

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 Twentynine 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 project site includes approximately 34 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 63 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. No off-site areas will be impacted or used by the Proposed Action.

The site is located in an unincorporated area of San Bernardino County. The site is located in overall desert tortoise (*Gopherus agassizii*) habitat and approximately 84 acres of the 97-acre site are within the Pinto Mountains critical habitat unit and Desert Wildlife Management Area (DWMA). The desert tortoise is listed as a federal threatened species. However, 76 acres of the 97-acre project area are highly impacted by past mining activities (quarry, stockpiles, and roads) and are not considered existing desert tortoise habitat.

1.2 PROPOSED ACTION

Operations

Iron Age Mine, LLC proposes to remove tailings left behind by a previous mining operation at its Iron Age Mine site and then reclaim all areas except roads disturbed by the removal activities per BLM Surface Management Regulations (43 CFR 3809) and the California Surface Mining and Reclamation Act (SMARA). No new mining is proposed; only the removal of the existing tailings stockpiles.

Detailed operations and reclamation plans with large drawings and cross-sections are included in the *Plan of Operations and Mine Reclamation Plan (Lilburn 2012)*. Operations would consist of removing iron ore tailings from existing stockpiles up to 50 feet deep and generally devoid of vegetation by loaders and graders on approximately 59 acres, crushing and screening plant operations to concentrate iron on 5 acres, trucking ore product along the 3.4 mile long re-aligned haul road (17 acres) to the mill sites on SR 62, and loading and shipping the material on street legal trucks at the mill sites (8.5 acres) (see Figure 3 and Table 1). Waste material not meeting iron ore specs will be conveyed and backfilled into the existing barren quarry.

FIGURE 1

FIGURE 2

FIGURE 3 PLAN OF OPERATIONS

Total available iron tailings at the mine are estimated at 12 million tons of which approximately 40% will be concentrated and shipped as product and 60% will be backfilled into the existing quarry. Iron Age is requesting a 15-year period starting upon project approvals through year 2029 for operations as annual production rates may be highly variable depending on demand plus five years for implementation of reclamation (through year 2034). 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 from the mill site along SH 62 may occur 24 hours/day, six days per week (not including holidays), and tailings removal operations will be daytime hours only. Approximately 30 truck trips per day will transfer concentrated ore from the plant site to the transfer site along SR 62 up to a maximum of 60 truck trips per day. No pipelines will be installed.

**Table 1
Operations Plan Phasing Area and Schedule**

Operational Phases	Unpatented Acres	Patented Acres	Total Acres (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	97.0²	12	15 (operations) 5 (reclamation)¹

Areas and tons rounded and approximate. Refer to Figure 3.

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

² 76 acres of the total 97 acres are considered highly disturbed by past mining operations and consist of tailings stockpiles, quarry, and roads.

Reclamation

Reclamation and revegetation plans are detailed in the *Plan of Operations and Mine Reclamation Plan (Lilburn 2012)*. Figure 4 illustrates the areas and methods of reclamation and 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.

The revegetation effort will be evaluated for relative success as determined by the cover, density, and species richness success criteria for native perennials. Remedial actions may include

FIGURE 4 RECLAMATION PLAN

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 reclaimed end use will be open space desert habitat.

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. The access road (17 acres) and the onsite access roads (2 acres) will remain in place for site access and public access south. 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 reclaimed project site will have a net increase of approximately 50 acres returned to open space desert habitat as compared to existing conditions.

1.3 PROTECTIVE MEASURES

The following measures will be implemented by the applicant to avoid and minimize impacts to desert tortoise:

- 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 authorize 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.

1.4 MONITORING AND REPORTING

- No more than 90 days upon completion of construction of the mill site and access route repairs, the authorized biologist and 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.

2.0 SPECIES AND HABITAT DESCRIPTION

2.1 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 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*).

2.2 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.

2.3 DESERT TORTOISE SURVEY

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.

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 qualified biologist for this project was Juan Hernandez.

Survey Methodology

Protocol presence/absence surveys were conducted in the project 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 5). 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, pellets, 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 ENVIRONMENTAL BASELINE

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

Habitat in the 97-acre project area is predominantly disturbed habitat devoid of vegetation (76 acres) consisting of iron ore tailings stockpiles up to 50 feet deep, an existing quarry, surrounding areas impacted by mining activities, and roads. Habitat found on the remaining 21 acres within the project area include: creosote bush series, brittlebush series, catclaw acacia series, and unvegetated streambed (see Figure 6).

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 approximately 600 feet southeast of the proposed mining area (see Table 2 and Figure 5). 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.

FIGURE 5
SURVEY AREA

FIGURE 6 VEGETATION MAP

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 occur on a total of 97 acres. The 97-acre area is considered within overall desert tortoise habitat. Of the 97 acres, approximately 76 acres are highly 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 Action 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 DWMA. Approximately 5.3 acres of suitable desert tortoise habitat occurs in the northern portion of the project area outside of the critical habitat unit.

Table 2
Desert Tortoise Sign Observation Results

Class*	Burrows	Carcass	Comments
1			
2			
3			
4	1		Located approx. 600 feet southeast and outside project area
5	1		Located approx. 600 feet southeast and outside project area
Total	2		
*Desert Tortoise Sign Classification			
Burrow Classes		Carcass Classes	
1-Currently Active 2-Good Condition, definitely tortoise, no recent use 3-Deteriorated, 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 Pinto Mountain Desert Wildlife Management Area (DWMA) consists 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 USFWS. 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.

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 7). The Proposed Project requires approval of a Plan of Operations for the tailings removal operations and the haul road re-alignment per the BLM Surface Management Regulations (43 CFR 3809) and the California Surface Mining and Reclamation Act (SMARA) enforced by the County of San Bernardino.

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, 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 Action 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.

FIGURE 7 CRITICAL HABITAT MAP

3.4.1 BLM DESIGNATED HABITAT MANAGEMENT AREAS

The Project Area occurs within the BLM designated Pinto Mountain 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 DWMA is managed for desert tortoise conservation and recovery.

4.0 EFFECTS OF THE PROPOSED ACTION

Desert Tortoise

Tortoises may be affected both directly and indirectly by the Proposed Action. Though tortoises were not encountered in the Proposed Action area during pre-project surveys, the duration of the mining permit is for 15 years. It is conceivable that tortoises may be encountered by project personnel during this time. Tortoises can be injured or killed by mining equipment and truck traffic along the haul road. Truck traffic along the haul road is anticipated to reach 60 truck-loads per day at its height with additional personnel vehicles and a water truck. For these reasons the Proposed Action is anticipated to adversely affect the desert tortoise.

The implementation of the reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat will return approximately 50 acres to desert vegetation and suitable desert tortoise habitat. Thus, the long-term indirect impacts of the Proposed Project may be beneficial.

Due to the remoteness of the project area and the protected habitat within the critical habitat unit and DWMA and Joshua Tree National Park, it is unlikely that any future State or private activities will occur in the area. Therefore, cumulative effects from other activities are not expected.

Pinto Mountains Critical Habitat Unit

The Proposed Project is anticipated to impact 15.7 acres of suitable desert tortoise habitat within the Pinto Mountains Critical Habitat Unit/Pinto Mountains DWMA. Compared to the 183 square miles within this critical habitat unit, lack of tortoise sign, and the reclamation of the site back to desert habitat, it is concluded that the Proposed Project may affect, but will not likely adverse the Pinto Mountains Critical Habitat Unit.

The implementation of the reclamation and revegetation plan on tailings piles now devoid of vegetation and not suitable desert tortoise habitat, will return approximately 50 acres to desert vegetation and suitable desert tortoise habitat. Thus, the long-term indirect impacts of the Proposed Project on the Pinto Mountains Critical Habitat Unit may be beneficial.

Due to the remoteness of the project area and the protected habitat within the critical habitat unit and DWMA and Joshua Tree National Park, it is unlikely that any future State or private

activities will occur in the area. Therefore, cumulative effects from other activities are not expected.

5.0 DETERMINATION OF EFFECTS

Based on the information presented, we conclude that the Proposed Project may adversely affect the desert tortoise.

Based on the information presented, we conclude that the Proposed Project may affect, but not likely to adversely affect the Pinto Mountains Critical Habitat Unit.

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.

6.0 REFERENCES

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