

United States Department of the Interior
Bureau of Land Management
Environmental Assessment CA-670-2008-76
Case File Number: CACA 49292

Finding of No Significant Impact
Pyramid Construction Padre Madre
Mineral Material Contract
Imperial County, California

U.S. Department of the Interior
Bureau of Land Management
El Centro Field Office
1661 South 4th Street
El Centro, CA 93342

November 2011



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Proposed Action Title/Type: Mining and processing for sale of reclaimed overburden and stockpiled rock material generated from former Padre Madre mining operation (1988-1996) conducted on the site.

Applicant/Proponent: Pyramid Construction and Aggregates, Incorporated,
839 Dogwood Road, Heber, California 92249

Location of Proposed Action: Portions of Section 19, Township 15 South., Range 21 East, SBBM, Ogilby 7.5-minute USGS topographic quadrangle, Imperial County, California

INTRODUCTION

The El Centro Field Office, Bureau of Land Management, offered by competitive sale, 500,000 tons of rock from previous gold mining operations at the Padre-Madre mine in August 2007. Pyramid Construction and Aggregates, Incorporated (Pyramid) won the competitive mineral material sales contract which incorporates a portion of the waste rock dump resulting from over and inter-burden removal from the Padre Madre open pit gold mine. The contract area is located on unencumbered public land in eastern Imperial County, California, within the western portion of the Chocolate Mountains (Figure 1). The contract would authorize Pyramid to mine and process rock from within an area encompassing approximately 40 acres for a period of 10 years. The competitive contract would give Pyramid the right to renew the contract after a 10 year term, or after materials contracted have been removed, subject to reappraisal. This mineral material disposal was authorized and is being processed in accordance with the 43 CFR 3600 regulations for mineral materials disposal.

Mining operations, the processing facility, and ancillary facilities such as a water well and access road would be operated under the name "American Girl Operation" (AGO). AGO is a proposed construction aggregate mining and processing operation that would extract and market previously mined overburden and rock, stockpiled on the east side of the west open pit. Mining operations would be conducted in a manner so as to allow for concurrent reclamation. All processing and ancillary facilities and improvements would be removed at the end of the mine life, and the sites reclaimed in compliance with BLM and Imperial County requirements. There are no mining claims or mineral leases encumbering the subject site, and the area has been reclaimed by the previous mine operator in compliance with BLM's surface management regulations at 43 CFR 3809 and the State of California Surface Mining and Reclamation Act of 1975 and promulgated regulations.

The proposed AGO is located in the Tumco gold mining district with mineral extraction to be conducted entirely on lands disturbed by previous mining activities, most notably the former American Girl Mining Joint Venture (AGMJV) Padre Madre operations. The proposed area of disturbance (Figure 2) was the subject of an Environmental Assessment/Environmental Impact Report (EA/EIR) and Finding of No Significant Impact for the Padre Madre Gold Mine Project Phase II (EA Number CA-067-88-65) in 1988.

The most recent commercial production was associated with the Padre Madre mine, which was part of the American Girl Canyon Mining Area. Padre Madre gold mining activities were conducted in a phased manner and the most recent activity ceased in 1996. These areas were reclaimed over the next 5 years. While reclamation of previous gold mining activity met visual line and form goals of the reclamation plans, the rock features have changed the landscape from the original line and form of the pre-gold mining area. Subsequent to mining activity at the Padre Madre site, all mining claim interests on public land held by the AGJV have been abandoned.

PLAN CONFORMANCE AND CONSISTENCY

This Proposed Action is subject to the following Land Use Plans:

California Desert Conservation Area Plan 1980 as Amended;

Northern and Eastern Colorado Coordinated Management Plan

The Proposed Action has been reviewed for conformance with these plans, and found to be in conformance of the existing land use plans for the Project Area.

FINDING OF NO SIGNIFICANT IMPACT

The El Centro Field Office interdisciplinary review and analysis determined that the proposed action would not trigger significant impacts on the environment based on criteria established by regulations, policy and analysis.

Also, in response to a decision of the Interior Board of Land Appeals decided July 14, 2010 (179 IBLA299) which required the BLM to take a "hard look" at potential impacts or relevant areas of environmental concern, the BLM has examined the potential for toxic or hazardous materials present in the contracted rock material at the Padre-Madre site. Results of inquiries to the former mine operators as well as sampling and testing completed by this office, the material is not classified as toxic or hazardous under accepted protocols and relevant thresholds of the state and EPA.

Based on the findings discussed herein, I conclude that the proposed action is not a major Federal action and will result in no significant impacts to the environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27 and do not exceed those effects described in applicable land use plans. Therefore, preparation of an environmental impact statement to further analyze possible impacts is not required pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969.

This determination is based on the rationale that the significance criteria, as defined by the Council on Environmental Quality (CEQ) (40 CFR 1508.27) have not been met. "Significantly" as used in NEPA requires considerations of both context and intensity. In making this Finding of No Significant Impact (FONSI), the following criteria have been considered, in accordance with the Council on Environmental Quality (CEQ), 40 C.F.R. 1508.27.

Context: This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected

interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long term effects are relevant.

Environmental impacts associated with the proposed action and alternatives have been assessed by an interdisciplinary team and described in Environmental Assessment (EA) CA-670-2008-76. The context of the EA analysis was determined to be at a local and regional scale in Imperial County, California. The effects of the action are not applicable on a national scale since no nationally significant values were involved.

Intensity: This refers to the severity of impact. The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into BLM's Critical Elements of the Human Environment list (H-1790-1), and supplemental Instruction Memorandum, Acts, regulations and Executive Orders. The following have been considered in evaluating intensity for this proposal:

1) Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.

Beneficial Effects: The proposed project would provide a source of aggregate products for Eastern Imperial County. The project would reduce, reuse, and reclaim or recycle rock from the former Padre-Madre Mine, thus removing piles of rock and restoring the area to near-original surface contours. Removal of these piles would promote revegetation and increase accessibility of this area to wildlife.

Adverse Effects: Aggregate mining would generate noise from mining activity and haul trucks. Vehicles and equipment could rush, frighten or displace wildlife. Some of the area previously reclaimed by the American Girl Mining Joint Venture would be re-disturbed.

2) *The degree to which the selected alternative will affect public health or safety.* The proposed action is not anticipated to affect public health or safety. Characterization of the material was determined to be non-toxic and non-hazardous because the threshold limits for elements of concern were not reached. Stipulations to the contract and plan of operation would ensure that material used in end use products would meet the test of toxicity.

3) *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas.* The proposed aggregate mining would not be situated in proximity to park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas. The proposed project has been sited so as to avoid cultural or historic resources. The proposed project area lies within a former gold mine.

4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial.* It is not likely that aggregate mining in this area would result in impacts to the quality of the human environment that would be highly controversial.

5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.* Effects of the proposed action are well

understood and would not involve any unique or unknown risks. Standard analyses for the characterization of the rock stockpile material supports that the material is not toxic or hazardous. The rock material used for construction purposes will not lead to or create a substantial threat of a release of hazardous substances into the environment or of any pollutant or contaminant that could present an imminent or substantial danger to public health or welfare.

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* The proposed action would not establish precedents for future actions or represent a decision in principle about a future action.

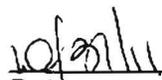
7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts – which include connected actions regardless of land ownership.* The proposed action would not establish precedents for future actions or represent a decision in principle about a future action.

8) *The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.* No significant scientific, cultural or historical resources would be affected by the proposed action.

9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, or the degree to which the action may adversely affect: 1) a proposed to be listed endangered or threatened species or its habitat, or 2) a species on BLM's sensitive species list.* The project area, while heavily disturbed, lies adjacent to desert tortoise habitat. The USFWS issued a Biological Opinion (BO) for Small Mining and Exploration Operations in the California Desert (3809 6840 CA-063-.50 (CA-932.50)). This project falls within the scope of the BO.

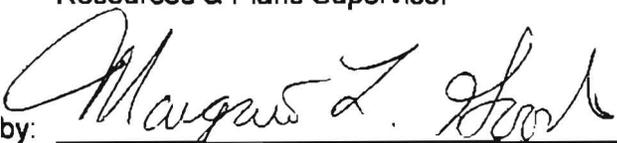
10) *Whether the action threatens a violation of a federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment, where non-federal requirements are consistent with federal requirements.* The proposed action does not threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Reviewed by: 
Environmental & Planning Coordinator


Date

Reviewed by: 
Resources & Plans Supervisor

11/1/11
Date

Approved by: 
Margaret L. Goodro, Field Manager
El Centro Field Office

11/9/11
Date

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Decision Record

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1.0 Introduction and Background

The El Centro Field Office, Bureau of Land Management (BLM), offered by competitive sale, 500,000 tons of rock from previous gold mining operations at the Padre-Madre mine in August 2007. Pyramid Construction and Aggregates, Incorporated (Pyramid) won the competitive mineral material sales contract which incorporates a portion of the waste rock dump resulting from over and inter-burden removal from the Padre Madre open pit gold mine. The contract area is located on unencumbered public land in eastern Imperial County, California, within the western portion of the Chocolate Mountains (Figure 1). The contract would authorize Pyramid to mine and process rock from within an area encompassing approximately 40 acres for a period of 10 years. The competitive contract would give Pyramid the right to renew the contract after a 10 year term, or after materials contracted have been removed, subject to reappraisal. This mineral material disposal was authorized and is being processed in accordance with the 43 CFR 3600 regulations for mineral materials disposal.

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1988. The most recent commercial production was associated with the Padre Madre mine, which was part of the American Girl Canyon Mining Area. Padre Madre gold mining activities were conducted in a phased manner and the most recent activity ceased in 1996. These areas were reclaimed over the next 5 years. Subsequent to mining activity at the Padre Madre site, all mining claim interests on public land held by the AMGJV have been abandoned. This project would involve mining in the previously reclaimed area.

In general, comments and concerns received during the draft review of the EA center around the issue that AGJV closed the American Girl Mine properties and reclaimed the Padre Madre Rock area with the expectation that the rock area would remain closed and in place in a reclaimed and stable condition. The previous operator of the Padre-Madre site is concerned about the potential liabilities that would be placed on them from the disturbance and off-site use of this material under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as being a generator of the rock. CERCLA¹, attaches a perpetual liability to all parties who once "...owned, controlled, or facilitated the disposition of hazardous substances or other contaminants" (Hecla comments, January 2009). The previous operator has concerns that BLM has not met its burden of assuring that "...the proposed action is in the public interest, and that there are no hazards to public health and safety" (HECLA Comments).

While the area has been disturbed by previous gold mining and processing activities, the site had been reclaimed in compliance with approved reclamation plans. Reclamation of previous gold mining activity met visual line and form goals of the reclamation plans, the rock stockpile features have changed the landscape from the original line and form of the pre-gold mining area. Part of BLM's goal in the material contract is to soften and reduce, as much as possible, the reclaimed rock facility to conform as near as practicable to the line and form of pre-gold mining topography. While BLM recognizes the considerable work and associated costs AGJV expended in compliance with reclamation provisions of their approved reclamation plans for the Padre-Madre gold project, the United States has offered this material to meet regional demands for the resource. In addition, removal of most of the rock stockpile will provide a final topographic profile closer to the original profile before gold mining activity.

On January 5, 2009, the Bureau of Land Management, El Centro Field Office, released the "Pyramid Construction Environmental Assessment" (EA; No. CA-670-2008-76), assessing the plan of operation and reclamation plan resulting from the sale of 500,000 tons of stockpiled rock to Pyramid Construction Company. As a result of that review, Hecla (and AGMJV) had comments on the toxicity methods applied in the November 2008 Mineral Report (Appendix B of the EA) and still considered secondary uses a liability placed on them under the CERCLA.

¹ Hazardous waste disposal and cleanup is an area that is controlled under two main statutes, the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). RCRA's goals are to protect human health and the environment from the potential hazards of waste disposal, conserve energy and natural resources, reducing the amount of waste generated, and ensure that wastes are managed in an environmentally-sound manner. RCRA's extensive tracking from generation to disposal of a hazardous waste, the process results in a "cradle to grave" system. CERCLA establishes a legal liability system for the cleanup of inactive or abandoned sites when there has been a release, or a significant threat of a release, of a hazardous substance.

Rock stockpiled from mining operations was not a permitted activity under the Resource Conservation Recovery Act (RCRA) by the state lead agency as hazardous or toxic materials. No arguments at the time were addressed concerning the toxic or hazardous potential of the rock. Based on analysis of samples collected from the rock stockpile in October 2008, and further work in January 2009 and August 2011, the rock is not considered a toxic or hazardous material. The rock does not meet any threshold limits for any of the 17 metallic elements of concern to the state of California. Mining of the rock from the Pyramid contract site would have no deleterious effect on humans or the natural environments when used as an aggregate admixture to concrete and asphalt concretes, or used as fill, rip-rap, or ballast applications.

Prior to release of the 2009 Decision Record, BLM had completed specific tests on the mineral material at the Padre-Madre site in an effort to characterize the material for potential toxicity in compliance with standard protocols of the Environmental Protection Agency and state of California. BLM completed the California approved standard test method for determining whether a solid material is susceptible to extraction of heavy metals into the human and natural environment. The Waste Extraction Test (WET) was done on the samples as collected and results did not indicate that the rock material had the characteristics of toxicity. Results of the WET were included in a supplemental mineral report, and a new table compiled that would replace Table 5 of the 2009 Environmental Assessment (EA). Neither the table or supplemental mineral report were included in the case file record on subsequent appeal, and information from the WET testing was not considered in the 2009 environmental assessment and decision record. In July 2011, in compliance with the direction from the Interior Board of Land Appeals in their July 14, 2010, decision (179 IBLA299) to take a hard look at the CERCLA issues that may result from disposal of the rock material, BLM conducted a further WET on crushed and classified rock material greater than 10 mesh screen that would typically be removed from the site as product. Testing did not indicate that the classified material has the characteristics of toxicity. Table 5 of the Final EA reflects all testing of the rock material.

Material is characterized as a non-hazardous waste if it does not exhibit a characteristic by either testing or applying knowledge of the material (40 CFR 262.11; defined in 40 CFR 261.2), or the material is specifically excluded from regulation under 40 CFR 261.4. If the material is not specifically excluded, hazardous characteristics determined by either testing the material according to the methods set forth in subpart C of 40 CFR part 261, or to an equivalent method approved by the EPA Administrator under 40 CFR 260.21.

Solid wastes, that are not hazardous wastes, include mining overburden returned to the mine site (40 CFR 261.4 (b) (3) (Exclusions)). This is the condition of the subject rock material under the AGMJV mine permitting process. The Total Toxics Limits Concentration (TTLC) analysis determines the total concentration of certain regulated metallic elements in the material. When any sample exceeds the TTLC limits, the material is classified as toxic and/or hazardous. Based on analyses, none of the rock stockpile exceeds the TTLC threshold for toxicity.

If a substance's TTLC is equal to or greater than ten times the Soluble Threshold Limit Concentration (STLC) regulatory limit, the Waste Extraction Test (WET) is required to determine if the material is toxic. If the TTLC results do not exceed 10 times the STLC

limit then normally no further analysis is required. If any substance in the waste extract is equal to or greater than the STLC value, it is considered a hazardous toxic waste.

Toxic Characteristic Leaching Procedure (TCLP) and WET are test methods used in California to determine whether a waste is a toxic hazardous waste. If the TTLC results do not exceed 10 times the STLC limit then normally no further analysis is required. Fours of the samples exceeded 10 times the STLC threshold and required further analyses. Based on the results of the California WET test, none of the rock stockpile material exceeded the standards that will characterize the material as toxic or hazardous. Absent this characterization, as well as the lack of information provided by Hecla and AGMJV that the material should be characterized as toxic and or hazardous, I do not believe that the material will pose any risk to the human or natural environment when use for encapsulated or non-encapsulated crushed rock products.

A supplemental mineral report (EA Appendix B and Appendix B1) provides a description analytic processes conducted on the rock stockpile material. Table A of the supplemental mineral report reflects additional work conducted in January 2009 and August 2011; Table A also replaces Table 5 of the 2009 EA.

2.0 Decision

2.1 Alternatives Considered

Alternative A, the Proposed Action:

The AGO proposes to mine and process overburden and stockpiled materials within the 40-acre confines of the project site within the scope of the mineral material contract (Figure 2). Saleable aggregate materials would be extracted and processed on public lands at and proximal to the west rock dump.

Alternative B:

Under this alternative, mining would be allowed without associated processing of rock and unusable material at the AGO site. This alternative would require that all processing operations be moved to another area of the county, away from the Cargo Muchacho site.

Alternative C, No Action:

Under the No Action Alternative, the BLM would deny the proposed AGO mine and reclamation plan in the project application and proposed reclamation of rock stockpiles would not be conducted.

2.2 Actions Considered but Eliminated from Further Consideration

Reduced Mining

The reduced mining alternative would limit mining and processing of mineral material from AGO to less than 4,500 tons per day, to approximately 250 tons per day. This amount is the maximum tonnage spread over the 10-year contract period over a 220 day

working year. Under this alternative, production would be sustained to minimize truck traffic along American Girl road and the Ogilby road to a level consistent with moderate recreation use in the area.

This alternative places an increased burden on the operator by not optimizing mining and production equipment to normal market needs. The alternative increases carbon emissions in the mine area as well as processing area by underutilizing equipment, and well as requiring an increase in worker transits to the site, increasing carbon emissions and wasting fossil fuels.

This alternative will not be considered further in this analysis because in comparison with the proposed action, would create more environmental impacts and increased hazards to public health and safety.

2.3 Decision and Rationale

Based on information in the EA and consultation with my staff, I have decided to implement the proposed action as described in the EA. Allowing aggregate production in this area provides mineral materials for construction projects without disturbing new areas, and will contribute to further reclamation of a disturbed area.

Alternative A (proposed action) is preferred over Alternative B or Alternative C for the following reasons:

- Mining and processing material at the American Girl site would be much more energy and cost efficient than hauling the material off sight to process.
- With the mitigation measures listed below, the adverse environmental impacts of Alternative A are not significant and will be only nominally greater than those attributable to Alternative B or C.
- Removing the rock piles will contribute to restoration of natural contours in the formerly mined site and contribute to increased value as wildlife habitat.

The following measures are designed to reduce the likelihood of impacts to natural resources by AGO personnel operating on the site:

Measures to protect Desert Tortoise and Tortoise Habitat

- The mine operator shall designate a field contact representative (FCR) who would be responsible for overseeing compliance with protective stipulations for the desert tortoise and for authority to halt all mining activities that are in violation of the stipulations. The FCR shall have a copy of all stipulations when work is being conducted on the site. The FCR may be the mine operator, the mine manager, any other mine employee, or a contracted biologist.

- An employee education program must be received, reviewed, and approved by the Bureau at least fifteen days prior to the presentation of the program. The program may consist of a class or video presented by a qualified biologist (Bureau or contracted) or a video. Wallet-sized cards with important information for workers to carry are recommended. All mine employees shall participate in the desert tortoise education program prior to initiation of mining activities. The operator is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees shall receive formal, approved training prior to working onsite. The program shall cover the following topics at a minimum:
 - Distribution of the desert tortoise,
 - General behavior and ecology of the desert tortoise,
 - Sensitivity to human activities,
 - Legal protection,
 - Penalties for violations of State or Federal laws,
 - Reporting requirements, and
 - Project protective migration measures.
- Only Biologists authorized by the Service and the Bureau shall handle desert tortoises. The Bureau or mine operator shall submit the name(s) of the proposed authorized biologist(s) to the Service for review and approval at least fifteen days prior to the onset of activities. No mining activities shall begin until an authorized biologist is approved. Authorization for handling shall be granted under auspices of this Section 7 consultation.
- The authorized biologist shall be required on-site during the initial construction activities. This biologist shall have authority from the operator to halt any action that might result in harm to a desert tortoise.
- Post-construction, the authorized biologist shall be required to be available on any day at any time during work hours, to respond to a request from the applicant or BLM to translocate a desert tortoise which is found to be in harm's way. Annual summaries of desert tortoise sightings, mortalities, and burrows shall be provided to BLM and to the Service in accordance with the requirements of the Small Mining Biological Opinion.
- The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Work area boundaries shall be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features, such as burrows, identified by the qualified biologist shall be avoided to the extent possible. To the extent possible, previously disturbed areas within the mining site shall be utilized for the stockpiling of excavated material, storage of equipment, digging of slurry pits, location of office trailers, and vehicle parking. The qualified biologist, in consultation with the mine operator, shall ensure compliance with this measure.
- Where practical, no access road shall be bladed for exploratory work. Cross-country access shall be the standard for temporary activities. For development activities, a short driveway (no more than 0.3 miles) from the nearest access road may be constructed if necessary. To the extent possible, access to the mine site shall be restricted to designated "open" routes of travel. A qualified biologist shall select and

flag the access route, whether cross-country or bladed, to avoid burrows and to minimize disturbance of vegetation.

- Except when absolutely required by the operation and as explicitly stated in the Plan of Operations, cross-country vehicle use by mine employees is prohibited during work and non-work hours.
- To prevent desert tortoises from falling in, test holes shall be either fenced or covered as much of the time as possible and at all times when not attended.
- For mine development where the mine site is in desert tortoise habitat, the entire site shall be enclosed within a desert tortoise-proof fence. The fence shall be constructed under the direction of a qualified biologist. The fence shall be located to avoid all desert tortoise burrows; to the extent possible, burrows shall be placed on the outside of the enclosure. The fence shall be constructed of ½-inch mesh hardware cloth. It shall extend 18 inches above ground and 12 inches below ground. Where burial of the fence is not possible, the lower 12 inches shall be folded outward against the ground and fastened to the ground so as to prevent desert tortoise entry. The fence shall be supported sufficiently to maintain its integrity. The gate shall remain closed except for the immediate passage of vehicles. The fence shall be checked at least monthly and maintained when necessary by the mine operator to ensure its integrity.
- After fence installation, the authorized biologist shall conduct a thorough survey for desert tortoises within the mine site. All desert tortoises found shall be marked and removed from the enclosure and placed outside the nearest fence. If the removal is during the season of above-ground activity, the desert tortoises shall be placed beside a nearby burrow of appropriate size. If the removal is not in the season of above-ground activity, the desert tortoise shall be moved (dug out of burrow if necessary) on a seasonably warm day and placed at the mouth of a nearby burrow of the appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be needed. The authorized biologist shall be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
- Desert tortoises moved from within a fenced site shall be marked for future identification. An identification number using the acrylics paint/epoxy covering technique shall be placed on the fourth left costal scute. 35-mm slide photographs of the carapace, plastron, and the fourth costal scute shall be taken. No notching is authorized.
- Desert tortoises may be handled only by the authorized biologist and only when necessary. New latex gloves shall be used when handling each desert tortoise to avoid the transfer of infectious diseases between animals. Aside from the initial site clearance, any desert tortoise moved shall be placed in the shade of a shrub in the direction in which it was facing when found or at the entrance to a burrow if hibernating. In general, desert tortoises should be moved the minimum distance possible to ensure their safety.
- The authorized biologist shall maintain a record of all desert tortoises handled. This information shall include for each desert tortoise:
 - The location (narrative and maps) and dates of observations;
 - General condition and health, including injuries and state of healing and whether animals voided their bladders;
 - Location moved from and location moved to; and
 - Diagnostic markings (i.e., identification numbers or marked lateral scutes).

- No later than 90 days after completion of construction, the FCR and authorized biologist shall prepare a report for the BLM. The report shall document the effectiveness and practicality of the mitigation measures, the number of desert tortoises excavated from burrows, the number of desert tortoises killed or injured. The report shall make recommendations for modifying the stipulations to enhance desert tortoise protection or to make it more workable for the operator. The report shall provide an estimate of the actual acreage distributed by various aspects of the operation.
- Upon locating a dead or injured desert tortoise, the operator is to notify the BLM. The BLM must then notify the appropriate field office (Carlsbad or Ventura) of the Service by telephone within three days of the finding. Written notification must be made within fifteen days of the finding. The information provided must include the data and time of the finding or incident (if known), location of the carcass, a photograph, cause of death, if known, and other pertinent information. Desert tortoise remains shall be collected, frozen, and delivered to the BLM as soon as possible. Injured animals shall be transported to a qualified veterinarian for treatment at the expense of the project proponent. If an injured animal recovers, the Service should be contacted for final disposition of the animal.
- Except on county-maintained roads, vehicle speeds shall not exceed 20 miles per hour through desert tortoise habitat.
- If it is necessary for a worker to park temporarily outside of the cleared enclosure, the worker shall inspect for desert tortoises under the vehicle prior to moving it. If a desert tortoise is present, the worker shall carefully move the vehicle only when necessary or shall wait for the desert tortoise to move out from under the vehicle.
- All dogs shall be restrained either by enclosure in a kennel or by chaining to a point within the desert tortoise enclosure.
- All trash and food items shall be promptly contained within closed, raven-proof containers. These shall be regularly removed from the project site to reduce the attractiveness of the area to ravens and other desert tortoise predators. All refuse generated on site will be removed by the operating crew on a regular basis and deposited in the dumpster located at Pyramid's office in Heber, California.
- Structures that may function as raven nesting or perching sites are not authorized except as specifically stated in the Plan of Operation. The project proponent shall describe anticipated structures to the BLM during initial project review.
- Final reclamation will include surface scalloping to enhance vegetative growth.
- At the end of the project, disturbed areas, including new access roads, shall be re-contoured and re-seeded with an appropriate mixture of native plant species according to the Reclamation Plan submitted to the Imperial County Planning Department and State Office of Mine Reclamation under separate cover.
- All areas developed under the contract will be reclaimed to 1:4 slope (1 vertical to 4 horizontal; 25 percent slope).
- All desert tortoise-proof fencing shall be removed after site reclamation.

Measures to Control Invasive/Non-Native Species

- Mine employees shall routinely inspect work areas for tamarisk. In the event new infestations are discovered, the operator shall consult BLM and remove the plants.

Measures to protect Wetland and Wash Habitat including Microphyll Woodlands

- Pyramid will avoid the wetlands completely. Access to the wetlands area from inside the property will be prevented by erecting fencing around the property perimeter, as discussed above, but excluding the wetlands portion of the property. The fencing, coupled with signage warning people away from the habitat, will help protect the wetlands from human and vehicle encroachment from inside the property, and will allow wildlife to reach the wetlands from outside the fenced area. Further, a 15-foot interior buffer zone would be established between the fence line and the active stockpile areas to provide additional protection. Once the project is complete, the fencing and signage will be removed as part of site reclamation.
- Microphyll woodland habitat will be avoided as these areas are likely foraging habitat for birds and bats. Pyramid will reduce the likelihood of impacts to the sensitive habitats by confining its activities to the portions of the proposed AGO site away from the habitats. This includes vehicle activity, stockpile movement, or other surface disturbance.
- The access road to the property is American Girl Road, a county road, which runs adjacent to American Girl Wash. The access road will be roped off with high-visibility tape along its southern length, where the road forks toward the property, to direct traffic away from the wash.
- Operations will be restricted to daytime (one-half hour before sunrise to one-half hour after sunset). Artificial lighting will be directed at the ground away from washes and woodlands as well as mountain slopes.

Measures to Protect Archaeological Resources

- The mitigation measures to be implemented are avoidance (for AGO Site 1 and AGO Site 6) and monitoring (of all resources) during road widening/grading and well-construction activities. Avoidance of AGO Site 1 is feasible since it falls outside the APE. Avoidance of AGO Site 6 can be achieved by conducting grading for road widening on the south side of the access road. Monitoring during construction would be conducted by a qualified archaeologist under permit from the El Centro Field Office.

Measures to Protect Public Health and Safety

- In the unlikely chance that solid waste is encountered during excavation operations, Pyramid would contact the BLM El Centro Office to take any necessary steps to properly dispose of the materials.
- Place temporary fences within the processing area of operations.
- Place gated fences in areas where there are access points to mine areas. Assure gated areas are secured (e.g., locked) during periods on non-operation.
- Unless equipment is secured from unauthorized use by other means acceptable to the authorized officer of the BLM, security personnel will be on mine and processing sites to limit public access to heavy equipment. Mining is recommended to be conducted in campaigns to minimize the number of days idle equipment is left unattended on mine and processing sites.

- All portable mine and processing equipment will be removed from mine and processing sites during periods of extended non-operation. A period of extended non-operation will exist when operations are idle for more than 90 consecutive days, or greater than 90 days as approved by the authorized officer. The operator will maintain public lands within the project area, including structures, in a safe and clean condition, and take all steps necessary to prevent unnecessary or undue degradation to public lands and resources during periods of extended non-operation.
- Haul truck travel along American Girl and mine access roads will be no more than 25 miles per hour.
- All over-the-road haul truck operators will obey all California vehicle laws, codes, regulations, and limits.
- All fines and sand (natural or manufactured) will be disposed of on site by spreading the material and integrating it with remaining rock material within the area of disturbance.
- Mining shall commence at the southern end of the rock stockpile and shall be mined in sequence northward. Operations are to excavate to the ground level as specified by the Authorized Officer of the BLM. Ground level elevation shall be maintained as mining progresses north into the stockpile. The excavated slope shall not be less than 1 horizontal to 1 vertical (1:1), or 100 percent slope as measured from the horizontal during periods where mining operations are being conducted. Final reclamation profile, and profile of all slope surfaces during periods of non-occupation over 90 days, 90 consecutive days, or greater than 90 days as approved by the authorized officer, shall not be greater (slope angle) than 4 horizontal to 1 vertical (4:1; 25 percent slope).
- Except for material encapsulated in Portland or asphalt cement products, all material leaving the site may be sampled and analyzed in compliance with any of the following protocols by the BLM or other appropriate agency.

3.0 Consultation and Coordination

The proposed project is located within the range of the Federally Threatened Desert Tortoise. Since it is possible that tortoises may traverse the project area, there is a possibility of "take" under the Endangered Species Act. The USFWS issued a Biological Opinion (BO) for Small Mining and Exploration Operations in the California Desert (3809 6840 CA-063-.50 (CA-932.50)). The BLM contacted the service on July 3, 2008 to inform them of the project and to determine if this project would fall within the scope of the programmatic BO. The service issued a letter on January 23, 2009 concurring with BLM that this project is covered under this BO.

4.0 Public Involvement

The EA was available for a 30 day public comment in December 2008 and January 2009. The comment period ended on January 5, 2009. An electronic notice of availability of the EA was forwarded to known interested parties.

Attachment A includes comments in response to EA, mine and reclamation plan by Mr. Jim Good, representing M.K. Resources Company (formerly M.K. Gold), its affiliate

AGMJV, and, M.K. and Eastmaque Gold Mines (U.S.) Corp., formerly a wholly owned subsidiary of Hecla Limited (herein all referred to as "Hecla"). Attachment B includes the responses to those comments.

Generally, Hecla's comments and concerns on the draft (January 2009) center on the issue that AGMJV closed the American Girl Mine properties and reclaimed the Padre Madre West Waste Rock area with the expectation that the rock area would remain closed and in place in a reclaimed and stable condition. Hecla is concerned that potential liabilities would be placed on them from the disturbance and off-site use of this material under the CERCLA as being a generator of the rock.

5.0 Consistency with Land Use Plans, Regulations and Policies

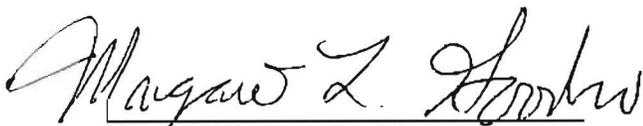
Based on information in the EA, the project record, and recommendations from BLM specialists, I conclude that this decision is consistent with the following Land Use Plans: California Desert Conservation Area Plan, 1980 (as amended), Northern and Eastern Colorado Coordinated Management Plan.

The Proposed Action is consistent with the National Energy Policy Act of 2005 and the BLM's National Energy Policy Implementation Plan; the Endangered Species Act; the Native American Religious Freedom Act; other cultural resource management laws and regulations; Executive Order 12898 regarding Environmental Justice; and Executive Order 13212 regarding potential adverse impacts to energy development, production, supply and/or distribution.

6.0 Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in accordance with the regulations in 43 CFR Part 4, and the enclosed form 1842-1. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825.

The effective date of this decision (and the date initiating the appeal period) will be the date this notice of decision is posted on BLM's (El Centro Field Office) internet website.



Margaret L. Goodro, Field Manager
El Centro Field Office

11/9/11
Date

Environmental Assessment Number CA-670-2008-76

November 2008
Amended November 2011

**Environmental Assessment for American Girl Aggregate Surface Mine
and Processing Facility**

American Girl Mineral Material Mining
Ogilby, Imperial County, California

Project Proponent:
Pyramid Construction and Aggregates, Incorporated
839 Dogwood Road
Heber, California 92249

United States Department of the Interior
Bureau of Land Management
El Centro Field Office
1661 South 4th Street
El Centro, California 92243
(760) 337-4400

TABLE OF CONTENTS

INTRODUCTION.....	1
PURPOSE AND NEED FOR THE PROPOSED ACTION	3
CONFORMANCE WITH LAND USE PLANS.....	3
RELATIONSHIPS TO STATUTES, REGULATIONS, AND OTHER PLANS	4
Alternative A: Proposed Action.....	5
Mining Operations.....	5
Excavation and Extraction	6
Materials Processing	6
Haul Roads and Site Access	8
Plant Reject Materials.....	9
Reclamation.....	9
Ancillary Facilities and Supplies.....	10
Electrical Power	11
Water Supply	12
Sanitary and Solid Waste Disposal.....	12
Drainage Control and Diversion Structures	12
Offices and Support Facilities	12
Fencing.....	13
Alternative B: Mining with Off-site Processing.....	13
Alternative C: No Action.....	14
ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS	14
Reduced Mining.....	14
AFFECTED ENVIRONMENT.....	15
Regional Overview	15
Areas of Critical Environmental Concern.....	15
Cultural Resources.....	15
Environmental Justice	17
Farm Lands	17
Wild and Scenic Rivers	17
Wilderness.....	17
Floodplains	17
Geology, Soils, and Seismicity	17
Mineral Resources	18
Waste and Hazardous Materials	19
Global Climate Change	23
Invasive/Non-Native Weed Species	24
Land Use.....	25
Native American Religious Concerns.....	25
Noise	25

Recreation	29
Soils 29	
Air Quality	29
Biological Resources/Threatened or Endangered Species	30
<i>Flora</i> 30	
<i>Fauna</i> 30	
Surface Water, Groundwater, and Water Quality	31
Visual Resources	32
<i>Landscape</i>	32
<i>Lighting</i>	32
Wetlands and Riparian Zones	32
Socioeconomics	32
Transportation	33
Public Services, Utilities, and Service Systems	33
ENVIRONMENTAL IMPACTS	34
Air Quality	35
Alternative A: Proposed Action	35
Alternative B: Mining with Off-site Processing	35
Alternative C: No Action Alternative	35
Mineral Resources	36
Alternative A: Proposed Action	36
Alternative B: Mining with Off-site Processing	36
Alternative C: No Action Alternative	36
Cultural Resources	36
Alternative A: Proposed Action	36
Alternative B: Mining with Off-site Processing	37
Alternative C: No Action Alternative	37
Invasive/Non-Native Species	37
Alternative A: Proposed Action	37
Alternative B: Mining with Off-site Processing	37
Alternative C: No Action Alternative	38
Noise	38
Alternative A: Proposed Action	38
Alternative B: Mining with Off-site Processing	38
Alternative C: No Action Alternative	39
Biological Resources/Threatened or Endangered Species	39
Alternative A: Proposed Action	39
Alternative B: Mining with Off-site Processing	39
Alternative C: No Action Alternative	40
Visual	40
Alternative A: Proposed Action	40
Alternative B: Mining with Off-site Processing	40

Alternative C: No Action Alternative.....	40
Wastes, Hazardous or Solid.....	41
Alternative A: Proposed Action.....	41
Alternative B: Mining with Off-site Processing.....	41
Alternative C: No Action Alternative.....	41
Surface Water, Groundwater, and Water Quality.....	41
Alternative A: Proposed Action.....	41
Alternative B: Mining with Off-site Processing.....	42
Alternative C: No Action Alternative.....	42
Wetlands and Riparian Zones.....	42
Alternative A: Proposed Action.....	42
Alternative B: Mining with Off-site Processing.....	43
Alternative C: No Action Alternative.....	43
Public Health and Safety.....	43
Alternative A: Proposed Action.....	43
Alternative B: Mining with Off-site Processing.....	44
Alternative C: No Action Alternative.....	44
MITIGATION MEASURES.....	44
Measures to protect Desert Tortoise and Tortoise Habitat.....	44
Measures to Control Invasive/Non-Native Species.....	47
Measures to protect Wetland and Wash Habitat including Microphyll Woodlands.....	48
Measures to Protect Archaeological Resources.....	48
Measures to Protect Public Health and Safety.....	48
CUMULATIVE IMPACTS.....	50
PERSONS AND AGENCIES CONSULTED.....	52
LITERATURE CITED.....	53

List of Figures

Figure 1 Chart showing the annual mean temperature change for northern latitudes (24 - 90° N; Source: Goddard Institute for Space Studies (2007)	24
Figure 2: Location Map.....	55
Figure 3: Satellite image showing area of operations.....	56
Figure 4: Site topographic map showing contour intervals at 3 feet.....	57
Figure 5: Map showing proposed facilities and mine phases.....	58
Figure 6: Map showing proposed mine phases and reclamation.....	59
Figure 7: Material Stockpile Cross Section.....	60
Figure 8: Post Reclamation Plan Topography.....	61
Figure 9 Map showing aggregate and rock operations in the general area of the pyramid AGO.....	62

List of Tables

Table 1: Proposed Mining Equipment	6
Table 2: Proposed Process Equipment Including Equipment Type and Description.....	7
Table 3: Estimated Fuel Consumption	11
Table 4: Total Cyanide Results (milligram per kilogram).....	19
Table 5 Results of TTLC, STLC Analysis, with Toxicity Standards.....	22
Table 6 Noise levels from various sources.....	26
Table 7 Noise levels from various equipment sources commonly found on mining sites.....	26
Table 8 Example of planning ordinance limitations on frequency and decibel range.....	27
Table 9 Change in noise intensity based on distance from source to receptor	28
Table 10 Resource values affected from the Proposed Action.....	34

List of Appendices

Appendix A: Technical Memorandum 1. Analytical results from total cyanide testing at the American Girl Operation

Appendix B: Hazmat Characterization report, 19 November, 2008.

Appendix B1: Supplemental Hazmat Characterization report, September 2011

Appendix C: Biological Assessment of American Girl Property done by Helix Environmental Planning Inc, 8 February, 2008.

Appendix D: Mine Plan

Appendix E: Reclamation Plan

Appendix F: Letter from the BLM EI Centro Field Office to Jim Good requesting information on concerns regarding hazardous materials being on site.

Appendix G: Response to the BLM EI Centro Field Office to Jim Good requesting information on concerns regarding hazardous materials being on site

El Centro Field Office, California Desert District Bureau of Land Management

ENVIRONMENTAL ASSESSMENT Number CA-670-2008-76

Proposed Action Title/Type: Mining and processing for sale of reclaimed overburden and stockpiled waste rock material generated from former Padre Madre mining operation (1988-1996) conducted on the site.

Project Applicant/Proponent: Pyramid Construction and Aggregates, Incorporated, 839 Dogwood Road, Heber, California 92249.

Location of Proposed Action: Portions of Section 19, Township 15 South., Range 21 East, SBBM, Ogilby 7.5-minute USGS topographic quadrangle, Imperial County, California

INTRODUCTION

The El Centro Field Office, Bureau of Land Management, offered by competitive sale, 500,000 tons of waste rock from previous gold mining operations at the Padre-Madre mine in August 2007. Pyramid Construction and Aggregates, Incorporated (Pyramid) won the competitive mineral material sales contract which incorporates a portion of the waste rock resulting from over and interburden removal from the Padre Madre open pit gold mine. Case file serial number CACA 49292 has been assigned to this contract.

The contract area is located on unencumbered public land in eastern Imperial County, California, within the western portion of the Chocolate Mountains (Figure 2). The contract would authorize Pyramid to mine and process waste rock from within an area comprising approximately 40 acres for a period of 10 years. The competitive contract would give Pyramid the right to renew the contract after a 10 year term, or after materials contracted have been removed, subject to reappraisal. This mineral material disposal was authorized and is being processed in accordance with the 43 CFR 3600 regulations for mineral materials disposal

Mining operations, the processing facility, and ancillary facilities such as a water well and access road would be operated under the name "American Girl Operation" (AGO). AGO is a proposed construction aggregate mining and processing operation that would extract and market previously mined overburden and waste rock, stockpiled on the east side of the west open pit. Mining operations would be conducted in a manner so as to allow for concurrent reclamation. All processing and ancillary facilities and improvements would be removed at the end of mine life, and the sites reclaimed in compliance with BLM and Imperial County requirements. There are no mining claims or mineral leases encumbering the subject site, and the area has been reclaimed by the previous mine operator in compliance with BLM's surface management regulations at 43 CFR 3809 and the State of California Surface Mining and Reclamation Act of 1975 and promulgated regulations.

The proposed AGO is located in the Tumco gold mining district with mineral extraction to be conducted entirely on lands disturbed by previous mining activities, most notably the former AGJV Padre Madre operations. The proposed area of disturbance (Figures 4 through 6) was the subject of an Environmental Assessment/Environmental Impact Report (EA/EIR) and Finding of No Significant Impact for the Padre Madre Gold Mine Project Phase II (EA Number CA-067-88-65) in 1988. The most recent commercial production was associated with the Padre Madre mine, which was part of the American Girl Canyon Mining Area. Padre Madre gold mining activities were conducted in a phased manner and the most recent activity ceased in 1996. These areas were reclaimed over the next 5 years. Subsequent to mining activity at the Padre Madre site, all mining claim interests on public land held by the AGJV have been abandoned. This project would involve mining in the previously reclaimed area.

Hecla and AGJV appealed BLM's decision (Decision Record (DR) and Finding of No Significant Impact (FONSI) issued by the Field Manager, El Centro Field Office) on October 8, 2009). As a result of the appeal, the Interior Board of Land Appeals set aside BLM's October 2009 decision and directed that "...BLM considered all relevant areas of environmental concern, took a "hard look" at potential impacts, or made a convincing that BLM considered all relevant areas of environmental concern...".

This EA attempts to answer concerns addressed by Hecla regarding hazardous materials on the site that may affect public and environmental health and safety. To affect a better understanding of Hecla and AGJV's concerns, a letter was sent to them by the El Centro Field Office dated November 3, 2010, requesting any information that Hecla and AGJV may have collected from their extensive work on the Padre-Madre site, and more specifically as it relates to the toxic or hazardous characteristics of rock material under the subject contract, that supports their contention that extraction and use would constitute a potential CERCLA liability (Appendix F). Hecla and AGJV responded by letter dated 30 without support for their arguments that the material may pose a health risk to the public and natural environment (Appendix G).

In response to Hecla's, et al, earlier comments on the draft environmental assessments and decision record, further analytical work was completed in January 2009 (Appendix B1). Prior to release of the 2009 Decision Record, BLM had completed specific test on the mineral material at the Padre-Madre site in an effort to characterize the material for potential toxicity in compliance with standard protocols of the Environmental Protection Agency and state of California. BLM completed the California approved standard test method for determining whether a solid material is susceptible to extraction of heavy metals into the human and natural environment. The Waste Extraction test (WET) was done on the samples as collected and results did not indicate that the rock material had the characteristics of toxicity. Results of the WET were included in a supplemental mineral report, and a new table compiled that would replace Table 5 of the 2009 Environmental Assessment (EA). Neither the table nor supplemental mineral reports were included in the case file record on subsequent appeal; the information from the WET testing was not considered in the 2009 environmental assessment and decision record. In July 2011, in compliance with the direction from the Interior Board of Land

Appeals in their July 14, 2010, decision (179 IBLA299) to take a hard look at the CERCLA issues that may result from disposal of the rock material, BLM conducted a further WET on crushed and classified rock material greater than 10 mesh screen that would typically be removed from the site as product. Testing did not indicate that the classified material has the characteristics of toxicity. Table 5 of the Final EA reflects all testing of the rock material.

PURPOSE AND NEED FOR THE PROPOSED ACTION

BLM's purpose for this action is to provide Pyramid Construction and Aggregates, Incorporated with legal opportunity to produce mineral materials on public land. The need for this action is established by FLPMA 1976, in accordance with the Mining and Minerals Policy Act of 1970.

Pyramid Construction and Aggregates, Incorporated's purpose for this project is to allow production of mineral materials in eastern Imperial County. BLM conducted a competitive bid sale in August 2007 in which Pyramid Construction was awarded 500,000 tons of waste rock from the former Padre Madre mine site, with the ability to extend the term to include another 500,000 tons. The proposed AGO would mine existing overburden stockpiles remaining at the site and process these materials for sale as construction aggregate in the local Imperial County market. The project would reduce, reuse, and reclaim or recycle what are considered wastes, thus removing waste stockpiles and restoring the area to near-original surface contours. Additionally, the material mined and marketed from this property would supplement the dwindling supply of aggregate in Imperial County. Based on the most recent document available, the 1986 Conservation Plan, the area available for mineral extraction in Imperial County is largely depleted, leaving the region with a questionable aggregate mining future. Encumbrances for non-mineral uses, on both public and private lands in Imperial County, limit access and availability to adequate construction materials necessary to meet local and regional needs.

The project objective is to remove all saleable resources from the rock stockpiles within the contract period, for a minimum of two years and up to 10 years, depending on market conditions. Second use of previously mined material at the AGJV Project area (American Girl and Padre Madre mine areas), not dedicated to existing uses, is estimated at over 10 million tons. Resources available from the west stockpile, which is encumbered by the Pyramid contract, mined within the scope of a final reclamation profile is estimated at about 1.6 million tons.

CONFORMANCE WITH LAND USE PLANS

This AGO area is designated as “Class M” or “Moderate” use under the California Desert Conservation Act (CDCA) of 1980, as amended. Additionally, this Environmental Assessment conforms with the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) as amended to the CDCA Plan 1980 and Sikes Act Plan with the California Department of Fish and Game (July 2002). The proposed AGO activities conform with Imperial County’s General Plan Design (Open Space/ Recreation) and Zoning (S-Open Space with mining allowed, subject to Conditional Use Permit [CUP] approval).

RELATIONSHIPS TO STATUTES, REGULATIONS, AND OTHER PLANS

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

Under Federal Law, review and approval of the AGO Mining and Reclamation Plan (43 CFR 3601.40) by BLM is required before operations can proceed under the contract. Under State Law, review and approval of a reclamation plan pursuant to the California Surface Mining and Reclamation Act of 1975 by the County of Imperial Planning Department (County) is also required. Under Federal Law, the water well required for site operations (see Water Supply, below), requires a right of way grant from the BLM; under state law it requires a well construction permit from Imperial County.

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

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

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

On January 22, 2008, the U. S. Army Corps of Engineers (USACE) issued an exemption from the Army Corps Section 404, Regional Water Quality Control Board Section 401 permit and waste discharge requirements under National Permit 14 for the project area (Monarres 2008, personal communication; Stormo 2008, personal communication).

An EA/EIR and Finding of No Significant Impact (FONSI) were prepared and approved for the previous Padre Madre Project Phase II (EA #CA-067-88-65). This earlier project produced the existing waste rock and overburden stock piles that are the source of aggregate material for the proposed AGO project.

Alternative A: Proposed Action

The AGO proposes to mine and process overburden and stockpiled materials within the 40-acre confines of the project site within the scope of the mineral material contract (Figure 2). Saleable aggregate materials would be extracted and processed on public lands at and proximal to the west waste dump. All salable products produced from the rock material would be transported to markets, as discussed in the following subsections.

Mining Operations

Pyramid proposes to mine and process all the overburden and stockpiled materials within a small portion of the confines of the formerly mined American Girl Mine-Padre Madre Mine Operation and would not disturb any native or previously undisturbed ground. The extraction of materials from these stockpiles would be accomplished with conventional mining methods using loaders and haul trucks. No blasting would be required. The operation would include mining, and hauling to the processing facilities by off-road material haul trucks. At the processing facilities, waste rock removed from the waste dump would be crushed, screened and washed, with future provision for a portable asphalt batch plant.

The stockpile would be mined systematically in order to facilitate concurrent reclamation in parallel with the proposed operation. Approximately one million cubic yards of stockpiled material is estimated to be removed to recover the contract amount of 500,000 tons of plus 1.4 inch crushed rock.

Material processing would include crushing and screening, and washing when necessary, to meet the required specifications for the construction aggregates being sold. Some material products would require crushing and screening as well as washing to remove fines, while others may require only washing. All plant reject material would be temporarily stockpiled in the north portion of the site (Figure 3A) for eventual spreading over the reclamation areas and graded into the final contours. The maximum

daily production is planned to be 4,500 cubic yards. Mining operations are proposed for daylight hours only (one-half hour before sunrise and one-half hour after sunset).

Excavation and Extraction

All mining would occur at elevations above natural ground elevation; that is, no new pits would be created at the site as a result of the proposed AGO operation. Stockpile extraction would be conducted using conventional surface-mining equipment, such as front-end loaders, haul trucks, bulldozers, motor graders, and water trucks. Specific equipment is provided in Table 1 below. The maximum daily extraction rate would not exceed 4,500 cubic yards per day.

Table 1: Proposed Mining Equipment

Equipment Type	Model Equivalent	Quantity
Front-End Loader – 7 cubic yards	CAT 980	1
Motor Grader	CAT 140	1
Haul Truck – 35 ton	CAT D350	3 (future)
Bulldozer	CAT D8	1
Generator	Cummins QSX15-G9 (725 kW)	1
Water truck	4,000 gallon	1

Excavation would entail using a bulldozer to move material from the top to the toe of the stockpile where front-end loader would scoop the material to haul trucks or move the material directly to the materials processing site. Bulldozer excavations would be maintained at slopes not exceeding 4 horizontal to 1 vertical..

Materials Processing

In addition to the excavation and extraction equipment listed above, a crushing and screening facility would be used to manufacture construction aggregate materials to meet specific market needs. Mined stockpile material would be delivered directly to the crushing plant feeder hopper on-site. Material would be fed from the hopper into the jaw crusher and then conveyed to the portable screen plant and either routed to a product pile or to a secondary cone crusher, which returns material to the on-site screen plant. Table 2 below and Table 3 in the Plan of Operation lists the anticipated crushing and screening equipment.

Table 2: Proposed Process Equipment Including Equipment Type and Description

1- 3 144 Pioneer jaw crusher (1 50 HP)
1- 7' x 20' JCI triple deck screen, Model 7203-38 (50 HP)
1- 1400LS JCI cone crusher (300 HP)
1- 48" x 30' jaw under crusher conveyor (30 HP)
1- 42" x 60' conveyor (30 HP)
1- 60" x 25' screen conveyor (30 HP)
1- 36" x 25' screen conveyor (15 HP)
1- 36" x 1 5' screen conveyor (10 HP)
1- 42" x 30' cone crusher feed conveyor (30 HP)
1- 48" x 15' cone under crusher conveyor (20 HP)
1- 30" x 30' portable conveyor (10 HP)
2- 30" x 60' portable conveyors (15 HP each)
1- 30" x 100' radial stacking conveyor (25 HP)
1- 36" x 30' portable conveyor (15 HP)
1- 36" x 60' portable conveyor (20 HP)
1- 36" x 100' radial stacking conveyor (30 HP)
1- Caterpillar generator set, powered by a Cat diesel-fueled engine, Model 3412CDITA, turbocharged, rated at 1,186 HP@ 1,800 rpm
1- JCI 7 x 20 Screening Plants sIn 2006165
1- Thor 36 x 150 telescopic portable radial
12- RF 36 x 60 stackable conveyor
1 – riprap separator
1 –Ford F800 (maintenance truck)

Materials processing would include crushing and screening, and washing. A portable crushing and screening facility would be used to manufacture construction aggregate materials to meet specific market needs. Mined stockpile materials would be delivered directly to the crushing plant feeder hopper. Material would be fed from the hopper into the jaw crusher and then conveyed to the portable screen plant. Based on size, material would be routed to stockpiles. Some larger sizes may report to a secondary cone crusher, which returns materials to the screen plant for further size classification. The maximum daily production is planned to be 4,500 cubic yards.

The entire crushing and screening plant is designed as a portable system, so no permanent foundation is required. Because it is portable, the plant can be relocated on site as needed.

Product specification may require washing of materials in order to remove fines. Fines and wash water would be placed in a settling pond(s). Once dried, any fines materials would be removed from the settling pond(s) and be incorporated into soil used for final reclamation.

Processing operations are proposed for daylight hours only (one-half hour before sunrise and one-half hour after sunset).

Haul Roads and Site Access

Access to the proposed AGO would be over existing county roads (i.e., the same road originally used for access to the former American Girl Mine-Padre Madre Operations). Haul and access roads would follow existing access and exploration roads. A short section of the access road to AGO would be modified. This section is located approximately 1,800 feet west of the proposed AGO (Figure 2). The road would be modified to extend around the natural slope just north of the knob. This would eliminate the need to rip or reduce the grade of the knob. Through-access to the existing knob road would be modified with landscaping including but not limited to fill material and boulders. Additionally, the existing knob road would be vegetated with creosote and other native vegetation. This would not only enhance the visual qualities of the knob, but it would provide a natural sound and visual barrier between the public and the proposed mine site as well as prevent pass-through by the public. A maximum of 250 truck trips per day (25 trucks at 10 trips per day) is projected during periods of peak activity.

All mine roads would be developed to an operating width of 20 to 25 feet, which is no greater than the current average width of the roads leading to the site. Road grades would be limited to overall gradients of eight percent or less. Ambient roadway dust emissions would be suppressed using water application or industry-standard chemical roadway dust suppressant agents (e.g., magnesium chloride) where necessary.

Plant Reject Materials

Reject materials would consist of all silts and sands that are not saleable as construction materials. The estimated percentage of waste for this project is expected to be no more than 5% or 50,000 cubic yards (CY) of material. This material, while not saleable, would be used on site as part of concurrent reclamation and graded into the final contours. Plant reject/wash material would be stored in a small sediment pond (see Figure 3). This pond would be cleaned as needed and the dried fine material disposed into the final pit reclamation profile.

Reclamation

Site reclamation would be conducted concurrent with mining through all mine phases. All cut slopes would be maintained at 4 (horizontal) to 1 (vertical). This process would include site grading and re-vegetation with appropriate native plant species to restore the 40-acre area to a pre-mining condition. Dimpling and scalloping the final slope and plateaus on the finished site would be done to trap moisture and seed. Photograph below illustrates the natural re-vegetation of the current rock material 13 years after reclamation was completed by AMJV.

All ancillary facilities and earthworks will be removed, and stockpiled vegetative soils spread over disturbed surfaces. Details are provided in the Reclamation Plan (Appendix E).



Photograph 1 showing creosote and grasses growing in a scalloped surface left on of the rock stockpile from earlier gold mine reclamation activity.

Ancillary Facilities and Supplies

Fuel Storage

Fuel and other supplies to be used at the proposed AGO include diesel fuel, motor oil, and lubricating compounds. Fuels to be stored on site would be contained in two 12,000-gallon above-ground diesel storage tanks (Figure 3A). A secondary containment area would be constructed around the storage tanks to hold 100 percent of the capacity of the largest single-walled tank as well as the area displaced by all other tanks in the secondary containment. This is in addition to calculated freeboard to accommodate the average daily rain event. All vehicles refueling would occur within the containment area. All appropriate state and local storage permits would be obtained prior to fuel delivery to the project area. All materials used in the fuel containment would be demolished and removed from the site to an appropriate disposal facility authorized to accept the class waste.

Daily fuel consumption estimates are included in Table 3 below.

Table 3: Estimated Fuel Consumption

Equipment Type	Model Equivalent	Quantity	Estimated Fuel Consumption / Hr / Vehicle (gallons)	Hours of Operation Per Day	Estimated Fleet Fuel Consumption / Bay (gallons)
Front-End Loader – 7 cubic yards ¹	CAT 980	1	11.25	8	90
Motor Grader ¹	CAT 140	1	5.05	8	40.4
Haul Truck – 35 ton ¹	CAT D350	3	9.25	8	222
Bulldozer ¹	CAT D8	1	8.75	8	70
Generator ²	Cummins QSX15-G9 (725 kW)	1	39.3	8	314.4
Water truck ¹	4,000 gallon	1	5.8	8	46.4
Water pull ¹	5,000 gallon	1	6.5	8	52
Total Daily Consumption (gallons)					835.2

Source: (1) *Cat Handbook, Edition 31 (assumes "medium" duty)*

(2) *Diesel Service and Supply, Brighton, Colorado (assumes 3/4 load)*

A Spill Prevention Control and Countermeasures Plan would be prepared prior to project startup in compliance with 40 CFR Part 112.

Electrical Power

The proposed AGO would use a portable diesel generator for site power. The portable diesel generator would be rated at approximately 725 kW and would operate at 480 volts. No permanent power lines are planned for the project. A maintenance service truck would refuel the generator on an as-needed basis using fuel stored in the two 12,000-gallon tanks discussed above.

Water Supply

The maximum daily water requirement for full operations at the AGO is estimated to be 60,000 gallons, or approximately 42 gallons per minute. This water would be used primarily for dust suppression 3.5 miles along American Girl Mine Road, 1.6 miles of mine access road, and within the processing plant area as well as within the pit area being mined.

Construction of a new water well is the proposed water source for the project. The location of the proposed well is approximately 1.5 miles southwest of the proposed AGO along the north side of American Girl Mine Road in Assessor's Parcel Number 050120009000 (Figures 3). This location was chosen for its proximity to access roads, the proposed mine site and roads that would be subject to dust control measures. Several wells are currently or were historically located in this alluvial setting and reportedly produce up to four times the required volume for the proposed AGO.

Water extracted from this well would be transferred to two portable storage tanks at the well site and conveyed in water trucks to portable storage tanks to be located on the site (Figure 3b). Use of this well would require coordination with BLM for use and right-of-way access. Conditional Use Permit 08-001 has already been approved by Imperial County for this well.

Sanitary and Solid Waste Disposal

The proposed AGO project is planned as a "pack-it-in, pack-it-out" project with no permanent on-site waste disposal facilities. Temporary sanitary facilities would be provided as rented portable toilets suitable in number to support crews operating on site. Toilets would be maintained by the rental firm.

All refuse generated on site would be removed by the operating crew on a regular basis and deposited in the dumpster located at Pyramid's office in Heber, California.

Drainage Control and Diversion Structures

Roadway drainage would be intercepted by haul road drainage channels, which would be incorporated within the roadway to promote drainage along the inside edge of the roadway. These channels would route runoff from precipitation to the nearest sediment control facility. The combined use of these channels with additional storm water Best Management Practices (BMPs), such as temporary straw-bale diversion and/or sedimentation ponds, would manage sediment transport during high-precipitation events.

Offices and Support Facilities

The portable crushing and screening plant would include a small control room. No other office facilities are planned. The site would operate on an intermittent basis and no permanent facilities are planned. A maximum of ten (10) employees would be needed for the proposed project.

Equipment maintenance would be provided by owner or vendor service trucks. Neither temporary nor permanent maintenance facilities would be required. However, for small, portable equipment that requires periodic maintenance, a small pad near the fueling area would be established as necessary. All other maintenance to equipment such as conveyors and crushers would be performed where the equipment located and appropriate Best Management Practices would be employed to reduce the risk of environmental accidents. These practices may include but are not limited to plastic containment tarps, drip pans and spill kits. Any drip pans would be monitored during wet weather season.

Fencing

Public access would be restricted within the proposed AGO site area by erecting a temporary fence around a portion of the processing area perimeter. The fence would be a minimum of six feet high, constructed of crossed wire, with a gate and keyed lock. Keys would be restricted to Pyramid crew assigned to the site, and BLM. A tortoise fence would be erected immediately adjacent to the six foot fence to reduce the risk of desert tortoise from accessing the property. (Refer to the Biological Resources section of this report for more information on the desert tortoise).

The access road to the facility would be roped off with high-visibility tape along its southern length, where the road forks toward the property, to direct traffic away from the wash to the south of the American Girl Mine Road (Figure 3A). The fence and gate would be removed following completion of site reclamation activities.

In addition to the above site-wide fencing, Pyramid would restrict access to the wetlands area from inside the property by erecting fencing on the inside perimeter of sensitive property thereby excluding the wetlands portion from the active portions of the property. The fencing, coupled with signage warning people away from the habitat, would help protect the wetlands from human and vehicle encroachment from inside the property, and would allow wildlife to reach the wetlands from outside the fenced area. Further, a 15-foot interior buffer zone would be established between the fence line and the active stockpile areas to provide additional protection. Once the project is complete, the fencing and signage would be removed as part of site reclamation.

Alternative B: Mining with Off-site Processing

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

Activity associated with mining would be no different than under the proposed action.

All mined material, rock and waste material, from AGO would be loaded into highway haul trucks for transport to off-site processing facilities away from the AGO site. Loading activity would require an approximate 1-acre staging area with an associated stockpile area (less than 1-acre) to allow efficient loading of highway haul trucks.

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

Alternative C: No Action

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

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Reduced Mining

The reduced mining alternative would limit mining and processing of mineral material from AGO to less than 4,500 tons per day, to approximately 250 tons per day. This amount is the maximum tonnage spread over the 10-year contract period over a 220 day working year. Under this alternative, production would be sustained to minimize truck traffic along American Girl road and the Ogilby road to a level consistent with moderate recreation use in the area.

This alternative places an increased burden on the operator by not optimizing mining and production equipment to normal market needs. The alternative increases carbon emissions in the mine area as well as processing area by underutilizing equipment, and well as requiring an increase in worker transits to the site, increasing carbon emissions and wasting fossil fuels.

This alternative will not be considered further in this analysis because in comparison with the proposed action, would create more environmental impacts and increased hazards to public health and safety.

AFFECTED ENVIRONMENT

This section presents the existing environment of the proposed AGO project site and surrounding vicinity. Much of the background information has been derived from the 1988 EA/EIR, except for recent surveys conducted for cultural and biological resources, the results of which are presented here and in the Environmental Impacts section.

Regional Overview

The proposed AGO project area is located in the Cargo Muchacho Mining District of eastern Imperial County, California. This district has a long history of mining-related activities dating back over 150 years. Prospecting and mining have been conducted for gold, uranium, geothermal, mica, and kyanite (aluminum silicate) resources. Extensive mining over the years has resulted in significant surface disturbance. Overburden stockpiles produced as a result of prior commercial mining (the Padre Madre Project Phase II) remain on the site.

The general region and the proposed AGO project area are typical desert, characterized by low rainfall and high mean temperatures; sparse, low-growing vegetation found mainly in washes or depressions; and shallow, poorly developed soils.

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACECs) are set aside to protect and preserve biological, cultural and scenic values. The closest ACEC (Plank Road ACEC) is approximately 7 miles from the site. The project would not take place in or adjacent to an ACEC nor would this project have any effect on ACECs, therefore this element will not be considered further.

Cultural Resources

Cultural resources include both prehistoric and historic resources. The Imperial Valley area has a well-documented history of prehistoric occupation. Historic settlements and mining operations are also well known in the Valley.

A cultural resources site record search was conducted for this project in January 2008 by the Southeast Information Center, the state repository for Imperial County cultural resource information. A total of 11 sites and 10 field surveys have been recorded covering the project area up to a 1-mile radius of the project boundaries, indicating that the area has been well studied. One significant historic mining site was recorded in 1987 within 1 mile of the AGO project area: 4-IMP-3303-H, the town and mills of Obregon. This resource was considered eligible for the National Register of Historic Places (NRHP) (SEIC, 2008).

One resource, 4-IMP-5300-H, was recorded in 1986 within the proposed AGO project boundaries. It consisted of a highly disturbed isolated artifact scatter and one group of disturbed historic features. As reported in the 1988 EA/EIR, due to the disturbed nature

of the resources, in 1987 the State Historic Preservation Officer concurred with the report recommendation that 4-IMP-5300-H was not National Register eligible. Therefore, 4-IMP-5300-H was not considered significant and no mitigation measures were required. Because the area was used subsequently for the American Girl-Padre Madre Mining Operation, the resource no longer exists (SEIC, 2008).

A preliminary archaeological site visit was conducted by a Registered Professional Archaeologist (RPA) in March 2008 to evaluate the potential for undisturbed cultural resources remaining on the property. The RPA also consulted with an historic archaeologist (also an RPA) regarding potential historic resources in the project area. Based upon review of the site records search results, map information, aerial photographs of the project site, site visit, and historic consultation, it was concluded that the potential for cultural resources on the site is essentially nonexistent due to the extensive site disturbance caused by previous mining activity.

In June 2008, a BLM class III archaeological field survey was conducted by the cultural resource management firm Laguna Mountain Environmental to evaluate the potential for undisturbed cultural resources along American Girl Mine Road and at two recently identified primary and secondary proposed well locations. In particular, a segment of the existing road proposed for lowering, grading, and associated road shoulder alteration was inspected. The road and well locations were also evaluated by aerial photo prior to field survey.

Six archaeological sites (AGO Site 1 through AGO Site 6) and three historic isolates (AGO Isolate 1 through AGO Isolate 3) were located on this survey. One of the sites (AGO Site 1) is a small prehistoric lithic scatter with a possible cleared circle. The other sites are historic (AGO Sites 2, 4, 5 and 6) and include refuse scatters of various kinds and a marker or monument (AGO Site 3). With the exception of the lithic scatter/possible cleared circle (AGO Site 1), none of the resources appears to be eligible for the NRHP (Gross and Pigniolo 2008).

AGO Site 1 is clearly outside the Area of Potential Effect (APE) of the project. The three historic isolates, historic refuse scatters, and the marker are all within the APE, but all but one of the artifact scatters (AGO Site 6) are outside the areas that would actually be impacted by grading. The survey report recommended that a slight adjustment in grading be done to avoid impacts to AGO Site 6 by conducting grading for road widening on the south side of the road. The survey report also recommended that an archaeological monitor be present during grading to assure that the sites are not subjected to inadvertent impacts (Gross and Pigniolo 2008). This will be discussed further in the Environmental Impacts section. The cultural resources survey report is provided under separate cover.

Environmental Justice

The project is proposed in a remote area, approximately 7.5 miles from the nearest community (Gold Valley). Impacts that may result from mining, processing, or transportation operations would not affect any communities, including low-income and minority residents. Therefore, this element will not be considered further.

Farm Lands

There are no farm lands located in or near the project area. Therefore, this element will not be considered further.

Wild and Scenic Rivers

There are no wild and scenic rivers located in or near the project area. Therefore, this element will not be considered further.

Wilderness

The project is not located within or near a designated wilderness area. Therefore, this element will not be considered further.

Floodplains

Surface water flow at the proposed AGO project area consists of ephemeral drainage, such as the American Girl Wash. These drainage ways only contain water following major precipitation events. The proposed AGO project is not within a flood hazard area according to the Flood Insurance Rate Map (FIRM) Community-Panel Number 060065 0900 B. The closest flood hazard designation zone is Zone C. The Zone C designation corresponds to areas outside the 1-percent annual chance floodplain. In addition, the waste dump is elevated 25 to 35 feet above the undisturbed drainage topography. Mining would not penetrate to the topography of the pre-mining surface. The proposed action would have no impact on floodplains; therefore will not be discussed further.

Geology, Soils, and Seismicity

The Cargo Muchacho Mountains are a small part of the Chocolate Mountain Range in the eastern portion of the Colorado Desert Geologic Province. Four geologic settings have been identified for this area: sheared rocks, linear zones trending north-northeast, chemically and physically altered Cenozoic metamorphosed rock, and fractured quartz in east-trending thrust faults. Highly mineralized zones, believed to have originated from hydrothermal activity in the area, are generally developed within shear zones. Many of the mineralized deposits are no longer in place as the entire region has been heavily mined for gold and associated metals.

The proposed project is located in the Imperial Valley at the southern end of the San Andreas Fault system, a seismically active area. Active and potentially active faults exist in the area, although no recently active faults were identified in the 1988 EA/EIR. Recent information indicates that the very active Imperial Fault lies roughly 42 miles west of the proposed AGO site. This fault experienced significant activity in 1940, 1966, 1968, 1971, 1977, and 1979. Some of this activity was surface ruptures and some was classified as triggered creep. Despite the very active nature of this fault, however, the fault falls outside of the Earthquake Fault Zone for the proposed project site as defined by the Alquist-Priolo Act (Hart 1994).

Soils in and around the project site are derived from the host granitic or meta-sedimentary substrate, either as weathered in place or as material deposited as shallow alluvium over bedrock. Soils in the project area are characterized as shallow and poorly developed. Native soils on the project site are covered with stockpiles from previous mining activity and are not generally exposed. The stockpiled material consists of the host granitic substrate that was likely not deemed economically feasible to process for heavy metals as well as what is theorized to be reworked surface alluvium, soils and transported overburden from past mining activities.

Mineral Resources

The mineral subject to contract CACA 49292 consists of blasted rock removed from in and around valuable ore zones associated with the Padre Madre open pit operations. Rock from both the West and Padre-Madre pits (Figure 2) was removed as over- and inter-burden rock that was barren of valuable minerals or had ore grades too low to be considered in mineral extraction processes (heap leaching). This rock was necessary to be removed in order to access by the open pit, ore grade rock.

The rock consists of predominately of hornblende biotite gneiss and quartz monzonite, with minor mica and talcose granite schists, and volcanic flow rocks. Volcanic rocks are mainly overburden rock having basalt to andesite compositions. The rock material consisted of mainly of minus 10-inch sized angular rock through silt sized material, with approximately 2 to 3 percent consisting of boulders as large as 3 feet in diameter. Most of the material is in the rock and boulder range, making this material suitable for armour and rip-rap applications.

In small pits that exposed subsurface material, the rock size classification is between 70 percent plus No. 10 screen (approximately 1.7 millimeters) sized rock to 30 percent minus No. 10 screen sized sand and silts. Fine waste material from processing rock material at the Pyramid site will be about 30 to 40 percent after crushing and screening operations are complete. A portion of the minus ¼-inch material may be further processed to concrete and stucco sands. However, the majority of the fines material will be returned to the site. (Appendix B and B1).

There is a rock shortage within the Imperial County market area, and especially from El Centro to the Arizona border. No other mineral material site is located within this region that mines predominately rock (Figure 9). Sand and gravel operations along the East

Highline canal on BLM contract areas as well as private land mine material with well rounded rock generally suited for base aggregate. No rip-rap or armor rock is mined in this area. The Bureau of reclamation mines from quarries along the Colorado River in both California and Arizona. Quarries extend from north of Needles, California south to the Mexican Border (Figure 9).

Waste and Hazardous Materials

The proposed AGO would be mining the waste rock from previous precious gold mining operations. Historically, it is documented that cyanide leaching was used in specific areas of this mining district. However, the 40-acre parcel that is the subject of this EA was not one of the locations documented to have been used for the leaching process and the BLM has indicated that cyanide was not used during historic mining operations on this 40-acre portion of the former Padre-Madre Mine. Despite the documented fact that cyanide was not used on this 40-acre parcel, several soil samples were collected to assess the presence or absence of total cyanide in surface soils. This sampling was completed as a precautionary measure to ensure that removal and use of the aggregate from the stockpile does not create dust containing residual cyanide or create deleterious conditions when used as base material. The sampling for this investigation included the collection of five surface soil samples from the stockpile, surveying of the sampling locations, and analysis for total cyanide.

Results from the five samples indicated no detectable concentrations of total cyanide (Table 4). These data have been submitted and reviewed by the BLM, Imperial County Public Works Department and the Imperial County Air Pollution Control District.

Table 4: Total Cyanide Results (milligram per kilogram)

Sample ID	Sample Date	Concentration
PMSP301	7/24/08	<0.50
PMSP302	7/24/08	<0.50
PMSP303	7/24/08	<0.50
PMSP304	7/24/08	<0.50
PMSP305	7/24/08	<0.50

<0.5 – value is below the laboratory reporting limit

While the waste rock disposed on the AGO site was not considered a hazardous solid waste, or permitted as such by the state of California, rock mined in the vicinity of gold deposition is typically enriched in certain heavy metals. These rock materials may be considered toxic to the human and natural environments if metal concentrations are high enough to pose a threat to human or natural environments. Solid wastes that are

not hazardous wastes include mining overburden returned to the mine site¹. This is the condition of the subject rock material under the AGJV mine permitting process. BLM made 4 sample transects of the proposed mining site to characterize the site for the occurrence and concentration of 17 metals listed by the State of California as elements of environmental concern (Title 22; CAM 17 Metals). Under standard testing protocols, a Total Toxics Limits Concentration (TTLC) analysis was made to determine the total concentration of certain regulated metallic elements in the material. When any sample exceeds the state or federal Environmental Protection Agency TTLC threshold limits, the material is classified as toxic and/or hazardous. A report (Appendix B) of the sampling protocols for each sample transect, and results of the TTLC testing for elemental concentrations within each composited transect is presented in a report (Appendix B).

The analyses of samples collected from the rock stockpile in the report at Appendix B show that antimony, arsenic, mercury, and zinc are concentrated from 2 to 8 times crustal abundance in the rock and soil of the waste dump. The remaining elements in the CAM 17 metals analysis are below crustal abundance. These levels are not unexpected from mineral deposits, and represent the abundance of elements in undisturbed soil and rock samples within the mine area. Results of BLM's October 2008 TTLC analyses also showed that no samples had metal concentrations at or above the regulatory TTLC thresholds. (Note: Although the October 2008 TTLC tests showed that zinc had concentrations in the rock higher than crustal abundance for all 4 samples analyzed, this metal is not considered as having a toxic threshold in the TCLP determination).

On January 5, 2009, the Bureau of Land Management, El Centro Field Office, released the "Pyramid Construction Environmental Assessment", assessing the plan of operation and reclamation plan resulting from the sale of 500,000 tons of stockpiled rock to Pyramid Construction Company. As a result of that review, Hecla (and AGJV) had comments on the toxicity methods applied in the November 2008 Mineral Report and still considered secondary uses of the rock material a liability placed on them and BLM under the CERCLA.

Solid material are characterized as a non-toxic non-hazardous waste (material) if it does not exhibit a characteristic by either testing or applying knowledge of the material², or the material is specifically excluded by regulation³. If the material is not specifically excluded, hazardous characteristics are determined by either testing the material according to the methods set forth in regulation⁴, or to an equivalent method approved by the EPA Administrator⁵, such as in California. A waste exhibits the characteristic of

¹ Title 40 Code of Federal Regulations (CFR) subpart 261.4 (b) (3) (Exclusions)
² 40 CFR subpart 262.11; defined in 40 CFR 261.2
³ 40 CFR subpart 261.4.
⁴ Subpart C of 40 CFR part 261.
⁵ 40 CFR 260.21.

toxicity⁶ if the extracts from representative samples of the waste, when using the Toxicity Characteristic Leaching Procedure (TCLP)⁷, contain any of listed metals at a concentration equal to or greater than the respective value determined by EPA or California to be a toxic threshold level in the leachate.

Toxic Characteristic Leaching Procedure (TCLP) and WET are test methods used in California to determine whether a waste is a toxic hazardous waste. If the TTLC results do not exceed 10 times the STLC limit then normally no further analysis is required. Four of the samples tested by TTLC in October 2009 exceeded 10 times the STLC threshold and required further analyses. This analysis was completed in January 2009. A September 2011 supplemental report to the November 2008 report provides a description of analytic processes conducted on the rock stockpile material and findings as a result of that work. Table A of the supplemental mineral report and Table 5 herein reflect additional work conducted in January of 2009 and July 2011, and amends Table 5 of the 2009 E.A (Appendix B1).

Based on the results of the California WET test, none of the rock stockpile sampled material exceeded the standards that will classify the material as toxic or hazardous. If the rock material's TTLC is equal to or greater than ten times the Soluble Threshold Limit Concentration (STLC) regulatory limit, the Waste Extraction Test (WET) is required to determine if the material is toxic. If the TTLC results do not exceed 10 times the STLC limit then normally no further analysis is required. If any substance in the waste extract is equal to or greater than the STLC value, it is considered a hazardous toxic waste. The WET was done on both the sample as collected as well as a crushed product at plus 10 mesh screen size.

Other potential sources of waste and hazardous materials that may be present on site as a result of past mining activities include buried concrete, steel, plastic and other waste materials that may have resulted from the demolition and decommissioning of previous mining operations. Disposal of these waste items are generally not approved by the BLM or Imperial County under their authorities. However, it is not unexpected that these items will be encountered during excavation activities within the waste dumps. While the technologies are available to conduct a subsurface investigation for these type items, it was deemed unnecessary as the record of the AGJV closure of the Padre-Madre mine does not disclose that materials of this type were disposed on the site within the waste material. Appropriate actions would be taken on a case by case basis in the unlikely situation that some solid waste material from previous operators is encountered in the course of AGO's daily operations.

⁶ Title 22, Article 3, Section 66261.24. Characteristic of Toxicity.

⁷ Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, third edition and Updates (incorporated by reference in section 66260.11 of this division)

Table 5 Results of TTLC, STLC Analysis, with Toxicity Standards

(CAM 17) Metal/Element	Element Crustal Abundance (ppb)**	Total Threshold Limit Concentration (TTLC) Values, Section 66261.24(a)(2), Table II, Characteristic of Toxicity, California Code of Regulations (Title 22, Division 4.5, Chapter 11, Article 3)	Rock Dump Assayed Concentration CAM 17 (TTLC; ppb)				Chemical Abstracts Service Number	Toxicity Characteristic Leaching Procedure (TCLP), Maximum Concentration of Contaminants for the Toxicity Characteristic-Section 66261.24(a)(2), Table I, Characteristic of Toxicity, California Code of Regulations (Title 22, Division 4.5, Chapter 11, Article 3)		Rock Dump TCLP (ppb)				STLC Element/Metal	List of Inorganic Toxic Substances and Their Soluble Threshold Limit Concentration (STLC)- Section 66261.24(a)(2), Table II, Characteristic of Toxicity, California Code of Regulations (Title 22, Division 4.5, Chapter 11, Article 3)		Rock Dump minus 10 mesh- STLC (WET; ppb)				Rock Dump minus 1/2 plus -10 mesh- STLC (WET; ppb)											
			Sample L-1	Sample L-2	Sample L-3	Sample L-4		(CAS#)	Hazardous Waste Criterion (ug/L)	Microbac Lab Reporting Limit	Sample L-1	Sample L-2	Sample L-3		Sample L-4	Hazardous Waste Criterion (STLC Threshold; ug/L)	Microbac Lab Reporting Limit	Sample L-1	Sample L-2	Sample L-3	Sample L-4	Sample L-1	Sample L-2	Sample L-3	Sample L-4							
			TTLC ug/L (ppb) Threshold Limits (3)																													
Antimony	200	500,000	1,910	2,910	1,390	1,120	7440-36-0						Antimony	15,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	
Arsenic	1,800	500,000	7,080	16,600	9,520	11,900	7440-38-2	5,000	20	<20	<20	<20	<20	Arsenic	5,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
Barium (4)	425,000	10,000,000	24,400	28,300	30,900	41,600	7440-39-3	100,000					Barium	100,000	1,000	2,090	1,500	1,630	1,400	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	
Beryllium	2,800	75,000	625	793	860	1,110	7440-41-7	100,000					Beryllium	750	50	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	
Cadmium	150	100,000	1,030	1,280	1,710	3,620	7440-47-3	1,000					Cadmium	1,000	500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	
Chromium (5)	102,000	2,500,000	3,520	3,300	3,780	3,780	7440-48-4	5,000					Chromium	5,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	
Cobalt	25,000	8,000,000	4,540	6,750	8,960	6,320	7440-50-8						Cobalt	80,000	500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Copper	60,000	2,500,000	269,000	133,000	62,700	118,000	7440-36-0						Copper	25,000	1,000	14,900	11,200	<1,000	<1,000	<1,000	<1,000	6,560	6,410	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	
Lead	14,000	1,000,000	23,200	39,400	64,700	72,500	7439-92-1	5,000	10	18	14	28	11	Lead	5,000	1,000	1,630	3,250	3,110	3,270	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	
Mercury	85	20,000	739	1,186	185	223	7439-97-6	200	0.20	<0.20	<0.20	<0.20	<0.20	Mercury	200	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
Molybdenum	1,200	3,500,000	2,680	8,480	8,470	6,060	7439-98-7						Molybdenum	350,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	
Nickel	84,000	2,000,000	2,910	3,080	4,030	1,800	7440-02-0						Nickel	20,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	
Selenium	50	100,000	Det	Det	Det	Det	7782-49-2	1,000					Selenium	1,000	200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	
Silver	75	500,000	Det	Det	Det	Det	7440-22-4	5,000					Silver	5,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	
Thallium	850	700,000	Det	Det	Det	Det	7440-28-0						Thallium	7,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	
Vanadium	120,000	2,400,000	24,200	38,500	32,600	48,900	7440-62-2						Vanadium	24,000	1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
Zinc	70,000	5,000,000	173,000	249,000	167,000	483,000	7440-66-6						Zinc	250,000	4,000	4,580	7,310	<4,000	<4,000	<4,000	<4,000	<4,000	4,480	<4,000	<4,000	<4,000	<4,000	<4,000	<4,000	<4,000	<4,000	

** CRC Handbook of Chemistry and Physics, 85th Edition. CRC Press. Boca Raton, Florida (2005). Section 14, Geophysics, Astronomy, and Acoustics; Abundance of Elements in the Earth's Crust and in the Sea

STLC and TTLC are used for California regulated hazardous waste materials. Source is the California Code of Regulations, Title 22, Chapter 11, Article 3.

(2) If a substance analyzed by TTLC is ten times the STLC regulatory limit, the Waste Extraction Test (WET) is indicated (Condition 2a). If any substance in the waste extract is equal to or greater than the STLC threshold limit, it is considered a hazardous toxic material (Title 22, Division 4.5, Chapter 11, Article 3; Condition 2b).

(3) Section 1.2 of the TCLP guide allows for a total constituent analysis (TTLC) in lieu of the TCLP extraction (Condition 2c). If a substance in a waste is equal to or greater than the TTLC threshold limit, it is considered a hazardous toxic w

(4) Excludes barium sulfate.

(5) If the soluble chromium as determined by the TCLP is less than 5 mg/L (5 ppm or 5,000 ppb), and the soluble chromium as determined by the STLC test equals or otherwise identified as a RCRA hazardous waste, then the waste is a non-RCRA hazardous waste.

Condition 2a - Rock Dump Assay (TTLC) Exceeds Ten times the STLC regulatory limit found in the TTLC						
	10X STLC Threshold (ppb)	L-1	L-2	L-3	L-3	L-4
Antimony	150,000	Less Than	Less Than	Less Than	Less Than	Less Than
Arsenic	50,000	Less Than	Less Than	Less Than	Less Than	Less Than
Barium (4)	1,000,000	Less Than	Less Than	Less Than	Less Than	Less Than
Beryllium	7,500	Less Than	Less Than	Less Than	Less Than	Less Than
Cadmium	10,000	Less Than	Less Than	Less Than	Less Than	Less Than
Chromium (5)	50,000	Less Than	Less Than	Less Than	Less Than	Less Than
Cobalt	800,000	Less Than	Less Than	Less Than	Less Than	Less Than
Copper	250,000	Requires WET	Less Than	Less Than	Less Than	Less Than
Lead	50,000	Less Than	Less Than	Exceeds	Requires WET	Requires WET
Mercury	2,000	Less Than	Less Than	Less Than	Less Than	Less Than
Molybdenum	3,500,000	Less Than	Less Than	Less Than	Less Than	Less Than
Nickel	200,000	Less Than	Less Than	Less Than	Less Than	Less Than
Selenium	10,000	Less Than	Less Than	Less Than	Less Than	Less Than
Silver	50,000	Less Than	Less Than	Less Than	Less Than	Less Than
Thallium	70,000	Less Than	Less Than	Less Than	Less Than	Less Than
Vanadium	240,000	Less Than	Less Than	Less Than	Less Than	Less Than
Zinc	2,500,000	Less Than	Less Than	Less Than	Less Than	Less Than

Condition 2b(1) - STLC (WET; minus 10 mesh) Value is Equal to or Greater than the STLC Threshold Value (Regulatory Limit)				
STLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
15,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
750	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
80,000	Less Than	Less Than	Less Than	Less Than
25,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
200	Less Than	Less Than	Less Than	Less Than
350,000	Less Than	Less Than	Less Than	Less Than
20,000	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
7,000	Less Than	Less Than	Less Than	Less Than
24,000	Less Than	Less Than	Less Than	Less Than
250,000	Less Than	Less Than	Less Than	Less Than

Condition 2b(2) - STLC (WET; minus 1/2 inch plus 10 mesh) Value is Equal to or Greater than the STLC Threshold Value (Regulatory Limit)				
STLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
15,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
750	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
80,000	Less Than	Less Than	Less Than	Less Than
25,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
200	Less Than	Less Than	Less Than	Less Than
350,000	Less Than	Less Than	Less Than	Less Than
20,000	Less Than	Less Than	Less Than	Less Than
1,000	Less Than	Less Than	Less Than	Less Than
5,000	Less Than	Less Than	Less Than	Less Than
7,000	Less Than	Less Than	Less Than	Less Than
24,000	Less Than	Less Than	Less Than	Less Than
250,000	Less Than	Less Than	Less Than	Less Than

Condition 2c - Rock Dump Assay (TTLC) Exceeds Twenty times the TCLP regulatory limit found in the TTLC				
TTLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
1,120	Less Than	Less Than	Less Than	Less Than
11,900	Less Than	Less Than	Less Than	Less Than
41,600	Less Than	Less Than	Less Than	Less Than
1,110	Less Than	Less Than	Less Than	Less Than
3,620	Less Than	Less Than	Less Than	Less Than
3,780	Less Than	Less Than	Less Than	Less Than
6,320	Less Than	Less Than	Less Than	Less Than
118,000	Less Than	Less Than	Less Than	Less Than
72,500	Less Than	Less Than	Less Than	Less Than
223	Less Than	Less Than	Less Than	Less Than
6,060	Less Than	Less Than	Less Than	Less Than
1,800	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
500,000	Less Than	Less Than	Less Than	Less Than
700,000	Less Than	Less Than	Less Than	Less Than
48,900	Less Than	Less Than	Less Than	Less Than
483,000	Less Than	Less Than	Less Than	Less Than

Condition 3 - TTLC Value Exceeds the TTLC Regulatory Limits				
TTLC Regulatory Limit (ppb)	L-1	L-2	L-3	L-4
500,000	Less Than	Less Than	Less Than	Less Than
500,000	Less Than	Less Than	Less Than	Less Than
10,000,000	Less Than	Less Than	Less Than	Less Than
75,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
2,500,000	Less Than	Less Than	Less Than	Less Than
8,000,000	Less Than	Less Than	Less Than	Less Than
2,500,000	Less Than	Less Than	Less Than	Less Than
1,000,000	Less Than	Less Than	Less Than	Less Than
20,000	Less Than	Less Than	Less Than	Less Than
3,500,000	Less Than	Less Than	Less Than	Less Than
2,000,000	Less Than	Less Than	Less Than	Less Than
100,000	Less Than	Less Than	Less Than	Less Than
500,000	Less Than	Less Than	Less Than	Less Than
700,000	Less Than	Less Than	Less Than	Less Than
2,400,000	Less Than	Less Than	Less Than	Less Than
5,000,000	Less Than	Less Than	Less Than	Less Than

Based on samples collected from the AGO site and various analytical work completed on different size classifications of the samples, waste rock material at the AGO site is not characterized as a “toxic” or “hazardous material” requiring RCRA Subtitle C tracking from the generation, transport, and treatment and/or disposal (e.g., “cradle to grave”). Mining of this rock waste material would have no different environmental affect than if the site were developed by primary quarry mining operations under the Materials Act of 1947 (30 USC 601, *et seq*). Because of the non-toxicity of the rock material at the AGO site, mining of the waste rock would have no adverse impact on the human or natural environments when used as an aggregate admixture to concrete and asphalt concretes, or used as fill, rip-rap, or ballast applications.

Global Climate Change

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

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Chart 1 demonstrates that northern latitudes (above 24° N) have exhibited temperature increases of nearly 1.2°C (2.1°F) since 1900, with nearly a 1.0°C (1.8°F) increase since 1970.

The Intergovernmental Panel on Climate Change (IPCC) has recently completed a comprehensive assessment of the current state of knowledge on climate change, its potential impacts and options for adaptation and mitigation. At printing of this EA, this assessment is available on the IPCC web site at <http://www.ipcc.ch/>. According to this report, global warming may ultimately contribute to a rise in sea level, destruction of estuaries and coastal wetlands, and changes in regional temperature and rainfall patterns, with major implications to agricultural and coastal communities. The IPCC has suggested that the average global surface temperature could rise 1 to 4.5 degrees Fahrenheit (°F) in the next 50 years, with significant regional variation. The National Academy of Sciences (2006) has confirmed these findings, but also indicated that there are uncertainties regarding how climate change may affect different regions. Vulnerabilities to climate change depend considerably on specific geographic and social contexts.

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

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

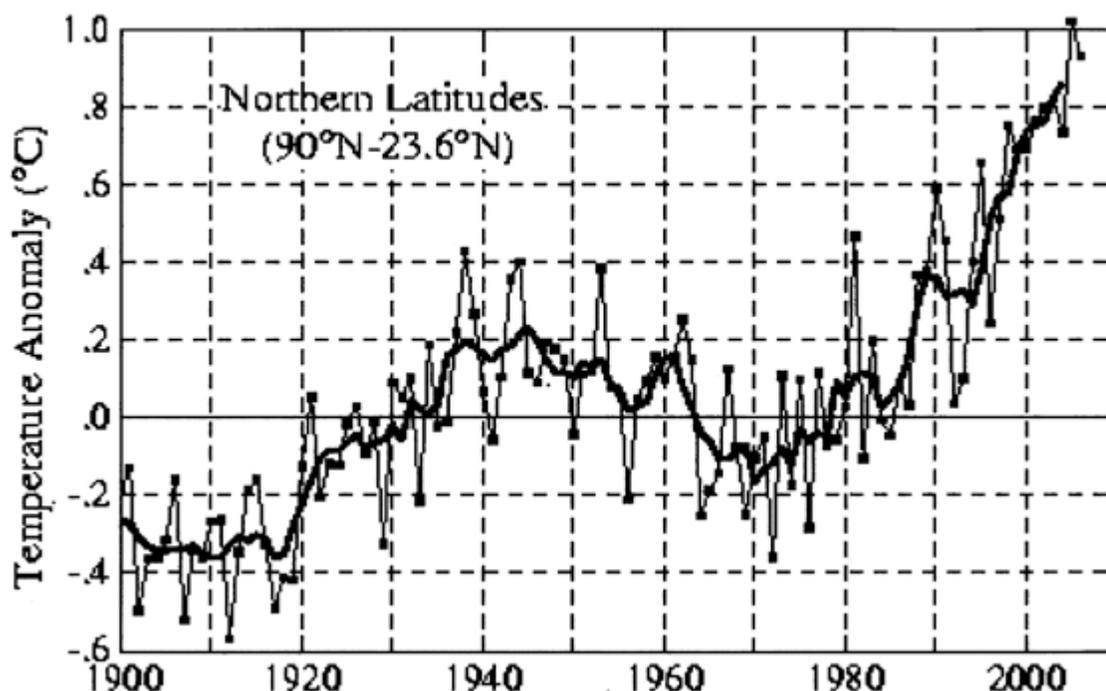


Figure 1 Chart showing the annual mean temperature change for northern latitudes (24 - 90° N; Source: Goddard Institute for Space Studies (2007)

Invasive/Non-Native Weed Species

The project area is heavily disturbed and, as discussed under Threatened or Endangered Species/Biological Resources (below), the site itself supports mostly disturbed Sonoran creosote bush scrub that has re-established on the abandoned mine spoils and tailings. Invasive/non-native species in this area include Sahara mustard (*Brassica tournefortii*), Mediterranean grass (*Schismus* sp.) and tamarisk (*Tamarix* sp). Sahara mustard and Mediterranean grass are present throughout the project area. These species are annuals that die each year and their seeds lie dormant for long

periods of time in the soil. During wet periods these species reemerge and partially cover this portion of the desert although it should be noted that during the dry season, these species are not prevalent.

Land Use

As discussed earlier, land use in the Cargo Muchacho Mountains historically and presently is largely devoted to mining and mineral exploration. This area is designated as “Class M” or “Moderate” use under the California Desert Conservation Area plan due to past, present, and potential future mining activities. Multiple-Use Class M is based upon a controlled balance between higher intensity use (such as mineral development) 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. Multiple-Use Class M management is also designed to conserve desert resources and to mitigate damage to those resources which permitted uses may cause. Other land uses in the general area include military and Indian reservation lands.

The project site is zoned S-Open Space with Recreational Use under the Imperial County General Plan. Mining is allowed in this zone subject to approval of a Reclamation Plan and Plan of Operations. The Imperial Sand Dunes Recreational Area is the closest recreational area and is located several miles to the west and south of the proposed project site.

Currently, the site is not used for any residential, industrial or commercial benefit. It is open to the public and in the winter months it is frequented by long term visitors by permit, and used by rockhounds and other on-foot recreationalists.

Native American Religious Concerns

This general area is known to have religious/sacred or traditional cultural significance to local Native American groups. Informal consultation was conducted with the Quechan Indian Tribe and the Cocopah Indian Tribe. Their cultural resource staffs have reviewed the technical cultural resource inventory reports. The Quechan Indian Tribe requested that the project area APE be staked or flagged and monitored by qualified archaeologists to ensure avoidance of cultural resources. The Cocopah made no comment but requested to be continued in the consultation process should any cultural resources be affected in the future.

Noise

Noise affects solitude and comfort for humans and animals near or distant from a source. Noise is measured at the source as well as from an observation point. Noise effects to solitude can occur from a number of attributes such as intermittence, beat

frequency or shrillness, and intensity and duration. Most noise emanating from mine sites occurs as low frequency vibrations. The unit of measure is the decibel⁸.

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

Table 6 Noise levels from various sources.

Threshold of Hearing.....	0 dBA
Quiet Room.....	45 dBA
Conversation.....	55 dBA = 45 dBA x 10
Car (50 mph at 50 ft).....	65 dBA = 45 dBA x 100

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

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

Table 7 Noise levels from various equipment sources commonly found on mining sites.

Equipment	Decibel Rating
Abrasive blasting	105 - 110 dBA
Backhoe	- 93 dBA
Bulldozer	93 - 96 dBA
Crane	90 - 96 dBA
Demolition	up to 117 dBA
Earth tamper	.90 - 96 dBA
Front-end loader	86 - 94 dBA
Gradeall	87 - 94 dBA

⁸ The decibel is a measure of how "loud" a sound is. Decibels are used to measure sound pressure level (SPL) as compared to a reference pressure, typically referred to as overpressure.

Equipment	Decibel Rating
Hammer	87 - 95 dBA
Heavy equipment operation	95 - 110 dBA
Jack hammer	102 - 111 dBA
Pneumatic chip hammer	103 - 113 dBA
Rock Drilling	up to 115 dBA
Skilsaw	88 - 102 dBA

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

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

Table 8 Example of planning ordinance limitations on frequency and decibel range.

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

Noise attenuation⁹ typically decreases 6 decibels as the distance from measuring points double. For example, from the above table a bulldozer with a 95 decibel rating 50 feet from the source would be 6 decibels less 100 feet from the source, and 12 decibels less 200 feet from the source. Typical nighttime comfort range is 40 decibels in a quiet town. Examining the bulldozer activity in relation to Olgilby Road, the following table illustrates the change in noise intensity:

Table 9 Change in noise intensity based on distance from source to receptor

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

There is currently no regulated threshold for noise in the vicinity of the proposed AGO. The proposed project would not use blasting to mine mineral materials and there is no 24-hour per day milling or processing operation proposed. Most onsite noise will be generated by crushing and screening operations, and vehicles associated with excavation activities.

Seismic noise consists of energy waves propagated through the earth. These include compressional, shear, and longitudinal waves. Typical earthmoving equipment and rolling stock induce vibrations into the earth; however, the attenuation of the amplitude of these waves diminishes significantly away from the source, and is not expected to be a significant source of concern to humans except within the Padre-Madre mine area.

⁹ Reduction of noise strength during transmission through air, and is the opposite of amplification.

Recreation

The proposed project site is designated as open space with recreational use under the Imperial County General Plan, and as “Class M” or “Moderate” use under the CDCA of 1980, as amended. The Imperial Sand Dunes Recreational Area is the closest recreational area and is located approximately seven miles to the west of the proposed project site. The Cargo Muchacho area is popular with campers and rockhounds who winter in the area in motor homes and trailers. The land is open to the public and in the winter months it is frequented by rockhounds and other recreationalists.

The proposed project would not affect the availability of this area for recreation or limit the types of recreation in the area; therefore this element will not be discussed further.

Soils

Soils in and around the project site are derived from the host granitic or meta-sedimentary substrate, either as weathered in place or as material deposited as shallow alluvium over bedrock. Soils in the project area are characterized as shallow and poorly developed.

Native soils on the project site are covered with stockpiles from previous mining activity and are not generally exposed. The proposed project would occur on previously disturbed areas and would not create any new impact on soils; therefore this element will not be discussed further.

Air Quality

Because the area is largely undeveloped and uninhabited, the major air quality issues are particulate matter (PM) and ozone. PM standards pertain to the size of the particulates and are generally evaluated by their ability to be inhaled (e.g., PM₁₀¹⁰).

The project area is located in a part of the Imperial Valley that is designated as an “unclassifiable attainment area” (any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant) for PM by the U. S. Environmental Protection Agency (USEPA) (USEPA 2004). The California Air Resources Board (2007) has indicated that the entire Imperial County is a state nonattainment area for PM₁₀ and unclassified for PM_{2.5} under the California Health and Safety Code Section 39608.

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

USEPA found that Imperial County failed to attain the 8-hour ozone national ambient air quality standard that was required to be reached in June 2007, and has proposed that Imperial County be reclassified as a moderate 8-hour ozone nonattainment area (USEPA 2007).

Biological Resources/Threatened or Endangered Species

The following subsections discuss the vegetation communities and rare, endangered, or sensitive habitats and species currently existing in the proposed project area. A biological reconnaissance of the proposed AGO project area was conducted in February 2008 by professional biologists to evaluate the biological resources evident at the time and to identify any potential biological limitations for the proposed re-mining of the site. The assessment report is included as Appendix C of this EA.

Flora.

The proposed AGO project area is highly disturbed from past mining activities and the site itself supports mostly disturbed Sonoran creosote bush scrub that has re-established on abandoned mine spoils and tailings. Due to the disturbed nature of the site, the Sonoran creosote scrub has little to very low wildlife habitat quality because the plants are widely spaced over open and uneven topography and provide no cover for animals. Of the plant communities observed in the project area, desert dry wash woodland is designated as sensitive habitat by California Department of Fish & Game (CDFG) and requires mitigation. Plants observed in this community include ironwood (*Olneya testata*), cat-claw acacia (*Acacia greggii*), blue palo verde (*Cercidium floridum*), creosote (*Larrea tridentata*), brittlebush (*Encelia farinosa*), and sweetbush (*Bebbia juncea*). This habitat was observed along the wash in the southern portion of the property. This habitat and a small wetland located on the property are discussed below under Wetlands and Riparian Zones.

No listed or sensitive plant species were observed on the site during the biological survey, nor are they expected to occur due to the disturbed nature of the site. Further, listed plant species are not known to occur in the general site vicinity according to the 2007 CDFG California Natural Diversity Database (CNDDDB).

Fauna.

No listed animal species were observed on the site during the biological reconnaissance. A search of the CNDDDB revealed eight sensitive animal species known to occur in the general vicinity of the proposed AGO site, including three bat species (pallid bat, western mastiff bat, and California leaf-nosed bat). There are former underground workings near the project area that provide suitable roosting habitat nearby. The bats roost off site but may use the project area for foraging. It should be noted that the former underground workings of the American Girl Mine are not on the property proposed for mining. No suitable on-site habitat exists to support the other five species on the CNDDDB list (Hardy's dune beetle, Andrew's dune beetle, Le Conte's thrasher,

Gila woodpecker, and the flat-tailed horned lizard). The presence of one CDFG sensitive animal, the mule deer, was detected on the project site.

The desert tortoise (*Gopherus agassizii*), a federally and state-listed threatened species, is not known to occur in the project area; however, desert tortoises are known to occur about 2.5 miles north of the project site, according to the U.S. Fish & Wildlife database. Tortoises were not observed during the 2008 field survey. Because the project site is too disturbed and lacks appropriate burrowing and foraging habitat, desert tortoises are not expected to occur on the project site. Tortoise sign has been identified in some of the abandoned mine audits roughly one mile north of the project area. These tortoises may be using the native desert habitat in areas surrounding the project area and it is, therefore, possible that desert tortoise may traverse the access road area leading to the mine site.

The project site provides potential foraging habitat for raptors. However, suitable habitat for tree-nesting or cliff-nesting raptors does not occur on site as the trees present on the property are not tall enough to provide adequate protection for raptor nests.

Surface Water, Groundwater, and Water Quality

Surface water consists of intermittent drainages, such as American Girl Wash mentioned above. These drainages contain water only following major precipitation events. Sheet washing and flash flooding are common following heavy rainstorms. All surface water issues would be addressed through the Storm Water Pollution Prevention Plan (SWPPP) and through the regular use of best management practices.

A detailed groundwater evaluation was undertaken for the former 1988 Padre Madre EA/EIR. The Imperial Valley groundwater reservoir consists of Cenozoic-era valley fill deposits underlain by a basement complex of pre-Tertiary rock. Moderate to high groundwater yields have been obtained in the eastern part of the Imperial Valley by deep wells tapping into marginal alluvial deposits of the Colorado River. Regional groundwater recharge in Imperial Valley is controlled by the Colorado River, while underflow from tributary areas, direct precipitation, and local runoff are minor contributors to recharge. Flowing wells are common in the eastern Imperial Valley.

The County-approved AGO well site is located within the Amos-Ogilby watershed, which is encompassed by the Amos-Ogilby hydrologic unit (HU 726.00), as defined by the Regional Water Quality Control Board (RWQCB) – Colorado River Basin (Region 7) (RWQCB, 2002). The Amos-Ogilby hydrologic unit has designated beneficial uses for municipal production. Based on recent research, data from the California Department of Water Resources (DWR) and the United States Geologic Survey (USGS) indicate six water wells within a two mile radius of the proposed AGO (DWR, 2008 and USGS, 2008). The databases contained no information on wells in the Cargo Muchacho Mountains.

Visual Resources

Landscape

The proposed project area is characterized by desert landscape and low mountain ranges with barren, rocky slopes interspersed with arroyos (washes) and alluvial plains. While the general views are expansive and marked by sparse development, the Cargo Muchacho Mountains have long been an area of active mining and the vistas in the project area reflect the associated surface disturbance.

Lighting

Direct effects of lighting include light pollution which is defined in many communities as artificial light which causes a detrimental effect on the environment, interferes with the enjoyment of the night sky, causes undesirable glare, or unnecessary illumination of adjacent properties. Lighting affects concerned publics in two ways: First, light as a point source (apparent brilliance) that can be seen with the human eye at varying distances without apparent change in intensity, and second as illumination which is a measure of the intensity of the light falling upon a feature surface.

Wetlands and Riparian Zones

As discussed above under Threatened or Endangered Species/Biological Resources, desert dry wash woodland was observed along the wash in the southern portion of the property. Desert dry wash woodland is designated as sensitive habitat by CDFG and requires mitigation. Plants observed in this community include ironwood (*Olneya testata*), cat-claw acacia (*Acacia greggii*), blue palo verde (*Cercidium floridum*), creosote (*Larrea tridentata*), brittlebush (*Encelia farinosa*), and sweetbush (*Bebbia juncea*).

A small wetland exists in the northwestern portion of the property. It supports a small amount of desert dry wash woodland and tamarisk (*Tamarix* sp.) scrub, including athel, blue palo verde, and ironwood. Both the desert wash and the wetland may be considered jurisdictional resources by the CDFG but not by the United States Army Corps of Engineers (Corps) because the resources are isolated. Further, in January 2008 the Corps determined that the proposed AGO project is exempt from 404/Water Board 401 permit requirements under National Permit 14 (Monarres 2008, personal communication).

Socioeconomics

According to the California Employment Development Department and 2006 Imperial County Employment by Industry data, government employs 30.7% of people in Imperial County, followed by agriculture, and trade. Much of the agricultural work is seasonal in nature and, while comprising a large part of the County's economy, does not necessarily provide a steady source of income for agricultural employees. Mining and construction employs about 3.5 percent or less of the employed population. Traditionally, mining in Imperial County has involved pit and quarry products such as sand and gravel, stone, clay, gypsum, and large precious metals production, principally

in eastern Imperial County (Mesquite, Picacho, and American Girl-Padre Madre mines). Development of waste rock from previous mineral activity would supply needed rock-based aggregate resources in the Imperial County region. Currently, there is no job activity on the project site and therefore no employees.

Housing and population centers in Imperial County are closely related to agricultural activities. The largest residential center is El Centro, the Imperial County seat, located approximately 45 miles west of the proposed project site and situated in the heart of the agricultural area. The City of Yuma, Arizona is the largest residential center near the proposed project site, which is located approximately 15 miles southeast of the site.

The proposed AGO plans to use existing employees to operate the project; therefore, no impacts on the socioeconomics of the area are expected and will not be discussed further.

Transportation

Imperial County communities are serviced by State highways and County roads. Traffic volumes tend to decrease with increasing distance from major communities and irrigated agricultural areas.

The largest transportation artery is Interstate 8, located less than five miles south of the project site. Interstate 8 passes through both El Centro and Yuma. The project site is reached from Interstate 8 by taking State Route 34/Ogilby Road north about four miles to American Girl Mine Road and traveling roughly two miles northeast on American Girl Mine Road. This road is a well-maintained County gravel road and also serves as public access to BLM lands.

Public Services, Utilities, and Service Systems

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

There are no existing utilities at the project site, including piping for water, wastewater, natural gas, or electrical power lines. This project would have no affect on utilities or public services

ENVIRONMENTAL IMPACTS

The Table 7 summarizes the potential to impact various elements of the human environment. Resources presented in Table 1 that are marked “Possibly Affected” are discussed in detail and mitigation measures presented.

Table 10 Resource values affected from the Proposed Action.

Critical Element	Not Affected	Possibly Affected	Not Present
Air Quality*		X	
Areas of Critical Environmental Concern*			X
Cultural Resources*		X	
Environmental Justice			X
Farm Lands (Prime or Unique)*			X
Floodplains*	X		
Geology and Seismicity	X		
Global Climate Change	X		
Invasive/Non-Native Weed Species*		X	
Land Use	X		
Native American Religious Concerns*		X	
Noise		X	
Recreation	X		
Soils	X		
Biological Resources/Threatened or Endangered Species*		X	
Visual Resources		X	
Waste, Hazardous or Solid*		X	

Critical Element	Not Affected	Possibly Affected	Not Present
Water Quality (Surface and Ground)*	X		
Wetlands and Riparian Zones*		X	
Wild and Scenic Rivers*			X
Wilderness*			X
Public Health and Safety		X	

* - Required BLM critical element

Air Quality

Alternative A: Proposed Action

The proposed action includes utilizing water for dust suppression for all operations. By applying these measures the amount of PM10 emissions resulting from this project would be minimal.

Alternative B: Mining with Off-site Processing

Under Alternative C, impacts to air quality associated with mining operations would be the same as the Proposed Action. Because rock and waste material will be processed off-site, there will be no resultant impacts to air quality at the AGO site associated with material processing. However, air resource impacts, especially PM₁₀ emissions would be displaced to the offsite facility, in the same manner and degree as the proposed action. There would be an increase in PM₁₀ emissions associated with loading waste material along with the rock material to waiting trucks at the AGO site. An increase in PM₁₀ emissions would also occur when off-loading waste with rock material at the off-site location. There would be a net increases in PM₁₀ emissions over the proposed action under this alternative.

Because an undetermined amount of waste must be trucked to the off-site facility, there would be more truck traffic on local roads between the AGO mine site and off-site processing facility. This increase in truck usage on a per unit product basis will result in increases in NO_x and CO_x emissions associated with waste transport.

Alternative C: No Action Alternative

The No Action alternative would not result in an increase of emissions at the projects site; however, there would still be a need for aggregate material in the region. Hauling distances would be much greater for projects occurring in eastern Imperial County and

could result in increases NOx and COx due to farther haul distances for aggregate materials.

Mineral Resources

Alternative A: Proposed Action

The economic limit of haul is from 30 to 40 miles distant from the pit site. This means that it is generally not economic to move common varieties of building stone, gravel, and sand beyond this limit. The AGO site is within an area where no rock or aggregate resources are or have been permitted with the exception of dedicated operations in support of Bureau of Reclamation facilities. This site would provide a needed source of material to the commercial market for surface applications (erosion armor, rip-rap, and ballast) and crushed aggregates (asphalt and Portland cements, manufactured sand, and bases) in the area east of El Centro in Imperial County (Figure 9). This site can supply up to 500,000 tons over the contract life of 10 years, with a potential of 1,600,000 tons over potential resources of the rock stockpile. Potential resources have a net regional value of \$32,000,000 (2010; aggregate \$20.00 value per ton). Property, sales and employment taxes from at least 10 full time employees are distributed from the net regional value. Material from this site will also benefit infrastructure projects within the limit of haul by lowering overall transportation costs.

Alternative B: Mining with Off-site Processing

Access to, and availability of aggregate resources from the rock stockpile will be similar as in Alternative A: Proposed Action.

Alternative C: No Action Alternative

Access to, and availability of aggregate resources within the market limit of haul will be limited to available resources further distance from the source to the needed project. This will require longer haul distances and higher material costs for both commercial and governmental construction and infrastructure projects.

Cultural Resources

Alternative A: Proposed Action

Cultural resources (six sites and three isolates) have been recorded in portions of the project area. All but one (AGO Site 1, a prehistoric lithic scatter) have been recommended as ineligible for the NRHP. AGO Site 1 has insufficient information at this time to determine NRHP eligibility.

AGO Site 1 is outside the APE and the other resources fall within the APE. While the survey report concluded that the project would result in no impacts to historic properties, it recommended mitigation measures to assure that the resources are not inadvertently damaged (Gross and Pigniolo 2008).

The mitigation measures to be implemented are avoidance (for AGO Site 1 and AGO Site 6) and monitoring (of all resources) during road widening/grading and well-construction activities. Avoidance of AGO Site 1 is feasible since it falls outside the APE. Avoidance of AGO Site 6 can be achieved by conducting grading for road widening on the south side of the access road. Monitoring during construction would be conducted by a qualified archaeologist.

Alternative B: Mining with Off-site Processing

Under Alternative B, impacts to cultural associated with mining operations would be the same as the Proposed Action.

Surface use associated with processing facilities would be displaced to an off-site location. There would be a 1 to 2 acre area associated with loading and stockpile staging operations. Overall, surface disturbance under Alternative B would be less at the AGO site. Depending on where the off-site location is placed, surface use would be the same, and surface disturbance would be dependent on the location of the off-site facilities. If the off-site location were accounted in surface occupation similar to the proposed action, there would be a net increase in overall surface disturbance under Alternative B.

Alternative C: No Action Alternative

The No Action Alternative would have no adverse impacts on Cultural Resources.

Invasive/Non-Native Species

Alternative A: Proposed Action

Many invasive species are prone to invade disturbed areas. The former gold mining operation ceased in 1996 and the area has since been restored a more natural landscape. There are some weeds existing on the site, but due to the extreme dryness of the area, weeds are not prevalent over the area. Water used for dust suppression could stimulate growth of invasive plants, however water would only be applied to highly disturbed surfaces and the mining activity would likely destroy most of these annuals before they reach maturity. In the event that tamarisk appears within the project area as a result of the water trucks or well, the plants would be removed. Renewed mining activity in the area is unlikely to result in higher density or the additional spread of invasive/non-native species.

Alternative B: Mining with Off-site Processing

Impacts from Alternative B would be similar to those from the proposed action. There could be a greater impact to the off-site processing facility if weed seeds were transported in.

Alternative C: No Action Alternative

Under the no action alternative, invasive species would continue to exist in the project area. They could still be spread by off-highway vehicles and wildlife.

Noise

Alternative A: Proposed Action

The project area is largely uninhabited and undeveloped, so natural noise sources are generally limited to wind, rain, thunder, insects, birds, and other wildlife. Man-made noise in the area, when present, would be created by periodic vehicle travel along Ogilby Road, Sidewinder Road, and American Girl Mine Road, and is related mainly to haul trucks associated with mining or other sporadic vehicle travel including seasonal recreational vehicles that frequent the area in the winter months. Occasional light aircraft and military aircraft, such as fighter jets and helicopters, also produce minor noise.

Mining activity would produce noise from heavy equipment. Processing operations would produce noise from generators, crushers, and other aggregate processing equipment. These impacts would be mitigated through installation of MSHA-approved mufflers on necessary equipment to dampen noise if applicable as well as regular maintenance of all equipment. Due to the remote location of the proposed mining operation, there may be little impact to, people recreating in the desert, or to the town of Gold Valley from noise generating sources at the AGO pit and processing site as it would blend with ambient noise levels typically experienced.

Wildlife in the immediate vicinity of heavy equipment could be affected by seismic noise, however seismic noise dissipates very rapidly as distance increases. The area affected by seismic noise would likely be the areas experiencing surface disturbance due to transportation of material or mining, therefore noise impact would not be a threat to wildlife because surface disturbance would have already displaced those individuals.

Alternative B: Mining with Off-site Processing

Under Alternative B, impacts to noise associated with mining operations would be the same as the Proposed Action.

Noise associated with processing facilities would be displaced to an off-site location. There would be an increase in noise associated with loading and stockpile staging operations because an undetermined amount of waste would be loaded with the rock material additional to the proposed action. Overall, noise under Alternative B would be less at the AGO site. An increase in noise would be associated with off-site processing due to the increased amount of truck traffic moving waste as well as rock material. In addition, there would be noise associated with waste material loading and haulage to disposal at the off-site processing location if the waste must seek a further off-site disposal facility. There would be a net increase in overall noise under Alternative B,

mainly associated with extra haul truck loading and staging operations and at both the AGO and off-site locations.

Alternative C: No Action Alternative

The No Action Alternative would have no adverse impacts on Noise.

Biological Resources/Threatened or Endangered Species

Alternative A: Proposed Action

While desert tortoise and bat species have not been observed or recorded on the proposed AGO site, the USFWS and CNDDDB databases report these animals in the general vicinity.

Since it is possible that tortoises may traverse the project area, there is a possibility of “take” under the Endangered Species Act. The USFWS issued a Biological Opinion (BO) for Small Mining and Exploration Operations in the California Desert (3809 6840 CA-063-.50 (CA-932.50)). This project falls within the scope of the BO.

The entire Mine area was formerly disturbed by the Padre Madre Mine. The waste rock piles have such steep walls that they would not support a natural array of vegetation adequate for tortoise forage. Also the steep walls create a barrier to tortoise movement. Removing this material would create habitat for tortoise by reducing the steep walls thus allowing better re-vegetation.

Since this project falls in a formerly mined area, new surface disturbance would be minimal. Most of the wildlife species that inhabit this region depend on dry wash woodlands for forage and shelter. This project would be avoiding washes and would not disturb any of the wash woodlands.

Following the former American Girl-Padre Madre mining operation which ceased in 1996, the 40-acre mine site was reclaimed and re-vegetated. The proposed AGO project would remove surface stockpiles and reclaim the existing disturbed ground surface. Any remaining re-vegetated areas would also be reclaimed, with the exception of the wetland and riparian areas discussed below. Upon completion of the AGO project, the 40-acre area would be reclaimed and re-vegetated according to the approved 2008 AGO Reclamation Plan (Appendix E).

Alternative B: Mining with Off-site Processing

Under Alternative B, impacts to noise associated with mining operations would be the same as the Proposed Action.

As discussed under the Cultural Resources and Noise impacts sections, activities disturbing wildlife from noise and surface occupation of the AGO site under Alternative B would be less than under the Proposed Action. However, an overall net increase in both surface occupation and noise affecting wildlife would be realized under this alternative, depending on where the processing site is located within the county.

Alternative C: No Action Alternative

The No Action Alternative would have no adverse impacts on threatened or endangered species; however, the overburden piles would remain and there would be no habitat improvement.

Visual

Alternative A: Proposed Action

The site, a reclaimed surface mine, is presently covered with stockpiles of waste rock material and alluvium, which contrast esthetically with undisturbed adjacent desert landscapes. While the proposed AGO would alter the landscape in the project area, the proposed operation would remove the “unnatural” landforms created by and resulting from past mining activities. The project would reduce, reuse, and reclaim or recycle what are considered to be wastes, thus removing waste stockpiles and restoring the area to more natural surface contours.

Under the proposed action and alternatives, there is not expected to be any increase in the level of light emanating from the pit area as the proposed action is limited to daylight hours. The project is proposed to operate from one-half hour before sunrise to one-half hour after sunset; therefore lighting would likely be required in the early morning and/or late afternoon. As the project is located in an undeveloped area, this early morning and late afternoon lighting would not adversely affect adjacent landscapes and is not expected to create human or biological concern.

The proposed project location is positioned topographically so that the operation would not stand out in the landscape. The end result of mining would have positive benefits by restoring natural contours. The proposed project would have minimal effect, and would not change the visual character of the area.

Alternative B: Mining with Off-site Processing

Under Alternative B, visual impacts (changes in line and form) from surface occupation by industrial activities associated with mining operations would be the same as the Proposed Action.

As discussed under the Cultural Resources section, activities disturbing line and form of the AGO site from surface occupation by industrial activities under Alternative B would be less than under the Proposed Action. However, an overall net increase in surface occupation would be realized under this alternative, depending on where the processing site is located within the county.

Alternative C: No Action Alternative

The No Action Alternative would have no additional impacts on visual resources. The existing waste rock piles would remain in place and continue to contract with the adjacent landscape.

Wastes, Hazardous or Solid

Alternative A: Proposed Action

The site is not situated on the former cyanide heap leach piles that were used during the operation of the former Padre-Madre mine, and recent test data indicate that there are no residual traces of cyanide in the surface soils of the AGO parcel. Therefore, hazardous waste in the form of cyanide is not an anticipated issue for the proposed AGO.

There is a chance that decommissioning solid wastes such as trash and rubbish from the previous mine operator and that accumulated from accessing older underground mine workings may be encountered when excavating the area.

Solid waste generated by Pyramid would not be an issue at the proposed AGO. As stated in the section titled "Sanitary and Solid Waste Disposal," no permanent on-site waste disposal facilities would be present at the proposed AGO.

An unquantified amount of non-hazardous waste material (sand or fines) will result from on-site processing of the waste rock material. This waste material from processing operations would be replaced back into the excavated mine area of the waste rock stockpile/dump.

Alternative B: Mining with Off-site Processing

Under Alternative B, solid (non-mineral) waste management impacts associated with mining and off-site processing operations would be the same as the Proposed Action.

Depending on the location of the off-site facility, there would be increases in NO_x and CO_x associated with off-site transport of processing waste material (mineral) under Alternative B as compared with the Proposed Action.

Alternative C: No Action Alternative

The No Action Alternative would have no effect on hazardous wastes.

Surface Water, Groundwater, and Water Quality

Alternative A: Proposed Action

Groundwater use from the proposed water wells would be directed to watering the access road for dust control during periods of material transport (estimated at 30,000 gallons per day, 6 days a week or approximately 57 acre feet per year) and for processing and washing crushed rock material (estimated at 30,000 gallons per day). Use of wash water in settling containments would be recycled for both dust control and rock processing operations. Water well capacity of 30,000 gallons per day would meet water needs.

Alluvial aquifer waters are predominantly a sodium-chloride type. The water quality has been determined suitable for non-potable uses in mining and milling operations. This basin has not been identified by the RWQCB as being in an overdraft condition.

The proposed level of water usage is not likely to reduce the quantity or quality of ground water available nor is surface operations likely to substantially alter surface flows.

Alternative B: Mining with Off-site Processing

Under Alternative B, water use associated with mining operations would be the same as the Proposed Action.

Under Alternative B there would be a net decrease in water usage at the AGO site when processing waste and rock materials at an off-site location. Depending on waste percentage transported to an off-site processing facility, there would be an unquantifiable increase in water usage at the AGO site to minimize PM10 emissions from haul truck loading and staging activities, and increased truck movements on the American Girl access road associated with waste and rock material removal from the AGO area to an off-site processing facility. Water use at the off-site processing facility would be the same as under the proposed action. An increase in water usage from the increase in waste handling would occur at the off-site location.

Depending on the location of the off-site facility, there would be a net increase in water use as a result of off-site processing under Alternative C as compared with the Proposed Action alternative.

Alternative C: No Action Alternative

The No Action Alternative would have no adverse impacts on Surface Water, Groundwater, and Water Quality.

Wetlands and Riparian Zones

Alternative A: Proposed Action

The site includes dry desert wash habitat in the southern portion and a small wetland area in the northwestern portion. The wash includes a bed and bank, shows sign of flow, and supports a small amount of desert dry wash woodland. The wetland area supports tamarisk scrub, and a small amount of surface water was present during the field visit. This area is considered a jurisdictional wetland by the CDFG but, as discussed, above, the USACE does not consider this wetland jurisdictional because it is isolated. In January 2008 the USACE determined that the proposed AGO project is exempt from Army Corps 404/Water Board 401 permit requirements under National Permit 14 (Monarres, 2008; Stormo, 2008 personal communication).

Mitigation is required for adverse impacts to habitats such as dry desert wash woodland and wetlands, which are considered sensitive by CDFG. If impacted, mitigation for dry desert wash woodland would require land acquisition compensation at a ratio of 1:1 to

3:1. CDFG has a no-net-loss policy for wetlands and would require mitigation at a minimum ratio of 3:1, including a minimum ratio of 1:1 for wetland creation. Pyramid proposes to avoid impacts to these sensitive habitats so that habitat replacement would not be needed.

Alternative B: Mining with Off-site Processing

Under Alternative B, impacts wetlands and riparian zones associated with mining operations would be the same as the Proposed Action.

Overall, under Alternative B there would be a net decrease in surface disturbance and use when processing material displaced to an off-site location. Depending on waste percentage transported to an off-site processing facility, there would be an unquantifiable increase surface use at the AGO site from haul truck loading and staging activities associated with waste and rock material removal from the AGO area to an off-site processing facility. Surface use at the processing facility would be the same as under the proposed action. However, an increase in surface use and disturbance from the increase in waste handling would occur at the off-site location.

Depending on the location of the off-site facility, there would be a net increase in surface disturbance and use as a result of off-site processing under Alternative B as compared with the Proposed Action alternative.

Alternative C: No Action Alternative

The No Action Alternative would have no adverse impacts on wetlands or riparian zones.

Public Health and Safety

Alternative A: Proposed Action

Mining and mineral processing activity is an industrial operation. Heavy equipment moves readily throughout mining and processing areas of operations. Operator visibility is frequently limited due to the size and profile of rolling stock. During operations, inattentive public use and access to mine and process areas could result in injury or death from vehicle impact incidents with mining equipment.

Based on production of 4,500 cubic yards of salable product per day, up to 250 haul truck movements and transits will occur along public roads each day. Incidental impacts could also occur with haul truck transits along public access routes, including American Girl Mine and Ogilby roads, and Interstate 8.

Alternative B: Mining with Off-site Processing

Impacts to Public Health and safety would be the same for Alternative B as the Proposed Action at the mine site.

At 30 percent waste, an increase from 250 up to 325 haul truck movements would be realized daily. The potential for increased incidental impacts could occur with haul truck transits along public access routes, including American Girl Mine and Ogilby roads, and Interstate 8, moving waste with rock to off-site processing.

Alternative C: No Action Alternative

The No Action alternative would have no impact on public health or safety.

MITIGATION MEASURES

The following measures are designed to reduce the likelihood of impacts to natural resources by AGO personnel operating on the site:

Measures to protect Desert Tortoise and Tortoise Habitat

- The mine operator shall designate a field contact representative (FCR) who would be responsible for overseeing compliance with protective stipulations for the desert tortoise and for authority to halt all mining activities that are in violation of the stipulations. The FCR shall have a copy of all stipulations when work is being conducted on the site. The FCR may be the mine operator, the mine manager, any other mine employee, or a contracted biologist.
- An employee education program must be received, reviewed, and approved by the Bureau at least fifteen days prior to the presentation of the program. The program may consist of a class or video presented by a qualified biologist (Bureau or contracted) or a video. Wallet-sized cards with important information for workers to carry are recommended. All mine employees shall participate in the desert tortoise education program prior to initiation of mining activities. The operator is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees shall receive formal, approved training prior to working onsite. The program shall cover the following topics at a minimum:
 - Distribution of the desert tortoise,
 - General behavior and ecology of the desert tortoise,
 - Sensitivity to human activities,
 - Legal protection,
 - Penalties for violations of State or Federal laws,
 - Reporting requirements, and
 - Project protective migration measures.
- Only Biologists authorized by the Service and the Bureau shall handle desert tortoises. The Bureau or mine operator shall submit the name(s) of the proposed

authorized biologist(s) to the Service for review and approval at least fifteen days prior to the onset of activities. No mining activities shall begin until an authorized biologist is approved. Authorization for handling shall be granted under auspices of this Section 7 consultation.

- The authorized biologist shall be required on-site during the initial construction activities. This biologist shall have authority from the operator to halt any action that might result in harm to a desert tortoise.
- Post-construction, the authorized biologist shall be required to be available on any day at any time during work hours, to respond to a request from the applicant or BLM to translocate a desert tortoise in harm's way. Annual summaries of desert tortoise sightings, mortalities, and burrows shall be provided to BLM and to the Service in accordance with the requirements of the Small Mining Biological Opinion.
- The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Work area boundaries shall be delimited with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features, such as burrows, identified by the qualified biologist shall be avoided to the extent possible. To the extent possible, previously disturbed areas within the mining site shall be utilized for the stockpiling of excavated material, storage of equipment, digging of slurry pits, location of office trailers, and parking of vehicles. The qualified biologist, in consultation with the project proponent, shall ensure compliance with this measure.
- Where practical, no access road shall be bladed for exploratory work. Cross-country access shall be the standard for temporary activities. For development activities, a short driveway (no more than 0.3 miles) from the nearest access road may be constructed if necessary. To the extent possible, access to the mine site shall be restricted to designated "open" routes of travel. A qualified biologist shall select and flag the access route, whether cross-country or bladed, to avoid burrows and to minimize disturbance of vegetation.
- Except when absolutely required by the operation and as explicitly stated in the Plan of Operations, cross-country vehicle use by mine employees is prohibited during work and non-work hours.
- To prevent desert tortoises from falling in, test holes shall be either fenced or covered as much of the time as possible and at all times when not attended (See also measure h, paragraph 2).
- For mine development where the mine site is in desert tortoise habitat, the entire site shall be enclosed within a desert tortoise-proof fence. The fence shall be constructed under the direction of a qualified biologist. The fence shall be located to avoid all desert tortoise burrows; to the extent possible, burrows shall be placed on the outside of the enclosure. The fence shall be constructed of ½-inch mesh hardware cloth. It shall extend 18 inches above ground and 12 inches below ground. Where burial of the fence is not possible, the lower 12 inches shall be folded outward against the ground and fastened to the ground so as to prevent desert tortoise entry. The fence

shall be supported sufficiently to maintain its integrity. The gate shall remain closed except for the immediate passage of vehicles. The fence shall be checked at least monthly and maintained when necessary by the mine operator to ensure its integrity.

- After fence installation, the authorized biologist shall conduct a thorough survey for desert tortoises within the mine site. All desert tortoises found shall be marked and removed from the enclosure and placed outside the nearest fence. If the removal is during the season of above-ground activity, the desert tortoises shall be placed beside a nearby burrow of appropriate size. If the removal is not in the season of above-ground activity, the desert tortoise shall be moved (dug out of burrow if necessary) on a seasonably warm day and placed at the mouth of a nearby burrow of the appropriate size. If the desert tortoise does not enter the burrow, an artificial burrow may be needed. The authorized biologist shall be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
- Desert tortoises moved from within a fenced site shall be marked for future identification. An identification number using the acrylics paint/epoxy covering technique shall be placed on the fourth left costal scute (Fish and Wildlife Service 1990). 35-mm slide photographs of the carapace, plastron, and the fourth costal scute shall be taken. No notching is authorized.
- Desert tortoises may be handled only by the authorized biologist and only when necessary. New latex gloves shall be used when handling each desert tortoise to avoid the transfer of infectious diseases between animals. Aside from the initial site clearance, any desert tortoise moved shall be placed in the shade of a shrub in the direction in which it was facing when found or at the entrance to a burrow if hibernating. In general, desert tortoises should be moved the minimum distance possible to ensure their safety.
- The authorized biologist shall maintain a record of all desert tortoises handled. This information shall include for each desert tortoise:
 - The location (narrative and maps) and dates of observations;
 - General condition and health, including injuries and state of healing and whether animals voided their bladders;
 - Location moved from and location moved to; and
 - Diagnostic markings (i.e., identification numbers or marked lateral scutes).
- No later than 90 days after completion of construction, the FCR and authorized biologist shall prepare a report for the Bureau. The report shall document the effectiveness and practicality of the mitigation measures, the number of desert tortoises excavated from burrows, the number of desert tortoises killed or injured, and the specific information for each desert tortoise as described in measure 1. The report shall make recommendations for modifying the stipulations to enhance desert tortoise protection or to make it more workable for the operator. The report shall provide an estimate of the actual acreage distributed by various aspects of the operation.

- Upon locating a dead or injured desert tortoise, the operator is to notify the BLM. The BLM must then notify the appropriate field office (Carlsbad or Ventura) of the Service by telephone within three days of the finding. Written notification must be made within fifteen days of the finding. The information provided must include the data and time of the finding or incident (if known), location of the carcass, a photograph, cause of death, if known, and other pertinent information. Desert tortoise remains shall be collected, delivered to the BLM, and frozen as soon as possible. Injured animals shall be transported to a qualified veterinarian for treatment at the expense of the project proponent. If an injured animal recovers, the Service should be contacted for final disposition of the animal.
- Except on county-maintained roads, vehicle speeds shall not exceed 20 miles per hour through desert tortoise habitat.
- If it is necessary for a worker to park temporarily outside of the cleared enclosure, the worker shall inspect for desert tortoises under the vehicle prior to moving it. If a desert tortoise is present, the worker shall carefully move the vehicle only when necessary or shall wait for the desert tortoise to move out from under the vehicle.
- All dogs shall be restrained either by enclosure in a kennel or by chaining to a point within the desert tortoise enclosure.
- All trash and food items shall be promptly contained within closed, raven-proof containers. These shall be regularly removed from the project site to reduce the attractiveness of the area to ravens and other desert tortoise predators. All refuse generated on site would be removed by the operating crew on a regular basis and deposited in the dumpster located at Pyramid's office in Heber, California.
- Structures that may function as raven nesting or perching sites are not authorized except as specifically stated in the plan of the operation or notice. The project proponent shall describe anticipated structures to the BLM during initial project review.
- At the end of the project, disturbed areas, including new access roads, shall be re-contoured and re-seeded with an appropriate mixture of native plant species according to the Reclamation Plan submitted to the Imperial County Planning Department and State Office of Mine Reclamation under separate cover.
- All desert tortoise-proof fencing shall be removed after site rehabilitation.

Measures to Control Invasive/Non-Native Species

- Mine employees shall routinely inspect work areas for tamarisk. In the event new infestations are discovered, the operator shall consult BLM and remove the plants.

Measures to protect Wetland and Wash Habitat including Microphyll Woodlands

- Pyramid would avoid the wetlands completely. Access to the wetlands area from inside the property would be prevented by erecting fencing around the property perimeter, as discussed above, but excluding the wetlands portion of the property. The fencing, coupled with signage warning people away from the habitat, would help protect the wetlands from human and vehicle encroachment from inside the property, and would allow wildlife to reach the wetlands from outside the fenced area. Further, a 15-foot interior buffer zone would be established between the fence line and the active stockpile areas to provide additional protection. Once the project is complete, the fencing and signage would be removed as part of site reclamation.
- Microphyll woodland habitat would be avoided as these areas are likely foraging habitat for birds and bats. Pyramid would avoid impacts to the sensitive habitats by confining its activities to the portions of the proposed AGO site away from the habitats. This includes vehicle activity, stockpile movement, or other surface disturbance.
- The access road to the property is American Girl Road, a County road, which runs adjacent to American Girl Wash. The access road would be roped off with high-visibility tape along its southern length, where the road forks toward the property, to direct traffic away from the wash.
- Operations would be restricted to daytime (one-half hour before sunrise to one-half hour after sunset). Artificial lighting would be directed at the ground away from washes and woodlands as well as mountain slopes.

Measures to Protect Archaeological Resources

- The mitigation measures to be implemented are avoidance (for AGO Site 1 and AGO Site 6) and monitoring (of all resources) during road widening/grading and well-construction activities. Avoidance of AGO Site 1 is feasible since it falls outside the APE. Avoidance of AGO Site 6 can be achieved by conducting grading for road widening on the south side of the access road. Monitoring during construction would be conducted by a qualified archaeologist under permit from the El Centro Field Office.

Measures to Protect Public Health and Safety

- In the unlikely chance that solid waste is encountered during excavation operations, Pyramid would contact the BLM El Centro Office to take any necessary steps to properly dispose of the materials.
- Place temporary fences within the processing area of operations.

- Place gated fences in areas where there are access points to mine areas. Assure gated areas are secured (e.g., locked) during periods on non-operation.
- Unless equipment is secured from unauthorized use by other means acceptable to the authorized officer of the BLM, security personnel will be on mine and processing sites to limit public access to heavy equipment. Mining is recommended to be conducted in campaigns to minimize the number of days idle equipment is left unattended on mine and processing sites.
- All portable mine and processing equipment will be removed from mine and processing sites during periods of extended non-operation. A Period of extended non-operation will exist when operations are idle for more than 90 consecutive days, or greater than 90 days as approved by the authorized officer. The operator will maintain public lands within the project area, including structures, in a safe and clean condition, and take all steps necessary to prevent unnecessary or undue degradation to public lands and resources during periods of extended non-operation.
- Haul truck travel along American Girl and mine access roads will be no more than 25 miles per hour.
- All over-the-road haul truck operators will obey all California vehicle laws, codes, regulations, and limits.
- All fines and sand (natural or manufactured) will be disposed of on site by spreading the material and integrating it with remaining rock material within the area of disturbance.
- Mining shall commence at the southern end of the rock stockpile and shall be mined in sequence northward. Operations are to excavate to the ground level as specified by the Authorized Officer of the BLM. Ground level elevation shall be maintained as mining progresses north into the stockpile. The excavated slope shall not be less than 1 horizontal to 1 vertical (1:1), or 100 percent slope as measured from the horizontal during periods where mining operations are being conducted. Final reclamation profile, and profile of all slope surfaces during periods of non-occupation over 90 days, 90 consecutive days, or greater than 90 days as approved by the authorized officer, shall not be greater (slope angle) than 4 horizontal to 1 vertical (4:1; 25 percent slope)
- Except for material encapsulated in Portland or asphalt cement products, all material leaving the site may be sampled and analyzed in compliance with any of the following protocols by the BLM or other appropriate agency.

CUMULATIVE IMPACTS

Cumulative environmental impacts are those which result from the incremental effects of the proposed action, combined with the effects of past, present, and reasonably foreseeable actions in the future.

Proposed Pyramid operations at the AGO site, would be confined to a small area of the former Padre-Madre mine site, which is isolated both geographically and topographically from other areas of Imperial County where other large industrial surface disturbing operations are occurring. Operations are to be conducted in a manner which re-creates as near as practicable the topography which existed prior to Gold Mining operations at the Padre-Madre site. Operations will be conducted in a manner which removes waste rock material from stockpiled areas, and placement of waste in a manner that best conforms to the natural topographic relief at the site. Overall, present and future aggregate mining actions will enhance visual and natural line and form that currently exist as a result of gold mining operations to a condition that best emulates past landscapes.

The Mesquite Gold Mine and associated Mesquite Regional Landfill are located approximately 26 miles north of the proposed project area. Union Pacific Railroad (3 miles west) has plans to convert their single track rail line to a double track in the future. These projects are not connected to the proposed action. There is no agriculture, heavy industry or other industrial activities proximal to the Pyramid site that would be contributing to surface disturbance or impacts to natural resources.

Mineral material markets are highly transportation dependant. Most material supplying the El Centro area of Imperial County markets is currently being met by operations at Ocotillo, East Highland Canal area, and along the western Chocolate Mountain shoreline terrace deposits east of the Salton Sea. Most of this material is directed to highway projects and general construction markets. All these production areas are closer to local and regional markets than is the AGO site. It is expected that because of the remoteness of both the proposed Granite and Pyramid operations at the Padre-Madre site, most material products produced would be directed to special need projects within the region, and not compete with usual construction demand in local Imperial markets centered in and around the cities of El Centro and Brawley. While predicting future demands for materials at the AGO site is speculative, it is not expected to contribute to an increase in environmental impacts within the region of the Cargo Muchacho Mountains.

Within the confined area of the AGO site, Granite Construction Company has been awarded a mineral material contract to mine and process heap leach material from the former Padre-Madre mine. This property is approximately $\frac{3}{4}$ mile west from the Pyramid site. The Granite site is currently awaiting environmental review and is not in operation. It is expected that both operations would be mined concurrently, and at the same production levels over the 10 year life of both mineral material contracts. The

Granite site would not have attendant crushing operations. Maximum cumulative annual production by both Granite and Pyramid at the AGO site, would be less than 10 percent of the annual average production by AGJV at the Padre-Madre mine during peak gold mining operations during the early 1990's. In addition, maximum estimated use of the surface by both Granite and Pyramid would be less than 26 percent of the acreage occupied by AGJV at the end of mining operations at the Padre-Madre site.

This area was mined in the past for gold and subsequently reclaimed. The large waste rock piles left behind are much different from the past landforms. Implementation of the proposed mitigation measures will result in avoidance of all historic properties during this project and other active and proposed projects in the general area of the mine are being mitigated by archeologists in order to minimize possible adverse effects in the overall region. The presence of an archeological monitor would mitigate inadvertent discovery and disturbance of unknown or subsurface cultural resources. In the future after reclamation of the proposed waste rock mining, the natural topography would be restored

Due to past mining, the waste rock piles have such steep walls that they would not support a natural array of vegetation adequate for tortoise forage. Also the steep walls create a barrier to tortoise movement. Removing this material would create habitat for tortoise by reducing the steep walls thus allowing better re-vegetation. Re-vegetation resulting from the removal of the waste material may provide additional suitable forage for game species such as deer, as well as forage for species such as desert tortoise. Increased re-vegetation would provide additional cover and nesting mediums for birds and insects. Over time, as waste rock is removed, additional native plants would reclaim the area to its previous state. Effects on T & E species would be minimal due to the mitigation measures proposed for this project. In the future, there would be a net increase in habitat as the waste rock piles are reclaimed.

Invasive and non-native weed species are present on the site. Currently weeds are spread by vehicles, wind, flooding, wildlife, and various other methods. Removal of the waste rock material would result in a much more favorable condition for plant growth including invasive/non-native species. However, introduction of new specimens to the site would be reduced due to the mitigation measures proposed for this project. In the future as weeds continue to spread, some weeds will likely grow on the site, as will native vegetation.

It is possible that removal of the materials at the site may alter the water flow patterns on the waste rock pile, thereby allowing increased infiltration of water into the water table. The possible altering of the flow patterns would help to restore the site to its original state, allowing microphyll woodland species present on the site and also downstream from the site to be restored and/or persist.

It has been determined that cumulative impacts from both the Granite and Pyramid operations within the Padre-Madre mine site would be negligible. Mining would only take place on previously disturbed areas. No permanent structures would be erected on site; the project would reduce, reuse, and recycle existing waste piles present on the

site; and, through reclamation, the proposed AGO would ultimately restore the land to near-original surface contours and re-vegetate the site.

PERSONS AND AGENCIES CONSULTED

United States Bureau of Land Management, El Centro Field Office

Daniel Steward - Resources Branch Chief/ Supervisor

Andrew Trouette – Botany

Sharon Tyson – Biology

Carrie Simmons – Cultural Resources

Nicollee Gaddis-Moore – NEPA

United States Fish and Wildlife Service

Peggy Bartels – Section 7 Consultation

United States Army Corps of Engineers

Laurie Monarres – 404/401 permit exemption

California Regional Water Quality Control Board, Region 7

Joan Stormo – Waste Discharge Requirement waiver

County of Imperial Planning Department

Patricia Valenzuela – SMARA and Conditional Use Permit

David Black – SMARA and Conditional Use Permit

Jurg Heuberger – SMARA and Conditional Use Permit

County of Imperial Air Pollution Control District

Jesus Ramirez – Dust Plan

County of Imperial Public Works Department

Joe Hernandez – Traffic Control Plan

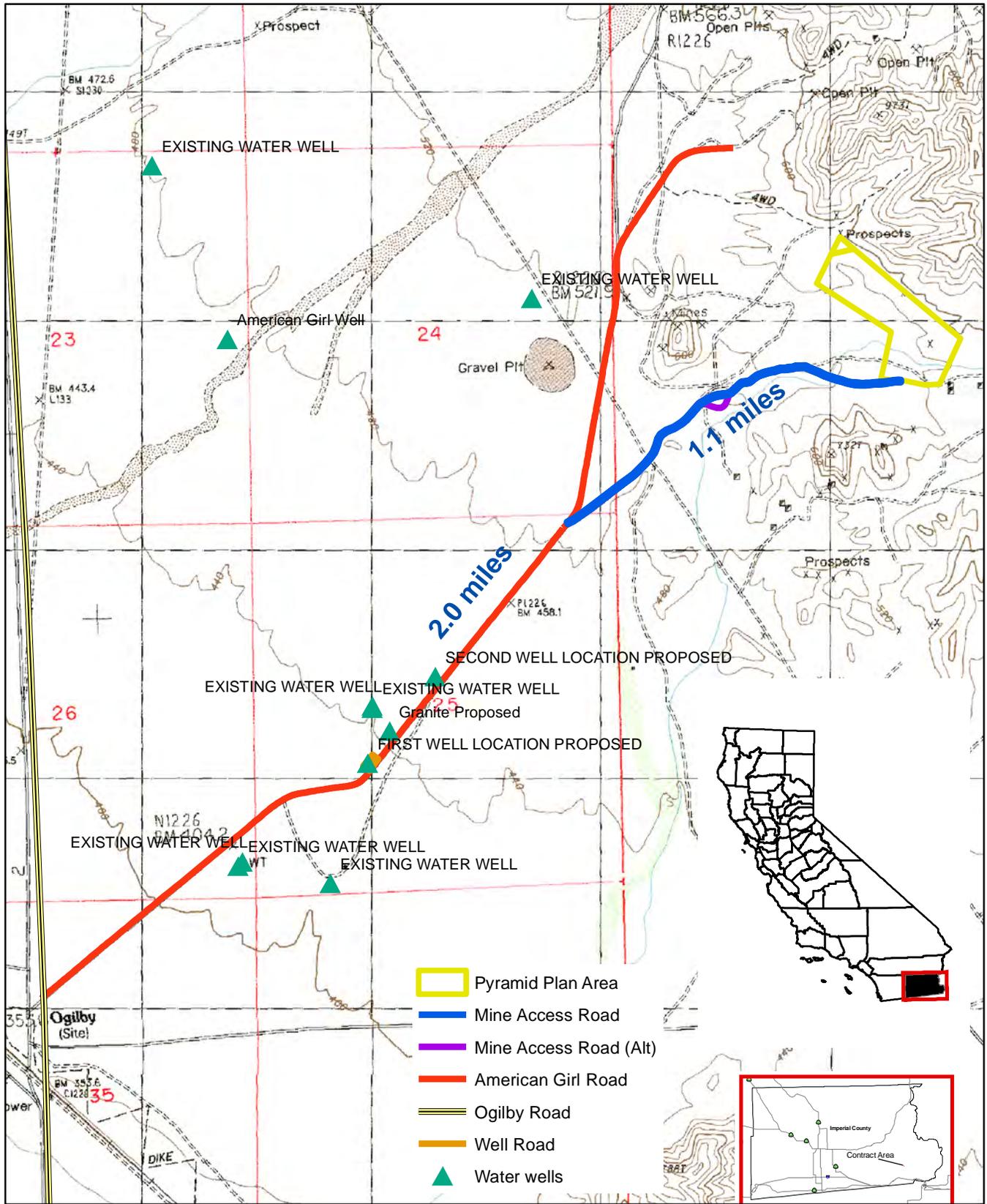
Manuel Ortiz – Traffic Control Plan, Dust Plan

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Pyramid Construction - Proposed American Girl Operation BLM Mineral Material Contract CACA 49292 Location Map



0 1 2 Miles

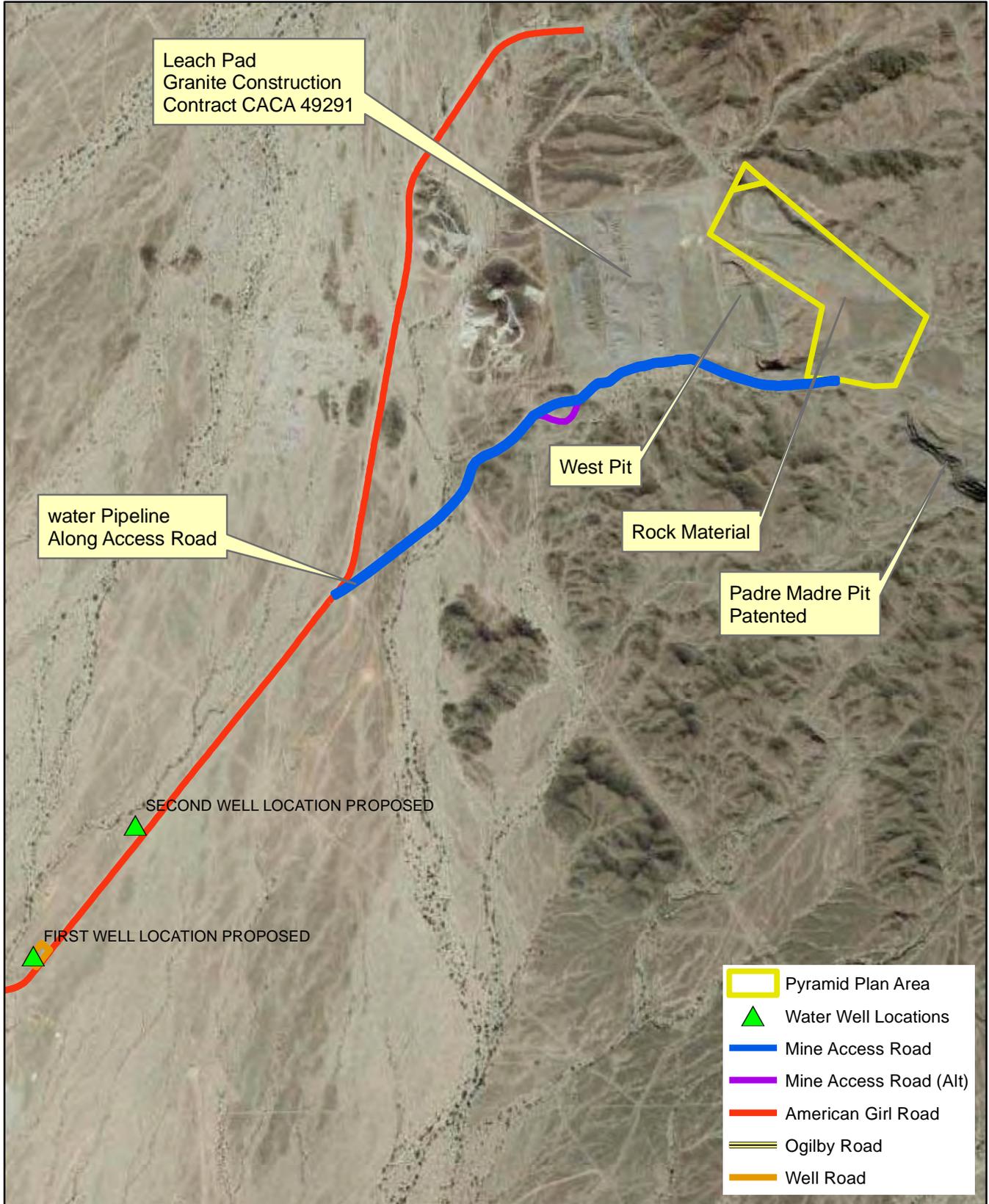
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BUREAU OF LAND MANAGEMENT
California Desert District

Figure 2

**Pyramid Construction - Proposed American Girl Operation
BLM Mineral Material Contract CACA 49292
Satellite Image Showing Area of Operations**



0 1,000 2,000 3,000 4,000 5,000 Feet

1:16,000



US Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District

Figure 3

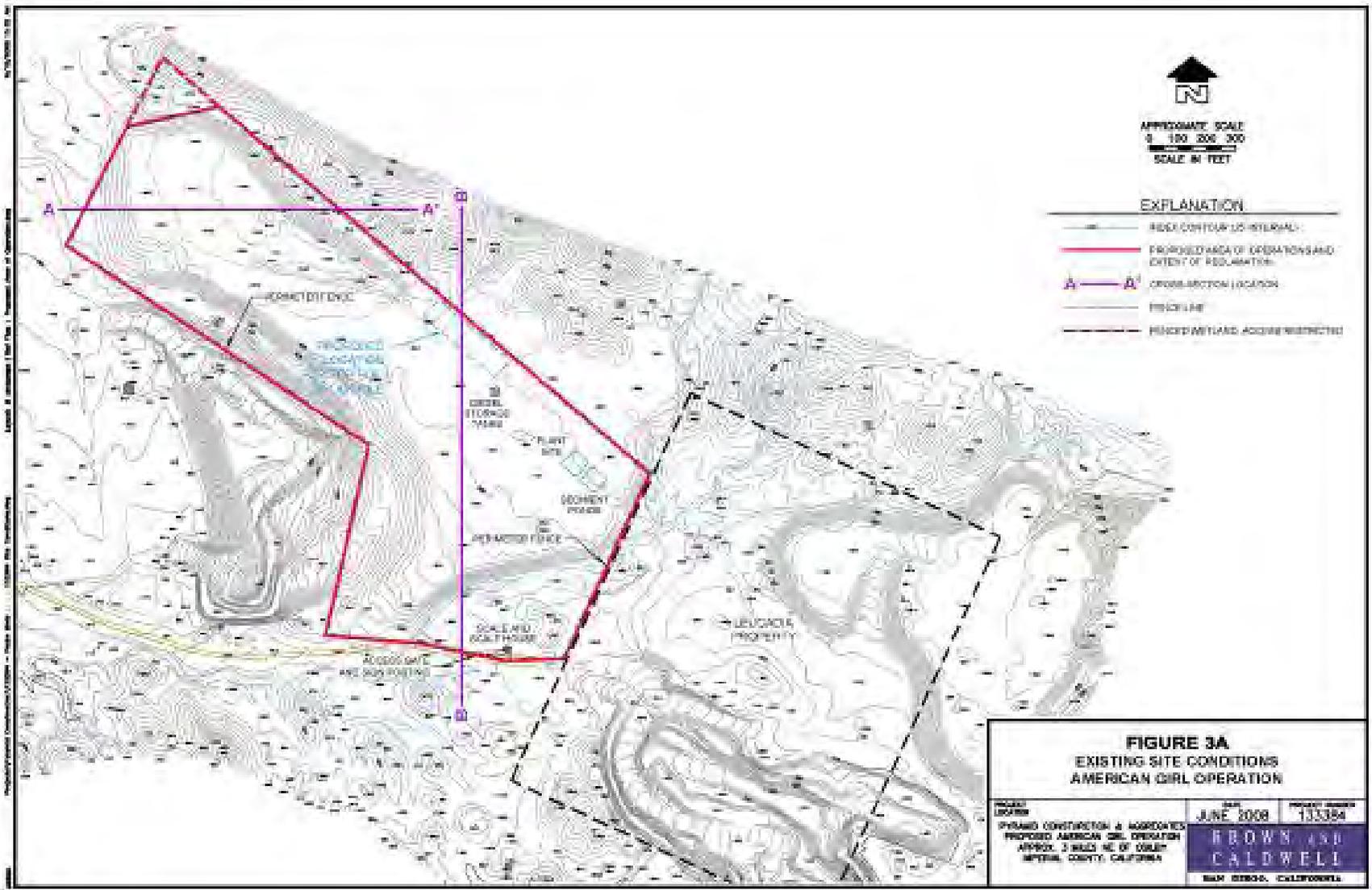
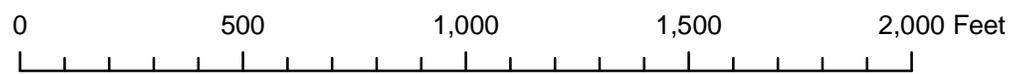


Figure 4: Figure 3A of the proposed mine plan (Appendix D) showing topographic contours (3 feet).

**Pyramid Construction - Proposed American Girl Operation
BLM Mineral Material Contract CACA 49292
Proposed Facilities and Mine Phase Map**



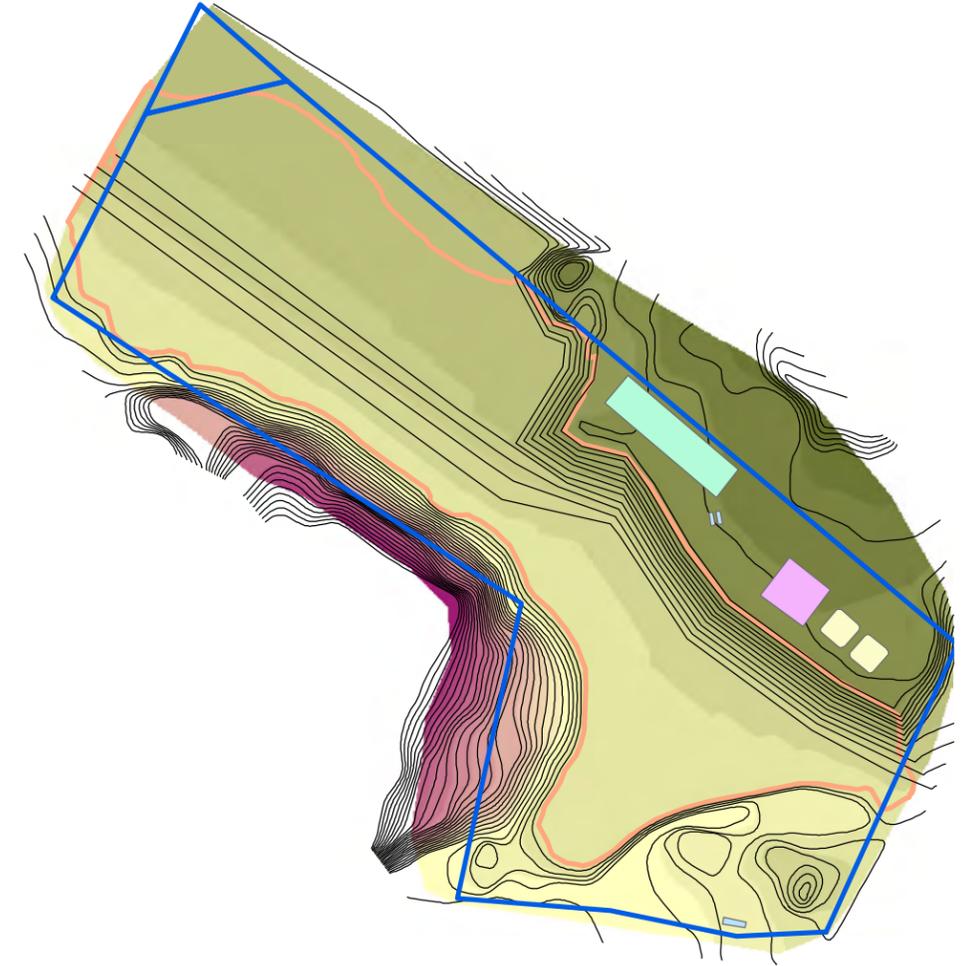
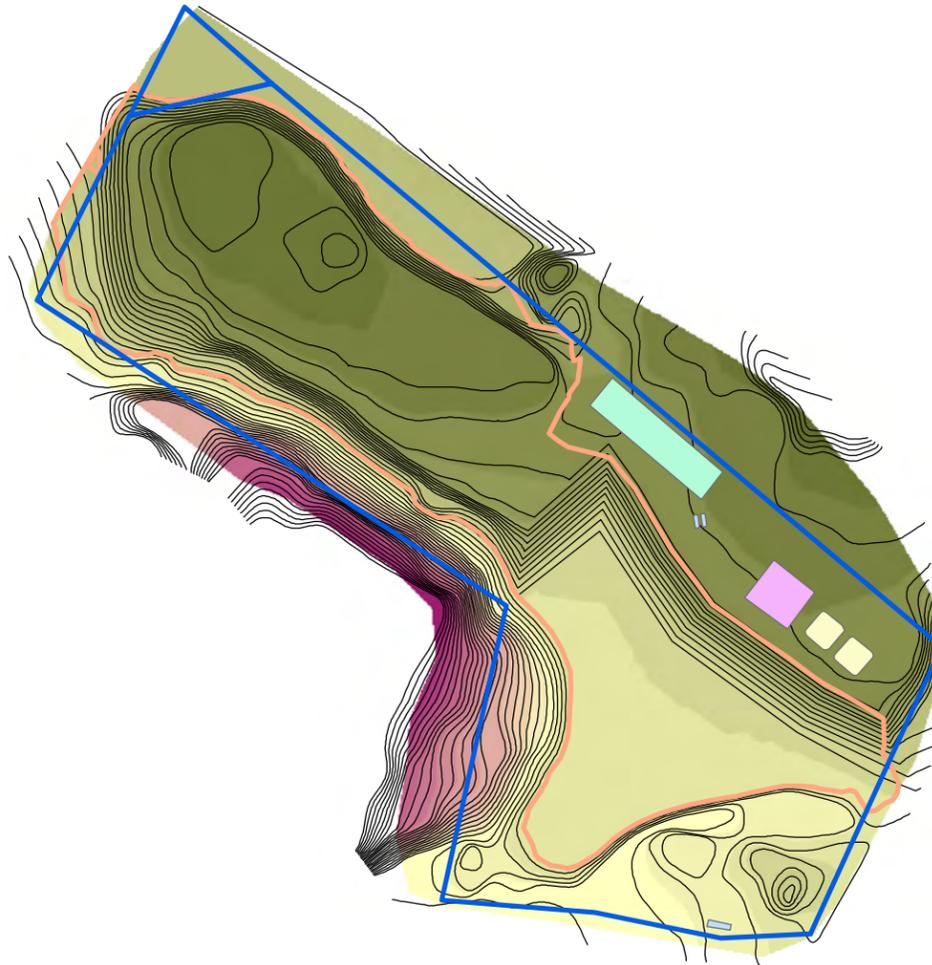
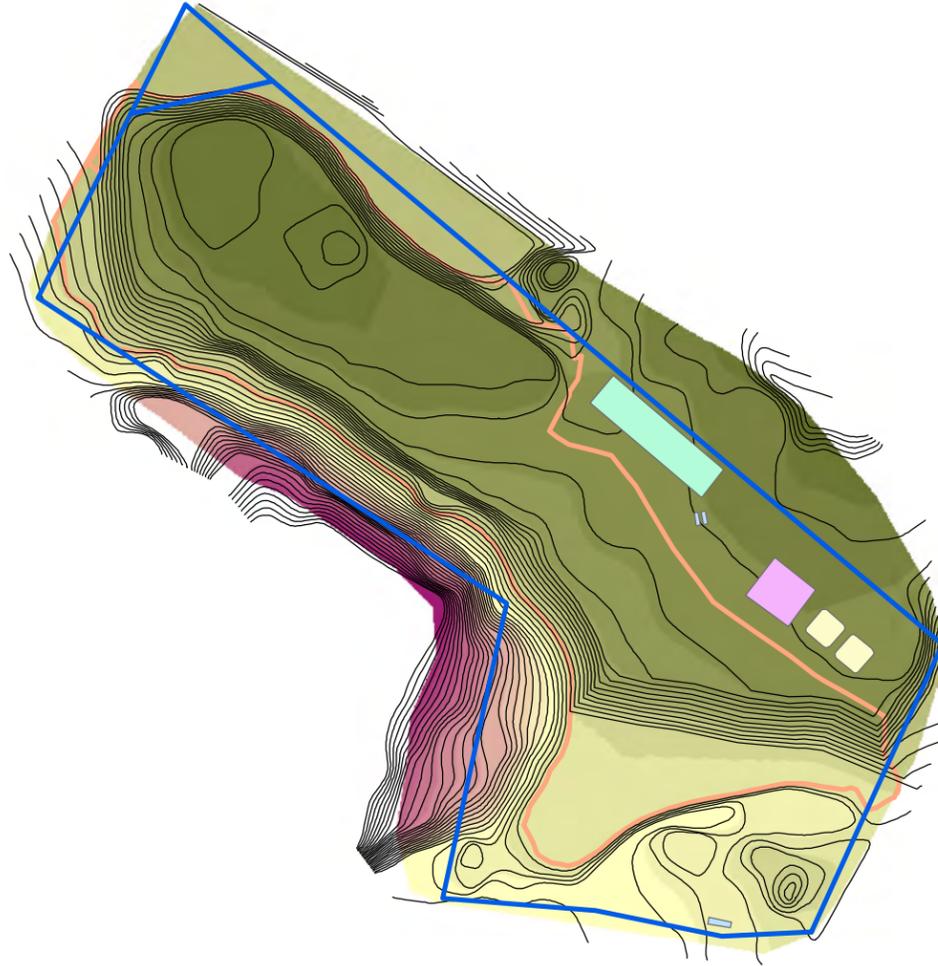
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Figure 5

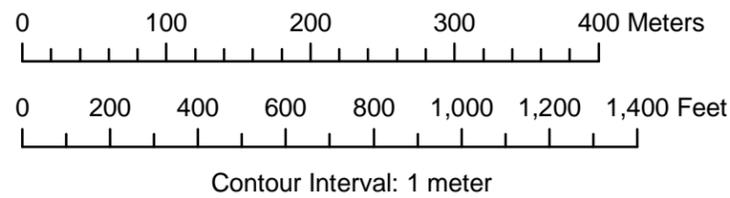
Phase 1 Plan
104,000 cu meters
226,000 tons
Phase Reclamation Profile

Phase 2 Plan
155,000 cu meters
337,000 tons
Phase Reclamation Profile

Phase 3 Plan (Future Proposed)
521,000 cu meters
1,131,000 tons
Proposed Final Reclamation Profile



Phase Plan
Pyramid Construction American Girl Operations



- Plan of Operation Area
- Excavation Area
- Plan of Operation Facilities**
- Diesel Storage
- Processing Plant
- Sediment Pond
- Soil Stockpile
- Truck Scale



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 Date Prepared: 4/29/2011
 Project: pyramid_contours.mxd

Figure 6

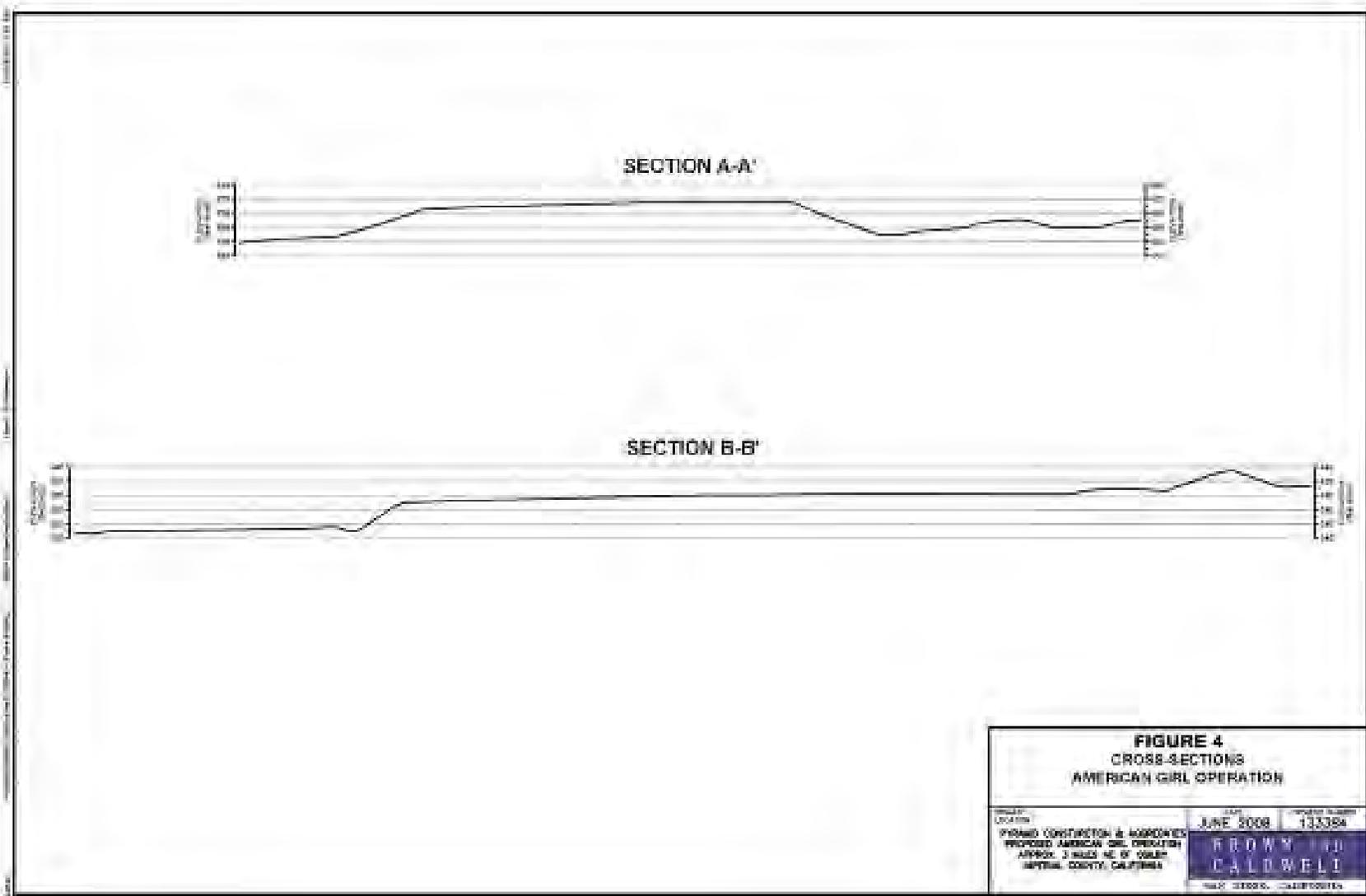


Figure 7: Figure 4 of the proposed mine plan (Appendix D) showing cross sections of the rock material stockpile (refer to Figure 4 for the location of cross-section index lines).

Pyramid Construction - Proposed American Girl Operation BLM Mineral material contract CACA 49292 Aggregate and Rock Location Map

