

FINAL

PLAN OF OPERATIONS

Prepared for
Pyramid Construction
American Girl
Imperial County, California
April 11, 2008

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BROWN AND CALDWELL

9665 Chesapeake Drive, Suite 201
San Diego, California 92123

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PLAN OF OPERATIONS

1. INTRODUCTION

Pyramid Construction (Pyramid) is submitting this Plan of Operations as part of the process to finalize a competitive mineral material sale contract for the proposed American Girl Operation (AGO). This Plan of Operations has been prepared to comply with the Title 43 Code of Federal Regulations (CFR) Part 3600.

AGO is a proposed construction aggregate mining and processing operation located in Imperial County, California (Figure 1). A Reclamation Plan has been submitted as a separate document to the Imperial County Planning/Building Department. The Reclamation Plan has been prepared to comply with the requirements of Imperial County and the Surface Mining and Reclamation Act of 1975 (SMARA), as amended.

The proposed AGO is located in an historic mining district with mining to be conducted entirely on lands mined as the former American Girl- Padre Madre Mining Operation. The proposed area of disturbance (Figure 2) has been the subject of extensive environmental studies conducted previously in support of the former American Girl-Padre Madre Mining Operation (BLM EA No. CA-067-88-65).

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2. APPLICANT INFORMATION

2.A Individual Completing Application

Mr. Daryl Dickerson
Owner
Pyramid Construction and Aggregates, Incorporated
Application Date: January 2008

2.B Applicant's Business Address

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

2.C Applicant's Business Telephone Number

(760) 337-5839

2.D Corporate Information

Corporate Name: Pyramid Construction and Aggregates, Incorporated
839 Dogwood Road
Heber, California 92249
Telephone Number: (760) 337-5839

Owner: Mr. Daryl Dickerson
Pyramid Construction and Aggregates, Incorporated
839 Dogwood Road
Heber, California 92249

2.E Partnership Information

Not applicable.

2.F Authorized Field Representative

Pyramid personnel will be onsite at all times during active mining or processing operations and will be responsible for ensuring compliance with this Plan of Operations and associated Reclamation Plan.

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3. PROJECT OWNERSHIP AND SURFACE DISTURBANCE

3.A Project Location

The proposed AGO is located in an uninhabited area of the southern Cargo Muchacho Mountains (about 15 miles northwest of Yuma, Arizona, and 45 miles east of El Centro, California) in an un-surveyed portion of Township 15 South Range 20 East, of Imperial County, California (see Figure 1). The proposed AGO is located entirely upon previously disturbed lands associated with the former American Girl Mine-Padre Madre Mining Operation, which was part of the American Girl Canyon Mining Area. The proposed AGO will mine a portion of existing overburden stockpiles remaining at the site and process these materials for sale as construction aggregate in the local Imperial County market. The project will reduce, reuse, and reclaim or recycle what are considered to be wastes, thus removing waste stockpiles and restoring the area to near-original surface contours.

Estimated Acreage of the Proposed Disturbances

The estimated areas of disturbance associated with the project are listed in Table 3-1 and shown on Figure 2. The mining disturbance associated with the proposed AGO will affect previously reclaimed lands and will be focused on mine overburden stockpiles created by historic mining operations. Mining of these stockpiles will return the area to near original land surface contours or road base elevation.

Location	Acres	Year Reclaimed
Plant Site	5	Concurrent
Haul Road Year 1-5	3	END
Year 1 Mining	25	2
Year 2-3 Mining	5.5	4
Year 4-5 Mining	0	6
Year 5-10 Mining	0	N/A
Access Road	1	END
Well*	0.5	END
Long-term Monitoring	N/A	Post-Reclamation
Project Total	40	

*The proposed well is located on a non-contiguous parcel of land. See Figure 2.

3.B Surface Ownership

The land surface is owned by the federal government of the United States and is administered by the Department of the Interior, Bureau of Land Management (BLM). The BLM has the right to dispose of sand, gravel, and other mineral materials pursuant to the Act of July 31, 1947, as amended (30 U.S.C. 601 *et. seq.*), commonly referred to as the Materials Act. The BLM can award non-competitive or competitive sales

contracts pursuant to 43 CFR 3600. Included with such a contract is the right to occupy the land to the extent necessary for fulfillment of the contract.

3.C Use and Occupancy of Public Lands

As required by the BLM's regulations governing Use and Occupancy under the Materials Act, 43 CFR 3600, this section of the Plan of Operations describes the existing and proposed uses and occupancies of applicable public lands to be mined under this Plan of Operations. The types of existing and proposed uses and occupancies on public lands include portable buildings, portable storage facilities, and temporary fences. These proposed uses and occupancies are depicted on Figures 3A and 3B, and a typical cross-section is provided in Figure 4.

Portable buildings will be used for beneficiation operations, administrative, communications, maintenance, and security functions. Storage facilities will be used to secure, safely store, and protect mining equipment, supplies, and materials from improper or unauthorized use, theft, vandalism, and exposure to weather. Fences will be constructed to comply with Federal, State and local regulatory and safety requirements, to protect employees, the public, and wildlife, and to provide security for Pyramid's operations and the mining equipment, supplies, materials, and mineral products present on the site. More detailed descriptions of the particular uses and occupancies on public land are provided throughout Section 5.0 of this Plan of Operations.

The proposed AGO is approximately 45 miles east of El Centro, California, and roughly 15 miles northwest of Yuma, Arizona (Figure 1). Access to the site is via Interstate 8 to the Ogilby Road exit, traveling four miles north on paved Ogilby Road/State Route S34, and traveling three miles northeast from Ogilby Road along American Girl Mine Road, a county gravel road. Pyramid's mining-related uses and occupancies of public land will continue for the duration of the Project until reclamation is completed and approved by the Imperial County Planning Department located in El Centro, California.

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4. HISTORIC MINING AND PRIOR DISTURBANCES

The proposed AGO is located in an area not previously surveyed by the United States Geological Survey (USGS) but that is estimated to be Section 19, Township 15 South Range 20 East, Imperial County, California on a portion of the former American Girl Mine-Padre Madre Operations. The associated water well is located in Section 25, Township 15 South Range 20 East, Imperial County, California. This district has a long history of mining-related activities including exploration, prospecting, pilot testing, and commercial production using both open pit and underground mining methods. Mining in the district dates back over 50 years with the most recent commercial production (American Girl Mine-Padre Madre) ceasing in 1996.

The proposed AGO plans to operate within the reclaimed land boundary and will not disturb any native ground (Figure 2). Instead, Pyramid plans to mine the existing overburden stockpiles remaining at the site and process these materials for sale as construction aggregate in the local Imperial County market. The project will reduce, reuse, and reclaim or recycle what are considered to be wastes, thus removing waste stockpiles and restoring the area to a more original land form.

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5. OPERATING PLAN

5.A Summary of Proposed Operations

The proposed AGO will mine existing overburden stockpiles, at the site and process these materials for sale as construction aggregates in the local Imperial County market. The project objective is to reuse and reclaim all saleable resources via removal of the stockpiles within a minimum of two years and up to 10 years, depending on market conditions.

Pyramid projects a total of approximately one million cubic yards¹ of material are available for mining as construction aggregate materials within the 40-acre footprint of the operations and within the limits of the current contract with BLM. The maximum mining rate is established by 43 CFR 3600 and is dependent upon the BLM award of competitive mineral material contracts to Pyramid as well as approval of this Plan of Operations and associated Reclamation Plan (submitted to Imperial County under separate cover).

The operation is planned as a temporary construction site and will have no permanent foundations, structures, or support facilities. All materials, including sanitary and non-sanitary wastes, maintenance wastes, including waste oil, will be removed from the site on a daily or weekly basis or other logical frequency. All operating facilities will be temporary in nature and will be hauled in on over-the-road transports.

5.B Period of Operations

Mobilization of the proposed AGO will begin when applicable Federal, State, and local approvals have been obtained. Pyramid anticipates project mobilization and initial commercial sales to commence in the second quarter of 2008. Reclamation activities will occur in parallel with mining and material beneficiation operations with final reclamation planned for completion following the cessation of operations at the site. Based on the resource and extraction rates described in this Plan of Operations, the life of the proposed AGO is planned to be two years but may extend for up to 10 years. This operating life estimate is dependent upon a variety of economic variables, including production costs, material sales contracts, and commodity prices.

5.C Project Access

Access to the proposed AGO will be over the existing county roads (i.e., same road originally used for access to the American Girl Mine- Padre Madre Operation). A short section of unpaved access road will require some dust control upgrades including the possible use of industry-standard chemical dust control treatments such as magnesium chloride (Figure 2). Additionally, a short section of road will be re-graded along the County route to provide access to the process plant and material load-out area as shown in Figure 2. The road will not be relocated but rather the grade of an approximately 300 foot section will be reduced to better accommodate haul trucks that will pass through the area. This process will not be achieved through blasting but rather “ripping” the grade with mining equipment. Excess materials resulting from this grade reduction will be processed as saleable material. Additionally, a small access road will be constructed for site access and

¹ Estimated available volume based on visual assessment, analytical data and field mapping. Estimate accurate to +/-50%.

the scale house. This road will be constructed within the confines of the property and will not affect the existing County road.

Based on communication with the United States Army Corps of Engineers (USACE), construction for this road will be performed under the authority of Nationwide Permit Number 14 and is therefore exempt from 404 and 401 permitting requirements. Further, since the former American Girl cyanide leach piles are not on the AGO parcel and there is no indication of cyanide being used historically along the roads related to the AGO parcel, the site is exempt from a Water Discharge Requirement (WDR) permit.

For potential discharges to surface waters outside of the site, the federal NPDES permit application Forms 1 and 2D will be completed and submitted to the California SWRCB.

5.D Proposed AGO

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 will not disturb any native or previously undisturbed ground. The extraction of materials from these stockpiles will be accomplished with conventional mining methods using loaders and haul trucks. No blasting will be required. The operation will include mining, crushing, screening, and washing, with future provision for a portable asphalt batch plant.

Each of the stockpiles will 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 and planned for extraction under the current contract with BLM.

Material processing will include crushing and screening, and washing when necessary, to meet the required specification of the respective construction aggregates being sold. Some materials will require crushing and screening as well as washing to remove fines, while others may require only washing. All plant reject material will 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.

5.D.1 Stockpile Excavation

All mining will occur at elevations above natural ground elevation (i.e., no new open pits will be created at the site as a result of the mining operation). The stockpile extraction will be accomplished with conventional surface mining equipment including front-end loaders, haul trucks, bulldozers, motor graders, and water trucks. Table 5-1 below lists the proposed mining equipment fleet. The maximum annual extraction rate is dictated by the BLM's material sales contract limitations and market demand. The maximum daily extraction rate is planned at 4,500 cubic yards.

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
Water pull	5,000 gallon	1

Approximate post-mining contours are depicted in Figure 5.

5.D.2 Plant Reject Materials

Plant reject/wash material will be stored in a small sediment pond as shown in Figure 3A. All plant reject materials will be used as part of concurrent reclamation and graded into the final reclamation contours.

5.D.3 Haulage and Access Roads

Haulage and access roadways will follow existing access and exploration roads. All mine roads will be developed to an operating width of 25 feet which is no greater than the current approximate width of the roads leading the site. Road grades will be limited to overall gradients of eight percent or less.

Roadway drainage will be intercepted by haul road drainage channels, which will be incorporated within the roadway construction to promote drainage along the inside edge of the roadway. These channels will route runoff from precipitation to the nearest sediment control best management practices (BMP). The combined use of these channels with additional stormwater BMPs, such as temporary straw bale diversion and/or sedimentation ponds, will control sediment transport during high precipitation events.

Ambient roadway dust emissions will be suppressed using water application and industry-standard chemical roadway dust suppressant agents (e.g., magnesium chloride) where necessary.

Construction techniques will ensure compliance with all Federal, State and local safety regulations.

5.D.4 Crushing and Screening Facility

A crushing and screening facility will be used to manufacture construction aggregate materials to meet specific market needs. Mined stockpile material will be delivered directly to the crushing plant feeder hopper. Material will 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 screen plant. The entire crushing and screening plant is designed as a portable system such that no permanent foundations are required, and the plant can be relocated as necessary. Table 5-2 below lists the anticipated crushing and screening equipment.

The plant production is limited on an annual basis by the BLM's material sales contract limitations and by market demand. The maximum daily production is planned to be 4,500 cubic yards.

Table 5-2. 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 15' 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)

Table 5-2. Proposed Process Equipment Including Equipment Type and Description

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 s/n 2006165
1- Thor 36 x 150 telescopic portable radial
12- RF 36 x 60 stackable conveyor
1 - riprap separator
1 -Ford F800 (maintenance truck)

5.D.5 Material Washing

Product specifications may require washing of materials in order to remove fines. Plant reject/wash material will be stored in a small sediment pond as shown in Figure 3A. Once dried, the fines materials will be incorporated into soils used for final reclamation.

5.D.6 Fuel and Other Supply Transport and Storage

Fuel and other supplies to be used at the proposed AGO include diesel fuel, motor oil, and lubricating compounds. Fuels to be stored at the site will be contained in two 12,000-gallon diesel storage tanks (Figure 3A). A secondary containment area will 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 refueling of vehicles will occur within the bounds of the containment area. All appropriate State and local storage permits will be obtained prior to delivery to the project area.

Daily fuel consumption estimates are included in Table 5-3 below.

Table 5-3. Estimated Fuel Consumption

Equipment Type	Model Equivalent	Quantity	Estimated Fuel Consumption / Hr / Vehicle (gallons)	Hours of Operation Per Day	Estimated Fleet Fuel Consumption / Day (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 Countermeasure (SPCC) Plan will be prepared prior to start-up to comply with 40 CFR Part 112.

5.D.7 Offices and Support Facilities

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

Equipment maintenance will be provided by owner or vendor service trucks. Temporary or permanent maintenance facilities are not required.

5.D.8 Electrical Power

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

5.D.9 Water Supply

The maximum daily water requirement is proposed to be 60,000 gallons, or approximately 42 gallons per minute.

Construction of a new alluvial well is proposed for the 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 on Assessor's Parcel Number 0501200009000 (Figures 2, 3B). This location was chosen for its proximity to access roads, the proposed mine site and roads that will 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 will 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 3A). Use of this well will require coordination with BLM for use and right-of-way access as well as a Conditional Use Permit from Imperial County.

For more detailed information on the location of the proposed water well, refer to the Well Siting Study provided as Appendix A to this Plan of Operations (Brown and Caldwell, 2008).

5.D.10 Refuse and Sewage Disposal

The proposed AGO is planned as a pack-it-in/pack-it-out project with no permanent on-site disposal facilities. All refuse will be required to be removed by the operating crew on a daily or weekly basis or some other reasonable interval. The refuse will be deposited in the dumpster located at the Pyramid offices in Heber, California.

Temporary sanitary facilities will be provided as rented portable toilets suitable in number to support the operating crews. Toilets will be maintained by the rental firm.

5.D.11 Operation Period/Workforce

Pyramid plans to operate the proposed AGO on an intermittent basis, 12 months per year, for up to 10 years. The project will operate from 6 a.m. to 6 p.m. No night shifts are planned.

An intermittent work force of approximately five to 10 employees is planned for the life of the project. These workers are currently employed by Pyramid therefore an increase in workforce is not planned or anticipated.

5.D.12 Growth Medium Management

The proposed AGO will stockpile any growth medium soils and the limited topsoil present on the site encountered during mining in the north portion of the property (Figure 3A). These materials will be used during concurrent reclamation. More information on reclamation can be reviewed in the Reclamation Plan submitted to Imperial County under separate cover.

5.D.13 Reasonable Foreseeable Development

Possible future plans for the site include a portable asphalt plant and associated support facilities. The asphalt plant would run on an intermittent basis depending on specific project needs.

5.D.14 Surface Waters

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

Surface water issues will be addressed through the Storm Water Pollution Prevention Plan (SWPPP) and through the regular use of BMPs.

The proposed AGO will utilize a roadway under the authority of USACE National Permit Number 14. Under this national permit, the proposed AGO has been issued an exemption from 401 and 404 permitting requirements.

Surface water management will be performed under the authority of the California State Water Resources Control Board (SWRCB) Water Quality Order No. 97-03-DWQ and National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared prior to operations start-up. Stormwater monitoring and visual inspections will be performed once the site is in operation, and appropriate BMPs will be installed, as necessary.

For potential discharges to surface waters outside of the site, the federal NPDES permit application Forms 1 and 2D will be completed and submitted to the California SWRCB. The proposed AGO is exempt from a Water Discharge Requirement (WDR) permit, due to the fact that the materials used for construction of the access road are free of cyanide. The cyanide leach piles from the previous mining activity are not located on the same property as the proposed AGO.

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.

5.D.15 Safety and Fire Protection

The proposed AGO will operate in conformance with all Federal and State safety regulations. Site access will be restricted to employees, contractors, consultants, and authorized visitors. Fire protection equipment and a fire protection plan will be established in accordance with State and local standards.

5.D.16 Fencing and Site Security

Public access will be restricted within the proposed AGO site area by erecting a temporary fence around a portion of the property perimeter. The fence will be a minimum of six feet high, constructed of crossed wire, with a gate and keyed lock. Keys will be restricted to Pyramid crew assigned to the site. The access road to the facility 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 to the south of the American Girl Mine Road (Figure 3A). The fence and gate will be removed following completion of site reclamation activities.

In addition to the above site-wide fencing, Pyramid will 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, 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 will 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.

5.E Control of Air Emissions

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., PM₁₀).

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.

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).

Pyramid has committed to comply with the Imperial County Air Pollution Control District (APCD) standards for dust control within the mine site. In accordance with the Dust Plan submitted to the Imperial County APCD for this project, the active mining area will be watered by a water truck during all mining activities. The haul roads and access road will also receive water periodically, as needed, to control dust emissions. Pyramid may also apply an industry-standard dust palliative (magnesium chloride) to the access road that meets all environmental regulations upon approval from the BLM and Imperial County. Air quality will be addressed on an as-needed basis. If there is equipment that is not self-permitting, Pyramid will perform periodic monitoring and implement BMPs and products to reduce emissions as necessary to meet local, State and Federal standards.

Imperial County Air Pollution Control District (ICAPCD) Rule 401 prohibits the emissions of plumes beyond a certain opacity. In general, the opacity that cannot be exceeded is No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines (USBM). This is determined visually/subjectively by a trained/certified person.

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6. ENVIRONMENTAL STUDIES

6.A Existing Studies

A Final Environmental Assessment/Environmental Impact Report (EIR) (BLM EA No. CA-067-88-65) was prepared for the former American Girl Mining Project. Environmental studies were previously conducted over a 2,100-acre Study Area, which includes the proposed 40-acre proposed AGO area. Thirteen environmental resource areas were studied in the previous assessment of impacts due to the former mining operations. The EIR states “In the context of the regional environment, none of the adverse impacts identified were determined to be significant.” Based on the nature and scope of the proposed AGO project, impacts will be even less than those identified and documented for the former American Girl gold-mining operation, and none will be environmentally significant.

A summary of 13 key environmental resource areas has been addressed below with respect to the proposed AGO.

6.A.1 Topography

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.

While the proposed AGO will alter the landscape in the project area, the proposed operation will remove the “unnatural” landforms created and resulting from past mining activities. The project will 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.

6.A.2 Geology and Seismic Setting

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, it 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.

6.A.3 Air Quality and Climatology

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., PM₁₀).

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.

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).

The proposed AGO will have fewer emissions than previous mining operations in the area since the overall mining rates and times of operation are significantly less. All equipment, if not self-permitting, will be permitted in accordance with Federal, State and local regulations.

The calculations for PM₁₀ for the proposed mining operation are based on "Modeling Fugitive Dust Sources", a guidance document from the National Stone, Sand & Gravel Association (NSSGA), and US EPA's AP-42 Handbook of Emission Factors. The estimates include PM₁₀ emissions from various processes/operations such as equipment (i.e. crushers, screens, and conveyors); customer truck traffic on unpaved roads within the property boundary; and stockpile emissions, including dust created from wind erosion, truck loading, and stockpile construction. Whenever applicable, the guidance document presents uncontrolled emissions in contrast to controlled emissions. Table 6-1 below contains variable diesel engine horsepower ratings and their corresponding emission output, including those for PM₁₀.

Imperial County Air Pollution Control District (ICAPCD) Rule 401 prohibits the emissions of plumes beyond a certain opacity. In general, the opacity that cannot be exceeded is No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines (USBM). This is determined visually/subjectively by a trained/certified person.

A Dust Plan has been submitted under separate cover to and discussed with the ICAPCD. Air quality will be addressed on an as-needed basis. If there is equipment that is not self-permitting, Pyramid will perform periodic monitoring and implement best management practices and products to reduce emissions as necessary to meet local, State and Federal standards.

Dust emissions associated with travel to and from the site on access roads and site roads will be regularly addressed with water suppression or industry-standard dust suppression chemicals such as magnesium chloride.

Table 6-1. Annual Pollutant Emissions

Pollutant	10 HP	15 HP	20 HP	25 HP	30 HP	150 HP	300 HP	1186 HP
	Emissions (ton/yr)							
PM ₁₀	0.1	0.14	0.19	0.24	0.29	1.45	2.89	11.43
SO _x	0.09	0.13	0.18	0.22	0.27	1.35	2.69	10.65
NO _x	1.36	2.04	2.72	3.39	4.07	20.37	40.73	161.04
CO	0.29	0.44	0.59	0.73	0.88	4.39	8.78	34.70

6.A.4 Noise

There is currently no regulated threshold for noise in the vicinity of the proposed AGO. The proposed project will not use blasting to mine mineral materials and there is no 24-hour per day milling or processing operation proposed.

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 “snowbird” 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 will produce noise from generators and other aggregate processing equipment. These impacts will be mitigated through installation of MSHA-approved mufflers on necessary equipment to dampen noise if applicable as well as regular maintenance of all equipment.

6.A.5 Hydrologic Resources

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.

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.

The proposed AGO will use less groundwater for the mining operation than the former American Girl—Padre Madre Mining Operation, currently estimated at roughly 60,000 gallons per day (gpd), and is not expected to appreciably impact groundwater supply. No chemical processes are necessary for the proposed AGO and therefore there will be no impacts to groundwater from potential process discharges.

Surface water issues will be addressed through the SWPPP (see Section 5.D.14 above) and through the regular use of BMPs.

6.A.6 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 records 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 potentially significant historic mining feature 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.

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 Draft 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.

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.

The two proposed well locations were also evaluated by aerial photo and were driven past during the site visit. It was concluded that the well and alternative well locations have no undisturbed surface and therefore no potential for undisturbed archeology in this area exists.

The segment of existing road proposed for lowering and regrading was also examined via map, aerial photo, and drive-over. It was concluded that the road is within the area previously surveyed for cultural resources in the past (as addressed in the 2008 site records search) and no cultural resources were located there. The letter report that addresses cultural resources is included as Appendix B Plan of Operations. The project area is not known to have religious/sacred or traditional cultural significance to local Native American groups.

6.A.7 Soils Resources

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 AGO will be removing the existing steep-sloped stockpiles and returning the area to near original contours or road base. The steepest planned slope will be 4:1, horizontal to vertical, and will help reduce any surface erosion potential from current conditions.

6.A.8 Wildlife Resources

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). Because of the lack of suitable roosting habitat, the bats roost off site but may use the project area for foraging. No suitable on-site habitat exists to support the other five species (two beetles, two birds, and a lizard). The presence of one CDFG sensitive animal, the mule deer, was detected on the project site.

The desert tortoise, a federally and state-listed threatened species, is not known to occur in the project area; however, desert tortoise 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 tortoise are not expected to occur on the project site or proposed well locations. It is possible; however, 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.

Mitigation measures will be designed and enforced at proposed AGO to prevent on-site impacts to bats and desert tortoises by AGO personnel operating on site. These measures include education and avoidance. For a more thorough discussion of these measures, please refer to the Environmental Assessment submitted to the BLM under separate cover.

6.A.9 Vegetation

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, cat-claw acacia, blue palo verde, creosote, brittlebush, and sweetbush. 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 in more detail in the Reclamation Plan and Environmental Assessment both submitted under separate cover.

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 species are not known to occur in the general site vicinity according to the 2007 CDFG California Natural Diversity Database (CNDDDB). Following cessation of construction aggregate extraction at the site, Pyramid plans to provide the same or greater level of re-vegetation as prescribed by SMARA. Re-vegetation is discussed in more detail, including planned vegetative density and seed mixes, in the Reclamation Plan submitted to Imperial County under separate cover.

6.A.10 Visual Resources

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.

While the proposed AGO will alter the landscape in the project area, the proposed operation will remove the “unnatural” landforms created and resulting from past mining activities. The project will 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.

While the proposed AGO will alter the landscape in the project area, the proposed operation will remove the “unnatural” landforms created during former mining operations. As a result, the proposed aggregate extraction will return the previously mined areas to near-original surface contours.

6.A.11 Socioeconomics

According to the 1988 EA/EIR, mining employs about 1 percent or less of the employed population. Traditionally, mining in Imperial County has involved quarry products such as sand and gravel, stone, clay, gypsum, and limited precious metals production. Currently, there is no job activity on the project site and therefore no employees.

The largest residential center is El Centro, the Imperial County seat, about 45 miles west of the proposed project site. The largest residential center near the project site is Yuma, Arizona, located about 15 miles southeast.

The proposed AGO plans to utilize existing employees to operate the project; therefore, no impacts on the socioeconomics of the area are impacted.

6.A.12 Transportation

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 travelling 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.

The proposed AGO will have truck traffic associated with the removal of mineral materials related to the sale of construction aggregates. The anticipated maximum daily trip-count for aggregate trucks is 250.

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.

The proposed AGO plans to utilize the same roads already established in the area.

6.A.13 Land Use

The Cargo Muchacho Mountains historically and presently are largely devoted to mining and mineral exploration. This area is designated as “Class M” or “Moderate” in use under the California Desert Conservation Act due to past, present, and potential future mining activities. 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. The proposed AGO plans no modification to the intended land use once reclamation is complete and the land is returned to reclaimed land status.

PLAN OF OPERATIONS

7. RECLAMATION PLAN

The Reclamation Plan (Brown and Caldwell, April 2008) describes the work necessary to reclaim the proposed AGO site. The Reclamation Plan has been prepared to comply with the requirements of Imperial County and the California SMARA of 1975, as amended, and has been submitted as a separate document to the Imperial County Planning/Building Department.

PLAN OF OPERATIONS

8. LIMITATIONS

Report Limitations

This document was prepared solely for Pyramid Construction and Aggregates, Incorporated in accordance with professional standards at the time the services were performed and in accordance with the contract between Pyramid Construction and Aggregates, Incorporated and Brown and Caldwell dated September 21, 2007. This document is governed by the specific scope of work authorized by Daryl Dickerson; it is not intended to be relied upon by any other party except regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Pyramid Construction and Aggregates, Incorporated and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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PERSONS AND AGENCIES CONSULTED

United States Bureau of Land Management, El Centro Field Office

Walter Todd, III – Environmental Assessment
 Daniel Steward – Biology
 Jesse Irwin – Biology
 Carrie Simmons – Cultural Resources

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

County of Imperial Air Pollution Control District

Jesus Ramirez – Dust Plan

County of Imperial Public Works Department

Joe Hernandez – Traffic Control Plan

FIGURES

Figure 1. Vicinity Map

Figure 2. Site Map

Figure 3A. Existing Site Conditions

Figure 3B. Detail of Well Site

Figure 4. Cross-Sections

Figure 5. Post Reclamation Grading Plan

BROWN AND CALDWELL

FIG-1