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Environmental Assessment

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RED MOUNTAIN MINING, INC.,
MINING AND RECLAMATION PLAN

Case File Number: AZA-35653

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Red Mountain Mining Mineral Materials Sale

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1. INTRODUCTION

This Environmental Assessment (EA), Red Mountain Mining, Inc., Mining and Reclamation Plan, has been prepared in response to a mineral material sale contract application submitted by Red Mountain Mining, Inc. of Mesa, AZ. The reserves at the site are estimated to be approximately 3.7 million tons. The current application requests a new contract for the production and purchase of only 445,000 tons (200,000 yds^3 volume equivalent) of granite and associated materials, which includes decorative stone, boulders, gravel and fill, in order to continue operations at their existing facility. The analysis anticipates development of the full 3.7 million tons and future contracts may be issued using this environmental assessment to comply with the National Environmental Policy Act (NEPA). The site is administered by the Bureau of Land Management's (BLM) Phoenix District, Lower Sonoran Field Office. BLM's case file number for this application is AZA-35653.

The project area (see Figure 1) is located on public lands in T. 2 N., R. 6 E., Section 24, Lots 19, 21, 23, & 25-29, Gila & Salt River Meridian, in Mesa, Maricopa County, Arizona. This site was designated a community pit in May, 1995, under regulations found at 43 Code of Federal Regulations (CFR) 3603.10(a), which states "BLM may make mineral material sales and allow free use under permit from the same deposit within areas that we designate for this purpose". According to the company website (https://www.redmountainmining.com/about-us/), mining operations began onsite in 1961, with Red Mountain Mining, Inc. taking over the operation in 1973. Early production originated from mining claims, providing a variety of products that include decorative stone, boulders, rip rap, gravel, and highway fill. In February 1994, BLM approved the Red Mountain Mining, Inc. initial Mining Plan of Operations for the site, authorizing continued operations under a mineral material sales contract rather than the locatable mineral laws and regulations. Operations have since continued on the property under a series of subsequent sales contracts, providing material for the landscape and construction industries. According to BLM records, approximately 9.2 million tons of granite have been produced onsite since 1973. Remaining reserves identified by Red Mountain Mining, Inc. total about 3.7 million tons, which would be mined out in approximately 10 years at a projected production rate of 367,000 tons per year.

Operations onsite presently encompass approximately 112 acres, with about 4 additional acres planned to be disturbed before the mine reaches its final footprint. Approximately 108 acres have been previously disturbed. The parcel is bounded by National Forest System Lands to the east, State Trust lands to the west, and the Salt River-Pima Indian Community to the north. An 830-acre private residential development known as Red Mountain Ranch adjoins the property to the south. The mine site, offices, shop, weigh scale, fixed fuel tanks, and supporting facilities are located on site, and encompass a portion of the federal lands.

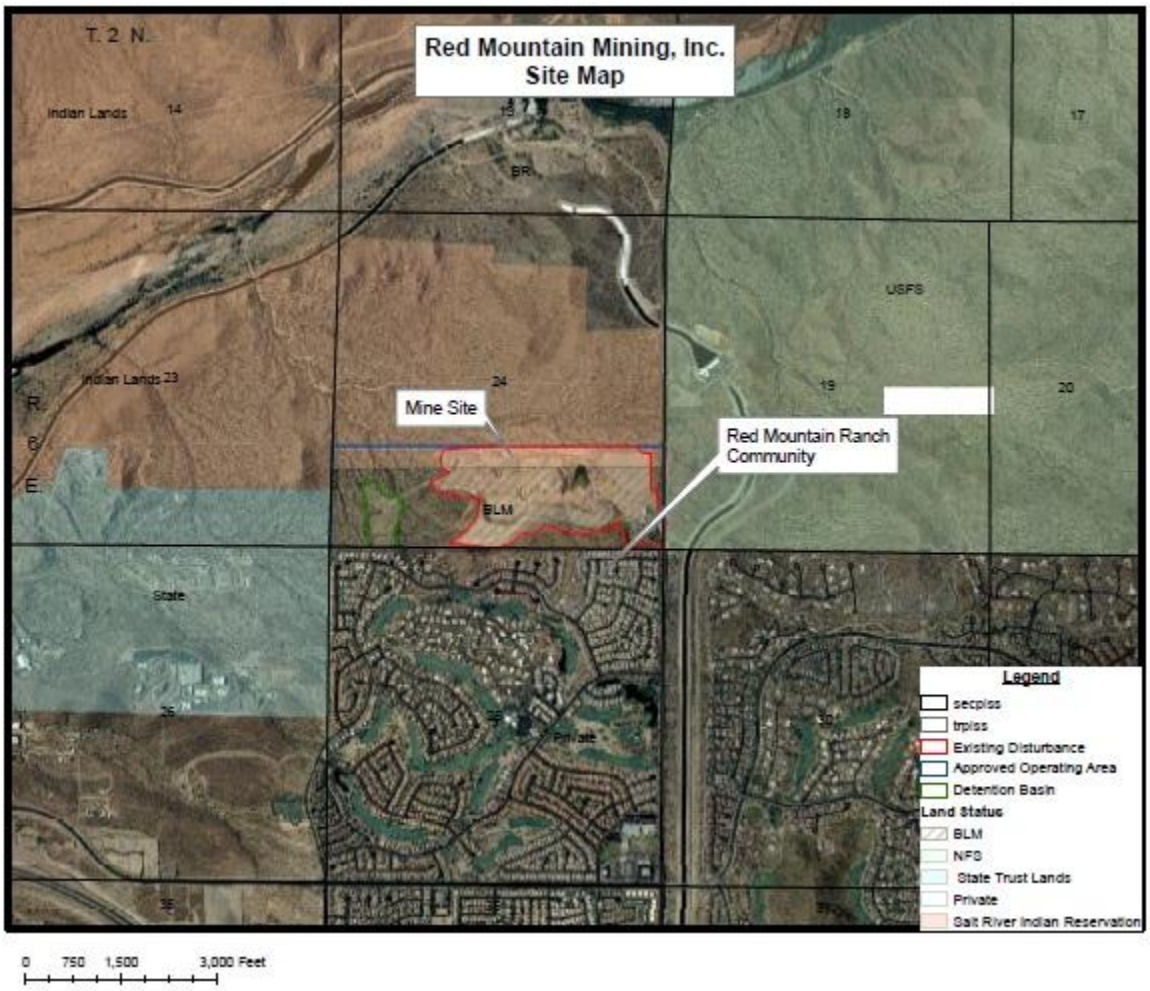

Figure 1 – Overview of the Red Mountain Mining site.

1.1 Purpose and Need for Action

The purpose of the action is to consider the effects of the Mining and Reclamation Plan submitted by Red Mountain Mining with their request for a mineral material sales contract.

The need for the action is established by BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) and the Materials Act of July 31, 1947 to respond to submissions of mineral material contract applications pursuant to the regulations at 43 CFR 3601, *et seq*. Per 30 USC Sec. 1602, it is the continuing policy of the United States to promote an adequate and stable supply of materials necessary to maintain national security, economic well-being and industrial production, with appropriate attention to a long-term balance between resource production, energy use, a healthy environment, natural resources conservation, and social needs.

1.2 Decision to be Made

This EA has been prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA), and in accordance with 40 CFR 1508.9, to assess the potential environmental impacts of the proposed mining and reclamation plan. Based on this evaluation of alternatives and potential impacts, the Bureau of Land Management (BLM) will make a decision determining whether or not to approve the proposed project and issue mineral materials contract(s). The decision will be made by BLM's authorized officer, Edward J. Kender, Field Manager, Lower Sonoran Field Office.

As appropriate, any potentially affected resources would be protected through the application of performance standards, standard or site-specific mitigation measures, and other management actions within BLM's regulatory authority. At a minimum, these include BLM's authority to require the following:

- Avoidance of sensitive resources and relocation of a surface disturbance activity in order to protect a sensitive resource.
- Submittal and implementation of an adequate reclamation plan and achievement of reclamation goals.
- Conduct operations in such a manner that avoids undue impacts to other resources.

1.3 Land Use Plan Conformance

This EA is tiered to the decisions, information, and analysis contained in the Lower Sonoran Record of Decision & Approved Resource Management Plan (2012). Objectives for management of salable mineral resources are defined in Chapter 2, 2.2.15 Minerals Management. Management objective MM-1.1.12 states "BLM lands not otherwise withdrawn or segregated from minerals actions will be open to discretionary mineral materials disposal via sales or free-use permits on a case-by-case basis, under regulations at 43 CFR 3600, subject to appropriate restrictions and stipulations to protect other resources". This Proposed Action conforms to the land use plan terms and conditions as required by 43 CFR 1610.5-3.

The BLM decision only authorizes extraction of BLM minerals. Use of non-BLM land (e.g., private land, National Forest System lands, State Trust land) is subject to the appropriate jurisdictional agency or private landowner's permission. BLM's authorization of the Proposed Action would include the requirement that the operator comply with the 43 CFR 3600 series regulations.

1.4 Scoping & Public Participation

The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis. Internal consultation with resource specialists of the Lower Sonoran Field Office (LSFO) was performed in order to identify important resource values that may be contained within the project area. Internal scoping for this EA included a site visit 4/19/2011 by BLM LSFO resource specialists, a review of available resource information, and an assessment of the types of impacts typically associated with mineral material extraction and processing.

Public outreach was conducted by the following methods:

- 10/31/2011: BLM issued a news release to the public for a public scoping period (02/01/2012 through 02/15/2012)
- 10/31/2011: BLM sent public scoping letters to adjacent landowners and stakeholders to request public comments on the proposed sale
- 03/01/2012: BLM posted this project on the Lower Sonoran Field Office NEPA website
- 06/06/2012: BLM held a public meeting with adjacent landowners and stakeholders to provide information regarding the proposed mineral material sales contract and to facilitate public participation in the development of the EA.

Public comments were solicited by letter to neighbors, adjacent land owners, and other city, county, state, and federal stakeholders. Comments were accepted by both email and the U.S. Postal Service for a period of 30 days. Seventy public comments were received, predominately from the adjacent residents of Red Mountain Ranch, located just south of the project area. In response to the request of those residents, a public meeting was scheduled and held June 6, 2012. Comments from the public scoping, and those submitted at the public meeting have been incorporated into development of the Alternatives described in this EA.

1.5 Issues Identified

During the internal and external scoping process, the following issues and resources were identified as present in the project vicinity and potentially affected by the proposed action:

- Blasting Activities
- Air Quality (including dust suppression)
- Wastes, Hazardous or Solid
- Visual Resources and Noise
- Socioeconomics

The following lists some of the concerns identified during the public scoping process. These are not presented in any particular order, but do help frame the purpose and need of the planning effort. They also help identify the Proposed Plan and develop the alternatives presented.

- Will a hearing be conducted? The purpose of scoping and public participation is to identify issues, concerns, and potential impacts that require detailed analysis. Internal scoping and public outreach was performed prior to the preparation of this document (see Section 1.4, Scoping and Public Participation). Results of that effort have been determined to be adequate and are incorporated into this analysis.
- Will the property be sold once mining has ceased? *The Lower Sonoran Record of Decision and Approved Resource Management Plan* (ROD) was issued September, 2012. Preparation of this planning document identifies management direction for BLM lands administered under the boundaries of the Lower Sonoran Field Office. As defined in the ROD, the lands identified in the Proposed Action are included within the boundaries of lands identified for disposal. What this means is, lands identified for disposal meet the criteria in Section 203(1) of the Federal Land Policy and Management Act of 1976 (FLPMA), as amended. However, any disposal process would be conducted under a separate NEPA process.
- Will the existing mining footprint be expanded? The Proposed Action does not include expansion of the existing disturbance area for mining purposes, but four additional acres will be developed as a sedimentation pond to serve the existing facility.
- What is the plan for the granite ridge separating the mine site from the subdivision of Red Mountain Ranch? Under the Proposed Action, the granite ridge located along the southern edge of the federal property boundary will not be affected. The possibility of removing the ridge top during the mining process is discussed under the Southern Expansion alternative.

2. ALTERNATIVES

This section describes the alternatives considered to address the purpose and need, including the 'no action' alternative.

2.1 Alternative 1 – Proposed Action

The Proposed Action consists of executing the mining and reclamation plan for a total disturbance of approximately 116 acres on federal lands administered by the LSFO. The bulk of the rock products sold are used in landscape, road construction, and the geotechnical applications industries.

Mining activities to date have impacted approximately 112 of the 200 acres described by Lots 19, 21, 23, and 25 through 29 of Section 24, T. 2 N., R. 6 E., Gila and Salt River Meridian, Maricopa County, Arizona. Four (4) additional acres of disturbance are contemplated under this plan.

Mining will be accomplished primarily through the ripping of rock in place by heavy equipment, (large bulldozers and front-end loaders); however, blasting will also occur where rock that cannot be ripped is encountered. Blasting will be performed by an outside contractor who is licensed to perform such activities. No explosives will be stored on site.

Blasting operations would occur only as required in order to economically extract mineral materials from the site and to contour the final dimensions of the pit wall in accordance with the Mining and Reclamation Plan. All blasting operations will be conducted in accordance with the Mine Safety and Health Administration (MSHA) regulations part 56, Safety and Health Standards—Surface Metal and Nonmetal Mines, Subpart E, Explosives, at 30 CFR 56.6000, *et seq*, and Title 27, Chapter 3, Article 2 of the Arizona Revised Statutes, at 27 ARS 321 through 325. The operator will also comply with the blasting regulations found in the CFR at Title 30, Chapter VII, Subchapter K, Part 816, Permanent Program Performance Standards- Surface Mining Activities, Subpart 67, Use of Explosives: Control of adverse effects (30 CFR 816.67).

In December 2006, Red Mountain Mining, Inc. submitted a request to incorporate blasting into their Plan of Operations due to a mineral character change of the material (hardness), when ripping the material with a dozer became inadequate. The Red Mountain Mining, Inc. Plan of Operations was amended in 2007 to include limited blasting, with special stipulations requiring monitoring and data recordation of blasting events, and in accordance with all applicable rules and regulations of local (City of Mesa), County, State, and Federal agencies. As of June 30, 2015, the company has blasted a total of 24 times since 2007. The blast events on record are listed in Table 2.

Excavations at hard-rock quarries will generally require fragmentation of the rock to allow handling and digging. It is necessary to break the rock mass and produce manageable rock piles with lump sizes that can be handled by the haulage equipment and processing plant. The desired

degree of primary fragmentation may be achieved in one of two ways, either mechanical breaking (ripping) or drilling and blasting. The selection of which method is or can be used is determined by:

- the degree of weathering of the rock mass;
- the nature and frequency of fractures, joints, faults, bedding, discontinuities, etc.;
- the crystallinity, nature and grain size of the rock mass, and;
- the impact strength of the rock mass (GWP, 2008).

Primary fragmentation is designed to be compatible with the loading and crushing plant. Inappropriate rock fragment size can reduce efficiency of the loading plant, reduce cycle times, and increase wear to buckets and teeth on the excavator, which delivers the fragmented material to the processing plant. Rock fragments too large for the processing plant can create loss of production due to plant choking and subsequent breakdowns, as well as increased wear on the crushing plates.

As shown in Table 2, blasting is performed on an "as needed" basis when other mechanical efforts to fracture the rock become ineffective. Ripping the rock with heavy equipment is preferred, but is only possible in extensively fractured rock.

Blasting is used in the mining industry not only to break up the material so that it may be further processed, but it is also utilized to control pit wall slopes and maintain proper elevations as the material is extracted. The shape and competency of the walls and floor of the developing mine allows for greater recovery of the material, production of less waste, and a safer working environment for those working within the site. If the opportunity for blasting were not available in those areas where mechanical breakage is not feasible, not only would the material extracted be of sizes too large for processing, but proper elevations, high wall slopes and pit configuration would be very difficult to establish in accordance with the mining and reclamation plan.

Maintaining slope geometry of the pit walls and floor is important in order to maintain pit competency, and it is paramount for maintaining safe mining conditions. If blasting could not be utilized, once the material became too hard to rip, it would then become un-mineable. In addition, reclamation efforts to grade pit walls and benches to safe specifications would be severely impaired.

The operator and any designated blasting contractor will record vibration from any blasting activities using a blasting seismometer located at a critical point near the property boundary with the adjacent subdivision to the south. Blasting vibration will be kept below the levels outlined at 30 CFR 816.67.

The current disturbance footprint includes processing equipment, sized stockpiles, facilities for crushing and screening, and a sales office. The majority of rock extraction is performed by ripping with a bulldozer. The unconsolidated materials are then transported by front-end loader to the crushing and screening plant located within the pit. Crushed, sized, and washed material is

then moved by front-end loader to stockpiles for sale. Boulders suitable for sale as decorative rock are stockpiled in as-mined condition.

A grader and water trucks are used to maintain roads and control dust within the mining site. Maintenance of mobile equipment on the property is limited to lubrication, filter and brake liner replacement, tire repair and routine maintenance. Although major repairs are sent to off-site commercial shop, maintenance and repair of the crushing plant is generally performed in place. A generator provides power for the crushing plant. Electrical power for attendant facilities is obtained through Salt River Project (SRP). Equipment to be used in the execution of the mining plan is listed in Table 1.

Water is purchased from the City of Mesa, and is used primarily for dust suppression on the haul roads and stockpiles, in the crushing plant, and in support of office activities. Two wells that provided water in the past are no longer in use.

In March, 2015, Red Mountain Mining identified 1.7 million bank cubic yards of remaining reserves at the site. Using a tonnage factor of 2.18 tons per bank cubic yard (per prior evaluation by Thomas-Hartig Associates and accepted by BLM), which equates to approximately 3.7 million tons of saleable material. At the average production of approximately 367,000 tons per year, this plan estimates production will complete in 10 years.

Throughout the mining and reclamation portions of the proposed plan, the operator will maintain current environmental and regulatory permits for the operation from appropriate regulatory authorities, which may include Non- Title V Air Quality Permit, Storm Water Pollution Prevention Permit, and other permits as required by Federal, State, County, or local authorities.

Table 1 Current and proposed mining, processing, and hauling equipment.

Type	*Number*	*Make/Model*	*Size*
Excavator	2	Komatsu PC 200	60,000 lb
Excavator	1	Komatsu PC 40	10,000 lb
Loader	1	Komatsu WA 40	1 cu. yd
Loader	3	Komatsu WA 500	5 cu yd
Loader	1	John Deere 84	1 cu yd
Haul Truck	1	Volvo A35	35 ton
Dozer	1	Komatsu D375-2	150,000 lb
Grader	1	Galion A500	14 ft.
Water truck	1	Kenworth W900	4,000 gal
Water truck	1	Kenworth T600	
Crane truck	1	Int'l, w/Olympic crane	10,000 lb
Generator set	1	Caterpillar	250 kW
Generator set	1	Telsmith/Cummins	75 kW
Screen	1	Powerscreeen Chieftain	250 tph
Screen	1	Powerscreen Powergrid	250 tph

Type	*Number*	*Make/Model*	*Size*
Crusher	1	Telsmith jaw	22”x55”
Crusher	1	Telsmith cone	44”
Conveyor	14		
Dump truck	1	Kenworth	80,000 lb gvw
Tractor	1	Kenworth	80,000 lb gvw
Tractor	4	Peterbilt	80,000 lb gvw
Transfer unit	3	Peterbilt	80,000 lb gvw
Transfer unit	1	Kenworth	80,000 lb gvw
Boulder truck	1	Kenworth	80,000 lb gvw
Boulder truck	1	Freightliner	80,000 lb gvw
Boulder truck	2	Peterbilt	80,000 lb gvw

Table 2 Blast history as of June 30, 2015.

Date
02/23/2007
02/27/2007
03/07/2007
04/16/2007
04/23/2007
05/18/2007
05/22/2007
05/03/2011
06/02/2011
06/28/2011
06/07/2013
06/18/2013
07/15/2013
07/26/2013
03/12/2014
03/24/2014
09/23/2014
10/09/2014
03/11/2015
03/23/2015
03/23/2015
03/27/2015
06/11/2015
06/17/2015

Reclamation Plan

Approximately 116 acres will have been disturbed over the life of the mine, including a 10 acre area west of the mining area that encompasses a storm water detention basin (see Exhibit C in Mining and Reclamation Plan).

Since concurrent reclamation cannot be utilized due to the total small area of the operations, reclamation will not begin until mining is complete. Once reclamation efforts begin, all equipment and buildings will be removed within 90 days. Complete reclamation will require approximately six (6) months to complete, with the exception of monitoring. Quarterly reclamation monitoring will be conducted by the operator or their contractor for the first year in order to track revegetation efforts, then, performed annually thereafter, until sufficient vegetation cover is established.

A geotechnical engineering report for final slope stability considerations was performed by Terracon in 2001, in order to determine the recommended reclaimed slope configuration of the

final pit walls. Recommendations from that report indicate the final pit walls should not exceed a ratio of 0.75H : 1V, with terracing in order to mitigate rock fall potential ("H" refers to the horizontal plane, and "V" refers to the vertical plane). Since that report, small slope failures have occurred primarily on the west end of the southern ridge, and this reclamation plan has slopes designed at a 1H : 1V ratio to increase slope stability.

The final pit wall will be a generally north facing slope approximately 2,600 feet in length and approximately 165 feet in height. Four benches have been designed with 25 foot wide catch benches every 50 to 70 feet vertically depending upon location in the pit. The benches will be located along the south pit wall.

Storm water runoff from the pit walls will be caught and discharged into the sediment pond. Ditches and berms will be located at the bottom of the rock slopes. Ditches will also serve as drainage ditches. From the east to west, there will be a 1% slope to facilitate runoff travelling to a spillway and sedimentation pond area.

Fines and overburdern from mining operations that has been and will continue to be stockpiled will be used to recontour the land to meet the reclamation state outlined in Exhibit C of the Mining and Reclamation Plan. All reclamation features are described in the reclamation portion of the plan, on pages 5 through 8.

Once all equipment and buildings are removed, and re-contouring is complete, the area will be re-seeded with a seed mixture approved by the BLM. A seven foot high chain link fence, with posted signage every 100 feet, will be installed along the southern flank of the ridge that separates the mine from the adjacent residential developments in order to keep people and animals away from the crest of the final pit high walls.

2.2 Alternative 2 – Cease Operations and Reclaim

The No Action Alternative generally means that the Proposed Action would not take place. In the case of a Noncompetitive Mineral Material Sales contract, this would mean denial of the application associated with the Proposed Action. The operator currently working at the project site would be required to cease operations and initiate reclamation activities. Reclamation would be performed in accordance with the current operator's Mining and Reclamation Plan, as approved.

The project area was designated a community pit in May, 1995, under regulations found at 43 CFR 3603.10(a), which state "BLM may make mineral material sales and allow free use under permit from the same deposit within areas that we designate for this purpose". This designation has been recorded on the Master Title Plat for the site. This alternative would only serve to stop current operations and direct Red Mountain Mining, Inc. to reclaim the area, but would not preclude submission of future applications for mineral material sales contracts from this site.

2.3 Alternative 3 – No Blasting

Public comments received during the scoping phase indicated a "No Blasting" alternative should be analyzed. This alternative generally means Red Mountain Mining, Inc. would operate under a new sales contract without the opportunity to utilize blasting to fracture the material into sizes small enough for further processing. All other activities as described under the Proposed Action would be the same.

2.4 Alternative 4 – Southern Area Expansion

Public comments received during the scoping phase identified potential support for partial or complete removal of the granite ridge that lies just north of the southern boundary of the federal land and the private property line of the adjoining residential development of Red Mountain Ranch. Some of the homes in the Red Mountain Ranch subdivision are sited right up to the southern edge of the federal property. Partial removal of the ridge could be achieved if the ridge was mined to the 1650 or 1625 foot elevation, allowing for a 200' and 150' offset from the southern property boundary respectively. The final pit wall could be configured with one less bench, reducing the overall final height (elevation) of the final south pit wall. As an alternative, full removal of the ridge would be designed to eliminate naturally occurring erosion potential during brief, high intensity thunderstorm events that occur in this part of the desert. Rainfall from these storms flows quickly off the landscape, often carrying a large, coarse sediment load with it. Although the several incised, deep drainages that dissect the southern aspect of the ridge catch most of the debris that is transported downslope from these types of events, removing the steepness of the ridge slope may provide added protection against a catastrophic rock fall.

2.5 Alternatives Considered but Removed from Detailed Analysis

One proposed alternative from public comment was for the BLM to give the property to Maricopa County for public use. Once mining activities have ceased, closure of Red Mountain Mining's crushed granite pit would begin according to the approved reclamation plan on file with the BLM. Once reclamation is complete, BLM would process requests for special land uses on the site as they are received.

This alternative includes actions and uses outside of the scope of the purpose and need for the Proposed Action. Any future planning for recreation or public use would undergo its own environmental analysis for that Proposed Action. Additionally, this area would still be designated as a community pit, subject to disposal of mineral materials through sales or permits according to the regulations. That designation may be in conflict with other Proposed Actions.

For these reasons, this alternative was not considered.

3. AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

3.1 Definition of Terms

Common terms used to describe potential environmental impacts are defined as follows:

Adverse: An effect that is negative or detrimental to one or more resources (e.g. degrades its quality or integrity). In this document, the term "impact" is assumed to be adverse unless otherwise stated.

Beneficial: An effect that is positive or beneficial to one or more resources (.e.g enhances its quality or integrity)

Direct: Effects of the action that are a direct result of the action, occurring at the same time and place as the action.

Indirect: Effects of the action that are caused or enabled by the action, but occur later in time or space or through an intermediary, and are reasonably foreseeable (e.g. growth-inducing effects, "but-for" effects, etc.).

Cumulative: Direct and indirect effects of the action combined with the incremental, additive effects of other past, present, and reasonably foreseeable future actions, on a given resource.

Short-Term: An effect that occurs only for a short time relative to the temporal scope of the action. The Proposed Action is for a Mining and Reclamation Plan with a 10 year operating life and approximately one year for reclamation. In this case, short term means less than the maximum duration of a single negotiated sale contract, 5 years.

Long-Term: An effect that occurs for a long time relative to the temporal scope of the action. The Proposed Action is for a Mining and Reclamation Plan with a 10 year operating life and approximately one year for reclamation. In this case, long term means longer than the maximum duration of a single negotiated sale contract, 5 years.

3.2 Resources and Rationale

Table 3 Summary analysis rationale for the considered resources

Resource	Not Present	Present, Not Affected	Present, May Be Affected	Rationale
Air Quality			X	Proposed Action would have to acquire and / or maintain Air Quality permitting under the regulatory authority of Maricopa County.
Vegetation, including Noxious and Invasive Non-native Species			X	Proposed Action includes multiple vehicles arriving on site which could inadvertently bring invasive and / or noxious plant species to the site.
Water Quality (Surface and Ground)			X	Proposed Action would have to acquire and / or maintain permitting compliance under the regulatory authority of the Arizona Department of Environmental Quality.
Wastes, Hazardous and Solid			X	Proposed Action generates wastes that must be disposed of in accordance with local, state, and Federal regulations.
Visual Resources and Noise			X	Proposed Action would have to be in conformance with current Land Use Plan, and not significantly affect the use(s) of adjacent lands.
Land Use			X	Proposed Action would have to be in conformance with current Land Use Plan, and not significantly affect the use(s) of adjacent lands.
Cultural Resources		X		A determination of No Historical Properties Affected was made after a Class III Cultural Inventory was conducted in January, 2015.
Native American Religious Concerns	X			No concerns have been expressed.

Resource	Not Present	Present, Not Affected	Present, May Be Affected	Rationale
Areas of Critical Environmental Concern	X			Proposed Action is not within or adjacent to any Area of Critical Environmental Concern.
Environmental Justice	X			None of the alternatives would disproportionately impact any low income or minority populations as described in Executive Order 12898.
Farmlands (Prime and Unique)	X			Not present.
Floodplains	X			Area of Proposed Action is outside of any delineated Special Flood Hazard Area or Floodway Area.
Wilderness	X			Proposed Action is not within or adjacent to a designated Wilderness Area.
Wildlife and Fish, including Threatened and Endangered Species, Special Status Species, and Migratory Birds			X	No current special status species or habitat have been documented in or adjacent to the Proposed Action area. Special status migratory birds and associated habitat linked to the Salt River riparian corridor are buffered by a distance of one mile or more.

3.3 Air Quality

3.3.1 Affected Environment

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, which includes seven nationally regulated ambient air pollutants, carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and sulfur dioxide (SO_2). EPA has delegated enforcement of air quality standards to some states. In accordance with Arizona Revised Statutes (A.R.S.) §49-406, the Maricopa Association of Governments (MAG) is the lead air quality planning organization for the Maricopa County portion of the Phoenix Metropolitan area. The MAG membership consists of the 27 incorporated cities and towns within Maricopa County and the contiguous urbanized area, the Gila River Indian Community, the Salt River Pima Maricopa Indian Community, Ft. McDowell Yavapai Nation, and Maricopa and Pinal Counties. In consultation with ADEQ, ADOT and the Pinal County Air Quality Control District (PCAQCD), MAG is responsible for developing Arizona State Implementation Plan (SIP) requirements in response to the EPA's 1996 designation of the greater Phoenix Metropolitan area as an area of Serious Nonattainment for particulate matter. In accordance with A.R.S. §49-107, the ADEQ has delegated to Maricopa County Air Quality Control Department, the responsibility for determining potential impacts subject to air quality laws, regulations, standards, control measures, and management practices within the project area. ADEQ has the ultimate responsibility for reviewing and permitting any project's air quality impacts.

National Ambient Air Quality Standards (NAAQS) are health based criteria for the maximum acceptable concentrations of air pollutants in an area of public use. Air quality standards are defined in accordance with A.R.S. 49-480 and Maricopa County Air Pollution Control Regulations Rule 316, which establishes limits for the emissions of particulate matter into the ambient air from any nonmetallic mining operation or rock product processing plant.

The project area is located in a portion of Maricopa County that has been designated by the EPA to be in nonattainment for three pollutants: PM_{10}, CO, and O_3. The Clean Air Act requires states with areas failing to meet the air quality standard for any of the NAAQS pollutants to produce a SIP to define a strategy to attain NAAQS standards. Originally adopted in July 1993, Rule 316 of the Maricopa County Air Pollution Control Regulations was recently revised in March 2008, to include control strategies that meet the Best Available Control Measures (BACM) test and the Most Stringent Measures (MSM) test for significant PM_{10} sources and source categories, in order to reduce PM_{10} emissions. This rule revision is in response to the EPA's requirement that Maricopa County submit a Five Percent Plan for PM_{10} to demonstrate 5% reductions per year in emissions from the date of submission. Rule 316 was revised to include a requirement that identified point sources must maintain a minimum moisture content on crushing and screening operations and monitor the moisture content for compliance. There are also new requirements

for dust control coordinators, training, and dustproof paving for parking, maneuvering, ingress and egress areas.

Although specific performance standards regarding air quality standards for mineral material sites are not specified in 43 CFR 3600 regulation standards, the regulations at 43 CFR §3601.6(b) state that "BLM's policy is to protect public land resources and the environment and minimize damage to public health and safety during the exploration for and the removal of such minerals." BLM sets forth performance standards and special stipulations with the issuance of any mineral material contract. Provisions of such contracts require that the purchaser obtain and keep current and in good standing all permits required by the various City, County, State, and Federal agencies and will abide by the stipulations set forth in the permit. In addition, all applicable Federal, State, County, and City pollution standards and permits must be in place prior to production activities, and remain in good standing through the course of active operations.

Red Mountain Mining, Inc. operates under Maricopa County Air Quality Department (MCAQD) permit #990634, originally issued May 15, 2005 and revised May 5, 2010 and March 17, 2015. The permit is set to expire on May 31, 2020. The permit establishes emission limitations for crushing and screening operations at the project site, and sets specific conditions, control measures, and testing, monitoring, and reporting requirements, for the operation, as authorized under Rule 316 of the MCAQD regulations. As required by the Five Percent Plan for PM_{10} emissions, a Fugitive Dust Control Technician must be on-site at all times during primary dust generating operations in order to ensure dust control measures are implemented. As also required by permit #990634, a Dust Control Plan was submitted and approved by MCAQD March 17, 2015, which defines all primary and contingency measures taken at the site to control fugitive dust emissions. After investigating MCAQD compliance records, the site has not been cited for compliance violations of their Air Quality permit between January 1, 2014 and July 31, 2015.

Two formal complaints regarding blasting at Red Mountain Mining have been received by the Arizona State Mine Inspector's Office since January, 2013. Both complaints were investigated and found to be within applicable regulatory thresholds. As a result of these complaints, Red Mountain Mining requested WESCO (their chosen blasting contractor) to reduce the blast shot size in order to further reduce adverse impacts to the neighbors. In addition to using timing delays, monitoring equipment, and only blasting under favorable weather conditions, the operator only conducts blasts near the middle of the day, avoiding early morning, night time, and late afternoon blasting times.

As of August 1, 2015, the measures taken by the operator and their blasting contractor have not resulted in any blasting event exceeding the sound threshold limits of 30 CFR 816.67, which state:

(a) *General requirements.* Blasting shall be conducted to prevent injury to persons, damage to public or private property outside the permit area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the permit area.

(b) *Airblast*—(1) *Limits.* (i) Airblast shall not exceed the maximum limits listed below at the location of any dwelling, public building, school, church, or community or institutional building outside the permit area, except as provided in paragraph (e) of this section.

Lower frequency limit of measuring system, in Hz (±3 dB)	Maximum level, in dB
0.1 Hz or lower—flat response[1]	134 peak.
2 Hz or lower—flat response	133 peak.
6 Hz or lower—flat response	129 peak.
C-weighted—slow response[1]	105 peak dBC.

[1]Only when approved by the regulatory authority.

The operator and the blasting contractor monitor and record every blasting event. Monitoring locations are between the blasting site and adjacent residences. Since the residences are farther away than the monitoring locations, sound levels are less than those at the monitoring sites.

As of June 30, 2015, the operator had not been cited by either the Mine Safety and Health Administration or the Arizona State Mine Inspector for violations with regards to explosives under their respective regulations.

Water is the primary dust control agent used to control rolling stock emissions and to minimize dust produced during crushing operations. Haul and entry roads are sprayed on a regular basis in accordance with terms and conditions of the Maricopa County Air Quality Department Dust Control Plan. Stockpiled screened and sized materials are also periodically sprayed to minimize fugitive dust. Visible Emission Test results, as required, are reported to Maricopa County to demonstrate that air quality standards are being met.

Traffic hauling and/or transporting material off-site are required to load such that the freeboard is not less than three inches. Loads must be covered with a tarp or suitable closure when transporting off-site in order to reduce spillage and fugitive dust. The exit from the site for haul trucks is paved, with a rumble grate installed to prevent track out from the project site. Moisture testing protocol is performed once weekly, as required per the MCACD air quality permit.

3.3.2 Proposed Action

Under the Proposed Action, fugitive dust would be emitted from the limited blasting operations that will occur on site, as well as the use of heavy equipment for extraction, crushing, processing, and hauling offsite. Additionally, there will be exhaust emissions from the heavy equipment and other vehicles that will be used on site and for hauling purposes.

Although blasting is often considered an annoyance to neighbors near quarry sites, studies have shown (USBM, 1980, 1984) that blasting can be performed safely, and designed to prevent adverse impacts to neighboring structures. Although not required, the applicant typically utilizes smaller shot sizes (explosive weight), timing delays, monitoring equipment, and favorable weather conditions, to minimize impacts to neighboring communities.

3.3.3 Cease Operations and Reclaim

Under the Cease Operations and Reclaim Alternative, monitoring and control of dust emissions under the current reclamation plan would still occur as set forth in the Maricopa County Air Quality Department (MCAQD) Permit #990634. If the application for a noncompetitive mineral material contract were denied, Red Mountain Mining would still be held to specific provisions and acceptable emission limitations as described in the current MCAQD Permit, until final pit closure.

Any future operations at the site would have to comply with Maricopa County Air Quality permitting guidelines.

3.3.4 No Blasting

This alternative would reduce the quantity and length of operations at the site, due to the nature of extracting the mineral material resource in certain areas of the operations area. Dust and exhaust emissions from heavy equipment and vehicles would be similar to the Proposed Action.

3.3.5 Southern Area Expansion

This alternative would increase the quantity of material mined and the duration of mining operations at the site. The operator would have to submit a Mining and Reclamation Plan Amendment to account for the added material and the changes in final pit design.

The Southern Area Expansion Alternative would also increase the amount of blasting events at the site. Similar control and mitigation measures would still be implemented. The overall air quality would not be significantly impacted by increased operations, because those operations would be regulated under the existing MCAQD permit.

3.4 Vegetation

3.4.1 Affected Environment

The operations area of the Proposed Action has been disturbed on a more or less continuous basis since 1973, and intermittently since 1961. The parcel is located in typical Sonoran Desert country, with summer high temperatures at or above 110 degrees Fahrenheit, and winter highs are frequently near 75 degrees. Nighttime low temperatures rarely approach freezing, and are generally significantly cooler than daytime highs. Precipitation is concentrated primarily in late summer monsoons, with high intensity, short duration showers and thunderstorms. Some winter

precipitation in the form of longer lasting, low intensity rain occurs infrequently. Total annual precipitation averages 11-12 inches per year, according to the Western Regional Climate Center.

Vegetation in the undisturbed area consists primarily of creosote bushes and palo verde trees, with occasional typical Sonoran Desert cacti (ocotillo, barrel, and prickly pear). The parcel also has ephemeral (intermittent) washes with increased occurrence of mesquite, desert willow, and palo verde. Perennial grass cover is typically low. However, only four additional acres within this undeveloped area would be developed for sedimentation ponds. The rest of the parcel that is devoted to current operations, totaling 112 acres, is fully disturbed and devoid of vegetation.

3.4.2 Proposed Action

While the short term effects of the Proposed Action would increase removal of existing vegetation on approximately four acres, the long term effects of the Reclamation Plan would meet the objectives of the Lower Sonoran Record of Decision and Resource Management Plan, specifically VM-5.1.1, which lists mining sites as being appropriate for rehabilitation practices that will "stabilize and rehabilitate sites impacted from new surface-disturbing activities."

Using a BLM specified revegetation mix outlined in the proposed Reclamation Plan will meet Plan objective VM-5.1.3, and periodic monitoring will ensure compliance with preliminary success criteria outlined in VM-5.1.4, which are "achieved when soil conditions are stabilized and approximately 50 percent or more of the plant composition and cover are present." Trees and shrubs will be considered established when they have survived without assistance for two consecutive years.

3.4.3 Cease Operations and Reclaim

Immediate implementation of the Reclamation Plan would, in the short term, meet the objectives of the Lower Sonoran Record of Decision and Resource Management Plan, specifically VM-5.1.1, which lists mining sites as being appropriate for rehabilitation practices that will "stabilize and rehabilitate sites impacted from new surface-disturbing activities."

Using a BLM specified revegetation mix outlined in the proposed Reclamation Plan will meet Plan objective VM-5.1.3, and periodic monitoring will ensure compliance with preliminary success criteria outlined in VM-5.1.4, which are "achieved when soil conditions are stabilized and approximately 50 percent or more of the plant composition and cover are present." Trees and shrubs will be considered established when they have survived without assistance for two consecutive years.

3.4.4 No Blasting

Not using blasting would only change the temporal effects from the Proposed Action listed above in section 3.4.2 due to a change in the Mining and Reclamation Plan duration. Since vegetation is not present on the granite high wall, and areas not blasted may still be partially or completely disturbed for mineral materials extraction, time is the only difference in effect.

3.4.5 Southern Expansion

The southern expansion would increase the area of effect of the Proposed Action by removing approximately 10 additional acres of existing vegetation, however, it would not change any mitigation measures or any timelines.

3.5 Water Quality

3.5.1 Affected Environment

Under section 402(p) of the Clean Water Act (CWA) and regulations found in 40 CFR 122, storm water discharges associated with industrial activity are prohibited to waters of the United States unless they are covered under an authorizing permit. The U.S. Army Corps of Engineers (COE) administer Section 404 permitting of the Clean Water Act regulating discharge of dredged or fill material into waters of the United States, which includes lakes, reservoirs, wetlands, and perennial and ephemeral streams and washes. Under the current Plan of Operations for Red Mountain Mining's quarry site, the COE determined there were no jurisdictional waters of the U.S. present within the project area.

Water resources may be potentially affected by an accidental release of hazardous materials, including lubricant and diesel fuel, during transportation to and from the project area, storage, and use in construction and operations. Areas sensitive to hazardous material release include areas adjacent to water bodies or areas above aquifers.

In Arizona, storm water discharges are covered by Arizona Pollutant Discharge Elimination System (AZPDES) permits. Red Mountain Mining has submitted a Notice of Intent (NOI) with the ADEQ, and submitted a Storm Water Pollution Prevention Plan (SWPPP), to comply with the requirements of the AZPDES General Permit for Storm Water Discharges Associated with Industrial Activity – Mineral Industry, also known as the Mining Multi-Sector General Permit (MSGP). This plan identifies possible characteristics of the facility that may have an impact from a storm water discharge event, as well as the associated controls that would be used to manage an event from the site, as required by the Arizona Department of Environmental Quality (ADEQ). Under permit number AZMSG 61867, approved by the ADEQ on June 3, 2011, Red Mountain Mining is authorized to discharge storm water within the requirements of the MSGP.

According to the Arizona Department of Water Resources (ADWR, 2013), the groundwater level at the project site is located between 160 and 190 below ground surface, or approximately 1325 feet above mean seal level (amsl). Although there are no active fresh water wells located near the project site, Red Mountain Mining, Inc. has two registered exempt water wells located within the project site that were formerly utilized in the 1980s. Water purchased from the City of Mesa or pumped from a pond in a low area at the east end of the operating area is used for all phases of the operation. The water in the pond consists of runoff from the operating area and from seepage.

Red Mountain Mining is located within the Salt River Watershed. The Central Arizona Project (CAP) aqueduct is found just north and east of the project area. Significant storm water drainage does not enter the project area from up-gradient sources. Raised berms along the northeast portion of the project area direct surface flow into an unnamed wash located along the northern boundary. Within the active project area, access control barriers, irrigation levees and small berms along roadways restrict runoff. Storm water runoff is directed into the quarry pit and discharged to a natural drainage channel through a sedimentation basin located west of the disturbed area. Two ephemeral washes drain the undisturbed areas both north and south of the project area, through natural drainage patterns, which drain to the northwest, and ultimately into the Salt River approximately ¾ miles away.

3.5.2 Proposed Action

The Environmental Protection Agency (EPA) developed requirements for the first Multi Sector General Permit (MSGP) for storm water discharges associated with industrial activity in September 1995, and has since revised the requirements in 2000, 2008, and most recently in 2015.

Since the Arizona Department of Environmental Quality was delegated to administer the National Pollutant Discharge Elimination System (NPDES) for the state of Arizona (excluding selected Native American lands), effective December, 2002, storm water discharges are regulated under the ADEQ MSGP. The ADEQ MSGP 2010 governs the permitting of discharge storm water associated with industrial activities. The operation currently discharges storm water under permit AZMSG-003, authorization number AZMSG-61867 from the ADEQ. The AZ MSGP 2010 expires on January 21, 2016, and all operations permitted under the 2010 MSGP will be required to transition to the new ADEQ MSGP that is currently in development.

The Proposed Action would implement the controls and mitigation measures in the Storm Water Pollution Protection Plan (SWPPP) regulated by the ADEQ under authority delegated from the US EPA. Operations are subject to inspection and enforcement under that regulatory authority.

As of August 19, 2015, there have been no violations or enforcement actions against the current operator.

3.5.3 Cease Operations and Reclaim

Under the Cease Operations and Reclaim Alternative, ongoing activities related to the mining and processing of crushed granite products still take place within the existing project area would cease, and reclamation activities to prepare for final pit closure would be initiated. Reclamation activities would be conducted under the requirements and oversight of the ADEQ and the Arizona State Mine Inspector.

Current operations are regulated under the ADEQ MSGP 2010, in order to eliminate point source pollutants that may be discharged into drainages as a result of storm events. The MSGP

establishes effluent limits and identifies control measures in accordance with applicable state and federal requirements.
Ceasing current operations would require extensive earth moving and stockpile relocation to manage surface flows of storm water to prevent discharges outside of permitted limits.

3.5.4 No Blasting

The No Blasting Alternative would still allow for production of mineral materials, although on a more limited basis than the Proposed Alternative.

Proper drainage and storm water controls are achieved through the creation of ditches with berms at the base of the southern high wall. These bermed ditches as designed require downhill surface flow of precipitation to be modulated by benches of varying heights between 35 and 60 feet. Such benches reduce the velocity and erosion characteristics of storm water runoff, which allows for engineering controls placed at lower elevations to direct surface flow to engineered sedimentation and settling ponds.

3.5.5 Southern Expansion

Expanding the planned operation to remove the mineral materials in the top of the southern ridge would require additional blasting, time, and water for dust suppression and operations at the processing facility.

In the Southern Expansion Alternative, the removal of the highest elevations of the southern pit wall would reduce the velocity of surface flows of storm water, reduce the number of benches required for final pit configuration, and improve drainage characteristics on the southern side of the southern pit wall.

Currently, there have been concerns expressed by some individual residents to the BLM regarding the surface storm water drainage on the natural, undisturbed topography south of the existing ridge. This drainage is precipitation runoff that has become naturally channelized, and focuses runoff into the back yards of adjacent landowners. The current conditions would exist regardless of whether or not any mining had ever been permitted at the site of the Proposed Action.

A detailed surface flow analysis, neighborhood drainage control planning, and evaluations of possible mitigation measures are beyond the scope of this document, however the Southern Expansion Alternative would greatly reduce the volume of surface storm water runoff onto neighboring privately held properties, and reduce the overall volume and siltation load on the engineered drainage for the neighboring properties.

3.6 Wastes, Hazardous and Solid

3.6.1 Affected Environment

BLM Instruction Memoranda WO-93-344 require that all National Environmental Policy Act (NEPA) documents list and describe any hazardous and/or extremely hazardous materials that would be produced, stored, transported, or disposed of as a result of a proposed project. Common industry practices for use of these materials and disposal of waste products are dictated by various Federal and State laws and regulations, and the BLM standard stipulations that accompany a mineral material contract.

Diesel fuel and lubricants are the major hazardous materials found at the project site. Fuel is stored in Mining Safety and Health Administration (MSHA) and Occupational Safety and Health Administration (OSHA) approved double-walled storage tanks supplied by a fuel vendor. Lubricants and oils are contained in similar tanks appropriately labeled for safety. Waste oil and other related fluids, oil rags, and used oil filters are collected and disposed of off-site. Minor servicing of equipment is done on-site in designated areas only; major repairs occur off-site as deemed appropriate. Controls are in place to prevent release of lubricant, fuels, and oils to the ground surface. These regulations and added contract performance standards are expected to adequately mitigate any potential hazardous or solid waste issued associated with the project.

3.6.2 Proposed Action

Possible pollutants that could be released during mining activities would include diesel fuel, hydraulic fluid, and lubricants. These materials would be used during normal operational and processing activities through use of the equipment and vehicles. None of these materials used in the facility operations meet the criteria for an acutely hazardous material/substance, as defined in 40 CFR-355, in amounts above threshold quantities.

Soil resources may be potentially affected by an accidental release of hazardous materials during transportation to and from the project area, storage, and use in construction and operations. Since an outside contractor has been used to conduct blasting operations, no explosives are stored on site.

As defined in the final reclamation plan for the site, a Phase 1 Environmental Site Assessment will be conducted prior to mine closure to identify any Recognized Environmental Conditions (RECs) that must be remediated before BLM will approve the final closure of the site.

Nothing in the analysis or approval of this action by BLM authorizes or in any way permits a release or threat of a release of hazardous materials (as defined under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended [42 U.S.C. 9601 et seq.], and its regulations), into the environment that will require a response action or result in the incurrence of response costs.

3.6.3 Cease Operations and Reclaim

Under the No Action alternative, mining activities would cease and reclamation activities would commence. The same control measures and Best Management Practices for equipment maintenance described in the Mining and Reclamation Plan would be in place under this alternative. Any unintentional spills into the soil would be removed off site and disposed of at an appropriate disposal facility.

Current federal and state laws and regulations applicable for the handling of wastes at the site, and performance measures identified in the Mining and Reclamation Plan, would remain in effect until final pit closure and are anticipated to mitigate any potential pollutants, as described above, through the duration of reclamation efforts.

3.6.4 No Blasting

Conducting operations without blasting would reduce the amount of vehicles and personnel on site over time, due to the elimination of blasting contractors from the site. This alternative would, however, result in increased activity of heavy equipment to fracture existing rock in place. Increased heavy equipment usage would increase the probability of equipment failure, including unintended releases of petroleum based lubricants and fluids.

Such unintended releases would not be larger in scope than under any other operational alternative, as the same or similar equipment will be used. The variability would be in frequency of such releases, which would depend upon operational usage of all equipment under the Mining and Reclamation Plan. Extracting mineral materials without blasting would use more equipment more often, which would increase the probability of a release.

The same control measures and Best Management Practices for equipment maintenance described in the Mining and Reclamation Plan would be in place under the No Blasting Alternative. Any unintentional spills into the soil would be removed off site and disposed of at an appropriate disposal facility.

3.6.5 Southern Expansion

This alternative would result in increased activity of heavy equipment to fracture existing rock in place. Increased heavy equipment usage would increase the probability of equipment failure, including unintended releases of petroleum based lubricants and fluids.

Such unintended releases would not be larger in scope than under any other operational alternative, as the same or similar equipment will be used. The variability would be in frequency of such releases, which would depend upon operational usage of all equipment under the Mining and Reclamation Plan.

The same control measures and Best Management Practices for equipment maintenance described in the Mining and Reclamation Plan would be in place under the No Blasting

Alternative. Any unintentional spills into the soil would be removed off site and disposed of at an appropriate disposal facility.

3.7 Visual Resources and Noise

3.7.1 Affected Environment

Landscape character of the project area is best described as generally flat lying, bounded by a set of small isolated hills to the north, and the prominent granite ridge to the south. Elevations range from 1,695' at the highest point on the southern ridge, to 1,380' at the outflow of the sediment basin located on the western portion of the property. Surrounding land uses are predominately agricultural/rural and residential, with National Forest System Lands (NFS) to the east, State of Arizona Trust lands to the west, and the Salt River – Pima Indian Reservation to the north. The 830 acre private residential development, Red Mountain Ranch, adjoins the property to the south.

The active mining operations are not visible from the Bush Highway or Red Mountain Ranch. The ridge separating Red Mountain Ranch from the mine site serves as a natural buffer, effectively screening the operations from the casual observer. Additionally, the southern ridge insulates the Red Mountain ranch subdivision from most of the noise generated by the mining operation, including blasting noise and equipment operation noise.

The Lower Sonoran Record of Decision and Approved Resource Management Plan (2012) (RMP), establishes this area as visual resource management (VRM) class IV on Map 4, Visual Resource Management. As defined in the RMP, the goal and objectives for visual resources are to manage public lands according to the class objectives set in the Visual Resource Inventory Handbook H-8410 and BLM Guidelines for a Quality Built Environment. For Class IV areas, the RMP requires the consideration of designs to "help reduce visual contrast between a proposed project and landscape settings (color, texture, line, and form)."

Currently, the ridge separating the mine site from the residential developments to the south reduces the noise impacts to adjacent landowners as well as provides a naturally formed landscape alternative to viewing mining activity in the pit.

Blasting creates noise and air pressure waves. Regulatory guidance of blasting operations at a mine site is published under Title 30, Chapter I, Subchapter K, Part 56, Subpart E – Explosives, of the Code of Federal Regulations (30 CFR 56.6000 *et seq.*), and state regulations at Title 11, Chapter 1, Article 2 of the Arizona Administrative Code (sections R11-1-211 through R-1-286 inclusive). Regulatory oversight is conducted by the Mine Safety and Health Administration (MSHA) for the Federal regulations and the Arizona State Mine Inspector for state regulations.

Blasting on the mine site is performed by a licensed blasting contractor. The operator does not hold a blasting permit since they are not licensed with the Department of Homeland Security to perform such activities. The Mesa Fire Department issues blasting permits for blasting

operations to Western Explosives System Company (WESCO), a blasting service provider for the mining, quarrying, and construction industries.

WESCO operates in several western states, including Arizona, California, Colorado, Idaho, Nevada, New Mexico, Utah, and Wyoming. WESCO provides full blasting services, which includes blast pattern design and blast monitoring.

Noise is generated during the course of normal operations from the crushing and screening plant, as well as from operation of the heavy equipment, predominately from the required safety equipment on the heavy equipment in use.

3.7.2 Proposed Action

Under the proposed Mining and Reclamation Plan, the surface disturbance would continue for approximately 10 years and six months until final reclamation of the site occurs. The proposed Reclamation Plan outlines a reclamation timeline with equipment and buildings removed within 90 days, and physical reclamation completed within six months from reclamation start. Reclamation time would continue until BLM directed monitoring of reseeding / revegetation is complete.

Screening of active mining operations from visibility by adjacent land owners in keeping with VRM Class IV guidelines would be preserved under this alternative because the southern ridge would be preserved. Some blasting to achieve a final engineered slope with benches in the southern ridge may still occur. Noise from equipment operations in the pit during reclamation activities would be buffered by the southern ridge.

Impacts to visual resources would be limited to support of the current mining and crushing activities in the form of heavy equipment (e.g., front end loaders, dozers, etc.) and vehicular traffic with an associated increase in dust and emissions. Specific impacts are addressed in the Maricopa County Air Quality Permit.

Noise is generated during the course of normal operations from the crushing and screening plant, as well as from operation of the heavy equipment, predominately from the required safety equipment on the heavy equipment in use.

3.7.3 Cease Operations and Reclaim

The current Reclamation plan outlines a reclamation timeline with equipment and buildings removed within 90 days, and physical reclamation completed within six months from reclamation start. Reclamation time would continue until BLM directed monitoring of reseeding/revegetation is complete.

During the deconstruction and reclamation process, screening of mining operations from visibility by adjacent land owners in keeping with VRM Class IV guidelines would be preserved under this alternative because the southern ridge would be preserved. Noise from equipment operations in the pit during reclamation activities would be buffered by the southern ridge.

Impacts to visual resources would be limited to support of the current mining and crushing activities in the form of heavy equipment (e.g., front end loaders, dozers, etc.) and vehicular traffic with an associated increase in dust and emissions. Specific impacts are addressed in the Maricopa County Air Quality Permit.

Noise is generated during the course of normal operations from the crushing and screening plant, as well as from operation of the heavy equipment, predominately from the required safety equipment on the heavy equipment in use.

3.7.4 No Blasting

The surface disturbance would continue until final reclamation of the site occurs. Although a new Reclamation Plan would be required under this alternative, it would align with the current Reclamation plan's timeline with equipment and buildings removed within 90 days, and physical reclamation completed within six months from reclamation start. Reclamation time would continue until BLM directed monitoring of reseeding / revegetation is complete, estimated at two years.

Screening of active mining operations from visibility by adjacent land owners in keeping with VRM Class IV guidelines would be preserved under this alternative because the southern ridge would be preserved. Noise from equipment operations in the pit during reclamation activities would be buffered by the southern ridge.

Impacts to visual resources would be limited to support of the current mining and crushing activities in the form of heavy equipment (e.g., front end loaders, dozers, etc.) and vehicular traffic with an associated increase in dust and emissions. Specific impacts are addressed in the Maricopa County Air Quality Permit.

Noise is generated during the course of normal operations from the crushing and screening plant, as well as from operation of the heavy equipment, predominately from the required safety equipment on the heavy equipment in use.

3.7.5 Southern Expansion

Under this alternative, the surface disturbance would continue for approximately 10 years and six months until final reclamation of the site occurs. Although a new Reclamation Plan would be required under this alternative, it would align with the proposed Reclamation Plan's timeline with equipment and buildings removed within 90 days, and physical reclamation completed within six months from reclamation start. Reclamation time would continue until BLM directed monitoring of reseeding / revegetation is complete.

Screening of active mining operations from visibility by adjacent land owners in keeping with VRM Class IV guidelines would not be preserved under this alternative because the southern ridge would be mined through. Some blasting to achieve a final engineered slope with benches in

the southern ridge would occur. Noise from equipment operations in the pit during reclamation activities would not be buffered by the southern ridge.

Impacts to visual resources would be limited to support of the current mining and crushing activities in the form of heavy equipment (e.g., front end loaders, dozers, etc.) and vehicular traffic with an associated increase in dust and emissions. Specific impacts are addressed in the Maricopa County Air Quality Permit.

Noise is generated during the course of normal operations from the crushing and screening plant, as well as from operation of the heavy equipment, predominately from the required safety equipment on the heavy equipment in use.

Impacts to the visual resources of the residents of the adjacent housing development would occur with this alternative. The elimination of the southern ridge would impact visual characteristics such as form, line, and space, but would still comply with the overall objectives identified for VRM Class IV.

4. CUMULATIVE EFFECTS

The CEQ defines cumulative effects (also known as cumulative impacts) as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what (federal or non-federal) agency or person undertakes such actions" (40 CFR 1508.7). In other words, it is the sum total of the direct and indirect effects of the action and the direct and indirect effects of other actions on the same affected resource or resources (i.e. the overlap of the actions' impacts). It is factored into the overall assessment of the significance of the proposed action's/alternative's impacts.

4.1 Cumulative Effects Study Area

The project area (see Figure 1) is located on public lands in T. 2 N., R. 6 E., Section 24, Lots 19, 21, 23, & 25-29, Gila & Salt River Meridian, in Mesa, Maricopa County, Arizona. This site was designated a community pit in May, 1995, under regulations found at 43 CFR 3603.10(a), which states "BLM may make mineral material sales and allow free use under permit from the same deposit within areas that we designate for this purpose".

4.2 Cumulatively Connected Actions

4.2.1 Past and Present Actions

As mining activity has occurred at this location continuously since 1973 and before that since 1961, this Proposed Action would continue the current use and provide for site reclamation and return to a multiple use area. The 1995 designation of the subject area as a community pit, however, still establishes a right to remove the materials superior to any subsequent claim or entry of the lands. The surrounding area to the south is developed with residential housing, which is associated with limited dispersed recreation on the undeveloped federal land north and west of the project area. There is also a munitions manufacturing and testing facility, Nammo Talley, Inc., that conducts open air testing of small arms and rocket-propelled grenades on private land less than a mile west of the project area.

4.2.2 Reasonably Foreseeable Future Actions

The existing uses of dispersed recreation and residential and industrial development are expected to continue in the area. No specific authorizations or new developments are known at this time.

4.3 Cumulative Impacts by Resource

4.3.1 Air Quality

Further development of the quarry pit and subsequent reclamation activities under all alternatives will result in a cumulative increase in an incremental contribution to the collective impacts to air quality with regard to fugitive dust and emissions from vehicles and equipment, but would

remain under current permitted statutory thresholds. Applicable emission limitations and controls are defined in the Pinal County Air Quality Control Permit, with compliance reporting and testing requirements. This permit must be renewed every 5 years. Future air quality permits authorized by the Pinal County Air Quality Control District (PCAQD) will be subject to stricter emission and monitoring control measures due to the recent designation of this part of Pinal County as an area of nonattainment for PM_{10} emissions.

4.3.2 Visual Resources and Noise

Under all of the alternatives, cumulative noise impacts associated with the use of heavy equipment on site would be expected. Additional noise impacts would be expected due to the blasting that is included in the Proposed Action and Southern Expansion Alternatives. In all cases the noise from this facility would combine with the existing noise impacts from the munitions manufacturing and testing facility located to the west. Nammo Talley, Inc. conducts open air testing of multiple types of weapons, which impacts the ambient noise levels for the nearby residential area. The limited blasting proposed at the Red Mountain facility would minimally increase the existing noise levels due to the extremely intermittent nature of blasting operations and the types of materials used to minimize noise impacts. Additionally, under the Proposed Action, the blasting would be buffered from the housing development by the difference in grade (the pit sits well below the elevation of the homes) and the barrier of the southern ridge.

5. PARTIES CONSULTED

The following personnel and / or organizations were consulted during the preparation of this Environmental Assessment (EA):

Jeff Flocken Fire Investigator, City of Mesa Fire Department; local blasting processes, regulations, and history of blasting operations at the site of the Proposed Action.

Tim Evans Assistant State Mine Inspector, Arizona State Mine Inspector; state blasting requirements, processes, and regulations.

John Stanford Deputy Mine Inspector, Arizona State Mine Inspector; specific case history with regards to blasting actions at the site of the Proposed Action.

Joanie Rhyner Project Manager, Stormwater and General Permits Unit, Arizona Department of Environmental Quality; specific case history of the operation with regards to storm water and pollutant discharge under state permit.

Fred Conrath Mineral Materials Lead, BLM Arizona State Office, applicability of federal surface blasting regulations.

List of Preparers

Table 4 BLM participants in preparation of this EA are listed below:

Name	***Title***	***Areas of Participation***
Karen Conrath	Geologist, LSFO	LSFO Minerals IDT Lead (2012-2014), Author
Judd Sampson	Geologist, LSFO	LSFO Minerals IDT Lead (2015), Author
Gloria Tibbetts	Planning and Environmental Coordinator, PDO	NEPA Review
Cheryl Blanchard	Archaeologist, LSFO	IDT Cultural Resources
Ron Tipton	Wildlife Biologist, LSFO Acting Field manager, LSFO	IDT Wildlife, Threatened and Endangered Species; review and general oversight
Matt Plis	Mining Engineer	IDT Hazardous Materials
Ed Kender	Field Manager, LSFO	Review and general oversight

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