

**U.S. Department of the Interior  
Bureau of Land Management**

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**Perovich Properties, Inc.  
DBA  
Taos Gravel Products  
Torres Pit Gravel Extraction Operation  
Environmental Assessment**

**DOI-BLM-NM-F020-2010-0023-EA**

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U.S. Department of the Interior  
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## **1.0 PURPOSE AND NEED**

### **1.1 INTRODUCTION**

Perovich Properties, Inc., dba Taos Gravel Products (TGP), has applied for a contract to mine Federal subsurface sand and gravel products administered by the U.S. Department of the Interior, Bureau of Land Management (BLM), Taos Field Office (TFO). TGP is interested in contracting the continued removal of aggregate materials on 84 acres of privately owned land adjacent to their existing Torres Pit facility. The extension property is located east and north of the existing Torres Pit located on a parcel of land in the NE ¼ of Section 11, T. 26 N., R. 11 E., Taos County, NM. There are currently no mineral claims taken within the project area. The individual who owns the surface of the land at the existing Torres Pit also owns the adjacent surface to the west, north, and east. TGP is interested in contracting an expansion onto new lands owned by the same private surface owner as those at the existing Torres Pit. The total extraction volume and rate projected in this Environmental Assessment (EA) would be the same volume and rate as is currently contracted within the existing operational boundary.

TGP has mined the Torres Pit since 2001. The Torres Pit is characterized by a layer of soil overburden approximately 4-10 feet thick over the well sorted sub-rounded rocky matrix comprising the desired ore body. Currently, TGP is approaching the limits of feasible ore that can be extracted within the boundaries of the currently permitted Torres Pit. The proposal would allow TGP to continue mining viable sand and gravel ore at a location directly adjacent to their existing Torres Pit at a reasonable profit.

Sand and gravel reserves within the existing Torres Pit boundary are nearly exhausted. The gravel that has been extracted under the existing contract has primarily been sold off to the State of New Mexico (State), Colfax and Taos Counties, and various private purchasers. Purchasers are interested in TGP materials due to the hardness and durability of the primarily igneous gravels extracted. These mineral compositions allow the gravel from the Torres Pit to meet the requirements for base course for roadways and runways, asphalt, structural concrete, as well as other applications requiring highly durable pavement (TGP 2010). Material from the existing TGP Torres Pit has also been sold for residential and commercial sand and gravel applications and commercial and residential concrete. Sales to government agencies has accounted for the remaining volume. Any material extracted from the proposed expansion would likely be used for similar purposes. TGP has applied for the contracted subsurface use of approximately 84 acres. This acreage could be disturbed in the future by the requested mine extension. This acreage comprises less than 0.000006% of the 15,359,940 acres that comprise the greater BLM, TFO planning area. TGP already has contractual permission from the existing land owner for surface use.

### **1.2 PURPOSE AND NEED FOR ACTION**

The purpose of the TGP Torres Pit expansion is to provide an adequate supply of sand and gravel products for commercial and residential construction in the Taos County area (BLM 2001). High quality sources of sand and gravel are critical for the region. The need for expansion of the Torres Pit is to continue to provide Taos County and the region with a continuous source of high quality specification sand and gravel products required for all types of public and private construction projects (residential, commercial, industrial, roadways, infrastructure, and landscaping).

The BLM must consider this action in accordance with its mandates under the Federal Lands Policy and Management Act (FLPMA) of 1976, which recognizes the development of mineral resources, such as sand and gravel production, as a principle use of public lands. The BLM must provide for this development in accordance with the applicable land use plan, the 1988 Taos Resource Management Plan, as amended (BLM 1988), in a manner which minimizes potential environmental effects and provides for the rehabilitation of affected lands.

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### **1.3 DECISION TO BE MADE**

Based on the information in this environmental assessment (EA), the BLM Field Manager will decide whether to approve the extension of the Torres Pit operation or to reject the proposed action.

This EA discloses the environmental consequences of implementing the proposed action or alternatives to that action. The Finding of No Significant Impact (FONSI) describes the findings of the analysis in this EA. The TFO Field Manager is the Deciding Official. The Field Manager's decision, and rationale for that decision, will be stated in a Decision Record.

### **1.4 LAND USE PLAN CONFORMANCE**

All elements of this EA are tiered from two BLM planning documents, the October 1988, Taos Resource Management Plan, as Amended, and the January 2000 Rio Grande Corridor Final Plan. These planning documents contain extensive information and guidance for each of the resources addressed in this EA and is incorporated here by reference. Only planning documents with direct relevance to the proposed Torres Pit extension are discussed below.

#### ***1.4.1 CONFORMANCE WITH THE TAOS RESOURCE MANAGEMENT PLAN, AS AMENDED (OCT. 1988)***

The following management objectives are identified in the Taos RMP, as amended, with respect to mineral sales:

- “The objective of the minerals program is to provide the opportunity for development of mineral resources in a manner which minimizes environmental damage and provides for the rehabilitation of affected lands” (p. 2-8) (BLM 1988).
- “It is the policy of the Bureau to make mineral resources available for disposal and to encourage development of these resources consistent with national objectives for maintaining an adequate supply of minerals at reasonable market prices. At the same time, the BLM strives to ensure that mineral development is carried out in a manner which minimizes environmental damage and provides for the rehabilitation of affected lands” (p. 2-9) (BLM 1988).
- “Federal lands are the major source of mineral materials (primarily sand and gravel) for industrial, state, and local projects in Taos, Rio Arriba, and Santa Fe Counties. The Field Office is responsible for the sale, permitting, and inspection and enforcement programs for mineral material activity” (p. 2-9) (BLM 1988).

The project area is not listed among the areas excluded from mineral leasing under the 1988 Taos RMP. The Taos RMP does identify a number of Special Management Areas (SMAs); however, the project area does not fall within or near the boundary of any SMAs or Areas of Critical Environmental Concern (ACECs) (BLM 1988).

#### ***1.4.2 CONFORMANCE WITH THE RIO GRANDE CORRIDOR FINAL PLAN (JAN. 2000)***

The following management objectives are identified in the Rio Grande Corridor Final Plan with respect to saleable minerals:

The Rio Grande Corridor Final Plan (RGCFP) provides management guidance for public lands along 94 miles of the Rio Grande and approximately 43 miles of its tributaries in New Mexico (Taos Field Office) and in Colorado (La Jara Field Office) and amends the Taos Resource Management Plan. The plan provides direction for managing the natural resources in the corridor from La Sauses, Colorado to Velarde, New Mexico. The primary intent of the plan is to focus on resolving resource use conflicts for direct use of the Rio Grande and the immediately adjacent corridor lands (BLM 2000). Nine issues were evaluated as focal points of the plan and of those, two are particularly germane to this project. The two issues relevant to this project are as follows:

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- **Issue 5:** Scenic quality is threatened by human activities and development.
  - **Issue 7:** Providing opportunities for commercial and personal uses of public land in the planning area conflicts with protecting natural and scenic resources.

**Issue 5:** The plan mandates use of the BLM Visual Resource Management (VRM) system to assign appropriate VRM classes to public lands in the planning area. Additionally, a contrast rating system is employed to determine whether or not a project will meet VRM class guidelines and provides regulatory guidance in order to resolve conflicts (BLM 2000).

**Issue 7:** The Plan explicitly addresses the need to resolve conflicts between commercial and personal usage of public resources and lands in the planning area. Additionally, the Plan clarifies that the sale of mineral materials is a discretionary, not mandatory, action. Applications for the removal of common-variety mineral materials including sand and gravel are based on restrictions contained in the TFO - RMP, the RGCFP, and applicable Supplemental Rules (BLM 2000). Furthermore, the RGCFP explains that opportunities for commercial uses are compatible with sustained biodiversity, a healthy ecosystem, and scenic quality (BLM 2000).

Additionally, the project area does not fall within a defined withdrawal or acquisition area (BLM 2000).

### **1.4.3 STATEMENT OF CONFORMANCE WITH LAND USE PLANS**

Both the Taos RMP, as amended (BLM 1988), and the Rio Grande Corridor Final Plan (BLM 2000) have been reviewed, and the proposed Torres Pit extension would be in conformance with both land use planning documents.

## **1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS**

The Federal Water Pollution Control Act [Clean Water Act (CWA)] requires that stormwater discharges from mining related activities or operation comply with the Nation Pollutant Discharge Elimination System (NPDES) permit requirements. The action requires Best Management Practices (BMPs) be implemented for all construction and mining related activities and operations in order to minimize the discharge of pollutants in stormwater runoff to protect water quality. This action applies to all States, Federal lands, and Indian Country regardless of whether the U.S. Environmental Protection Agency (EPA) or a State is the NPDES permitting authority. States have the authority to regulate any discharges pursuant to state law, through a non-NPDES permit program.

Compliance with Section 106 of the National Historic Preservation Act (NHPA) are adhered to by following the BLM – NM State Historic Preservation Officer (SHPO) protocol agreement, which is authorized by the National Programmatic Agreement between the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, and other applicable BLM handbooks.

The Endangered Species Act (ESA) provides guidance and protection to sensitive species that require conservation measures. One Federal Candidate Species was located in the proposed project area. Two small colonies of the montane subspecies of the Gunnison’s prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were found near the center of the project site. No other threatened, endangered, or special status wildlife species were observed within or adjacent to the project area (Black 2010). Of the 11 plant species listed as rare for Taos County, none were found in the project area due to lack of potential habitat (Devlin 2010). The potential for certain species of concern to occur is evaluated in Chapter 3 (Affected Environment) of this EA and in the attached Wildlife Survey Report and Plant Survey Report (Appendices A and B, respectively).

The Clean Air Act (CAA), as amended provides guidance and methodology to reduce airborne pollutants. Provisions of the CAA address acid rain, ozone depletion, and toxic air pollution in addition to

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establishing a national permitting program. Several other requirements and standards were also created in order to increase air quality and reduce negative effects to human health and safety.

## **1.6 IDENTIFICATION OF ISSUES BY RESOURCE**

On March 15, 2010, a 30-day formal public scoping period was opened. A press release was issued to Taos News on March 15, 2010 soliciting the general public to comment on the Torres Pit project and voice concerns. On March 18, a project brief was published in the Taos News outlining the basic project description and inviting comments from the public. The formal scoping period closed on April 15, 2010 with no public comments received.

On April 12, 2010, the proposed Torres Pit project was discussed by TFO resource specialists at an interdisciplinary team meeting. Issues discussed included wildlife and consultation requirements on threatened and endangered (T&E) species, visual resources, cultural resources and clearances, and potential alternatives to the Proposed Action. Follow up consultations were conducted with BLM resource specialists to clarify and resolve specific issues related to the scope of this analysis.

The proposed TGP project was posted in the online NEPA log on April 9, 2010.

Based on these scoping efforts, the following resources have issues that have been identified for detailed analysis in Chapters 3 and 4 of this EA:

- Biological Resources
- Cultural Resources
- Visual Resources

### **1.6.1 BIOLOGICAL RESOURCES**

- One Federal Candidate Species is located in the project area. Two small colonies of the montane subspecies of the Gunnison's prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were documented at the site. Mitigations outlined later in this EA must be adhered to in order to minimize impacts to this species.
- Across the extension property, various equipment and numerous large empty tanks are being stored. These tanks and equipment have many open cavities that present a hazard to birds and bats. Mitigations outlined later in this EA must be adhered to in order to minimize impacts to birds and bats.

### **1.6.2 CULTURAL RESOURCES**

- There are sensitive cultural resource sites near the project area that must be avoided. Also, if additional cultural resources are discovered, these must be protected as appropriate based on consultation with the NM State Historic Preservation Officer (SHPO).

### **1.6.3 VISUAL RESOURCES**

- The height of berms placed around open pits may impact the viewshed. All berms need to be limited in height so as to avoid creating features that are highly visible. Also, methods should be employed to reduce high contrast features relative to the surrounding landscape.

## **1.7 OTHER RELEVANT RESOURCES REQUIRING ANALYSIS**

In addition, the following are resources for which no specific issues were identified during scoping but are relevant and appropriate to include in the analysis of impacts in this EA.

- Land Tenure and Use
- Soils Resources
- Geology Resources
- Water Resources
- Air Quality
- Noise

## 2.0 DESCRIPTION OF ALTERNATIVES

### 2.1 ALTERNATIVE A: PROPOSED ACTION

Alternative A (Proposed Action) is discussed in detail in the following subsections.

#### 2.1.1 BACKGROUND

**Location:** TGP currently operates the Torres Pit. The existing Torres pit occupies approximately 51 acres located in the SWNE and NWSE of Section 11, T. 26 N., R. 11 E., Taos County, New Mexico (Figure 1). The Torres Pit is approximately 10 miles northwest of Taos, NM and approximately 1.6 miles north of the Rio Grande Gorge Bridge. The proposed continuation property is located on 84 acres east and north of the existing Torres Pit. The surface property of this parcel is privately owned; however, the subsurface minerals are owned by the Federal government and administered by the BLM, TFO.



Figure 1. Map of Torres Pit Property with inset aerial photo.

**Access:** Access to the Torres Pit would not change. No upgrades would be implemented to the access road into the mine property. The current road would remain the only means of ingress and egress from the pit. Currently, access to the pit is achieved via U.S. Highway 64 approximately ¾ mile northwest of

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the Rio Grande Gorge Bridge. From a locking gate at the U.S. 64 intersection, a paved 2 lane private road provides access to the mine property. Mr. J. E. Torres owns all property surrounding the active pit, continuation area, and access road.

**Land Use Consent:** This private landowner has issued TGP permission for use of his land for both access and mining. Mr. Torres entered into a Pit Agreement with TGP on December 21, 1999. The scope of the Pit Agreement between the Lessor (Mr. Torres) and the Lessee (TGP) is for lands described as Section 11, T. 26 N., R. 11 E., NMPM, in Taos County, NM.

### **2.1.2 MINING SEQUENCE & TIMING**

The pace of development of the Torres Pit mine will entirely depend on gravel market demands. It is anticipated that products from the Torres Pit would continue to be purchased by the State of New Mexico (State), Colfax and Taos Counties, and various other private buyers. Current peak permitted production are capped at 115,000 tons of Federal minerals annually and would not be exceeded. TGP does not propose to increase production.

Mining sequence and timing operations at the Torres Pit would move in phases through 4 distinct zones (Zone A, B, C, and D) displayed in Figure 2.

#### **2.1.2.1 Zone A (all of SWNE and parts of N2NWSE and N2S2NWSE Section 11)**

The current Torres Pit physical and operational boundary is entirely encompassed within Zone A. Zone A is the area that is undergoing active mining. Zone A would be used as an operational zone for the duration of continued mining activities which would allow TGP the ability to maintain facilities, traffic patterns, storage vessels, and any other desired machinery at or near their current locations within the Torres Pit. Zone A would also be used for a portion of topsoil and overburden stockpiling taken from Zones B, C, and D. Currently, the crushers/sorter is located within the pit in Zone A. TGP may potentially relocate the crushers/sorter to a different location in Zone A or another zone during mining continuation operations. Relocation would be based on stockpiling needs in Zone A and haul vehicle trip distance from the active mine face to the crushers/sorter. All overburden would be used for reclamation of the entire mine property both during, and following active mining in any of the 4 zones.

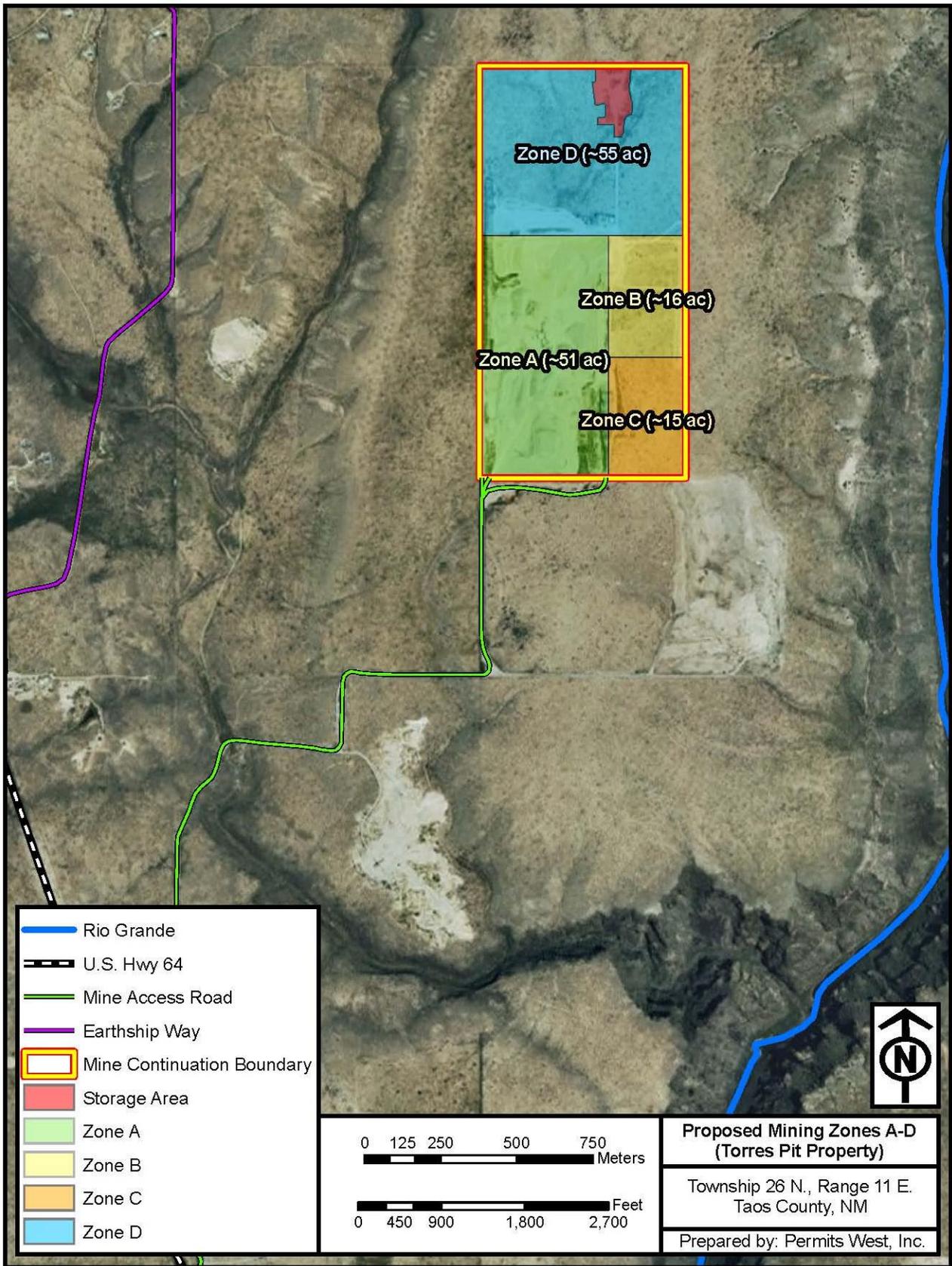
#### **2.1.2.2 Zone B (parts of E2SWNE and W2SENE Section 11)**

The first area to be mined during continuation operations is Zone B. Zone B is an approximate 16.37-acre area. Zone B has a high quality ore body with a low stripping ratio (ratio of overburden to ore body thickness). Zone B would be excavated first in order to take advantage of this geologic condition. As a result, TGP would direct the active mine face easterly into the western boundary of Zone B from the existing pit in Zone A. Zone B would be mined from west to east up to the eastern continuation boundary. All overburden stripped from Zone B would be stockpiled in the existing pit in Zone A; however, some overburden may be used immediately to contour areas of Zone A. Also, Zone C overburden may be stockpiled or used for reclamation contouring in Zone B. The crushers/sorter may be relocated from Zone A during mining operations occurring in Zone B.

#### **2.1.2.3 Zone C (parts of NWNESE and N2SWNESE Section 11)**

Following depletion of minerals in Zone B, the active mine face would be directed south from Zone B into Zone C up to the potential southern continuation boundary (Figure 2). Zone C is an approximate 15-acre area. The overburden from Zone C would either be stockpiled within the existing pit in Zones A or B, or used as reclamation fill for contouring areas of Zones A and/or B. Zone C also has a relatively low stripping ratio and represents the next best mining progression to access quality ore.

Once mining is completed in Zone C, the overburden stockpiles and unsold crusher fines stored in Zones A and B would be used to reclaim Zone C in entirety, and much of the southern portion of Zone B. An



**Figure 2. Proposed mining Zones A through D and their approximate acreages.**

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area at the northern boundary of Zone B would not be reclaimed to allow TGP the ability to direct the active mine face north into Zone D from Zone B. Reclamation activities occurring in Zones B and C would occur concurrent with active mine face progression into the southern boundary of Zone D. The crushers/sorter may be relocated from Zone A during mining operations occurring in Zone C.

An area to the south of Zone C and outside the project area has an archeological site that would not be disturbed by mining activities. Additionally, lands to the southeast of Zone C are part of an old reclaimed TGP gravel mining operation that would not be affected.

#### **2.1.2.4 Zone D (all of NWNE and parts of W2NENE Section 11)**

Following depletion of gravel ore from Zone C, TGP would direct the active mine face north from Zones A and/or B into Zone D. Zone D is an approximate 55-acre area. Zone D is the final area to be mined under this Plan. Zone D is characterized by a higher stripping ratio; therefore, a greater ratio of overburden would be generated per unit area stripped. TGP would either relocate the overburden from Zone D to reclaim Zones A, B, and C, or stockpile it within the pit at a location that would facilitate efficient, timely reclamation. Furthermore, upon completion of reclamation activities in Zones B and C, Zone D would be reclaimed concurrently with mining activities occurring in the zone. The crushers/sorter may be relocated from Zone A during mining operations occurring in Zone D. In addition, Zone D would be used for stockpiling a portion of topsoil taken from Zone B. Zone D currently includes a storage area (culverts, trucks, etc.).

#### **2.1.3 OTHER RELEVANT DETAILS**

**Configuration:** The maximum depth of potential continuation mining areas would be approximately 30 feet. The maximum width of the potential 84-acre continuation property would be approximately 1,687.5 feet. The maximum length of the continuation property would be approximately 3,625 feet. The maximum height of materials piled above original grade would be limited to 60 inches for earthen berms surrounding the pit. Overburden would be stockpiled in the bottom of the pit in discrete locations that facilitate efficient and timely reclamation. Crusher fines and marketable materials would be stored within the pit in Zone A. However, if the crushers/sorter is relocated out of Zone A during mining of Zones B, C, or D, all crusher fines and marketable materials would be stored in close proximity to the sorter discharge at that time. Any new crushers/sorter location would depend on dynamic operational and/or reclamation variables and would be evaluated as necessary.

**Reserves:** Reserve volumes available for excavation at the Torres Pit continuation property are not readily known. TGP has estimated that the ore body reserves would continue to be viable for the next 10-15 years. At current peak permitted production of 115,000 tons annually, the reserves available at the Torres Pit are estimated to be between 1,115,000 and 1,725,000 tons.

**Slope Stability:** Currently, the Torres Pit has several highwalls across the pit including the active mine face. These highwalls tend to be relatively stable and do not present an extreme hazard. Under the Proposed Action, all future highwalls or mining faces would comply with all applicable MSHA regulations. Caution would be exercised during any mining activities that occur beside or beneath highwall areas.

**Stockpile Stability:** Stockpile slopes would be at the angle of repose for the material being piled. This applies to topsoil, overburden, unprocessed material, and all marketable products (e.g., mine run, gravel, sand), and all unmarketable material (e.g., crusher fines).

**Drilling and Blasting:** There would be no drilling or blasting as part of the Proposed Action.

**Mining Methods and Equipment:** Under the Proposed Action, the methods and equipment used to mine would be similar to what is currently used. No operational expansion is proposed. A minimum of 3 inches of topsoil would be stripped by wheel tractor scraper or excavator and truck and stockpiled separate from overburden piles or earthen berms. Each new zone would have its own topsoil stockpile.

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TGP would initially rely on the seeds and roots in the topsoil to regenerate vegetative cover on topsoil stockpiles. If after one year the topsoil stockpile does not have a vegetative cover, then the topsoil stockpile would be seeded using one of three application methods with the Interim Seed Mix described below. The species mix and ratios would be approved by the TFO and would depend on seed availability at that time.

Seeding Application Method 1 is to hydraulically apply 1,500 pounds of wood fiber mulch with prescribed Seed Mix, and 150 pounds of tackifier per acre. Seeding Application Method 2 is to disc and drill prescribed Seed Mix and 1-1/2 tons of mechanically crimped weed free straw per acre. Seeding Application Method 3 is to broadcast prescribed Seed Mix and mechanically cover using appropriate soil mixing implement to cover seed.

Seed Mix Option 1 (*Interim Seed Mix*) is to use 10 pounds of Regreen™ and 20 pounds of approved native seed mix (cool and warm weather adapted, at least 5 varieties without shrubs) per acre. Seed Mix Option 2 (*Final Reclamation Seed Mix*) is to use 10 pounds of Regreen™ and 20 pounds of approved native seed mix (cool and warm weather adapted, at least 7 varieties including shrubs) per acre.

Under the Proposed Action, overburden would be excavated by a bulldozer, scraper, or excavator and truck and used to construct an approximately 60" high berm around the pit as required by the Mine Safety and Health Administration (MSHA). Any additional overburden would be stockpiled within the pit. The overburden would be kept in discrete piles or berms separate from the stockpiled topsoil. Some stripped overburden may also be used to reduce slopes of existing highwall areas in Zone A or other mined zones in an effort to begin partial reclamation before stockpiling additional overburden.

The overburden used to construct above grade earthen berms around the pit would be interim-seeded using a broadcast method. Only the overburden stockpiled in the above grade earthen berms would be interim-seeded. Broadcast seeding of earthen berms would utilize the Interim Seed Mix.

After overburden is removed, the ore would be ripped with a bulldozer. A front-end loader would then load the unprocessed material directly into the feeder hopper. As excavation of the active mine face moves farther from the feeder hopper, the front-end loader may load dump trucks. The dump trucks would then transport the unprocessed ore material to the feeder hopper along an established haul road circuit.

Initially, the ore would be screened and oversize material would be stockpiled for sale. If the oversize pile becomes too large, a portable primary crusher would be brought in to crush the oversize rock into suitably sized material. The screened or crushed rock would then go through a sorter which sorts acceptable diameter gravel from rock requiring additional size reduction through secondary crushing. All oversized rock would move via conveyor belt(s) to the secondary crusher. The secondary crusher would reduce oversized rock to a suitable size for sorting. Any rock material not requiring secondary crushing would be conveyed directly to the final sorting conveyor belt(s). Gravel expelled from the secondary crusher would then be reintroduced to the final sorting conveyor belt(s) and sorted by particle size into discrete piles. The sorted piles would then be stockpiled for future sale or loaded into dump trucks and hauled off-site for deliveries. This method is the same as that currently used to process material at the Torres Pit.

Currently for deliveries, dump trucks are weighed on a scale before entering the pit (if the tare weight is not known for any individual truck) and again as they exit the pit. The difference in weight is used to quantify the tonnage material being hauled away by any individual truck. The scale is calibrated on an annual basis. Calibration certificates would be provided to BLM as required. An office trailer is located beside the scale to coordinate scale operations. The scale trailer has gas and a portable toilet and does not require additional utilities. Sewage is pumped and hauled away to a State approved disposal facility. A 500-pound liquid propane tank used for power generation is refilled as necessary. Under the Proposed Action, all weighing and reporting activities would continue as they presently do.

Crusher fines, waste rock, overburden, and other unmarketable material would be used as back fill to reduce slope grades during reclamation.

The storage area located in Zone D (Figure 2) would be relocated once mining operations encroach. Any future storage area location would be coordinated with the existing landowner or located in the active pit.

Typical machinery, vehicles, and equipment that would be used at the Torres Pit are provided in Table 1.

**Table 1. Machinery, vehicles, and equipment to be used at the proposed continuation property.**

Vehicles, Machinery, and Equipment to be Used		
Bulldozer	Feeder hopper	Vehicle scale
Front end loader	Crusher(s)	Office trailer
Wheel tractor scraper	Conveyor belts	Pickup trucks
Grader	Splitter	HMA batch plant
Wheeled back hoe	Dump trucks	Water tanker truck
Fuels and lubes truck	Diesel generator	1,200 gallon diesel fuel tank

**Erosion and Sediment Control:** Erosion and sedimentation would be controlled in the short-term by interim seeding above grade earthen berms and building the berms to form a basin. The only portions of the berms that would drain outward away from the pit would be the outside slopes of the above grade berms. The highest point on the berm would be the outward edge in order to contain runoff inside the disturbed area. All berms would be constructed in accordance with all Mine Safety and Health Administration (MSHA) standards and requirements.

Erosion and sediment would be controlled in the long term by contouring slopes to no steeper than 3 (horizontal) to 1 (vertical), spreading overburden, spreading topsoil, ripping compacted areas at least 12” deep on the contour, and seeding. Unpaved roads within the pit and across the property would be similarly reclaimed. Because the main access road to the mine is paved, there would be no substantive changes to erosion and sediment control beyond what is presently in place.

All disturbed areas would be harrowed and seeded as described in the Revegetation Section below. The seedbed would be drug with a chain, bedspring, or other suitable implement to cover the seed if the seed is broadcast instead of drilled.

Fugitive dust would be controlled by water sprayed from a tanker truck onto unpaved haul roads and operational areas receiving moderate to heavy traffic and disturbance. Water would be applied when dust emissions from controllable surfaces are readily visible leaving the project area. Additionally, water would also be applied when the operational surfaces become dry, loose, and susceptible to wind erosion. Water used to control dust would be drawn from a nearby existing water well.

**Revegetation:** The initial steps in revegetation would be achieved by stockpiling the top 3 inches of topsoil separate from the overburden, interim seeding the topsoil pile if needed, and controlling noxious weeds as necessary.

Reclamation would be performed as part of the mining cycle. As the mining and processing operations migrate through the property, areas that have been mined out would be reclaimed. Excess material stockpiles would be flattened and a minimum of eight inches of overburden material would be placed to create slopes of 3 horizontal to 1 vertical or flatter. The available topsoil would then be spread over the top to facilitate permanent vegetation. After final contouring, seeding would be coordinated with the BLM and the surface landowner (Mr. Torres). The application rate would be 10 pounds Regreen™ and 20 pounds of approved native seed mix (warm and cold weather adapted, at least 7 varieties including shrubs) per acre. All re-vegetated areas would be monitored for one year for noxious weeds. If noxious

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weeds are discovered, they would be eradicated using the best practice available. If revegetation fails, all necessary areas will be reseeded until successful.

TGP would coordinate all revegetation efforts with the BLM, TFO range and wildlife staff as appropriate.

**Health and Safety:** TGP would comply with all Federal health and safety regulations as defined by the Mine Safety and Health Administration (MSHA). Although the Torres Pit would continue to have several highwalls, appropriate measures to ensure safety while working or mining beneath highwalls would be undertaken. TGP mine personnel would receive mandatory health and safety training pursuant to the provisions of 30 CFR Part 46.

**Water Use:** TGP has one water supply well on the mine property. The property where the water well is located is also owned by Mr. Torres. The diversion water right associated with the well (RG91034) is 3.0 acre-feet per year. The only planned water use at the Torres Pit is for fugitive dust control. There would be no discharge of well water from the mine property. Runoff into or from the pit would be prevented by diversion or containment of stormwater using above grade earthen berms on all sides of the pit.

## **2.2 ALTERNATIVE B: NO ACTION**

Alternative B (No Action alternative) assumes that the BLM TFO would deny the application for extension of the Torres Pit and that no future mining operations outside the existing mining limits would occur. No scraping, excavation, or grading would be undertaken with the intention of mining Federal minerals. Lands outside the current mining limits of the existing Torres Pit would receive no future mining activity of any type of future land use would occur under agreement between the surface land owner and TGP. Entering into materials sales contracts for sand and gravel is discretionary and the BLM has no obligation to approve either the proposed action or the alternative location. Actions of this type are, however, both consistent with current BLM resource plans and meet current planning objectives.

## **2.3 OTHER ALTERNATIVES**

No additional alternatives were identified during scoping.

## **2.4 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL**

There were no alternatives considered but eliminated from further detailed analysis.

## **3.0 AFFECTED ENVIRONMENT**

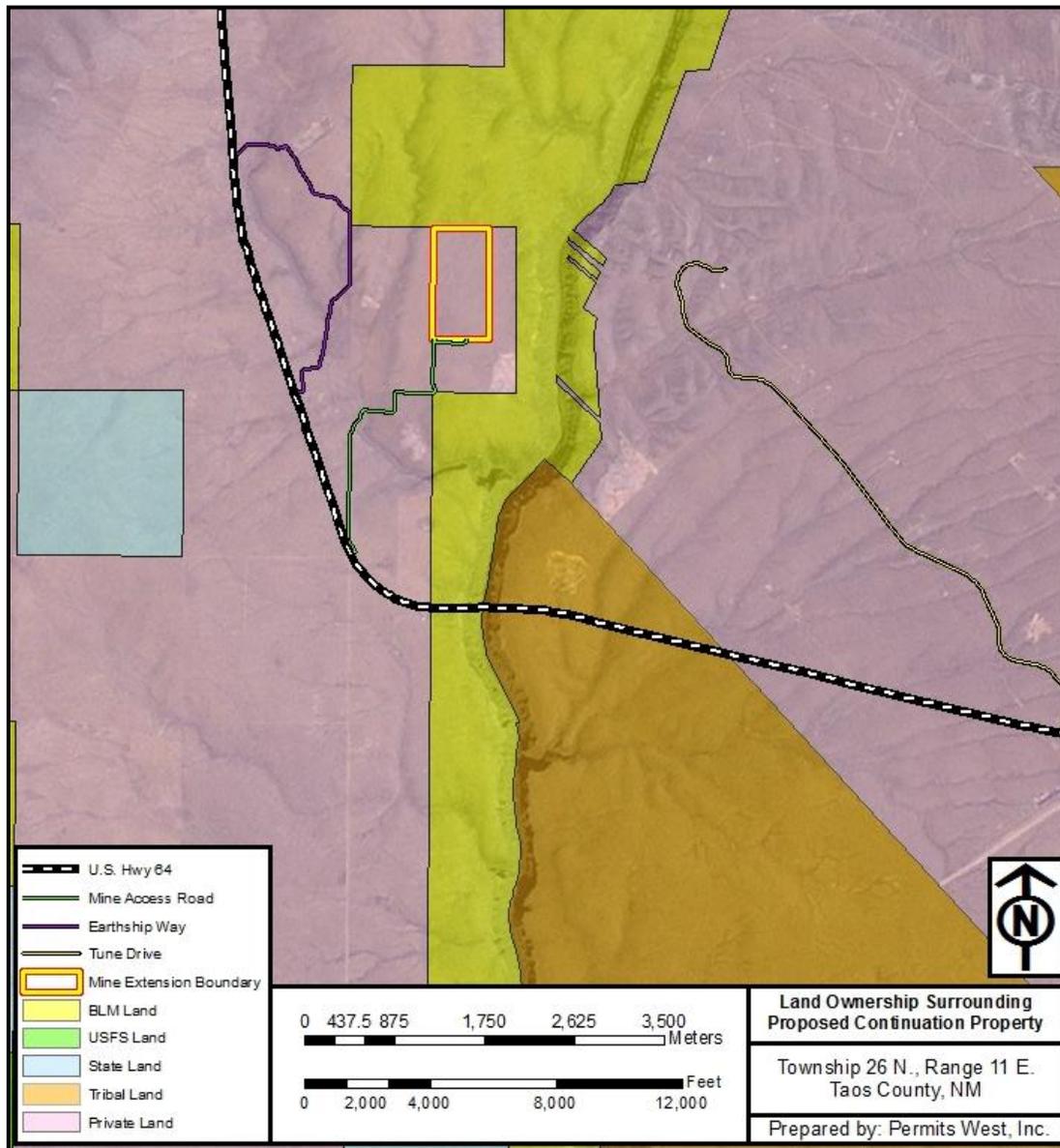
This chapter provides a description of the existing environment by resource type (Sections 1.6 and 1.7). All descriptions are intended to supply the reader with a context of the baseline condition to enable evaluation of effects in Chapter 4, Environmental Consequences.

### **3.1 LAND TENURE AND USE**

Land ownership surrounding the project site is illustrated in Figure 3. Land immediately north of the project area is administered by the BLM TFO. Approximately 1.5 miles west of the project area is a section of land owned by the State of NM. Approximately 0.8 miles southeast of the project area on the east side of the Rio Grande Gorge is the nearest tribal land (Taos Pueblo). Approximately 0.5 miles west of the project area is a private housing development (Earthship Community) accessed from US 64 and Earthship Way. The Earthship Community represents the closest receptors to the proposed mine continuation property. Approximately 1.0 mile east of the project area is a second private housing development accessed from Tune Drive (Tune Drive Community) on the east rim. The Tune Drive Community represents the next closest receptors to the project area. The Gorge Bridge is approximately 1.6 miles south of the project area and represents the third closest receptors to the project area. Visitation to the Gorge Bridge, Visitor's Center, and Taos Pueblo concessionaires is intermittent. Additionally, traffic crossing the Rio Grande Gorge Bridge along US 64 also accounts for short-term receptors in the

area that may be affected. Also, the occasional hunter or recreational user may travel near the project area.

Historically, land within and surrounding the project area were used for livestock grazing. Several sand and gravel mining operations were present in the past; however, most have since been abandoned or reclaimed. Currently, no cattle are being grazed on the continuation property or surrounding lands owned by Mr. Torres. The primary current land use for project area lands is the extraction of sand and gravel material from TGP’s existing Torres Pit and the storage of equipment by TGP.



**Figure 3. Land ownership surrounding the proposed project area.**

The Rio Grande and adjacent lands within the gorge just east of the project area have been designated by Congress into the National System of Wild and Scenic Rivers. There is an approximate 860-foot wide private land buffer between the proposed extension boundary and BLM land on top of the west rim, and an approximate 1,200-foot buffer between the proposed eastern mine boundary and the west rim of the gorge (Figure 3). No BLM land is currently being used at the Torres Pit, nor are any BLM lands proposed for mining continuation.

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## 3.2 GEOLOGY RESOURCES

The Quaternary pediment gravel deposit overlies Pliocene basaltic lava flows interbedded in the Santa Fe Group. The Torres Pit is on the west rim above the Rio Grande approximately 1,200 feet west of the rim of the Rio Grande gorge. At the Torres Pit, alluvial gravels deposited by the Rio Grande millennia ago cap the rim. These alluvial gravels are the desirable ore material that TGP proposes to excavate.

## 3.3 SOILS RESOURCES

*Silva-Sedillo association, gently sloping:* Soils within the project area are entirely characterized as Silva-Sedillo association, gently sloping. The mean annual precipitation for this soil association is 11-14 inches with a frost free period of 125-135 days and a mean annual air temperature of 46°-54° F. Soils of this association are found at elevations between 6,500 to 8,000 feet. Soils of this association are generally not fragile; however, they are subject to both wind and water erosion if they are heavily disturbed or the vegetative cover is removed (NRCS 2011).

Silva soils develop on ridges and convex surfaces from alluvial parent material derived from igneous and metamorphic rock. Silva soil is well drained with no frequency of flooding or ponding, and has no salinity. Also, Silva soils have a typical profile of loam from 0-3 inches, clay loam from 3-31 inches, and clay loam from 31-60 inches with slopes between 1 and 5 percent (NRCS 2011).

The Sedillo soils form on divides and side slopes from alluvium derived from igneous and metamorphic rock. This soil is well drained with no frequency of flooding or ponding, and has no salinity. Slopes range from 5-15 percent and have a typical profile of gravelly loam from 0-3 inches, very gravelly clay loam from 3-11 inches, and very gravelly sandy loam from 11-60 inches (NRCS 2011).

## 3.4 WATER RESOURCES

The continuation property is within the 738 square mile Taos Plateau drainage basin. A very shallow drainage through Zones A and D (Figure 2) is the most noticeable water sculpted geomorphologic feature of the continuation property. There are no stream beds or banks along any drainage features within the project area and drainage patterns are not readily visible to the casual observer. This light dendritic drainage pattern flows south through Zone A and into a tributary arroyo that feeds the Rio Grande. There are no springs or seeps within the continuation property. All evidence indicates a lack of shallow groundwater due to increased infiltration from fractures in the bedrock matrix.

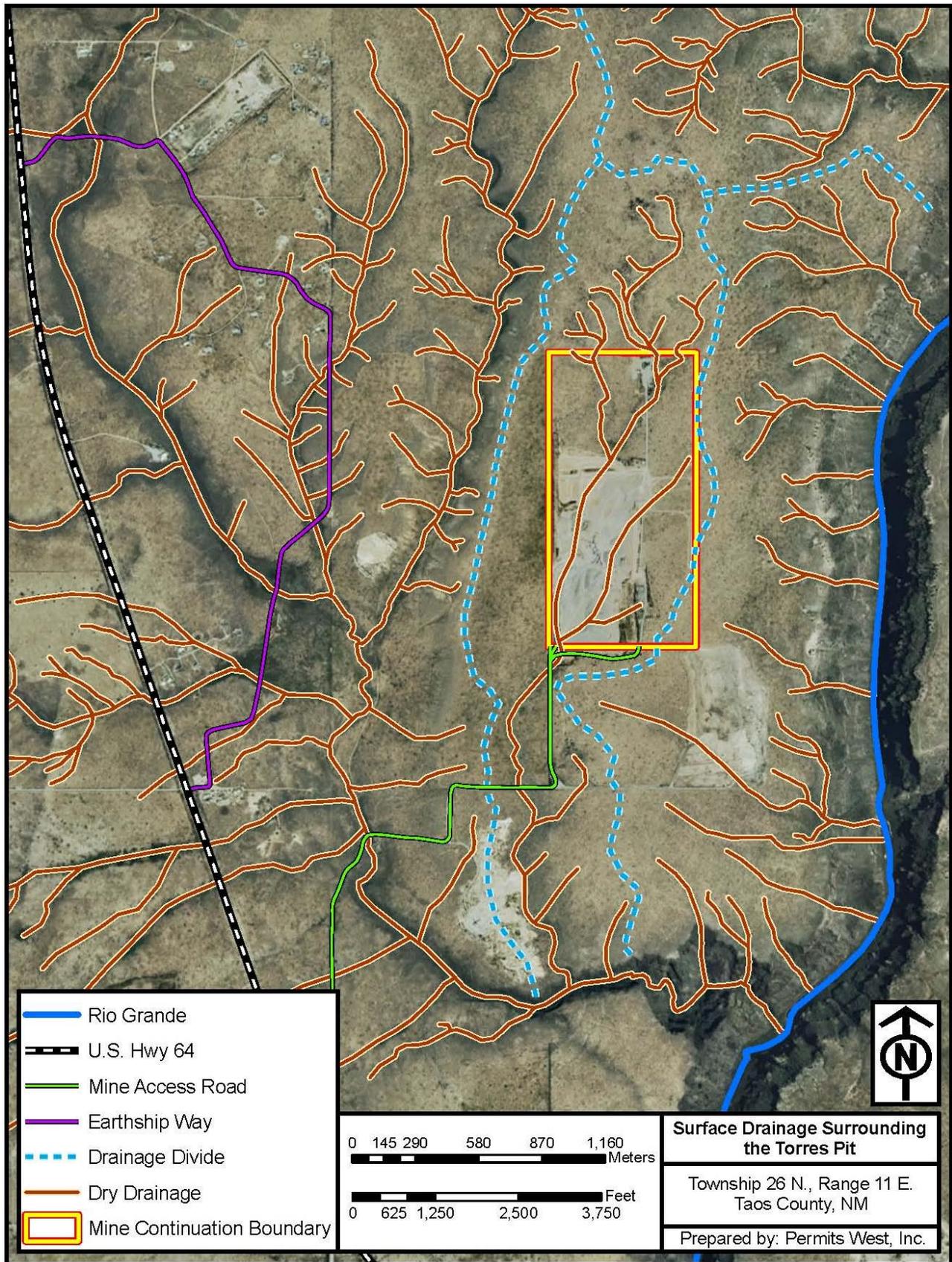
Average annual precipitation for Taos between December 1, 1892 and August 31, 2010 is 12.35 inches with July, August, and September being the wettest months (WRCC 2011). These summer months align with late summer monsoonal activity that drives large thunderstorm development.

The only perennial water source near the project area is the Rio Grande. The project area is not visible from the Rio Grande or any locations within the gorge. Congress designated the section of the Rio Grande flowing near the project area as a Wild and Scenic River. The only area where the project area is visible within the Wild and Scenic River corridor is on the Gorge Bridge and on the east side. No other special designations for water resources have been made in or near the project area.

The project area is not within a 100-year floodplain or susceptible to flooding.

A map illustrating the character and general pattern of drainage surrounding and across the continuation property is provided as Figure 4. The majority of the continuation property is within a single watershed area; however, a small piece of the southeast corner of the property (Zone C, Figure 2) is within the same watershed as the previously reclaimed mine area.

TGP currently uses one water supply well (POD number RG91034). The well is located ≈1 mile south of the existing Torres Pit in the south half of Section 14, T. 26 N., R. 11 E., Taos County, NM. The well is drilled to a depth of 689 feet and has a diversion water right of 3.0 acre-feet per year. TGP currently uses



**Figure 4. Surface drainage surrounding and across the proposed project area.**

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the well water for fugitive dust control in moderate to high truck and loader traffic areas as necessary. There is no discharge of well water from the mine property.

Runoff into or from the Torres Pit is currently prevented by diversion of water using soil berms on all sides of the pit. Thus, only direct rain or snowfall can accumulate in the pit. There is minimal precipitation accumulation within the pit since the average annual precipitation for Taos is 12.35 inches and the Silva-Sedillo soils are well drained and have no frequency of flooding or ponding (NRCS 2011 and WRCC 2011).

### **3.5 BIOLOGICAL RESOURCES**

Biological resources have been divided into two categories, wildlife and botany.

#### **3.5.1 WILDLIFE**

Three pedestrian surveys were conducted of the project area and relevant surrounding landscape. The surveys were conducted on March 31, April 7, and May 9, 2010 by a qualified wildlife biologist. Additionally, one line-of-sight survey was conducted for raptor nests using 10x40 binoculars and a 15x-60x spotting scope along the west rim of the Rio Grande gorge. Prior to conducting on-site surveys, the U.S. Fish and Wildlife Service (USFWS) Listed and Sensitive Species in Taos County, and the NM Department of Game and Fish (NMDGF) BISON-M databases were reviewed and downloaded. The purpose of the surveys was to inspect and document the potential presence of threatened, endangered, or special status animal species listed by the USFWS, BLM, and NMDGF (Black 2010).

One Federal Candidate Species was located on the proposed site. Two small colonies of the montane subspecies of the Gunnison's prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were found near the center of the project site. No other threatened, endangered, or special status wildlife species were observed within or adjacent to the project area during the March 31, April 7, or May 9, 2010 wildlife surveys (Black 2010).

The project area is deemed suitable habitat for 2 Federal Species of Concern, the mountain plover and the burrowing owl, both of which are migratory species. The May 9, 2010 survey was selected for these two species because each of these species would have arrived at the site by this date.

***Gunnison Prairie Dog (High Elevation Population):*** Two small colonies of the high elevation subspecies of the Gunnison's prairie dog were documented during surveys. This subspecies is a Candidate for listing as Threatened or Endangered (Black 2010).

***Red Fox:*** The project site is suitable habitat for this nocturnal species. No fox sign or burrows were observed during surveys. It is likely that red foxes occasionally occur within the project area (Black 2010).

***BLM Sensitive Bat Species:*** No bats were observed during wildlife surveys at the proposed site. There is no open water at or near the site. Any potential bat species could roost in open cavities in old stored tanks at the site (Black 2010).

***Ferruginous Hawk:*** The proposed project area is marginal breeding habitat for ferruginous hawks. This species favors wide open grasslands and prairies as breeding sites. The project area is dominated by sagebrush, although some open grassy areas are present. No raptor nests were found within a one-mile radius of the project area. It is likely that ferruginous hawks migrate through the project area (Black 2010).

***American Peregrine Falcon:*** The west side of the Rio Grande Gorge, located approximately 0.4 miles east of the east boundary of the project area contains suitable nest structures for peregrines. No active raptor nests were observed within a one-mile radius of the project boundary during the April 7, 2010 survey. The project area is suitable migration habitat for peregrines (Black 2010).

**Mountain Plover:** The project area contains suitable nesting habitat for mountain plovers. The sparsely vegetated open areas around the prairie dog colonies are potential areas for this species to nest. No plovers were observed during the initial wildlife surveys, although the survey dates were too early in the season for this migratory species. Mountain plovers probably arrive at the site in late April. A mountain plover survey was conducted on May 9, 2010 at the proposed site. No plovers were seen or heard during the survey (Black 2010).

**Burrowing Owl:** The project site is suitable nesting habitat for burrowing owls given the presence of prairie dog towns. No owls were observed during the initial wildlife surveys, although the survey dates were too early in the season for this migratory species. Burrowing owls probably arrive at the site in late April. A burrowing owl survey was conducted on May 9, 2010 at the proposed site. No burrowing owls were seen or heard during the survey (Black 2010).

**Loggerhead Shrike:** The project site and adjacent landscape is potential habitat for shrikes. Shrikes are probably an uncommon breeder and migrant in the project area (Black 2010).

**Migratory Birds:** Migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from a “take”. Take is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities”. A “take” does not include habitat destruction or alteration as long as there is not a direct taking of birds, nests, eggs, or parts thereof (Black 2010).

Ten species observed during the wildlife surveys are protected under the Migratory Bird Treaty Act.

### 3.5.1.1 Wildlife Species Observed During the Surveys

Table 2 provides a list of all species observed during the wildlife surveys conducted in the spring of 2010.

**Table 2. Wildlife species documented during surveys.**

SPECIES
<b>Birds</b>
Domestic pigeon ( <i>Colombia livia</i> )
Say’s phoebe ( <i>Sayornis saya</i> )
Horned lark ( <i>Eremophila alpestris</i> )
Western bluebird ( <i>Sialia mexicanus</i> )
Common raven ( <i>Corvus corax</i> )
Black-billed magpie ( <i>Pica hudsonia</i> )
American robin ( <i>Turdus migratorius</i> )
Vesper sparrow ( <i>Pooecetes gramineus</i> )
Sage sparrow ( <i>Amphispiza belli</i> )
<b>Mammals</b>
Gunnison’s (High Elevation) prairie dog ( <i>Cynomys gunnisoni montanus</i> )
Mule Deer ( <i>Odocoileus hemionus</i> )
Desert cottontail ( <i>Sylvilagus audubonii</i> )
Black-tailed jackrabbit ( <i>Lepus californicus</i> )
Coyote ( <i>Canis latrans</i> )

Source: (Black 2010)

Note: Mammal observations tend to be from tracks, scat, and other sign.

For a list of all USFWS, BLM, and NMDGF listed wildlife species with the potential to occur in the project area, refer to the Wildlife Survey Report provided as Appendix A.

### 3.5.2 BOTANY

The project area was surveyed on March 31 and April 7, 2010 by a qualified botanist. The survey of the proposed project area was conducted at 25-foot intervals following a zigzag pedestrian transect. A 25-foot wide buffer along the outer border of the entire project area was also botanically surveyed. The purpose of the surveys was to inspect and document the potential presence of plant species listed as rare for Taos County by the NM Rare Plant Technical Council (NMRPTC 1999). The 11 species are *Astragalus cyaneus*, *Astragalus puniceus* var. *gertrudis*, *Astragalus ripleyi*, *Delphinium alpestre*, *Delphinium robustum*, *Draba smithii*, *Erigeron subglaber*, *Eriogonum lachnogynum* var. *colobum*, *Hackelia hirsuta*, *Lorandersonia microcephala*, and *Salix arizonica*. In addition, all plants occurring in the project area were identified to the extent possible in order to determine the presence and extent of any State-listed noxious weeds (NMDA 2009, Devlin 2010).

The dominant shrub in the project area is big sagebrush (*Artemisia tridentata*). Although big sagebrush is dominant, the original plant community—prior to heavy livestock grazing in the project area—was most likely Desert Grassland rather than Great Basin Desert Scrub (Dick-Peddie 2000). In addition to big sagebrush, dominant plants include broom snakeweed (*Gutierrezia sarothrae*) and ring muhly (*Muhlenbergia torreyi*), both consistent with heavy grazing. There is a patch of land in the northwest corner of the project area with almost no sagebrush, dominated by grasses such as James' galleta (*Pleuraphis jamesii*) and black grama (*Bouteloua eriopoda*). The primary shrub in this area is winterfat (*Krascheninnikovia lanata*). The vegetative community of this small area indicates that the original plant community of the project area was likely Desert Grassland. The lack of shadscale (*Atriplex confertifolia*) and greasewood (*Sarcobatus vermiculatus*) also indicate that the current plant community is not true Great Basin Desert Scrub (Devlin 2010).

Immediately adjacent to the southeast corner of the project area is a reclaimed mine area vegetated by the following grasses: Indian ricegrass (*Achnatherum hymenoides*), Western wheatgrass (*Agropyron smithii*), intermediate wheatgrass (*Agropyron intermedia*), blue grama (*Bouteloua gracilis*), James' galleta (*Pleuraphis jamesii*), and alkali sacaton (*Sporobolus airoides*) (Devlin 2010).

Of the 11 species listed as rare for Taos County (*Astragalus cyaneus*, *Astragalus puniceus* var. *gertrudis*, *Astragalus ripleyi*, *Delphinium alpestre*, *Delphinium robustum*, *Draba smithii*, *Erigeron subglaber*, *Eriogonum lachnogynum* var. *colobum*, *Hackelia hirsuta*, *Lorandersonia microcephala*, and *Salix arizonica*), none were found in the project area, all due to a lack of potential habitat (Devlin 2010).

No State-listed noxious weeds were found in the project area. The Plant Survey Report prepared for the project area and buffer is provided in its entirety as Appendix B.

#### 3.5.2.1 Plant Species Observed During the Surveys

Table 3 provides a list of all species observed during the botanical surveys.

**Table 3. Plant species documented during surveys.**

Species	Common Name
<b>Trees</b>	
<i>Juniperus monosperma</i>	One-seeded juniper
<b>Shrubs &amp; Subshrubs</b>	
<i>Artemisia tridentata</i>	Big sagebrush
<i>Artemisia frigida</i>	Fringed sage
<i>Atriplex canescens</i>	Four-winged saltbush
<i>Chrysothamnus greenii</i>	Green's chamisa
<i>Chrysothamnus nauseosus</i>	Rubber rabbitbrush
<i>Krascheninnikovia lanata</i>	Winterfat
<i>Gutierrezia sarothrae</i>	Broom snakeweed

Species	Common Name
<b>Cacti</b>	
<i>Echinocereus pectinatus</i>	Hedgehog cactus
<i>Opuntia polyacantha</i>	Starvation pricklypear
<b>Grasses</b>	
<i>Achnatherum hymenoides</i>	Indian ricegrass
<i>Agropyron smithii</i>	Western wheatgrass
<i>Agropyron intermedia</i>	Intermediate wheatgrass
<i>Aristida purpurea</i>	Purple three awn
<i>Bouteloua eriopoda</i>	Black grama
<i>Bouteloua gracilis</i>	Blue grama
<i>Elymus longifolius</i>	Bottlebrush squirreltail
<i>Muhlenbergia torreyi</i>	Ring muhly
<i>Pleuraphis jamesii</i>	James' galleta
<i>Sporobolus airoides</i>	Alkali sacaton
<b>Forbs</b>	
<i>Conyza canadensis</i>	Horseweed
<i>Crypthantha crassisejala</i>	Thicksepal hiddenflower
<i>Cymopterus bulbosus</i>	Indian parsley
<i>Eriogonum alatum</i>	Winged buckwheat
<i>Helianthus annuuua</i>	Common sunflower
<i>Kochia scoparia</i>	Kochia
<i>Lactuca serriola</i>	Prickly lettuce
<i>Machaeranthera canescens</i>	Purple aster
<i>Salsola iberica</i>	Russian thistle
<i>Sisymbrium altissimum</i>	Tumble mustard
<i>Townsendia exscapa</i>	Early easterdaisy
<i>Tragopogon dubius</i>	Western salsify

Source: (Devlin 2010)

The following two biological issues were identified during surveys of the project area conducted by a qualified wildlife biologist.

### **3.5.3 BIOLOGICAL ISSUE 1: PRESENCE OF GUNNISON'S PRAIRIE DOG (*CYNOMYS GUNNISONI MONTANUS*)**

One Federal Candidate Species is located in the project area. Two small colonies of the montane subspecies of the Gunnison's prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were documented at the site. Mitigations outlined later in this EA must be adhered to in order to minimize impacts to this species.

### **3.5.4 BIOLOGICAL ISSUE 2: PRESENCE OF OPEN CAVITIES IN TANKS**

Across the extension property, various equipment and numerous large empty tanks are being stored. These tanks and equipment have many open cavities that present a hazard to birds and bats. Mitigations outlined later in this EA must be adhered to in order to minimize impacts to birds and bats.

## **3.6 CULTURAL RESOURCES**

A cultural resource records search and two field inventories (March 2007 and June 2009) were performed by Lone Mountain Archaeological Services, Inc. for the project's Area of Potential Effect (APE). The results of the inventories are documented in two reports maintained in the central files of the Bureau of Land Management, Taos Field Office. Because information on the nature and location of cultural resource sites is proprietary, the reports (NMCRIS Activity No. 104267 and NMCRIS Activity No.

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114212) are incorporated by reference into this EA. No cultural resource sites were documented within the project area.

### **3.6.1 CULTURAL ISSUE 1: AVOIDANCE OF CULTURAL SITES NEAR PROJECT AREA**

There are sensitive cultural resource sites near, but outside the project area boundary that must be avoided. Also, if additional cultural resources are discovered, these must be protected as appropriate based on consultation with the NM State Historic Preservation Officer (SHPO).

## **3.7 VISUAL RESOURCES**

The BLM manages lands using a Visual Resource Management (VRM) program. The guidance is provided to maintain the quality of visual values according to VRM class objectives. The project area is currently not classified in the BLM VRM classification system due to the fact that the surface ownership is private. BLM land immediately north of the project area are classified as VRM Class II, while BLM lands within the Rio Grande gorge are classified as VRM Class I and constitute a Special Management Area (Wild and Scenic River). There are no management objectives for the project area. The management objective for the adjacent Class I area "...is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the landscape should be very low and must not attract attention" (BLM 1986).

Although, there are currently no management objectives allocated to much of the Taos Plateau planning unit, public lands adjacent to the project area were inventoried by BLM for scenic value in 2006. Factors evaluated in the inventory were landform, vegetation, water, color, adjacent scenery, scarcity, cultural modifications, public sensitivity, and distance. Public land immediately north of the project area was found to have a relative scenic value of Class II in the inventory. VRM objectives are determined through the land use planning process which considers balancing management of all resources and resource uses as well as public input. Class II VRM objectives are "to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape" (BLM 1986).

Typically views are uninterrupted throughout the Taos Plateau with few structures visible except two track routes, barbed wire fencing, and the occasional power line in the distance. This leaves one with an impression of space and remoteness. However, along travel routes intrusions are more numerous and apparent including; signs, highways, power lines, and residences. Vegetation typically changes from yellow and pastel green grasses with grey/green sage on the flats to silhouetted dark green and blue conifers gradually climbing up the slopes of the volcanic domes. Texture of vegetation is finer on the plateau with uneven and random patches of sage and grass. Coarseness increases, from the base heading upslope of peaks, as vegetation changes from grass and shrubs to conifers. This change sometimes appears abrupt due to vegetation forming a digitate pattern following the flow of water along ridges and canyons. Some playas are visible amongst the grassy areas. The landform or soil appears in tan, beige with rusts, pink, and dark grey.

Two residential areas, as described in detail in Section 3.1 of this EA, are located in the vicinity of the project area and may be able to view the project area. The closer of the two residential areas is a grouping of houses spread along NM 64 west of the Rio Grande Gorge and west of the project area (Earthship Community). The closest residence within the Earthship Community is ≈0.6 miles from the western boundary of the project area. A second residential community that can view into the project area is accessed from Tune Drive (Tune Drive Community) on the east side of the Rio Grande Gorge. The closest residence within the Tune Drive Community is ≈1 mile east of the project area (See Figure 3 and Section 3.1).

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The visibility, contrast, and overall visual character of the project area was photo documented during site visits conducted in spring 2010. The existing Torres Pit, as viewed from the Earthship Community fence line (Figure 5) and the BLM boundary on west rim (Figure 6), captures the existing condition and current berm visibility from two vantages outside the immediate project footprint. Figures 5 and 6 are used later in Chapter 4 to analyze the effects of the Proposed Action using photo simulations. Note that in Figure 6, there are two individuals standing on top of the new  $\approx 8'$  tall berm. Although numerous photos were taken from the Tune Drive Community and Gorge Bridge observation points, no photo simulations were generated because the project area has a low visibility and contrast relative to the overall viewshed and was largely indistinguishable from the background in photos taken. Much of the reduction in overall project area visibility is due to the greater distances to observers, or aspect and elevation differences between the project area and the Gorge Bridge and Tune Drive locations.

Existing berms at the Torres Pit are  $\approx 20$  feet high on the west side of the active pit, to  $\approx 12$  feet tall on the east side. One newer berm segment (installed in winter 2010) east of the Torres Pit east berm is  $\approx 8$  feet tall and was constructed along the proposed eastern extension boundary and extends  $\approx 1,275$  feet north-south. The  $\approx 20$ -foot tall west berm can be seen in Figure 5. The two individuals on the berm in Figure 6 are standing atop the newly constructed  $\approx 8'$  high berm. The taller Torres Pit east and west berms can be seen behind the  $\approx 8'$  high berm.



**Figure 5. View of existing Torres Pit looking east from Earthship Community east fence line.**



**Figure 6. View looking west from BLM boundary on west rim of existing  $\approx 8'$  tall east berm.**

Currently, TGP does not interim seed above grade berms to help control dust, reduce contrast, and break up the color and line of the berms. Observation points at the Gorge Bridge view the mine; however, Gorge Bridge observation points have limited visibility of the southern boundary berm. Also, the mine floor at the Torres Pit is  $\approx 30$  feet below grade further reducing visibility of the existing operation from surrounding observation points. The existing mine is not visible from the west gorge bridge, and visible but not readily noticeable when viewed from the east gorge bridge points.

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There was one visual issue that was identified during scoping for this EA.

### **3.7.1 VISUAL ISSUE 1: HEIGHT AND CONTRAST OF ABOVE GRADE EARTHEN BERMS**

The height of berms placed around open pits may impact the viewshed. All berms need to be limited in height so as to avoid creating features that are highly visible. Also, methods should be employed to reduce high contrast features relative to the surrounding landscape.

### **3.8 AIR QUALITY**

The project area is within an area that is generally in attainment with New Mexico Environment Department (NMED) Air Quality Bureau and U.S. Environmental Protection Agency (EPA) air quality standards. The nearest air quality monitoring station to the project area is “3ZD Taos Fire Station” in Ranchos de Taos, NM. Occasionally, emissions of fugitive dust reach levels that exceed NMED and EPA standards. The sources of fugitive dust emissions near the project site are numerous, and some emissions are from several sand and gravel operations (active and abandoned) on private property. However, vehicles traveling unpaved, often unimproved roadways in Taos County are likely the most significant source of fugitive dust emissions. Additionally, fugitive dust emissions are much more frequent when sustained and gusty winds exist, lifting dust into the air from disturbed or poorly vegetated land areas. Elevated and gusty winds tend to occur in the springtime (March-May) in northern New Mexico and exceedances of NMED and EPA air quality standards generally occur in the spring.

### **3.9 NOISE RESOURCES**

Currently, noise sources related to the Torres Pit include those from active mining, crushing, processing and sorting, stockpiling, and removal of saleable sand and gravel material. Haul truck traffic also generates noise; however, the volume of traffic is directly linked to customer demand and varies greatly depending on local sand and gravel consumption. Also, less production is typically required to meet winter demands and the resulting traffic is typically far less during cold weather months.

During preparation of the 2001 Taos Gravel Products EA that ultimately permitted the current Torres Pit (BLM 2001), noise levels were measured from three key listening points to determine the noise level of potential disruptions. Listening Point #1 was at a high point in the Tune Drive Community directly across from the existing operation. This point was chosen because it is located at a minimal distance from the operation while still having an unobstructed “line of sound.” Listening Point #2 was at a point where there is a minimal distance between the existing operation and the rim of the Rio Grande Gorge. Listening Point #3 was at a point below the rim of the gorge but still at a minimal distance from the existing operation. Observations were taken at Listening Point #1 with the crushing equipment both operating and not in operation, in order to determine the difference between ambient noise levels and operational noise levels. Listening points on or below the rim of the gorge (Listening Points #2 and #3) were only collected with the equipment in operation, since the concern is with actual noise levels rather than the human perception of disruption (BLM 2001). Table 4 summarizes the results of these listening observations.

**Table 4. Noise level observations.**

<b>Noise Source</b>	<b>Point 1 (Tune Drive) dB Level (Light wind from 195°)</b>	<b>Point 2 (Rim) dB Level (Light/gusting wind from 150°)</b>	<b>Point 3 (Below Rim) dB Level (Wind not perceptible)</b>
Crusher Operation	Audible, but below 40	0-40 when wind is still	Not audible, no sound
Barking Dog (≈200 m)	60	N/A	N/A
2 Airplanes Overhead	40-60	N/A	N/A
Highway	Audible but below 40	N/A	N/A
Wind Gusts	N/A	50-65	N/A
Human Conversation	40-50	40-50	40-50

Source: (BLM 2001)

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A brief explanation of the observations is needed to understand the noise sources and the levels observed. The dB meter used was a Model 640005 manufactured by Sper Scientific. The meter was calibrated according to the manufacturer's instructions prior to data collection. The decibel meter operates in two ranges, 40 to 80 dB and 80 to 120 dB. All audible observations were collected in the low range (40 to 80 dB), because no noise emissions exceeded the lower range. The accuracy of the meter is +/- 3 dB. Some sounds that were audible during the noise survey (distant cricket chirping, low level highway noise, etc.) did not register on the decibel meter. Occasionally, it was possible to hear the operation of the crusher but the dB meter did not register. In other cases, a sound registered, but it was below the 40 dB lower limit the meter is designed and calibrated to detect (BLM 2001).

Potential receptors for noise emitted from the mine include residents in both the Earthship Community (west of project area) and the Tune Drive Neighborhood (east of project area on east rim).

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 DIRECT AND INDIRECT EFFECTS**

#### **4.1.1 ALTERNATIVE A: PROPOSED ACTION**

##### **4.1.1.1 Land Tenure and Use**

Direct effects to the proposed private extension lands would include the complete removal of all surface vegetation, soil, subsoil, and sand and gravel ore. This would create a bathtub landform once mining and reclamation are completed. The seed mix that TGP would use would be a BLM approved seed mix that would replace the plant community lost during initial stripping operations. In the short-term, project area lands would be dedicated to the extraction of sand and gravel material. Although the stripping and exclusion from the project area would reduce forage for livestock, no active livestock grazing occurs on the landowner's private land. As a result, there would be no effect to livestock or ranching operations as a result of the Proposed Action.

The Proposed mine boundary is approximately 1,200 feet from a BLM designated Wild and Scenic River corridor (Rio Grande). The project area is not visible or audible from within the gorge or at the Rio Grande and therefore, the Wild and Scenic Rivers section of the Rio Grande would not be affected by implementation of the Proposed Action.

##### **4.1.1.2 Geology Resources**

Geologic resources in the project area would be directly affected by the Proposed Action. All desirable sand and gravel ore would be permanently removed. The removal of sand and gravel ore from the proposed continuation property would result in an alteration to the areas landform creating a large closed basin that would appear as a large depression following reclamation. However, once reclaimed, any highwalls or steep slopes would be reduced to slopes no steeper than 3 (horizontal) to 1 (vertical). This would stabilize project area lands and protect geologic resources adjacent to the property.

##### **4.1.1.3 Soils Resources**

In the short-term, soils in the project area would be disturbed, compacted, scraped, and entirely removed. However, all topsoil would be discreetly stockpiled and interim seeded if necessary in order to maintain soil microbial life, nutrient levels, and long-term soil viability. Over the long-term, the topsoil would be redistributed across the project area during final reclamation and seeded with a BLM approved seed mix.

As a result, topsoil would be impacted within the project area during stripping and stockpiling. However over time, the stabilized topsoil would be reused as a seed bed during final reclamation. Therefore, a short-term negative effect to soils would occur from the Proposed Action but those effects would reduce as the topsoil is stockpiled, stabilized, seeded, avoided, and reused.

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#### **4.1.1.4 Water Resources**

Proposed mining extension activities would alter the drainage pattern at the project site. There are no defined channels within the project area and there would be no releases of hazardous substances as part of mining activities. No groundwater pumped from TGP's nearby well would be discharged outside the project area and only the volume of water necessary to effectively control fugitive dust would be used. Also, the Proposed Action would include the construction and maintenance of MSHA approved above grade berms around the project area which would divert or contain any surface flows. As a result, there would be no direct or indirect effects to surface or groundwater resources or water quality from implementation of the Proposed Action.

#### **4.1.1.5 Biological Resources**

**WILDLIFE:** One Federal Candidate Species was located on the proposed site. Two small colonies of the montane subspecies of the Gunnison's prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were found near the center of the project site. Direct effects to the two small colonies of the montane subspecies of the Gunnison's prairie dog would occur from implementation of the Proposed Action. All colonies would be completely removed and relocated using approved, ethical live trapping methods. Colonies would be relocated to a new, approved location in order to allow for mining of subsurface material underlying the colonies. No other threatened, endangered, or special status wildlife species were observed within or adjacent to the project area (Black 2010).

No raptor nests were located within 1 mile of the project area during surveys. Therefore, no direct or indirect effects to raptors would occur.

There are several pieces of equipment, materials, and empty tanks that represent a hazard to birds and bats. If not properly sealed, these cavities may result in losses or negative effects to birds and bats.

No take of migratory birds is anticipated under the Proposed Action and no direct effects to migratory birds would occur. A slight indirect effect to migratory birds would occur due to a temporary loss of habitat for species that favor those found in the project area.

A slight indirect effect to wildlife would occur from the temporary loss of habitat and forage during active mining. Smaller, less mobile wildlife species may be affected more heavily than larger mobile wildlife species. Small burrowing animals and any species that use the substrate for shelter may be taken during mining activities. Although individuals of a particular species may be lost, populations of non-sensitive species would not be greatly affected as a whole.

##### **Wildlife Mitigations:**

- 1) All Gunnison's prairie dogs (*Cynomys gunnisoni montanus*) at the site would be safely relocated to a suitable location (approved by BLM and any other applicable listing agencies).
- 2) All open cavities in the stored equipment, material, and tanks would be sealed to prevent access and use by birds and bats.

**BOTANY:** Direct negative effects would occur in the short-term to the plant community that currently occupies the project area. Under the Proposed Action, all plant material would be removed and discarded in order to enable stripping of overburden. None of the 11 plant species listed as rare Taos County were discovered at the project site during surveys. This was primarily because there is not suitable habitat for any of these species. Also, slight indirect effects to botanical resources would occur due to the temporary loss of habitat from removal of the soil substrate. However, following final reclamation of the project area, earthwork and topsoil spreading would reestablish suitable substrate habitat for a replacement plant community in the project area. Seeding would then stabilize earthwork and protect the newly replaced habitats for surrounding native plant species to expand onto. If the initial seeding effort fails, all necessary areas will be reseeded until successful.

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#### **4.1.1.6 Cultural Resources**

No Traditional Cultural Properties or Native American Religious Concerns were highlighted during scoping. Also, no cultural sites were identified within the project area during field inventories and records searches, and no effects to these resources or the lands they occupy would occur. As a result, no direct or indirect effects to cultural resources are expected from project implementation. However, in the event that buried cultural deposits are discovered during construction, work should cease and the Taos BLM should be notified and a qualified archaeologist should perform an evaluation of the findings.

##### ***Cultural Mitigations:***

- 1) If undocumented cultural resources are discovered during construction and operation of the Proposed Action, work would immediately cease and the BLM TFO archaeologist would be contacted for guidance.

#### **4.1.1.7 Visual Resources**

Direct effects to visual resources would occur from implementation of the Proposed Action. The mine property would extend onto an additional 84 acres and the number of residences that can view the project area would slightly increase. A map of the observation points selected at the Gorge Bridge, Earthship Community, and Tune Drive Community is provided as Figure 7. This analysis was performed using GIS software. All observation points represent various receptors near the project area. All observation points in Figure 7 have been assigned a color based on the visibility of a 5' berm completely surrounding the proposed mine continuation property from that point. The observation points assigned the color green are able to view the proposed mine while those colored red cannot.

A Visual Contrast Rating Worksheet (Form 8400-4) was completed from an observation point at the east fence line along Earthship Way (same location as Figure 8). There would be a weak to moderate contrast to form and line of the land from the Proposed Action. Also, there would be a moderate contrast to the line of the vegetation, and a weak to moderate texture contrast to vegetation. All other contrasts for land/water, vegetation, and structures were rated as weak or none for the Proposed Action.

Although the proposed mine property may be visible to a particular observation point, Figure 7 does not indicate a level of severity of change from the current condition at the mine. For this reason, 2 photo simulations were generated to illustrate the change in visual character that would occur from placing a 5' berm around the entire proposed extension property as viewed from the west (Figures 8) and east (Figure 9) and lowering existing berms to a height of 5 feet. The same photos from Figures 5 and 6 have been used to create photo simulations (Figures 8 and 9). It is important to note that TGP would reduce heights and interim seed the above grade berms surrounding the proposed mine property and that the photo simulations do not illustrate the revegetation. Interim seeding would further reduce the moderate contrast to form and line of the land, and line and texture of vegetation.

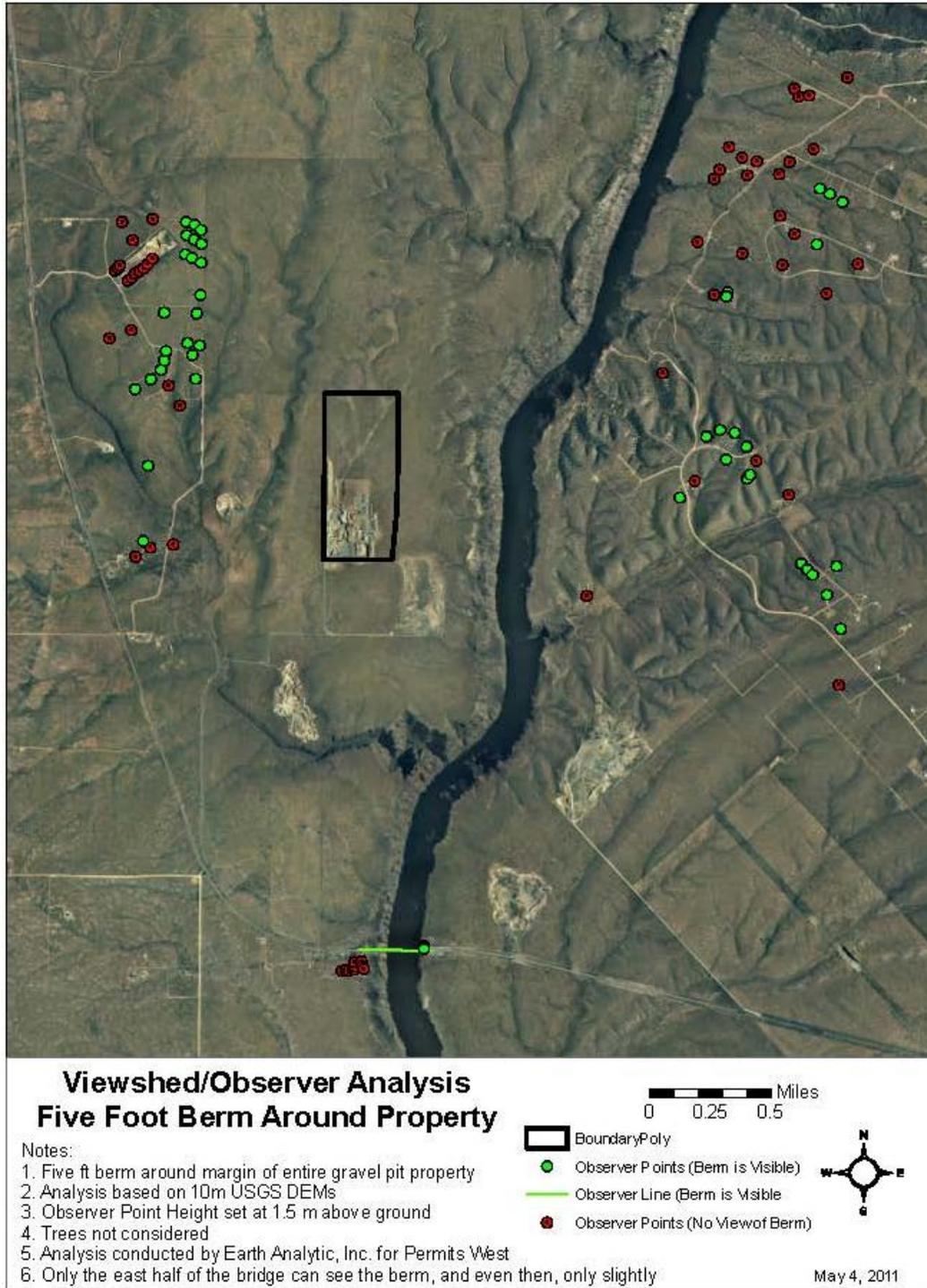
Current berms at the Torres Pit are piled to heights as tall as  $\approx$ 20 feet. These berms have a moderate contrast to the form and line of the land and a moderate contrast to the line and texture of the vegetation. All berms would be reduced under the Proposed Action to a height of 5' (60 inches). This action would significantly reduce the profile of the berms as viewed from the various observation points outlined in Figure 7 and along with interim seeding, largely mitigate effects to visual resources.

Although the overall proposed footprint of the mine would increase under the Proposed Action, both partial and final reclamation would occur concurrent with mining. Earthwork and contouring associated with reclamation would imitate the natural character and form of the landscape as much as possible (reducing slopes to no steeper than 3 horizontal to 1 vertical), while reseeding would further stabilize reclamation earthwork, reduce contrast of line and form of land, and reduce contrast to line and texture of vegetation, helping to reduce visible features associated with the Proposed Action. Although the project may be seen from various observation points, it would not likely attract the attention of the casual observer.

No indirect effects to visual resources would occur from the Proposed Action.

**Visual Mitigations:**

- 1) All above grade earthen berms would be constructed to a height of 5 feet and interim seeded using a BLM approved seed mix in order to reduce contrasts to land and vegetation and break up the linear feature and color of the berms. All existing berms (≈20 feet high) would be reduced to 5 feet high and interim seeded.



**Figure 7. Visibility of the proposed 5-foot berm from multiple observation points.**



Figure 8. Photo simulation of proposed extension looking east from Earthship Community east fence line.



Figure 9. Photo simulation of proposed extension looking west from BLM boundary on west rim.

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#### **4.1.1.8 Air Quality**

In northern New Mexico, disruption of air quality is largely a factor of winds blowing across disturbed areas and roadways, and can be highly variable by time of day and season. The access roadway into the mine is currently paved and is not exposed to the wind. Under the Proposed Action, extension of the Torres Pit would open additional acreage that would increase the surface area exposed to wind erosion. This increase in total disturbed acreage may result in increased dust emissions (generally mid-afternoon in spring). In order to offset this potential direct negative effect, TGP would interim seed the above grade earthen berms to reduce fugitive dust emissions. Also, groundwater pumped from a nearby well would be applied to roadways and high traffic active areas as necessary using a water truck to reduce dust emissions across the entire project area. The existing operation is covered by an air quality Permit No. 1484 issued by the State of New Mexico. Under the terms of that permit, the following emissions are allowed:

- Oxides of Nitrogen (NO<sub>x</sub>): 27.3 tons per year;
- Carbon Monoxide (CO): 7.2 tons per year;
- Volatile Organic Compounds (VOCs): 2.2 tons per year;
- Sulfur Dioxide (SO<sub>2</sub>): 3.4 tons per year;
- The greatest opacity permitted for any of the equipment is 15%.

Production rates are not proposed to change significantly, and the Torres Pit equipment and machinery would continue to be used as it is currently. As the mine progresses, portions of the proposed mine property would be partially or entirely reclaimed which would reduce the amount of bare ground directly exposed to wind erosion. Emissions from vehicles and equipment would remain similar to those currently occurring and would not significantly affect air quality locally or regionally.

No indirect effect to air quality would occur from the Proposed Action.

#### **4.1.1.9 Noise**

Noise sources proposed at the Torres Pit continuation property would be the same as those currently emitting noise. The closest receptors to the proposed project area are several residences on the east side of the Earthship Community, and a few residences on the west side of the Tune Drive Community. None of these residences are closer than 0.5 miles from the project area. Noise emission data indicates that the maximum dB level recorded at any of the three Listening Points during active crushing was at or below 40 dB. For comparison, human conversation tends to fall between 40-50 dB.

Because no operational expansion is proposed under the Proposed Action, and because the crusher and associated machinery would operate from within an approximate 30 foot deep pit during active mining, very little noise would be discernible at even the closest receptor distance of 0.5 miles (Earthship Community). Shifting winds may temporarily carry noise farther than it would otherwise travel; however, the frequency and intensity of wind is quite variable and, generally, frequent winds out of the west tend to carry noise farther east in the direction of the less densely populated Tune Drive Community.

Noise emissions from mining would be at similar levels to those currently produced. Receptor standoff distances from the proposed extension property are far enough to largely eliminate negative effects. Also, receptor locations remain geographically similar or identical to those analyzed in the 2001 Torres Pit EA (BLM 2001) and, therefore, that analysis remains relevant.

Under the Proposed Action, TGP would only operate the mine during daylight hours. As a result, no direct or indirect effects to nighttime silence would occur.

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## **4.1.2 ALTERNATIVE B: NO ACTION**

### **4.1.2.1 Land Tenure and Use**

No direct or indirect negative effects to land tenure and use would occur as a result of the No Action alternative. The existing land use of gravel mining would cease and the existing Torres Pit would be completely reclaimed. A slight positive effect would result from closure of the Torres Pit lands. No new mining would occur and the ultimate land use in the project area would fall back to grazing.

### **4.1.2.2 Geology Resources**

No additional mining would be permitted and, therefore, no direct or indirect negative effects to geology resources would result from mining activities. However, if the No Action is selected, the local sand and gravel market could experience less competition and regional stockpiles may be reduced due to limited permitted regional reserves.

### **4.1.2.3 Soils Resources**

Under the No Action alternative, soils on the extension property would not be removed for mining. As a result, soils resources would not experience direct or indirect negative effect from the No Action alternative.

### **4.1.2.4 Water Resources**

No direct or indirect negative effects to water resources would result from implementation of the No Action alternative.

### **4.1.2.5 Biological Resources**

No direct or indirect negative effects to biological resources would result from implementation of the No Action alternative.

### **4.1.2.6 Cultural Resources**

No direct or indirect negative effects to cultural resources would result from implementation of the No Action alternative.

### **4.1.2.7 Visual Resources**

No direct or indirect negative effects to visual resources would result from implementation of the No Action alternative. Over time, the existing Torres Pit would be closed and reclaimed which would have a direct positive effect on visual resources from elimination of above ground berms and piles, reducing contrast, and breaking up distinct linear features created through excavation of material by reestablishing vegetative cover.

### **4.1.2.8 Air Quality**

No direct or indirect negative effects to air quality would result from implementation of the No Action alternative. Over time, the existing Torres Pit would be closed and reclaimed which would have a direct positive effect on air quality by reducing the amount of disturbed, open, unvegetated land, thereby reducing the amount of land susceptible to wind erosion locally and regionally.

### **4.1.2.9 Noise**

No direct or indirect negative effects to noise would result from implementation of the No Action alternative.

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## **4.2 CUMULATIVE EFFECTS ANALYSIS**

A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other action.

### **4.2.1 CUMULATIVE ACTIONS**

#### **4.2.1.1 Past and Present Actions**

Both past and present sand and gravel mining is quite common in the local area. Numerous sand and gravel mining operations at varying levels of progression dot the landscape on both the east and west rim of the Rio Grande gorge. Some area mines are characterized by fully disturbed, open land, while others have been closed and entirely reclaimed. The existence of past and present mining operation has cumulatively resulted in increased emissions from dust lifted by wind. Also, the cumulative effect to wildlife is a reduction in the total amount of forage and suitable habitat.

Increased development in rural Taos County has also resulted in increased numbers of unpaved roadways and varying levels of disturbance. At times of high wind, air quality can be negatively affected by the combined fugitive dust emissions from all poorly stabilized or disturbed mining areas as well as all unpaved roadways and disturbed areas in Taos County.

Additionally, the cumulative effect of multiple sand and gravel mining operations has been a reduction of the total vegetative cover in the region. This reduction in vegetation impacts both wildlife due to a reduction in forage and temporary habitat loss. Although reclamation of mining areas is required to closeout a mining operation, few mines have successfully completed reclamation in the area. The result is an increase in fugitive dust emissions by wind erosion from these unstabilized, unreclaimed mine areas.

#### **4.2.1.2 Reasonably Foreseeable Actions**

Although mining operations in the general area may continue to produce new sand and gravel materials, only relevant components of non-speculative, reasonably foreseeable actions can be analyzed. As such, there are no pending or known future sand and gravel mines currently being permitted near the project area. In the event that future mines are permitted, the overall disturbed, open acreage may increase in the region causing additional dust emissions, noise from operations, loss of habitat for plants and wildlife, and loss of forage for wildlife. Also, an increased number of trucks hauling sand and gravel products to customers could contribute to increases in other air pollutants such as carbon monoxide and nitrous oxides. However, the total amounts of any potential pollutant or disturbance area is speculative and cannot be properly analyzed in this EA.

### **4.2.2 CUMULATIVE EFFECTS**

#### **4.2.2.1 Land Tenure and Use**

The total acreage of land approved for mining in the region would increase by 84 acres under the Proposed Action. A decision to permit the continuation of the Torres Pit would enable active mining in the project area to continue for more than 10 years. Land currently used for sand and gravel mining would continue to have this land use in the future. As a result, there would be only a slight cumulative effect to land tenure and use from implementing the Proposed Action.

#### **4.2.2.2 Geology Resources**

Geologic resources in the region are currently exploited by mining sand and gravel materials. The geologic resource of interest is widely distributed, capping large areas of the east and west rim along the Rio Grande gorge near the project area. Based on the sizeable quantity of desirable sand and gravel material in the region, the addition of 84 acres for mining of sand and gravel at the Torres Pit continuation property would not result in a sizeable cumulative impact to geologic resources of the region.

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#### **4.2.2.3 Soils Resources**

Topsoil in the project area is relatively thin ( $\approx 3$  inches). Although not all topsoil has been discreetly stockpiled by all operators in the region, TGP would stockpile topsoil for use in final reclamation. Therefore, the addition of 84 acres of topsoil removal and subsequent reuse would not result in a significant cumulative effect to soils resources.

#### **4.2.2.4 Water Resources**

No cumulative effects to surface water resources are anticipated from the Proposed Action.

The total permitted water right for TGP's nearby water well is 3.0 acre-feet per year. This volume of water is a standard diversion right issued by the NM Office of the State Engineer for domestic water wells. Other wells drilled in the local area also have a diversion right of 3.0 acre-feet per year. The cumulative effect of pumping all wells is not sufficient to cause significant negative cumulative effects to groundwater resources or the water table elevation.

#### **4.2.2.5 Biological Resources**

The addition of 84 acres under the Proposed Action would have a slight temporary cumulative effect on biological resources. Plants would be unable to establish at the site until final reclamation is completed. However, this would not significantly reduce the acreage of lands in the region that provide viable habitat characteristics for native plants found at the project site. Wildlife forage would also be cumulatively reduced by the addition of 84 acres that would be temporarily stripped and completely disturbed. However, wildlife would have access to sizeable areas of similar forage adjacent to the project area and would not experience significant cumulative effects from the Proposed Action.

#### **4.2.2.6 Cultural Resources**

There are no documented cultural sites in the project area. Cultural resources would not experience cumulative impacts from implementation of the Proposed Action.

#### **4.2.2.7 Visual Resources**

The addition of 84 acres to the size of the proposed mine would make it more visible to observers. Although not all observers can view all mine areas in the region, this increase in size would result in a slight cumulative effect to visual resources as more disturbed mining areas would be visible and the overall contrast and form of these mines would be slightly more apparent where visibility of multiple mining areas from a single observation point is high.

#### **4.2.2.8 Air Quality**

The addition of 84 acres that would be temporarily disturbed and completely opened would contribute to the release of fugitive dust emissions. However, windborne dust is generated from a number of sources that also include disturbed land, unpaved roadways, and other past and present mining operations. Although dust emissions may occur from time to time, the use of water for dust control and the application of interim seed on above grade berms would reduce dust emissions and therefore would not create a significant cumulative effect to air quality.

#### **4.2.2.9 Noise**

The Torres Pit is relatively distant to any other noise emitting sources. No other mines exist nearby and no mines are proposed that combined would greatly increase noise levels. As such, there would be no significant cumulative effect to noise from the Proposed Action.

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## 5.0 CONSULTATION AND COORDINATION

### 5.1 SUMMARY OF CONSULTATION AND COORDINATION

BLM consultation and coordination activities were initiated and conducted with other agencies and entities as part of this EA. All appropriate Tribes (including Taos Pueblo) were contacted early during scoping. No Tribes requested formal consultation or coordination with the TFO.

TFO wildlife biologist Valerie Williams has initiated an informal consultation with the U.S. Fish and Wildlife Service (USFWS) in order to coordinate the safe and successful, ethical relocation of any colonies of Gunnison's prairie dog that occupy the project area. Consultation with the USFWS is ongoing and will continue throughout the EA process to ensure success.

### 5.2 SUMMARY OF PUBLIC PARTICIPATION

On March 15, 2010, the 30-day formal public scoping period was opened. A press release was issued to Taos News on March 15, 2010 soliciting the general public to comment on the Torres Pit project. On March 18, a project brief was published in the Taos News outlining the basic project description and soliciting comments from the public. The formal scoping period closed on April 15, 2010 with no public comments received.

The proposed project was posted in the online NEPA log on April 9, 2010. A 15-day public review and comment period on this EA will be provided upon completion of this EA.

#### 5.2.1 PUBLIC COMMENTS ANALYSIS

*This section will be completed following the 15-day public review and comment period.*

### 5.3 LIST OF PREPARERS

The following is a list of preparers that either authored parts of the analysis, reviewed project deliverables, or provided feedback and comments during the preparation of this EA.

INDIVIDUAL	AGENCY/ORGANIZATION	TITLE
Charles Black	Permits West, Inc.	Wildlife Biologist
Brian Wood	Permits West, Inc.	Environmental Consultant
Tim Holman	Permits West, Inc.	Environmental Consultant/Author
Winnie Devlin	Permits West, Inc.	Botanist
Wayne Frasier	Taos Gravel Products	Manager
Joe Mirabal	BLM RPFO	Geologist
Brad Higdon	BLM TFO	Planning and Environmental Coordinator
Sam DesGeorges	BLM TFO	Field Manager
Tami Torres	BLM TFO	Recreation Planner
Valerie Williams	BLM TFO	Wildlife Biologist
Greg Gustina	BLM TFO	Fisheries Biologist
Paul Williams	BLM TFO	Archaeologist

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# **Appendices:**

**Appendix A – Wildlife Survey Report**

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**Appendix B – Plant Survey Report**

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# **WILDLIFE SURVEY REPORT**

**FOR**  
**PEROVICH PROPERTIES, INC. DBA TAOS GRAVEL PRODUCTS'**  
**TORRES PIT GRAVEL EXTRACTION OPERATION**

Section 11, T. 26 N., R. 11 E.  
Taos County, New Mexico

**JUNE 7, 2010**



*PREPARED BY:*



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## 1.0 INTRODUCTION

Perovich Properties, Inc. DBA Taos Gravel Products (TGP) is proposing the extension of the existing Torres Pit gravel extraction operation. The project area is located in Section 11, T. 26 N., R. 11 E., Taos County, New Mexico. The project area is located approximately 2 miles north (on the west side) of the Rio Grande Gorge Bridge. The total proposed acreage of the Torres Pit extension is approximately 90 acres. The entire extension property is on privately owned surface with Federal (BLM) minerals.

One Federal Candidate Species was located in the project area. Two small colonies of the montane subspecies of the Gunnison's prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were found near the center of the extension property. No other threatened, endangered, or special status wildlife species were documented within or adjacent to the project area during the wildlife survey.

## 2.0 METHODS

Prior to the field surveys, the following databases were reviewed:

- USFWS Listed and Sensitive Species in Taos County (downloaded and reviewed March 30, 2010)
- New Mexico Department of Game and Fish (NMDGF) BISON-M Threatened, Endangered, and Sensitive Taxa wildlife species in Taos County (downloaded and reviewed March 30, 2010)

The following tables in Section 4.0 provide information on the species identified in these databases.

On March 31, April 7, and May 9, 2010, wildlife biologist Charles Black conducted pedestrian surveys of the project site to inspect and document the potential presence of threatened, endangered, or special status species. On March 31, 2010, the weather was partly cloudy, and windy with a high around 65° F. On April 7, 2010, the weather was clear and windy with a high near 60° F. On May 9, 2010, the weather was partly cloudy and breezy with a high around 65° F.

The area surveyed consisted of the 90-acre project site. An additional 1.0-mile line-of-sight survey was conducted from the project area for raptor nests. This involved walking the west rim of the Rio Grande Gorge located approximately 0.4 miles east of the eastern boundary of the proposed project area. The surveyor used 10 x 40 binoculars and a 15x-60x spotting scope.

Because the site was deemed suitable habitat for two Federal Species of Concern, the mountain plover and the burrowing owl, follow-up surveys were conducted on May 9, 2010. This date was selected because both migratory species would have arrived at the site by this date. These surveys consisted of arriving at the areas of suitable habitat at first light (0600) and scanning with a 15x-60x spotting scope and listening for distinctive vocalizations. Surveys were conducted from 0600-1130.

### 3.0 DESCRIPTION OF EXISTING HABITAT

Terrain on and around the project area is relatively flat. The elevation at the site is approximately 7,010 feet. Vegetation at the site is dominated by monotypic sage flats (*Artemesia spp*). There are patches of open sparse grassy areas. The site contains a high percentage (40-60 %) of bare ground. There are no perennial streams or wetlands at this site.

Overall, the project area shows signs of heavy disturbance due to its proximity to the existing Torres Pit, historic overgrazing, and stockpiling and storage of large amounts of machinery and equipment. Equipment includes several old empty fuel tanks with open cavities that present a hazard to birds and bats.

### 4.0 THREATENED, ENDANGERED, AND SPECIAL STATUS WILDLIFE SPECIES

#### 4.1 FEDERAL T&E, CANDIDATE, AND SPECIES OF CONCERN WITH POTENTIAL TO OCCUR

The following table contains federally listed, candidate, and species of concern that are known to or have the potential to occur in Taos County, New Mexico.

Species	Status*	Habitat Associations	Potential to Occur**
<b>Mammals</b>			
Black-footed ferret ( <i>Mustela nigripes</i> )	E	Open grasslands with year-round prairie dog colonies.	NP
Gunnison’s prairie dog (High Elevation) ( <i>Cynomys gunnisoni montanus</i> )	C	Open grasslands and prairies, generally above 7000 feet. Gunnison’s prairie dogs found around both sides of the Rio Grande Gorge in Taos County are considered montanus	K
Townsend’s big-eared bat ( <i>Corynorhinus townsendii</i> )	SC	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS
NM meadow jumping mouse ( <i>Zapus hudsonius luteus</i> )	C	High, wet montane meadows	NP
<b>Birds</b>			
Southwestern willow flycatcher ( <i>Empidonax traillii extimus</i> )	E	Breeds in dense, shrubby riparian habitats, usually in close proximity to surface water or saturated soil.	NP
Burrowing owl ( <i>Athene cunicularia</i> )	SC	Open grassland and prairies, generally in proximity to prairie dog towns	S
Mexican Spotted Owl ( <i>Strix occidentalis lucida</i> )	T	Rocky canyons in mature montane forests below 9500 feet in elevation	NP
Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )	C	Extensive riparian corridors along lowland streams and rivers	NP
American peregrine falcon ( <i>Falco peregrinnus anatum</i> )	SC	In New Mexico, peregrine falcons are rare breeders in rocky, steep cliff area from 4500 to 9000 feet, generally near water or mesic canyons. The species also occurs as an	S

Species	Status*	Habitat Associations	Potential to Occur**
		uncommon migrant species statewide, where it is most often recorded in lowland wetland areas and along rocky, steep cliffs	
Baird's sparrow ( <i>Ammodramus bairdii</i> )	SC	Short grass prairie and desert grassland,. In Northeast New Mexico this species is an uncommon migrant	NP
Mountain Plover ( <i>Charadrius montanus</i> )	SC	In Northeast New Mexico this species breeds in dry, occasionally disturbed, or intensively grazed, open, flat grasslands. Bare ground, short vegetation, and flat topography are indicators of ideal habitat.	S
<b>Fish</b>			
Rio Grande Cutthroat trout ( <i>Oncorhynchus clarki virginalis</i> )	C	High montane free- stone streams and rivers	NP

Status\*

E: Endangered      T: Threatened      C: Candidate      SC: Species of Concern

Potential to Occur\*\*

K: Known, documented observation within project area.

S: Habitat suitable and species suspected to occur within the project area.

NS: Habitat suitable but species is not suspected to occur within the project area.

NP: Habitat not present and species unlikely to occur within the project area.

## 4.2 BLM SENSITIVE SPECIES WITH POTENTIAL TO OCCUR

The following table contains BLM sensitive species that are known to or have the potential to occur within the project area.

Species	Status*	Habitat Associations	Potential to Occur**
<b>Mammals</b>			
Little brown occult myotis bat ( <i>Myotis lucifugus occultus</i> )	SS	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS
Fringed myotis bat ( <i>Myotis thysanodes thysanodes</i> )	SS	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS
Long-eared myotis bat ( <i>Myotis evotis evotis</i> )	SS	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS
Long-legged myoits bat ( <i>Myotis volans interior</i> )	SS	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS
Small-footed myotis bat ( <i>Myotis ciliolabrum</i> )	SS	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS

Species	Status*	Habitat Associations	Potential to Occur**
Yuma myotis bat ( <i>Myotis yumanensis yumanensis</i> )	SS	Found in desert scrub, Pinyon-Juniper, and coniferous forests. Roosts in caves or abandoned mines, occasionally in buildings.	NS
<b>BIRDS</b>			
Ferruginous hawk ( <i>Buteo regalis</i> )	SS	In Northern New Mexico, this species nests in open grasslands and prairies. It also migrates and winters in similar habitats.	S

Status\*

SS: BLM Sensitive Species

Potential to Occur\*\*

K: Known, documented observation within project area.

S: Habitat suitable and species suspected to occur within the project area.

NS: Habitat suitable but species is not suspected to occur within the project area.

NP: Habitat not present and species unlikely to occur within the project area.

### 4.3 STATE OF NM LISTED, CANDIDATE, AND SENSITIVE TAXA WITH POTENTIAL TO OCCUR

The following table contains State of New Mexico listed, candidate, and sensitive species that are known to or have the potential to occur in Taos County, New Mexico.

Species	Status*	Habitat Associations	Potential to Occur**
<b>MAMMALS</b>			
Red fox ( <i>Vulpes vulpes fulva</i> )	ST	This species occurs in a variety of open habitats including deserts, grasslands and prairies.	S
Pine Marten ( <i>Martes Americana origenes</i> )	T	This member of the weasel family occurs in coniferous woodland in Northern New Mexico generally > 9000 feet	NP
<b>BIRDS</b>			
Bald eagle ( <i>Haliaeetus leucocephalus alascanus</i> )	T	In Northern New Mexico, this species migrates and winters along rivers and lakes, with large trees and snags.	NP
Brown Pelican ( <i>Pelecanus occidentalis carolinensis</i> )	E	This is strictly a marine species which occurs in New Mexico only as a rare vagrant.	NP
Loggerhead shrike ( <i>Lanius ludovicianus excubitorides</i> )	ST	This species occurs in a variety of open habitats including deserts, grasslands and prairies, usually with some shrub component present	S
Boreal Owl ( <i>Aegolius funereus</i> )	T	This tiny owl is only known from a few sites in New Mexico, and nests in dense stunted conifer stands surrounded by open meadows, in montane habitats > 9500 feet	NP
White-tailed ptarmigan ( <i>Lagopus leucura altipetens</i> )	E	This species is confined to very high montane zones at or above timberline	NP
Gray vireo ( <i>Vireo vicinior</i> )	T	This neotropical migrant song bird breeds locally in open pinyon/juniper woodland and savanna in Taos County	NP

Status\*

E: Endangered      T: Threatened      C: Candidate      ST: Sensitive Taxa

Potential to Occur\*\*

K: Known, documented observation within project area.

S: Habitat suitable and species suspected to occur within the project area.

NS: Habitat suitable but species is not suspected to occur within the project area.

NP: Habitat not present and species unlikely to occur within the project area.

## **5.0 RESULTS**

One Federal Candidate Species was located on the proposed site. Two small colonies of the montane subspecies of the Gunnison's prairie dog (*Cynomys gunnisoni montanus*), a recent addition as a Federal Candidate for listing as Threatened or Endangered, were found near the center of the project site. No other threatened, endangered, or special status wildlife species were observed within or adjacent to the project area during the March 31, April 7, or May 9, 2010 wildlife surveys.

### **5.1 GUNNISON PRAIRIE DOG (HIGH ELEVATION POPULATION)**

Two small colonies of the high elevation subspecies of the Gunnison's prairie dog were documented during surveys. This subspecies is a Candidate for listing as Threatened or Endangered. As long as mitigation measures outlined in the Recommendations Section of this BA are implemented, this species will not be adversely impacted by the proposed project.

### **5.2 RED FOX**

The project site is suitable habitat for this nocturnal species. No fox sign or burrows were observed during surveys. It is likely that red foxes occasionally occur within the project area. Given the relatively small scale of the proposed disturbance, this species will not be adversely impacted by the proposed project.

### **5.3 BLM SENSITIVE BAT SPECIES**

No bats were observed during wildlife surveys at the proposed site. There is no open water at or near the site. Any potential bat species could roost in open cavities in old stored tanks at the site. As long as mitigation measures outlined in the Recommendations Section of this report are implemented, no bat species will be adversely impacted by the proposed project.

### **5.4 FERRUGINOUS HAWK**

The proposed project area is marginal breeding habitat for ferruginous hawks. This species favors wide open grasslands and prairies as breeding sites. The project area is dominated by sagebrush, although some open grassy areas are present. No raptor nests were found within a one-mile radius of the project area. It is likely that ferruginous hawks migrate through the project area. Given the relatively small scale of the proposed disturbance, this species will not be adversely impacted by the proposed project.

### **5.5 AMERICAN PEREGRINE FALCON**

The west side of the Rio Grande Gorge, located approximately 0.4 miles east of the east boundary of the site contains suitable nest structures for peregrines. No active raptor nests were observed within a one-mile radius of the project boundary during the April 7, 2010 survey.

The project area is suitable migration habitat for peregrines. Given the relatively small scale of the proposed disturbance, this species will not be adversely impacted by the proposed project.

## **5.6 MOUNTAIN PLOVER**

The project area contains suitable nesting habitat for mountain plovers. The sparsely vegetated open areas around the prairie dog colonies are potential areas for this species to nest. No plovers were observed during the initial wildlife surveys, although the survey dates were too early in the season for this migratory species. Mountain plovers probably arrive at the site in late April. A mountain plover survey was conducted on May 9, 2010 at the proposed site. No plovers were seen or heard during the survey.

## **5.7 BURROWING OWL**

The project site is suitable nesting habitat for burrowing owls given the presence of prairie dog towns. No owls were observed during the initial wildlife surveys, although the survey dates were too early in the season for this migratory species. Burrowing owls probably arrive at the site in late April. A burrowing owl survey was conducted on May 9, 2010 at the proposed site. No burrowing owls were seen or heard during the survey.

## **5.8 LOGGERHEAD SHRIKE**

The project site and adjacent habitat is potential habitat for shrikes. Shrikes are probably an uncommon breeder and migrant in project area. Given the relatively small scale of the proposed disturbance, no take is anticipated and this species will not be adversely impacted by the proposed project.

## **5.9 MIGRATORY BIRDS**

Migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from a “take”. Take is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities”. A “take” does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof.

Ten species observed during the wildlife surveys are protected under the Migratory Bird Treaty Act (see the species list below). No take of migratory birds is anticipated from the proposed project.

## **6.0 SPECIES OBSERVED DURING THE SURVEYS**

While the field visits focused on T&E species, observations of non-listed species were also noted. The following lists include all wildlife species observed:

### **6.1 BIRD SPECIES OBSERVED**

- Turkey vulture (*Cathartes aura*)
- American kestrel (*Falco sparverius*)

- Domestic pigeon (*Colombia livia*)
- Say's phoebe (*Sayornis saya*)
- Horned lark (*Eremophila alpestris*)
- Western bluebird (*Sialia mexicanus*)
- Common raven (*Corvus corax*)
- Black-billed magpie (*Pica hudsonia*)
- American robin (*Turdus migratorius*)
- Vesper sparrow (*Pooecetes gramineus*)
- Sage sparrow (*Amphispiza belli*)

## **6.2 MAMMALIAN SPECIES OBSERVED:**

- Gunnison's (High Elevation) prairie dog (*Cynomys gunnisoni montanus*)
- Mule Deer (*Odocoileus hemionus*)
- Desert cottontail (*Sylvilagus audubonii*)
- Black-tailed jackrabbit (*Lepus californicus*)
- Coyote (*Canis latrans*)

Mammalian observations tend to be from tracks, scat, and other sign.

## **7.0 RECOMMENDATIONS**

- It is recommended that all Gunnison's prairie dogs (Montane subspecies) at the site be moved safely to a suitable location (yet to be determined), or that the prairie dog colonies be avoided during construction activities.
- It is recommended that all open cavities in old stored tanks and other equipment be sealed promptly as they are a hazard to birds and bats.

## **8.0 REFERENCES**

New Mexico Department of Game and Fish. BISON-M threatened, endangered, and sensitive taxa wildlife species in Taos County (downloaded and reviewed March 30, 2010) <http://www.bison-m.org/reports>.

Stewart, James. New Mexico Department of Game and Fish Small Mammal Biologist. Personal Conversation Concerning *Cynomys gunnisoni montanus* at the Project Site. April 5, 2010.

U.S. Fish and Wildlife Service Listed and Sensitive Species in Taos County (downloaded and reviewed March 30, 2010) <http://www.fws.gov/southwest/es/NewMexico/>

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**PLANT SURVEY REPORT**  
**FOR**  
**PEROVICH PROPERTIES, INC. DBA TAOS GRAVEL PRODUCTS'**  
**TORRES PIT GRAVEL EXTRACTION OPERATION**

Section 11, T. 26 N., R. 11 E.  
Taos County, New Mexico

**APRIL 16, 2010**



*PREPARED BY:*



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## 1.0 INTRODUCTION

This report evaluates the potential for disturbance to 11 plant species listed as rare for Taos County, New Mexico (NMRPTC 1999): *Astragalus cyaneus*, *Astragalus puniceus* var. *gertrudis*, *Astragalus ripleyi*, *Delphinium alpestre*, *Delphinium robustum*, *Draba smithii*, *Erigeron subglaber*, *Eriogonum lachnogynum* var. *colobum*, *Hackelia hirsuta*, *Lorandersonia microcephala*, and *Salix arizonica*. In addition, all plants occurring in the project area were identified to the extent possible in order that the presence of any State-listed noxious weeds (NMDA 2009) could be noted.

## 2.0 PROJECT DESCRIPTION

The project area is located on privately-owned land just east of State Road 64, approximately 5 miles northwest of the town of Taos in Taos County, New Mexico. The proposed project entails using the land as a borrow pit for road improvement projects in the area.

The project area consists of approximately 90 acres of relatively flat terrain about half a mile west of the Rio Grande Gorge and is adjacent to an existing pit that lies south and west of the project area. The project area is located in Section 11, T. 26 N., R. 11 E. at an elevation of 7135 feet. The soil is a clay loam that derives from igneous and metamorphic rock of the Silva-Sedillo association.

Although the dominant shrub is big sagebrush (*Artemisia tridentata*), the original plant community—prior to heavy livestock grazing of the area—was most likely Desert Grassland rather than Great Basin Desert Scrub (Dick-Peddie 2000). In addition to big sagebrush, dominant plants include broom snakeweed (*Gutierrezia sarothrae*) and ring muhly (*Muhlenbergia torreyi*), both consistent with heavy grazing. There is a patch of land in the northwest corner of the project area with almost no sagebrush, dominated by grasses such as Jame's galleta (*Pleuraphis jamesii*) and black grama (*Bouteloua eriopoda*), the primary shrub in this area being winterfat (*Krascheninnikovia lanata*). This patch provides evidence that the original plant community of the area is Desert Grassland. The lack of shadscale (*Atriplex confertifolia*) and greasewood (*Sarcobatus vermiculatus*) also indicate that this plant community is not true Great Basin Desert Scrub.

Immediately adjacent to the southeast corner of the project area is a reclaimed pit vegetated by the following grasses: Indian ricegrass (*Achnatherum hymenoides*), Western wheatgrass (*Agropyron smithii*), intermediate wheatgrass (*Agropyron intermedia*), blue grama (*Bouteloua gracilis*), Jame's galleta (*Pleuraphis jamesii*), and alkali sacaton (*Sporobolus airoides*).

## 3.0 METHODOLOGY

The proposed project area was surveyed on March 31 and April 7, 2010 under partly cloudy skies on cool days with a mild to strong breeze. The survey of the proposed project area was conducted at 25-foot intervals by a zigzag pedestrian transect. A 25-foot wide buffer along the outer borders of the entire area was also surveyed.

## 4.0 SURVEY RESULTS

Of the 11 species listed as rare for Taos County (*Astragalus cyaneus*, *Astragalus puniceus* var. *gertrudis*, *Astragalus ripleyi*, *Delphinium alpestre*, *Delphinium robustum*, *Draba smithii*, *Erigeron subglaber*, *Eriogonum lachnogynum* var. *colobum*, *Hackelia hirsuta*, *Lorandersonia microcephala*, and *Salix arizonica*), none were found in the project area, all due to lack of potential habitat.

No State-listed noxious weeds were found in the project area.

## 5.0 DISCUSSION

The proposed project will not impact any species of concern listed for Taos County.

## 6.0 REFERENCES

Allred, Kelly W. 1997. *A Field Guide to the Grasses of New Mexico*. Agricultural Experiment Station, New Mexico State University. Las Cruces, New Mexico.

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Whitson, Tom D., Larry C. Burrill, Steven A. Dewey, David W. Cudney, B.E. Nelson, Richard D. Lee, and Robert Parker. *Weeds of the West*. Jackson: University of Wyoming, 1996.

### Plants species identified during 2010 Field Surveys

Species	Common Name
<b>Trees</b>	
<i>Juniperus monosperma</i>	One-seeded juniper
<b>Shrubs &amp; Subshrubs</b>	
<i>Artemisia tridentata</i>	Big sagebrush
<i>Artemisia frigida</i>	Fringed sage
<i>Atriplex canescens</i>	Four-winged saltbush
<i>Chrysothamnus greenii</i>	Green's chamisa
<i>Chrysothamnus nauseosus</i>	Rubber rabbitbrush

Species	Common Name
<i>Krascheninnikovia lanata</i>	Winterfat
<i>Gutierrezia sarothrae</i>	Broom snakeweed
<b>Cacti</b>	
<i>Echinocereus pectinatus</i>	Hedgehog cactus
<i>Opuntia polyacantha</i>	Starvation pricklypear
<b>Grasses</b>	
<i>Achnatherum hymenoides</i>	Indian ricegrass
<i>Agropyron smithii</i>	Western wheatgrass
<i>Agropyron intermedia</i>	Intermediate wheatgrass
<i>Aristida purpurea</i>	Purple three awn
<i>Bouteloua eriopoda</i>	Black grama
<i>Bouteloua gracilis</i>	Blue grama
<i>Elymus longifolius</i>	Bottlebrush squirreltail
<i>Muhlenbergia torreyi</i>	Ring muhly
<i>Pleuraphis jamesii</i>	Jame's galleta
<i>Sporobolus airoides</i>	Alkali sacaton
<b>Forbs</b>	
<i>Conyza canadensis</i>	Horseweed
<i>Cryptantha crassisejala</i>	Thicksepal hiddenflower
<i>Cymopterus bulbosus</i>	Indian parsley
<i>Eriogonum alatum</i>	Winged buckwheat
<i>Helianthus annuua</i>	Common sunflower
<i>Kochia scoparia</i>	Kochia
<i>Lactuca serriola</i>	Prickly lettuce
<i>Machaeranthera canescens</i>	Purple aster
<i>Salsola iberica</i>	Russian thistle
<i>Sisymbrium altissimum</i>	Tumble mustard
<i>Townsendia exscapa</i>	Early easterdaisy
<i>Tragopogon dubius</i>	Western salsify