

**United States Department of the Interior
Bureau of Land Management
Las Cruces District Office
1800 Marquess
Las Cruces, NM 88005**



Environmental Assessment for
Tesoro Del Alma Mine Plan of Operations (NMNM126303)
Sections 3 & 4 of T. 16 S., R. 4 W. (N.M.P.M.)
DOI-BLM-NM-L000-2011-0123-EA

/S/ Mike Smith Geologist July 1, 2011

Signature and Title of Project Lead

Date

/S/ Jennifer Montoya, Planning and Environmental Coordinator July 1, 2001

Signature and Title Lead of Reviewer

Date

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1 INTRODUCTION

This Environmental Assessment (EA) is submitted to the US Department of the Interior, Bureau of Land Management (BLM), Las Cruces District Office for the Tesoro Del Alma Project, a proposed underground mining operation to further develop and expand existing underground operations conducted by another operator in the 1970's. This EA has been prepared and is submitted to support the Mine Plan of Operations NMNM 126303, for the Tesoro Del Alma Project submitted on March 9, 2011.

The proposed Tesoro Del Alma Underground Mining Project is located on the west flank of the Caballo Mountains, about three (3) miles east of Caballo Reservoir in Sierra County, New Mexico. The project is located in T16S, R4W, Sections 3 and 4 NMPM, at Latitude N32⁰ 56' 36", Longitude W107⁰ 14' 56". The area is a semi-arid, high Chihuahuan Desert environment, with winter high temperatures averaging in the high 50's to low 60's F, and lows in the mid-20's F. Average annual precipitation is about 10 inches, most of which generally falls during the summer monsoon period ranging from mid-June to the end of September.

The project is owned by Tesoro Del Alma, Inc. (Tesoro) of Bakersfield, California, and is a project to reenter the existing mine shaft that was constructed in the 1970's, known as the Droltre Hole, which was developed and worked by a previous operator.

The Tesoro Del Alma Project will be a low tech mining operation utilizing existing surface facilities, virtually none other than a cleared and somewhat leveled area around the shaft, hand and hand operated power tools in underground operations and mobile equipment on the surface. There are no plans for any surface facilities, stockpiles or other surface disturbance other than some minor earthwork to improve the access road into the site for a short distance and possibly some additional leveling in the area around the shaft and work to improve surface water diversion (run-on), and overall erosion and sediment control.

This Plan of Operations is being submitted consistent with the requirements of 43 CFR 3809.11. On February 15, 2011, an application for a Minimal Impact New Mining Operation was submitted to the New Mexico Department of Energy, Minerals and Natural Resources Department (EMNRD). That application has been determined to be administratively complete by EMNRD, and they have assigned the Permit Application Number of SI033MN to the Tesoro Del Alma Project. The application has been distributed to other agencies for review and comment, and a draft permit is scheduled to be posted in late April, 2011. The Operator of the project is:

Tesoro Del Alma, Inc. Contact: Nick Fleming, CEO and President
6077 Coffee Rd., Suite 4 PMB 196
Bakersfield, California 93308-9417
Ph: 661-600-4045 Email: nfleming@tesoro-del-alma.com

The property Mineral Claim information is:

BLM Mineral Claim Serial Numbers for the Tesoro Del Alma Project are:

Load Claim: TDA6, NMMC 167937, located in Sections 3 & 4, T16S, R4W, NMPM,

Tunnel Site Claim: TESORO 1, BLM Serial Number NMMC 189169

1.1 Purpose and Need

The Purpose of the Proposed Action is to allow the development of an underground mining operation for economic benefit. The need for the action is established by the BLM's responsibility under FLPMA to respond to a request for approval of this underground mining operation.

1.2 Decision to be Made

This process will allow the BLM to make the decision to grant authorization for the development of the underground mine as described in the submitted Mine Plan of Operations.

1.3 Plan Conformance

This proposed action conforms to the White Sands Resource Area, Resources Management Plan (RMP), October 1986 because the Plan states that public land is generally open to mineral entry, and Tesoro Del Alma holds active mineral claims for the project area. The Tesoro Del Alma Project Area has not been withdrawn from mineral entry and is open to mineral entry under the 1872 Mining Law.

1.4 Scoping and Issues

The proposed project is small in scale, has little new disturbance and commits to reclamation of surface disturbances created by other parties in the 1970's and left in the disturbed condition through the present. Resources that have potential to be affected from this project include:

Air Quality

Cultural Resources

Special Status Species/T&E

Livestock Grazing

Wildlife

Watershed Hydrology

Soils

Vegetation

Visual Resources

1.4.1 Internal Scoping

The MPO, NMNM 126303, for the Tesoro Del Alma Project was presented to the LCDO NEPA Interdisciplinary Team (IDT) on April 18, 2011. The IDT developed questions and additional information required to make a decision, and these were communicated to the project owners and their representative who has prepared the MPO.

1.4.2 External Scoping

Prior to submittal of the MPO to the LCDO, the applicant had prepared and submitted an application for a Minimal Impact Mining Permit to the New Mexico Mining and Minerals Division, Mining and Reclamation Program (NM MARP). The NM MARP reviewed the application and circulated copies of the permit application to several NM State agencies, including the Environment Department, NM Department of Game and Fish, NM Office of the State Engineer and NM State Historic Preservation Officer.

1.4.3 Resource Issues Identified

The existing condition of the project area consists of disturbances from previous, unauthorized mining activities, and includes an area of approximately 125 feet by 75 feet which was excavated to a depth of approximately 20 feet, and then a shaft was sunk to a depth of approximately 128 feet. The material from these excavations were pushed uphill, laterally and downhill. This disturbance was associated with what is referred to as the Drolte Hole. The shaft has been safeguarded by the current Mining Claim holders, with the installation of a locking steel cover.

In addition, a trench was excavated to the west of this area about 50 feet at a later time by a different operator. The trench is approximately 110 feet north and south by 70 feet east and west and the bottom slopes from ground level at the southern extent to about 60 feet deep at the northern extent.

No known actions were taken to identify or preserve resources from these operations. The current condition is unstable, eroding through wind and precipitation, is a negative effect to visual resources and is a physical safety hazard to humans, livestock and wildlife, with the steep walls of the existing trench. Vegetation is largely lacking, and habitat value is very limited.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

Mining will consist initially of removing mined material that was left in mine workings developed in a Pre-Act (“Pre-Act” refers to before promulgation of the New Mexico Mining Act of 1993) shaft known as the Droltre Hole, which was developed and worked sometime in the 1970's. Existing mined material will be loaded with hand tools, shovels, picks, wheelbarrows, etc., into hoisting containers (e.g. buckets), to be hoisted to the surface in a “mancage” utilizing a mobile hoist/crane. In addition, some work may be done with drills, either electric or pneumatic, to take additional materials out of mineral veins. If determined necessary, a product named Dexpan may be employed to assist in loosening rock for mine development. Dexpan is a non-explosive, controlled demolition agent, a powder that generates up to 18,000 psi expansive strength when mixed with common water. Dexpan is used in drilled holes where explosive would have been used, and breaks rock with no explosion or sound. (see www.dexpan.com). The Dexpan will only be brought to the mine when it is planned for use that same day, and will be removed from the mine on a daily basis and will not be stored on-site.

Power for mine lighting will be provided by portable generators located on the surface. Ventilation will be provided by portable fans or a surface compressor and ventilation tubing. Only minor earthwork will be required within the project area to allow safe access for personnel, vehicles and the mobile hoist/crane. The earthwork will consist of minor grading within the existing access road to the project area. This will consist of some minor filling and then regrading of about fifty (50) feet of Pre-Act existing roadway, utilizing a small bulldozer (CAT D5 or D6 sized), to allow safe access. It is anticipated that this work can be done within the existing road prism; however reclamation of the road after operations may require some disturbance outside of the existing road prism in order to achieve drainage of precipitation off of the road to minimize the potential for erosion.

Additional grading will be done within existing, Pre-Act boundaries of areas that have already been disturbed, including minor work within the area immediately adjacent to the shaft. To minimize potential

effects from surface waters to the area of the project, Best Management Practices (BMP's) such as a low, wide and drivable berm will be maintained on the entry to the shaft work area (east side) to divert run-on from entering the site. In addition, should it prove necessary, other BMP's such as waddles, straw bales or silt fence may be installed downgradient of any work areas to minimize potential effects from the project.

At completion of the project, when no additional existing mined material is remaining and additional underground testing determines that ore grade material is no longer available, the shaft will be permanently closed. The first step of closure and reclamation will consist of construction and in-situ ten (10) foot plug of polyurethane foam (PUF), into the shaft. First, a metal platform will be welded into the 36 inch steel pipe at 10 feet below the surface. Then a bulkhead to support the PUF will be constructed at approximately the same level in the annulus of the shaft surrounding the 36 inch pipe. Then approximately enough mixed PUF solution will be added to result in approximately 30 cubic yards of complete PUF, distributed inside of the pipe and in the annulus surrounding the pipe to the shaft walls. The PUF plug will be installed in lifts, with only enough PUF added to achieve a 12 to 18 inch lift at one time. This lift will be allowed to set and then the next lift will be added. At completion of the construction of the PUF plug, the area between the top of the PUF plug and the inside edge of the steel lid will be filled with concrete. When the concrete has set, the steel lid will be closed and welded in the closed position, and the entire area will be backfilled with surrounding dirt and rock to an elevation that will result in positive drainage to shed precipitation and minimize the potential for infiltration into the underground mine operations. Runoff from the reclaimed area will be controlled by stormwater BMPs including straw bales, wattles and diversion of runoff from precipitation. In addition, the reclaimed and re-vegetated slopes will result in more stable and non-erosive conditions than the current situation. The volume of fill required to achieve this cover and positive drainage is approximately 1,000 cubic yards, which is available from the project area from material that was excavated by previous, Pre-Act operations. This material will be placed in the depression over the sealed shaft using a bulldozer, excavator and front end loader. The fill will be graded to blend into the rock face to the north, and then tie into slopes on the west, south and east. The fill will then be lightly scarified and hand broadcast with the seed mix described in this application. A commercial fertilizer applied at the rate of 100 pounds per acre, and the area will have 2-tons per acre of weed-free straw applied and crimped or tackified in place.

In addition to the work to be done to plug and seal the shaft and reclaim the area around the shaft, Tesoro Del Alma is also committing to having the trench to the west of the shaft, which was constructed by the previous operators, backfilled and reclaimed. The trench area will be backfilled with surrounding dirt and rock that was excavated from the trench, to an elevation that will result in positive drainage to shed precipitation and minimize potential for infiltration into the underground mine operations. Runoff from the reclaimed area will be controlled by stormwater BMPs including straw bales, wattles and diversion of runoff from precipitation. In addition, the reclaimed and re-vegetated slopes will result in more stable and non-erosive conditions than the current situation.. The volume of fill required to backfill this trench and achieve this cover and positive drainage is approximately 7,500 cubic yards, which is available from the project area from material that was excavated by previous, Pre-Act operations. This material will be placed in the trench depression using a bulldozer, excavator and front end loader. The fill will be graded to blend into the rock faces to the east and north, and then tie into slopes on the west and south. The fill will then be lightly scarified and hand broadcast with the seed mix described in this Plan of Operations.

Table 1 Tesoro del Alma Reclamation Seed Mix.

Plant Name	Scientific Name	Variety	Application Rate (per acre)
Black grama	<i>Bouteloua eriopoda</i>	N/A	2.0
Sideoats grama	<i>Bouteloua curtipendula</i>	Vaughn or Niner	3.0
Purple Three Awn	<i>Aristida purpurea</i>	N/A	2.0
Desert Marigold	<i>Baileya multiradiata</i>	N/A	0.25
Fourwing Saltbush	<i>Atriplex canescens</i>	N/A	3.0
		TOTAL	10.25

A commercial, organic fertilizer will be applied at the rate of 100 pounds per acre. In addition, a weed-free straw mulch will be applied at a rate of 2-tons per acres and secured by crimping or with a tackifying agent. At completion of these actions, the entire project area will be fenced with a 4 strand Type A barbed wire fence, consistent with fencing specifications of the Las Cruces District Office of the BLM, to keep livestock from grazing the area until the vegetation is established. This fencing will be removed after three years. Stormwater BMPs will be retained for a three year period and then removed if necessary.

Location Maps and figures depicting Pre-Act existing disturbance, Topography and Cross Sections, as well as Post-Reclamation Topography and Cross Sections are provided in Appendix A of this application.

Maps showing the location of the Project Area are provided in Appendix A. Plan views and cross sections of the Project Area as it currently exists are also provided in Appendix A. There are currently no surface mined areas within the project area other than that pre-existing from previous operators, and no additional surface mining activities are planned. No processing facilities, waste or tailings disposal areas are included in project plans, as all materials brought out of the mine will be transported off-site for processing.

Water management will be done primarily by control of surface water with diversion berms to prevent run-on into the Project Area. Stormwater BMP's (Best Management Practices) will be put in place downgradient of operations to minimize the potential for downgradient effects. The Project Area will be regraded and re-vegetated after operations, including the pre-existing disturbed areas, which will enhance the surface water regime of the area. No groundwater will be encountered or affected by this Project.

The rock in the Project Area, and within the potential ore zone of the project, is intrusive granite. This granite is oxidized in chemical nature with no indications of any sulfide mineralization. In any event, all ore grade rock and mine materials developed in the mine will be removed and taken off-site for processing, and any non-ore rock will be left in place underground in a dry and non-reactive environment.

Quality assurance will be achieved through following good mining practice consistent with Mine Safety and Health Administration (MSHA) requirements, as well as requirements and practices of federal and state agencies that have been developed for the protection of environmental resources. There will be no surface facilities, no on-site fuel storage or storage of any other materials on the surface.

Since there will be no on-site fuel, chemical or other materials storage, the spill contingency will only address potential spills of fueling mobile equipment, generators or compressors. Potential spill volumes are small, and should a spill occur, it will be contained by berming and adsorbent materials. A Spill Kit

will be maintained on one of the mine vehicles and on-site at all times during operations. Soils affected will be excavated and placed in 55-gallon drums and removed to an approved landfill for disposal. Records will be maintained of incidents of spills, estimated volumes and measures to address and dispose of materials.

Operations will be initiated with approval from all regulatory agencies being granted. Operations will be initiated by moving a mobile crane / hoist onto site and lower equipment for lighting, ventilation and underground mining operations into the existing shaft. Personnel will be lowered into the existing mine with this mobile crane / hoist in a man cage. Mining operations will commence by loading of existing mine materials into buckets or other containers and hoisted to the surface. These materials will be taken off-site for storage and then transported to the as yet undetermined processing facility. As mining underground continues and existing mine materials are removed, additional materials will be drilled, broken utilizing Dexpan if necessary, and then removed from the mine in the same manner. The length of time that these activities will continue is unknown at this time, but is expected to continue for up to five (5) years from initiation of operations.

At the completion of mining activities, the shaft will be plugged and closed as described above, and the depression where the shaft is located, as well as the pre-existing trench to the west will be backfilled, graded, seeded, mulched and fenced. These closure and reclamation operations are expected to last approximately three (3) weeks.

Mitigation consists of reclamation of pre-existing disturbances that were not generated, nor the responsibility, of the current project owner. The project area resources will be enhanced by the reclamation of these pre-existing disturbances.

2.2 No Action Alternative

The No Action Alternative would deny authorization to proceed with the proposed Tesoro Del Alma Project. The existing shaft would not be closed and plugged and the area would not be backfilled, regraded or re-vegetated. Practically, the BLM cannot deny a mining claimant the ability to operate on their claim once they have submitted a complete plan of operations, completed NEPA analysis including mitigations, and bonded for surface disturbance. However, the No Action alternative is still evaluated to provide a baseline for identifying and comparing resource affects.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

One alternative considered was deepening the existing trench to access the existing underground mining areas. Because this would result in additional surface disturbances for storage of non-ore materials on the surface, increasing negative effects to soils, vegetation, air quality, surface water quality and wildlife, it was not brought forward for further analyses.

3 AFFECTED ENVIRONMENT

The proposed project area is located on the west side of the Caballo Mountains, and approximately three miles east of Caballo Reservoir. There are no existing buildings, facilities or structures, other than a few

fences for livestock management, and some corrals and wells in the area. The existing environment is rocky, xeric desert community vegetation, and forage available for livestock grazing is sparse. The area has long held interest to mineral exploration and general outdoor recreation. There are a number of access roadways in the general area, and the area is frequented by individuals mostly on weekends.

3.1 Air Quality

The Caballo range is designated a Class II air quality area, which allows for moderate amounts of air quality and visual degradation. Air quality in the proposed action area is generally considered good, reflecting the distance of the proposed operation from stationary sources. The primary air quality concern is dust (PM₁₀) mobilization during high-wind events during the spring months, occasional vehicular traffic due to the area being disturbed and not currently reclaimed or re-vegetated.

3.2 Cultural Resources

Information recorded from archeological surveys indicates nearly continuous habitation in the Caballo Mountain range from BC 9500 to the present. Given the large number of sites already recorded, the Caballo range is considered to have a generally high probability for cultural sites and features throughout the project area. A major historic feature in Sierra County is the Camino Real National Historic Trail, but this Trail passes east of the crest of the Caballo range and will not be affected by the proposed action.

3.3 Special Status Species / Threatened and Endangered

There are thirty-four species of plants and animals listed on the US Fish and Wildlife Service website for Sierra County, New Mexico (http://www.fws.gov/southwest/es/newmexico/sbc_view_all_bc.cfm). None of the species listed are likely to occur in or near the project area. Several are fish, others are species that inhabit significantly different habitat such as forests, etc. Some species, such as the Northern aplomado falcon might fly over the area or even forage there, but would not be obligate to the area. The Desert Bighorn Sheep is listed as threatened by the New Mexico Department of game and fish, and is thought to possibly utilize the general area of the project during lambing.

The one plant species, Todsens pennyroyal, is found in pinon-juniper habitat, which the project area is not. The New Mexico Rare Plants list was also consulted (<http://nmrareplants.unm.edu>), and all but one of the listed species occur at elevations above 5,000 feet, and most in limestone soils. The project area is primarily igneous rock derived soils. The Duncan's Pincushion Cactus (*Escobaria duncanii*) species, is listed on the BLM sensitive species inventory for Sierra County; but is not known to occur in the Caballo Mountains.

3.4 Livestock Grazing

There is one allotment that would be affected by the actions proposed in the project area, which is the Longbottom Canyon Allotment, number 16049. The allotment is a total of 21,506 acres in size, of which 14,853 are Public lands. The longbottom Canyon allotment is permitted for 244 cattle yearlong (CYL) or 2,664 Animal Unit Months (AUMs) at 91 percent public land use and 3 horses yearlong or 33 AUMs at

91% public land use. A primary basewater (Class I) for the allotment with a carrying capacity of 54 CYL is located on private land approximately 3,000 ft northwest of the the proposed project area.

3.5 Wildlife

The west facing slope of the Caballo Mountains, in the area of the proposed project, is rocky soils of igneous origin, with a xeric vegetative community. Mule deer and Desert Bighorn sheep are the most likely larger mammal species to utilize the area, however mid-sized mammal species such as coyote, skunk, javelina and gray fox will also likely be present. Rodents such as rock squirrel, pack-rat, deer mouse, grasshopper mouse will occur, and reptiles such as whip-tailed lizards, earless lizard, horned lizard, bull snake, rattlesnakes and racer snakes are likely as well. Birds will include raptors which may forage on the area on an opportunistic basis including prairie falcon, red-tailed hawk, turkey vulture and other species migrating through seasonally. Other birds species will include Gambel's quail, scaled quail, curved bill thrasher, cactus wren, mourning dove and others, especially during migration.

3.6 Watershed Hydrology

Drainage in the TDA project area consists of high-gradient ephemeral arroyos and gullies which generally only flow during precipitation events. Overland flow collects into these drainages and then into Granite Canyon; a first order tributary to the Rio Grande/Caballo Reservoir. Although infrequent, rain events are often intense and these ephemeral drainages may be subject to flash flooding, especially during summer Monsoons. Perennial surface waters within the upper elevations of the Caballo Range are limited to a few spring sites west of Timber Mountain.

3.7 Soils

Soils in the project area consist of Rock-outcrop-Torriorthents association consisting of at least 40% rock outcrop and 35% Torriorthents and similar soils. Stream sediments and talus make up the remaining 25% of soil association. These soils are set on ridges and alluvial fans and form on mixed gravel alluvium bedrock material. They are generally well drained, nonsaline, and have low calcium carbonate content (five percent or less). Depth to the water table generally exceeds 80 inches.

(<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>).

3.8 Vegetation

Under the Natural Resource Conservation Service (NRCS) website description (<http://esis.sc.egov.usda.gov/ESIS/>) of the area, the area is described as the "hill ecological site". There are no riparian areas or habitat on or near the Project Area. The area is on the west facing slope of the Caballo Mountains, and vegetation consists of common xeric species occurring in poor, rocky soils of the Chihuahuan Desert region. Common vegetative species include Rabbit-brush (*Chrysothamnus spp.*), honey mesquite (*Prosopis glandulosa*), Ocotillo (*Fouquieria splendens*), Prickly Pear Cactus (*Opuntia spp.*), and Sotol (*Dasyllirion Wheeleri*), Tar-bush (*Flourensia cernua*), Little-leaf Sumac (*Rhus microphila*), grama grasses (*Bouteloua spp.*), bush muhly (*Muhlenbergia porteri*) and other desert grasses. At the time of field review of the project area, February 2011, temperatures were at record lows (< 10 degrees F) and no noxious weeds species were identified in the project area.

3.9 Visual Resources

The TDA project area is classified as BLM Visual Resource Management (VRM) class II. The management objective in areas rated as VRM class II is 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 Manual H8410-1: <http://www.blm.gov/nstc/VRM/index.html>).

4 ENVIRONMENTAL EFFECTS

4.1 Impacts of Proposed Action on Wildlife Resources and Special Status Species

The Proposed Action has a potential effect on Desert Bighorn Sheep, which are thought to possibly utilize the general area of the project for lambing. However, since no explosives will be utilized in the operation, all equipment will be removed after shift daily from the area, the potential for effects are minimal. On the other hand, reclamation of the area after operations are complete will enhance the area and habitat for use by Desert Bighorn Sheep over the existing condition. No Special Status Species are likely to be negatively affected from the Proposed Action in the short term due to the small size of the project area relative to the overall habitat available to these species in the area. Long term affects through reclamation of the existing, non-reclaimed areas from previous activities, should result in an enhancement to habitat condition for Special Status Species.

4.2 Impacts of No Action on Wildlife Resources

If the No Action Alternative were selected, there would be no potential for effects to Desert Bighorn Sheep, or their lambing from the proposed activities. There would also be no enhancement of the area by the reclamation of the existing disturbances from previous unauthorized operation performed by other operators.

4.3 Impacts of Proposed Action on Safety, Air Quality, Surface and Ground Water Hydrology, Soils, Vegetation, Visual Resources, Livestock Grazing and Cultural Resources

The Proposed Action will have negligible, short term potential effects on Air Quality, Surface Water Hydrology, Soils, Vegetation, Visual Resources, Livestock Grazing and Cultural Resources. Air Quality has the potential to be effected through increased traffic in the area of dirt roads. This will be mitigated and controlled by applying water to the roadway as needed to minimize fugitive dust emissions. Surface Water Hydrology has the potential for effects from traffic on roadways during heavy precipitation events. This will be controlled and mitigated by minimizing road travel during these events to emergency situations only, and installing and maintaining BMPs to control erosion. There is minimal potential for effects to ground water as all materials taken underground for operations will be removed with ore or other materials removed from the mine, including the Dexpan used to break rock underground. No fuel or hydraulic oil will be used in underground operations, so there is no potential for affects of petroleum products. The potential for effects to Caballo Reservoir from operations and reclamation are minimal. During mining operations there will be no materials left on the surface, and material such as Dexpan used

130 feet underground to break rock in lieu of explosives, will be removed with all broken rock, ore and other materials, in 5-gallon buckets with secured lids, and transported off site daily to be taken to a facility in Nevada for processing. Reclamation operations will include the application of an organic fertilizer at a rate of 100 pounds per acre, for a total of approximately 150 total pounds to be applied on the project area. The project is located approximately 3 ½ miles east of Caballo Reservoir, and consists of approximately 1 ½ acres. This makes up less than 1/1,000 of a percent of the watershed of the east flank of Caballo Reservoir. Most of the fertilizer, which is a slow release, organic product, will infiltrate on the reclaimed area and be utilized by the plants seeded on the reclaimed area. What little leaves the area by surface transport will be impeded by the stormwater BMP, and what is transported beyond that will likely be taken up by downgradient plants. The amount of precipitation falling onto the reclaimed project area and ending up in Caballo Reservoir will make up a very small percentage of overall inflow to the reservoir and will have no effect.

Soils will not be affected during operations, however at the completion of mine operations and the initiation of reclamation operations, soils will be redistributed and eventually placed as a topdressing layer for re-vegetation. Noxious weeds have the potential for introduction into the project area from contaminated equipment used for project installation. In order to minimize this risk of noxious weed introduction and spread, all equipment used will be high-pressure washed to remove mud, dirt, and plant material immediately prior to entering the project area. Any gravel or fill to be used must come from weed-free sources; gravel pits and fill sources would be inspected to verify that they are weed-free. No soil spoil potentially containing noxious weed seeds shall be transported from the area where it is created.

Visual Resources will only be affected by the presence of the crane truck during working days, and Cultural Resources will have little potential for effects as no new disturbance is planned or anticipated. The only disturbance will be removal of material from existing stockpiles from previous operations, and placement on about 300 feet of existing access roadway. Disturbance will be limited to areas that are existing disturbance, with no proposed new disturbance. Proposed re-disturbance will be approximately 0.75 acres, which is primarily in the reclamation of previously disturbed and unreclaimed activities. Any material that extends beyond the existing road prism will cover any resources.

Livestock grazing will be affected by the possible exclusion of livestock from approximately 0.75 acres during reclamation operations, and from approximately 1.5 acres following reclamation with the fencing of the reclaimed areas after re-seeding. Livestock pipelines do occur in the vicinity; while they are not likely to be impacted directly by mining activities, any exposed pipelines do have the potential to be damaged by vehicles if they occur within or cross roads. There is a pipeline that crosses the access road in one spot, but it is buried, which would minimize the risk of damage since work to improve the road is not occurring at this location. At the completion of the project, reclamation of the area will improve the condition all of these resources, with the possible exception of Cultural Resources, which should have no effect.

4.4 Impacts of No Action on Safety, Air Quality, Surface Water Hydrology, Soils, Vegetation, Visual Resources, Livestock Grazing and Cultural Resources

The No Action Alternative would eliminate the potential for positive effects to these resources, including the reclamation of the area after operations and the enhancements that would result from the reclamation and re-vegetation of this area that is currently disturbed and unreclaimed and not re-vegetated and would result in retention of the unsafe highwall existing from the trench.

4.5 Cumulative Impacts

Adverse Cumulative Impacts of the Proposed Action would be slight due largely to the existing condition of the area from previous, unauthorized activities of other operations. In addition, a current increase in activity of mining interests in the Caballo Mountains area, increased traffic and human activity and noise from equipment operation could have an adverse effect to livestock and wildlife in the area by causing avoidance of the area by livestock and wildlife species. The Tesoro Del Alma Project in itself is about 1 ½ acres in size, and during mining operations noise generated will include diesel engine exhaust from the winch truck and compressor. During reclamation operations there will be noise and activity from the bulldozer and excavator utilized to reclaim the area. These activities, in addition to other potential mining operations in the general area could result in compounded, cumulative effect to the listed resources. As discussed, some effects could result to Air Quality, Surface Water Hydrology, Livestock Grazing and Desert Bighorn Sheep. However, the positive Cumulative Impacts from plugging, backfilling, regrading and reclamation of the area at the conclusion of operations to Safety, Air Quality, Vegetation, Soils, Wildlife Habitat, Surface Water Hydrology and Visual Resources will result in an improved conditions to safety to humans, wildlife and livestock, by eliminating the existing trench and highwall and to all of the above listed resources through regrading and reclamation and re-vegetation of an area that is currently in a highly erosive, non-productive condition.

5 TRIBES, INDIVIDUALS, ORGANIZATIONS OR AGENCIES CONSULTED

The project was processed through the State of New Mexico Mining and Minerals Division, Mining and Reclamation Program. That process included review by the New Mexico Environment Department, NM Office of the State Engineer, NM Game and Fish Department, NM State Historic Preservation Officer and others.

6 LIST OR PREPARERS

John C. Bokich
Vice President
Duran Bokich Enterprises, LLC
PO Box 1474
Elephant Butte, NM 87935
Ph: 575.740.2870
Email: jbokich@dbe-usa.com

7 REFERENCES

- Permit Application for a Minimal Impact New Mining Operation submitted to NM Mining and Minerals Division by Tesoro Del Alma Inc. February 15, 2011.
- Mine Plan of Operations for a Mining Operation submitted to BLM LCDO by Tesoro Del Alma Inc. March 7, 2011.
- BLM White Sands Resource Area Resource Management Plan, October 1986

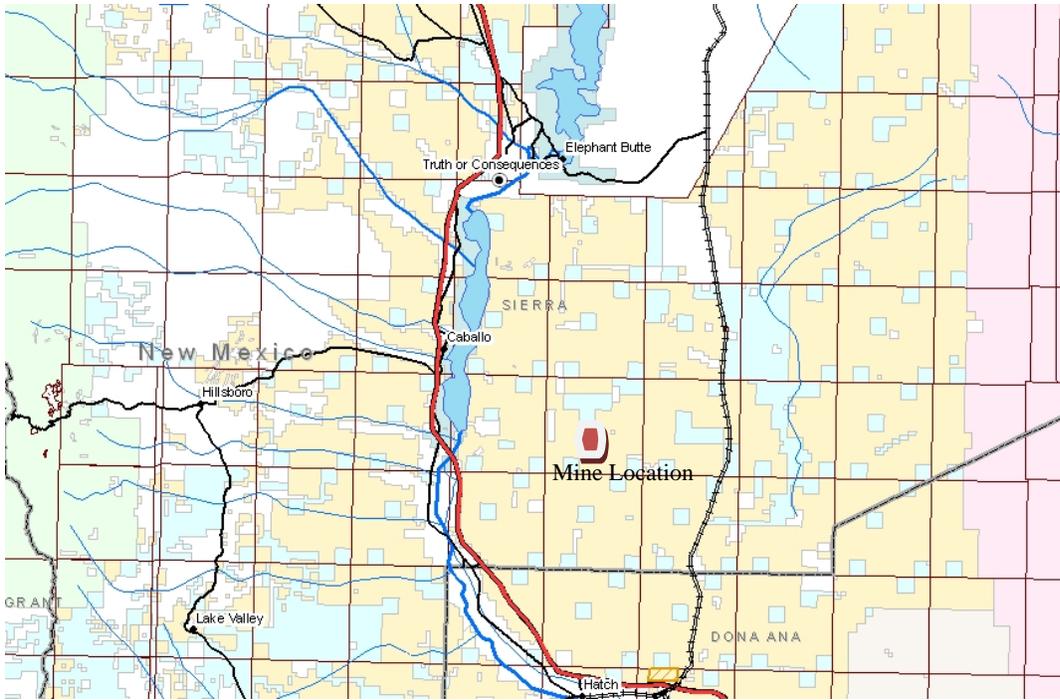


Figure 1 Appendix A General Location of Tesoro del Alma Mine, Sierra County, NM. T16S, R4W, Sections 3&4.

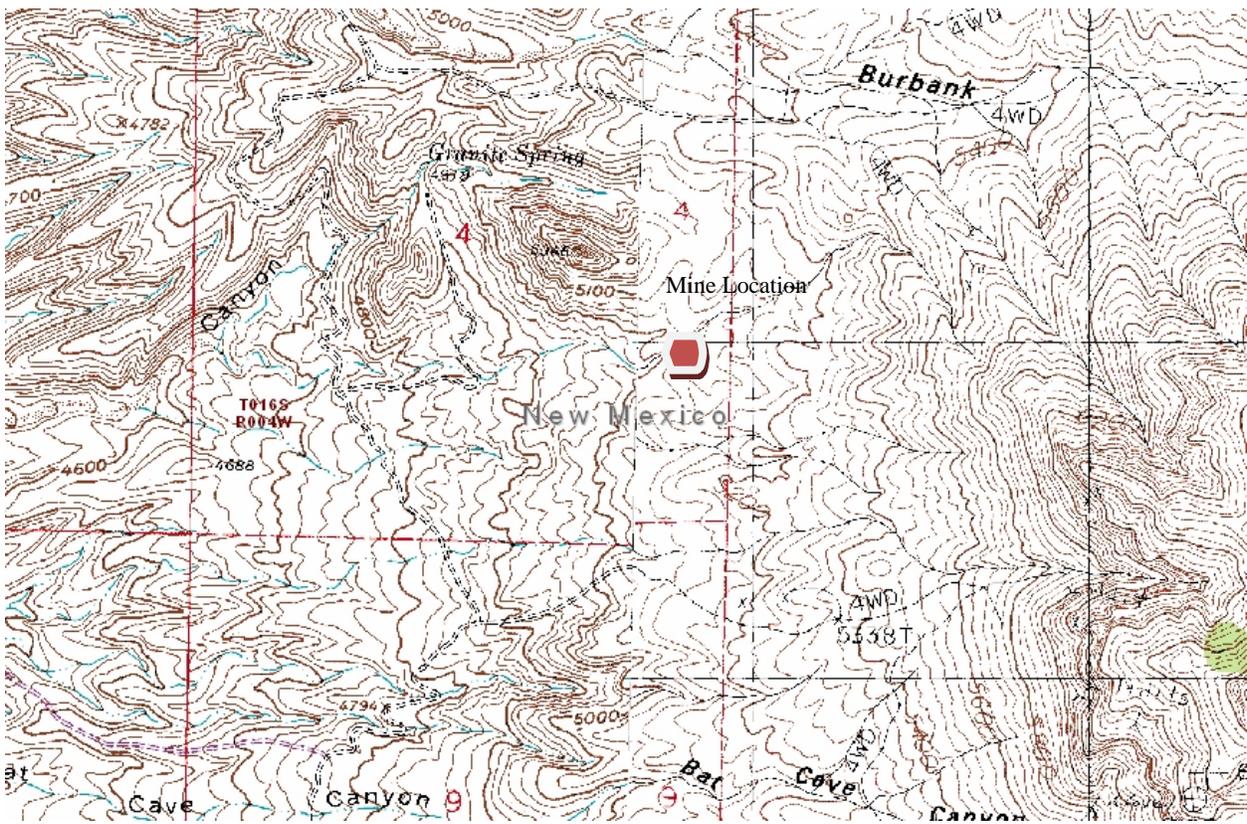


Figure 2 Appendix A Tesoro del Alma Project. Plan of Operations, Bureau of Land Management. T16S, R4W, Sections 3 & 4, Sierra County, NM

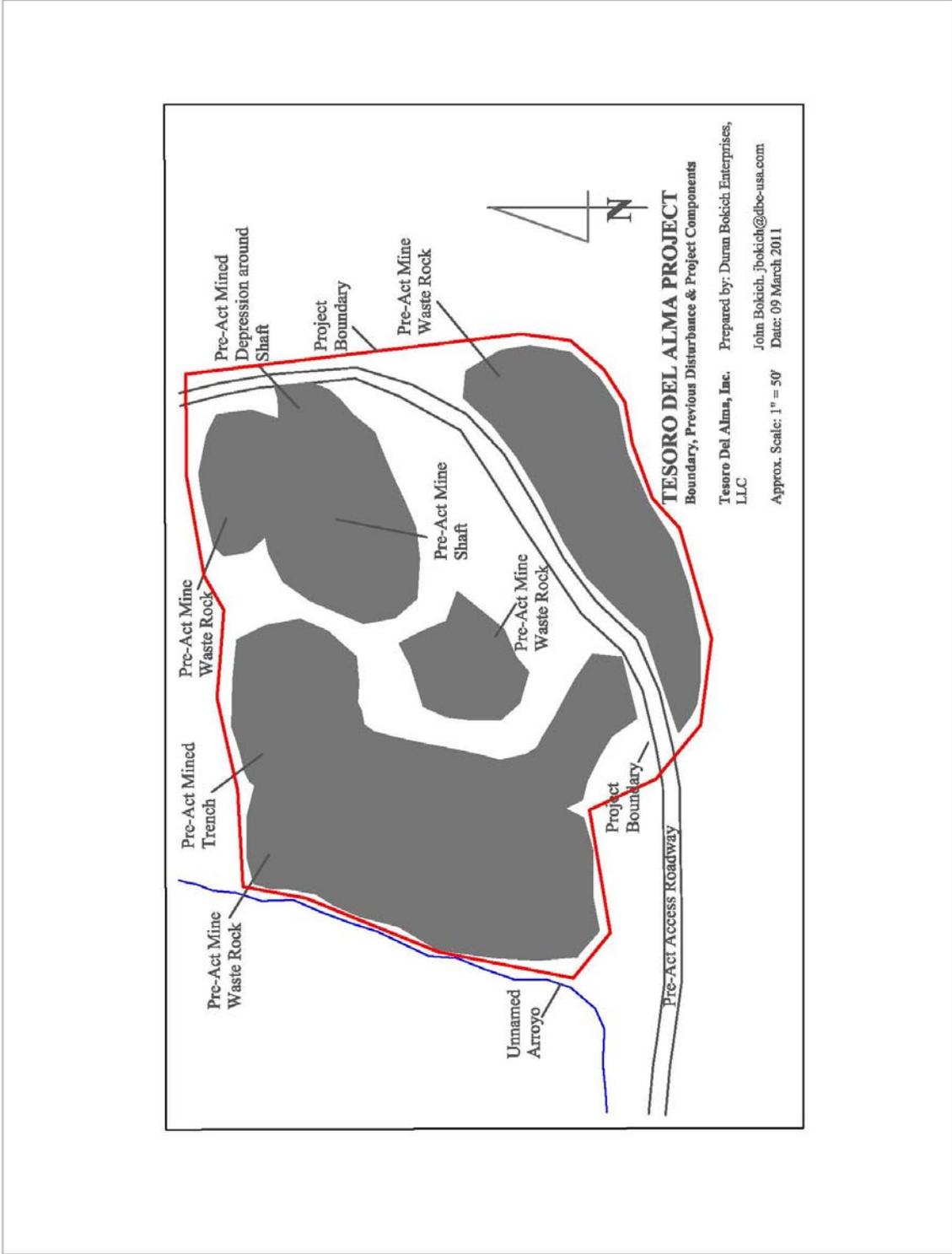


Figure 3 Appendix A Boundary, Previous Disturbance & Project Components.

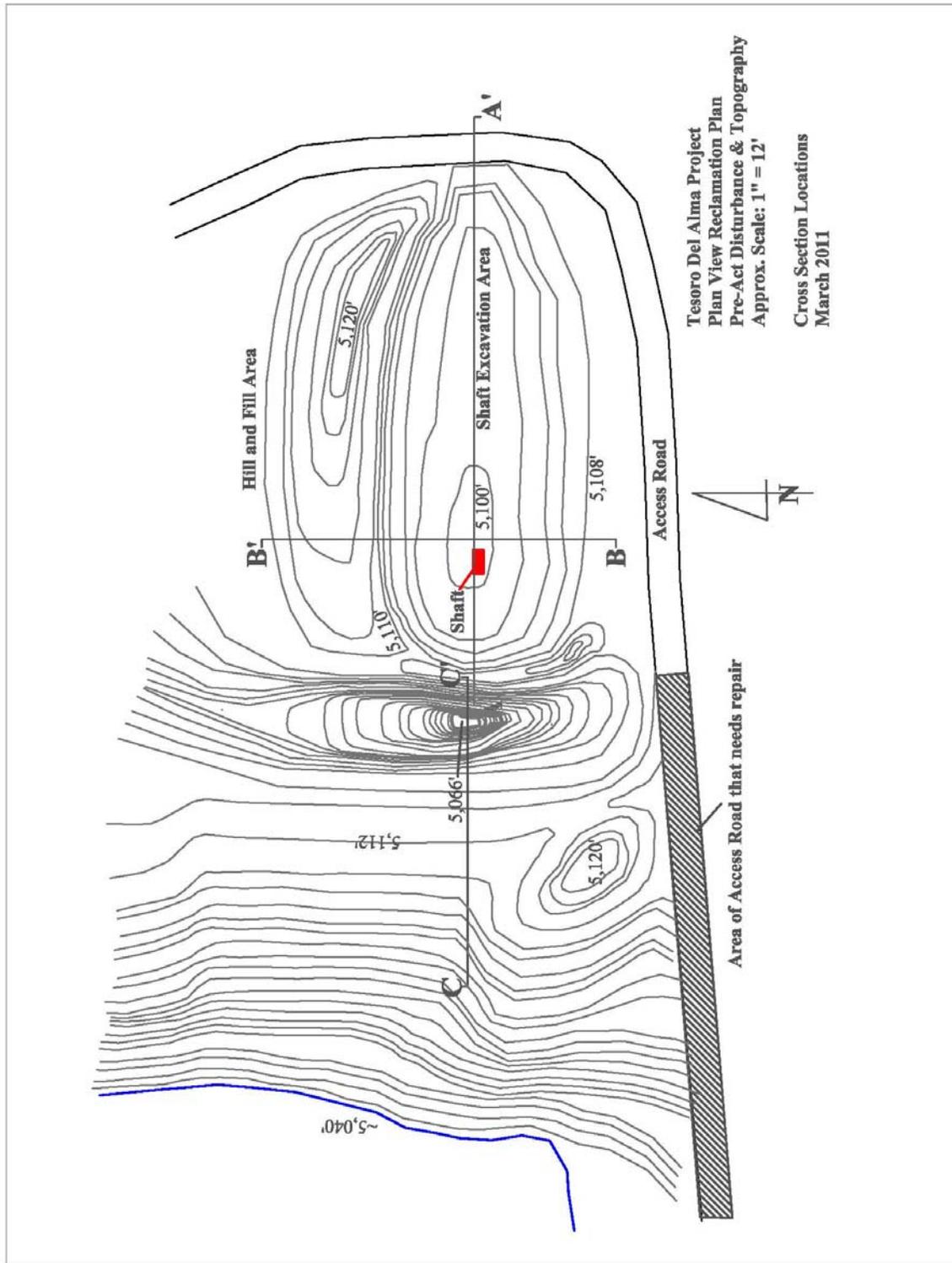


Figure 4 Appendix A Area of Access and Road that Needs Repair.

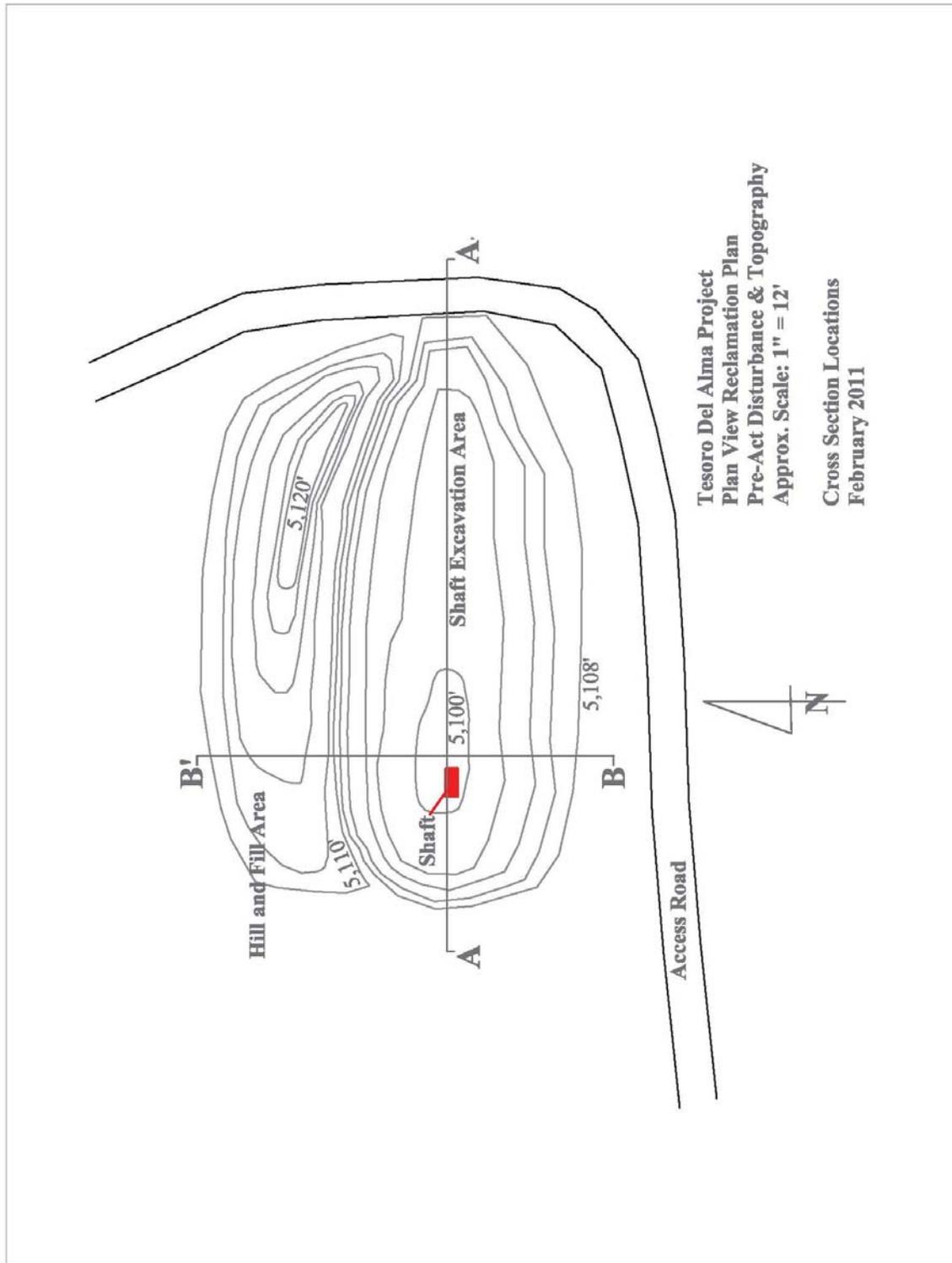


Figure 5 Appendix A Plan View. Hill and Fill Area. Shaft Excavation Area and Access Road.

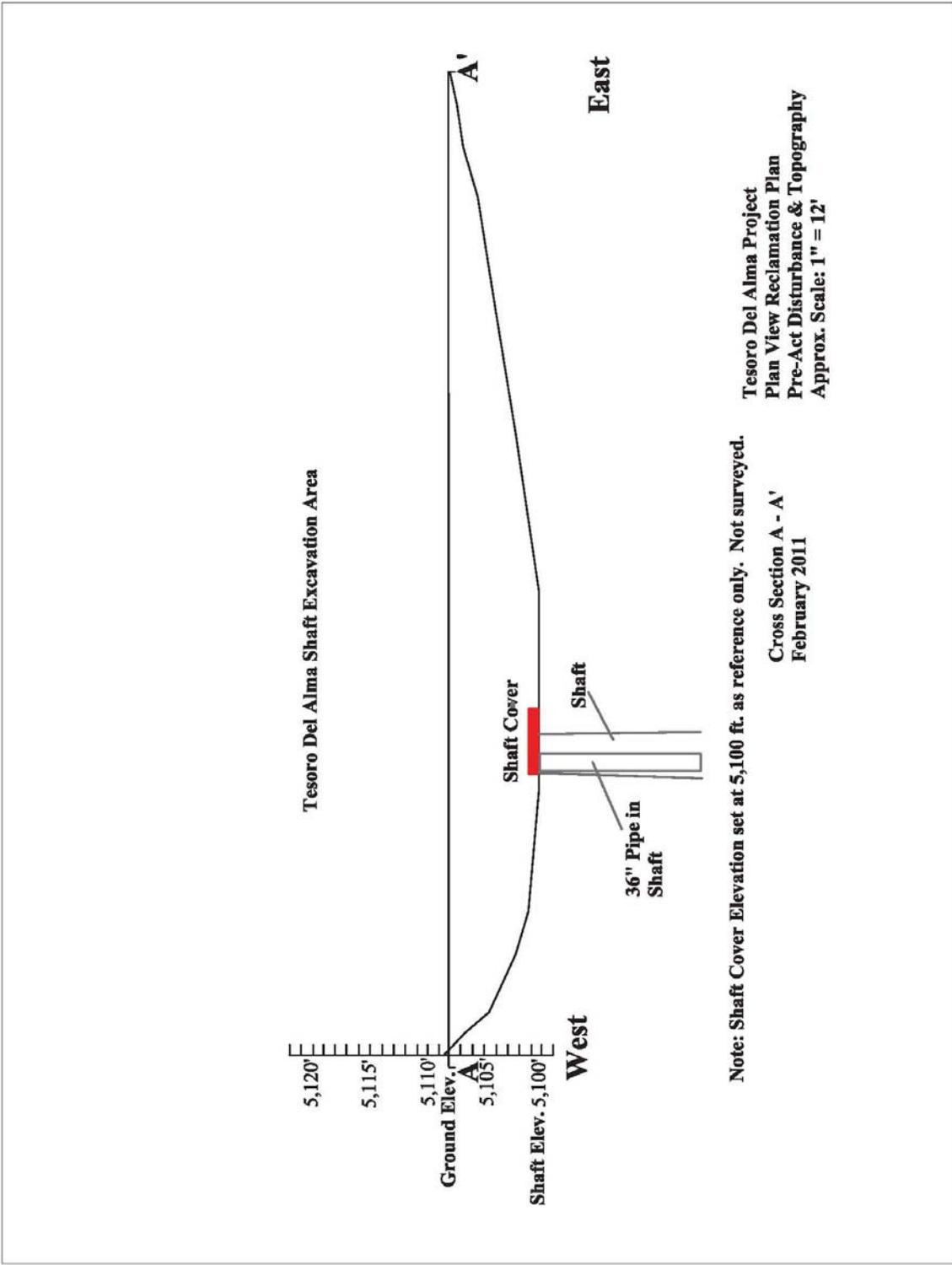


Figure 6 Appendix A. Shaft Excavation Area in Cross Section.

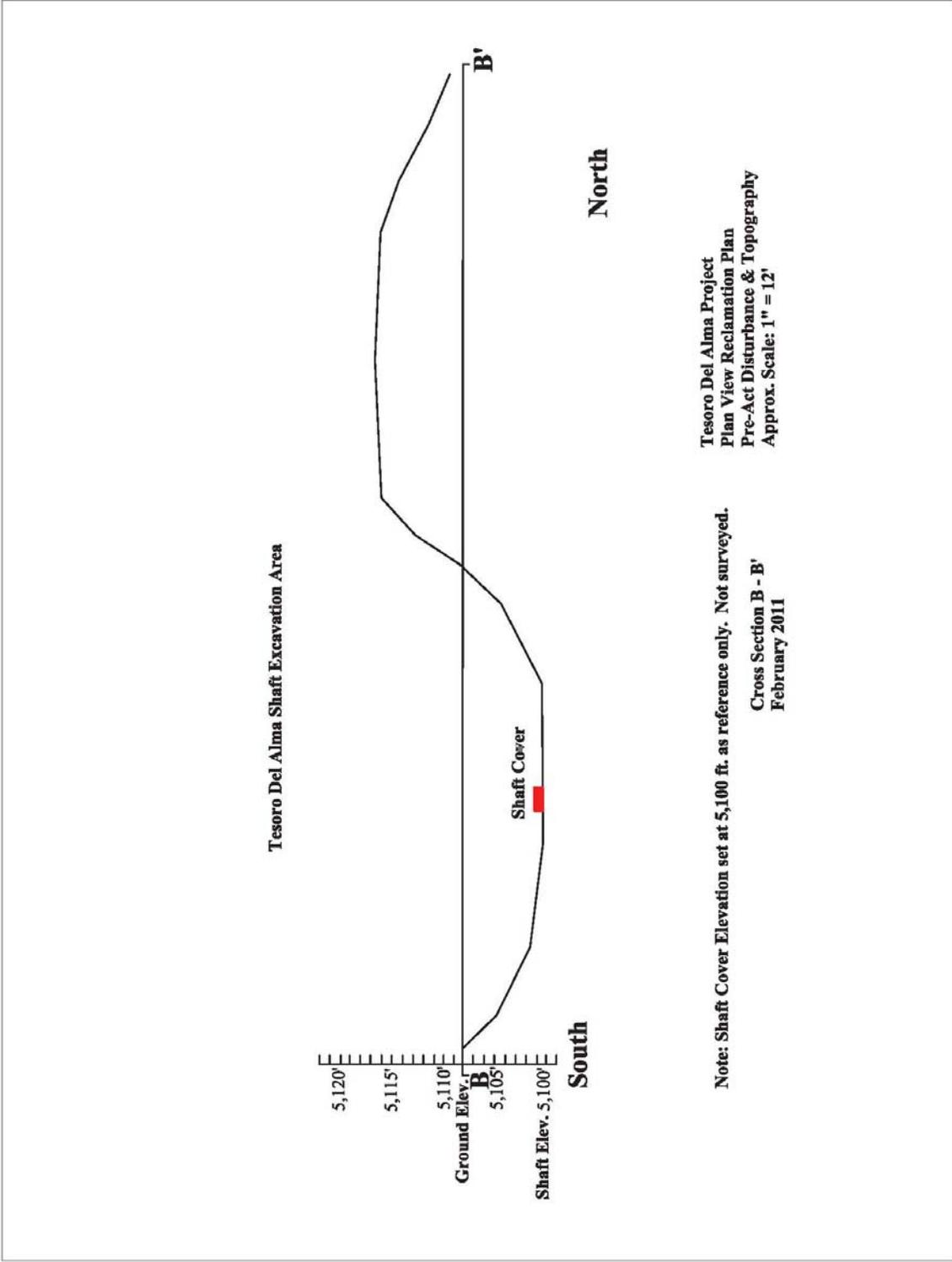


Figure 7 Shaft Excavation Area in Cross Section at 5,100 ft.

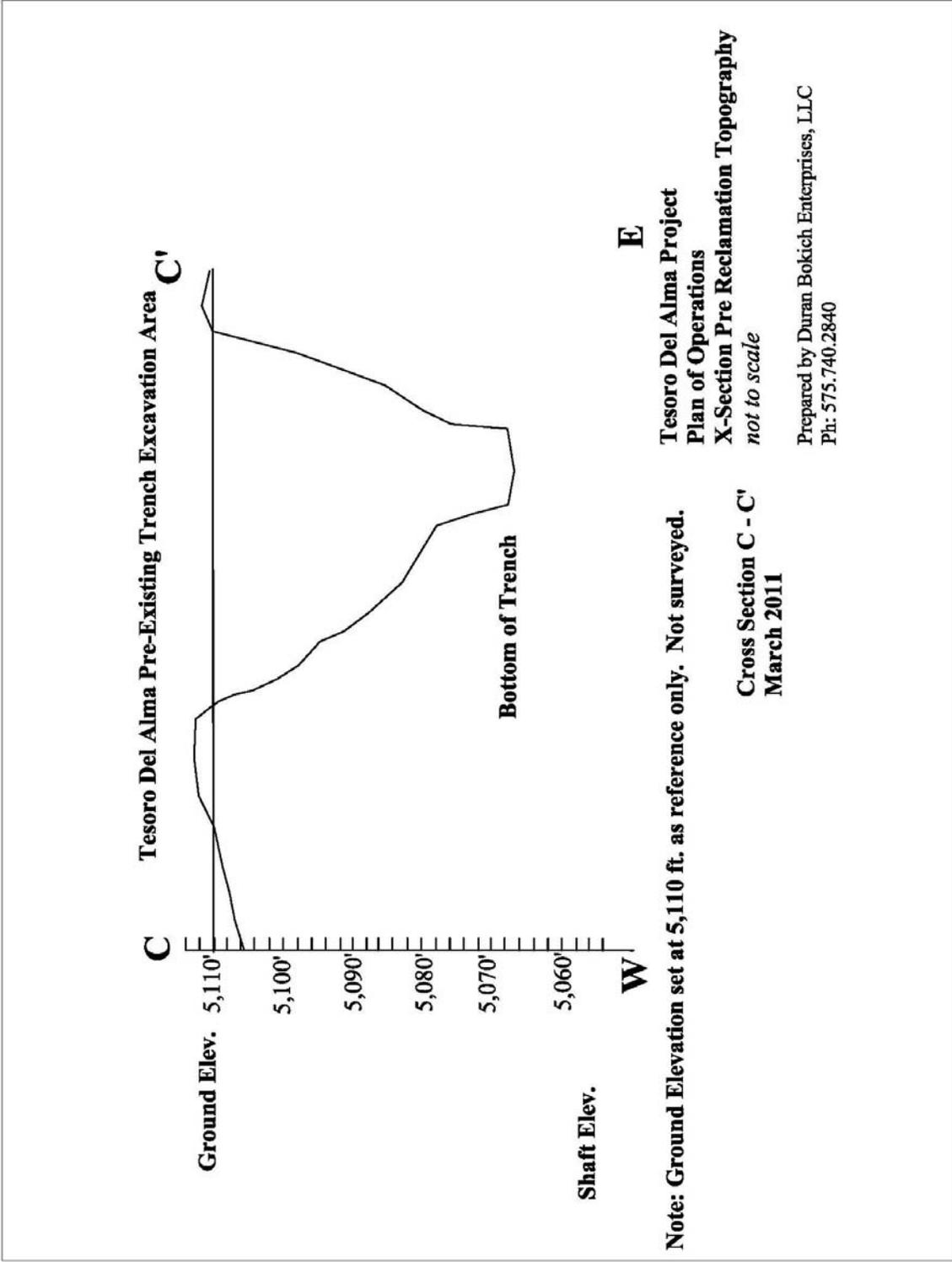


Figure 8 Appendix A. Pre-Existing Trench Excavation Area Cross Section.

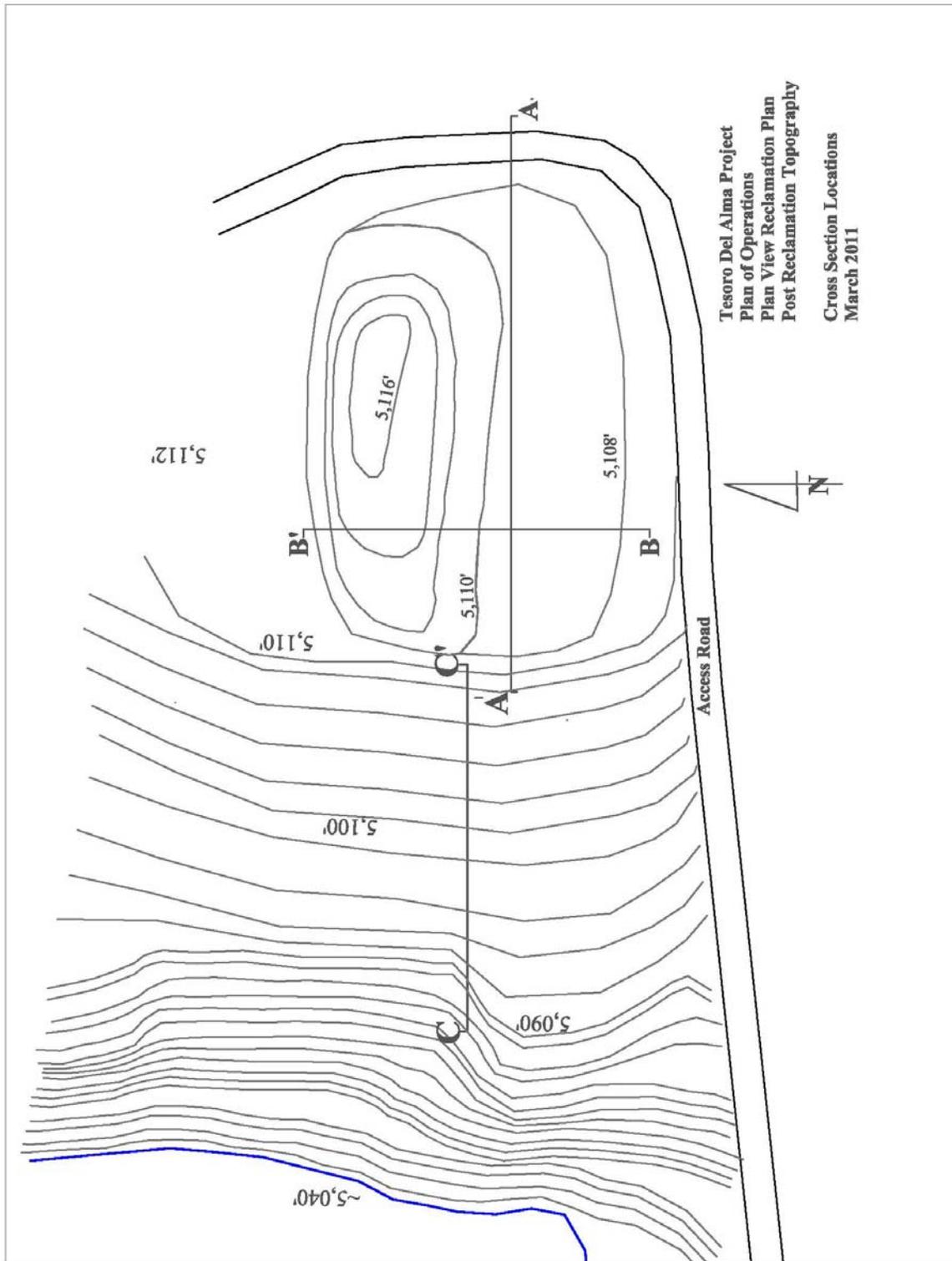


Figure 9 Appendix A. Plan View of Topography.

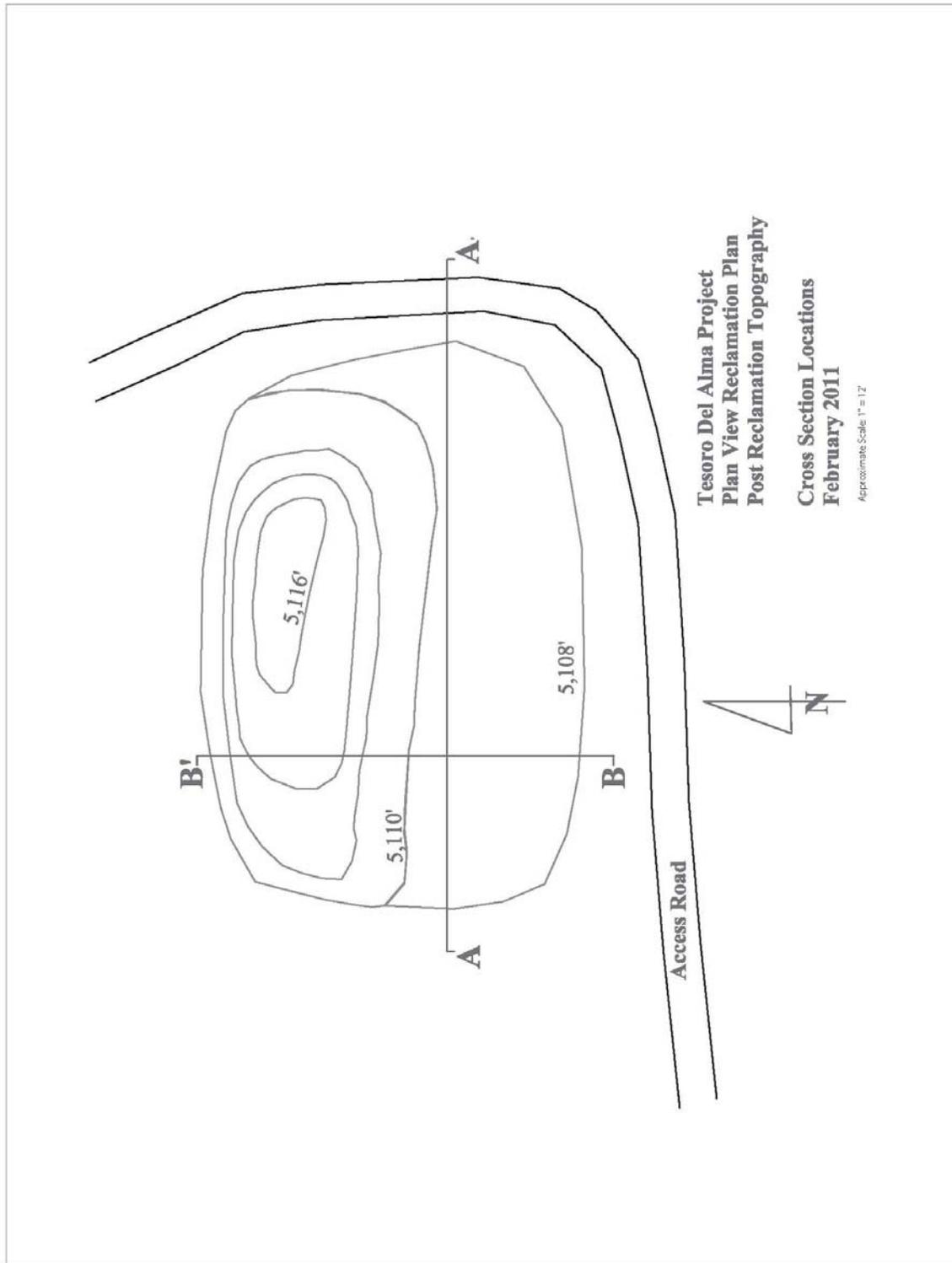


Figure 10 Appendix A. Overview of topography.

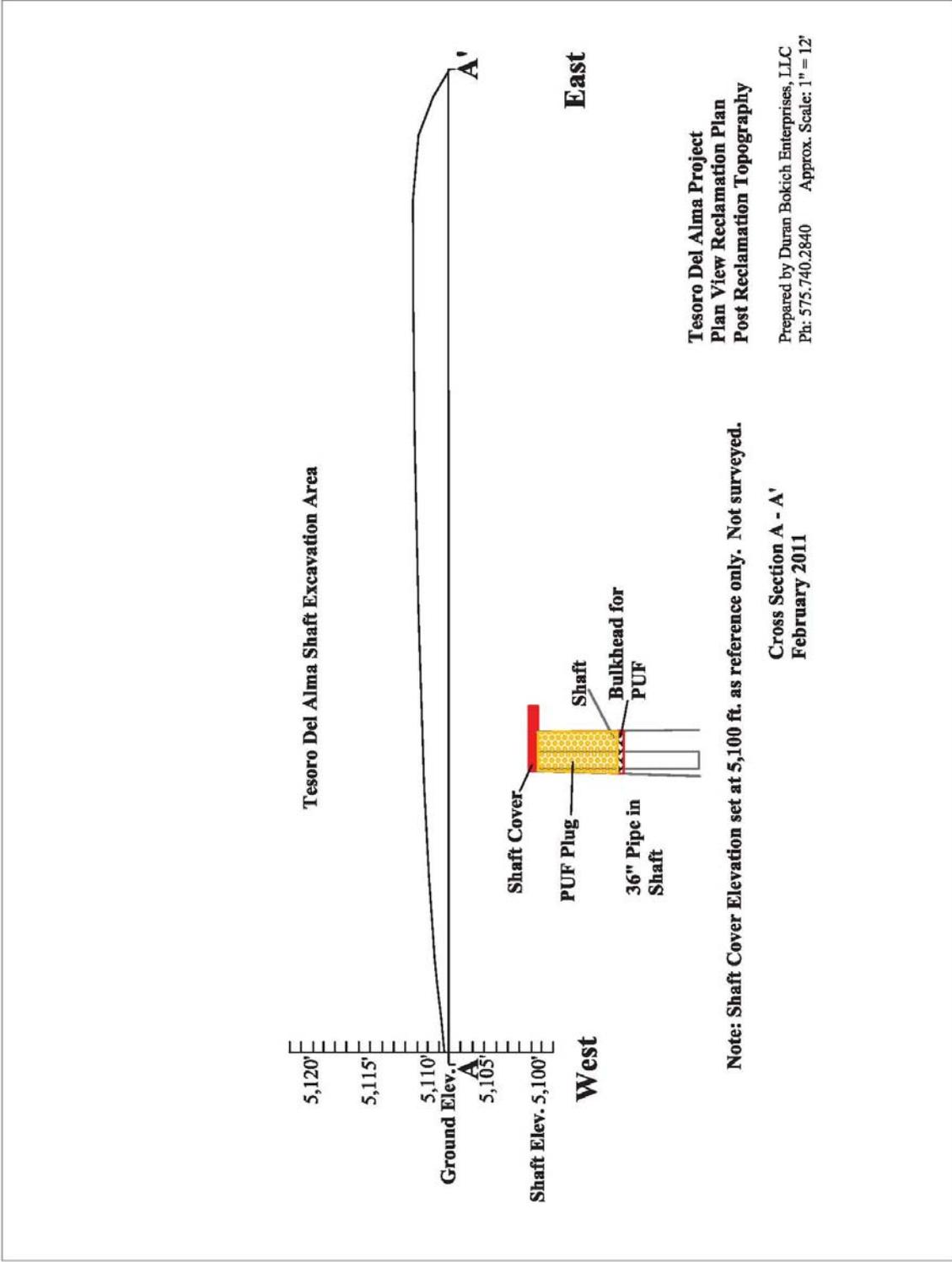


Figure 11 Appendix A. Shaft cover, PUF plug, Shaft, Bulkhead for PUF, 36" pipe in shaft.

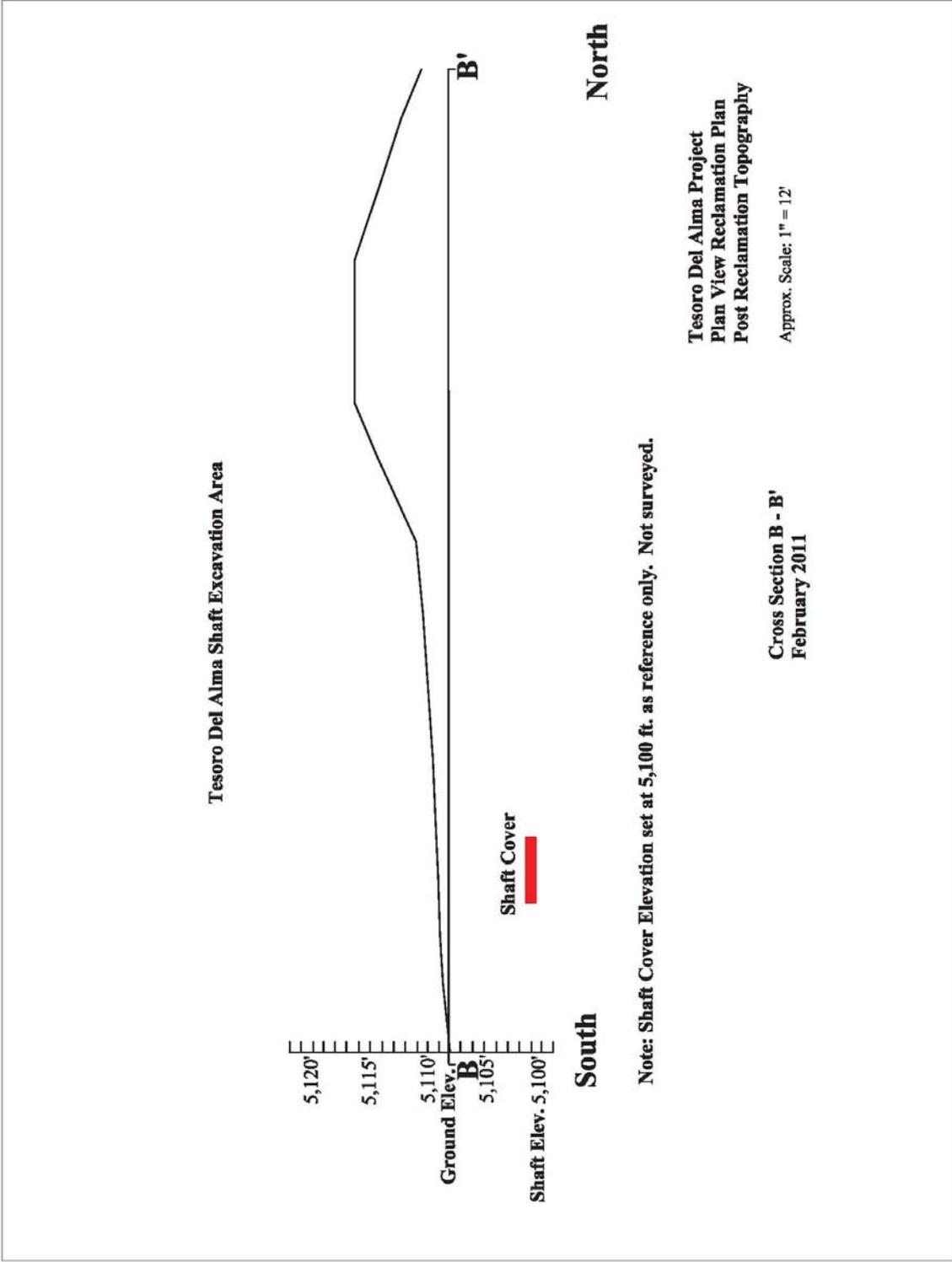
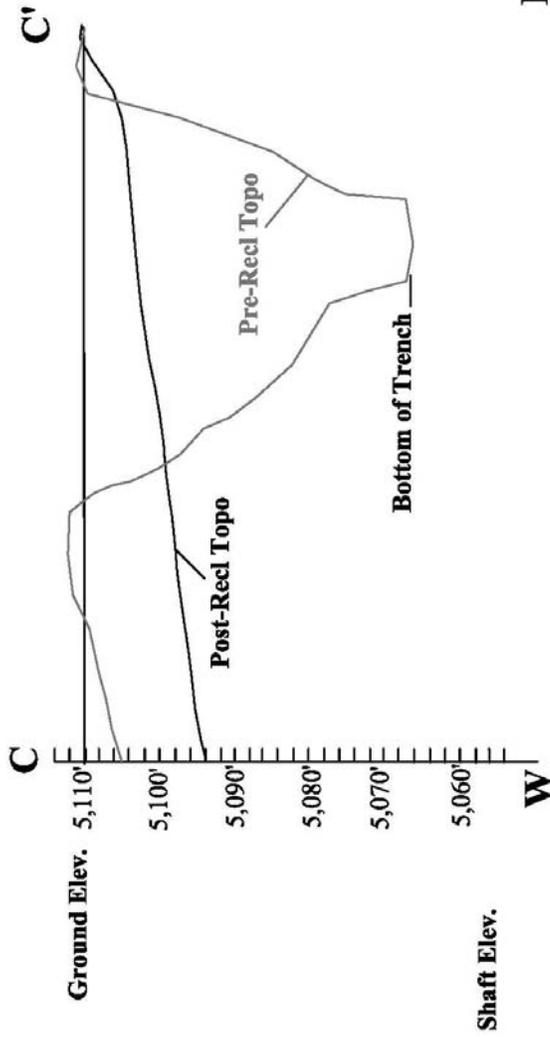


Figure 12 Appendix A. Shaft Excavation Cross Section and Elevations.

Tesoro Del Alma Post-Reclamation Trench Excavation Area Topography



Note: Ground Elevation set at 5,110 ft. as reference only. Not surveyed.

**Cross Section C - C'
March 2011**

E
Tesoro Del Alma Project
Plan View Reclamation Plan
Post Reclamation Topography
 Prepared by Duran Bokich Enterprises, LLC
 Ph: 575.740.2840

Figure 13 Appendix A. Post-reclamation trench excavation area. Elevations and topography