St. Cloud Mining Company
Zeolite Operations

Sierra County, New Mexico

Permit No. SI006RE

Permit Modification 20-1

April 2020

St. Cloud Mining Company
Zeolite Mining Operation

Application for Permit Modification 20-1

Reclamation Cost Estimate for Modification Area

Permit No. SI006RE

Sierra County, New Mexico

Prepared for the
Mining Act Reclamation Program
New Mexico Mining and Minerals Division

by

St. Cloud Mining Company

April 20, 2020

Permit Modification 20-1

St. Cloud Mining Company (St. Cloud) Zeolite Mining Operation is located in portions of Sections 3, 4, 10, and 11, Township 12 South, Range 8 West, New Mexico Principal Baseline and Meridian (NMPM), Sierra County, New Mexico. The mine and plant site are located about four miles south of Winston, NM, at approximately $33^0$17'30" N. Latitude, $107^0$37'35" W. Longitude. The St. Cloud Zeolite Operation is accessed by traveling south of Winston, NM, on Republic Road for about 0.5 miles, then south along Forest Road 157 about 1.0 mile, south along county road C007 for 3.0 miles, then northwest along the South Fork of Cuchillo Negro Creek on county roads C004 and C003A.

St. Cloud's Zeolite Operation consists of a zeolite processing plant, an impoundment used for storage of zeolite fines, the Old Main zeolite mine pit which is fully reclaimed, and the Yellowjacket pit, Phases I & II, that is currently being mined and concurrently reclaimed. The operation was originally permitted in 1996 and since has been in continuous operation under Permit SI006RE through the New Mexico Energy, Minerals, and Natural Resources Department, Mining and Minerals Division (MMD), Mining Act Reclamation Program.

This application is for a Permit Modification, 20-1, to Permit SI006RE. As defined under §19.10.5.505 of the NM Mining Act Regulations, this action is classified as a Permit Modification because the proposed change is consistent with the requirements for a permit modification as follows;

§19.10.5.505

(a) (will not) modify the Project Design Limits Boundary,

(i) (the proposed permit modification project) will not be located in or will have a direct surface impact on wetlands, springs, perennial or intermittent streams, lakes, rivers, reservoirs or riparian areas.

a. A field reconnaissance/clearance survey was conducted by John C. Bokich of GMB16, LLC, a Certified Wildlife Biologist and experienced botanist, in March 2020, and there is no presence of the habitat types or indication of the occurrence of the plant Wright's marsh thistle (*Cirsium wrightii*). This survey is provided as Attachment 1.

(ii) (the proposed permit modification project) will not have a direct impact on ground water that has a total dissolved solids concentration of less than 10,000 mg/l.

a. Based on regional exploration drilling conducted during the Little Hermosa Exploration Project, Permit SI039EM-R2, exploration holes were located relatively close and south of the Cuchillo Creek flood plain. Exploration holes were drilled utilizing air only, and to a maximum depth of 60 feet from the drill collar. No groundwater was encountered in any of the drill holes. As such, the depth to groundwater is below the surface elevation of the South Fork of Cuchillo Creek, which is located north of the project area and at a surface elevation of 200+ feet lower than the lowest elevation of the proposed surface mining pits. The mining operations will not intercept groundwater nor have any effect to groundwater.

(iii) (the proposed permit modification project) will not result in point or non-point source surface or subsurface releases of acid or other toxic substances from the permit area,

a. The development of the zeolite resource is in a pH neutral to alkaline sedimentary geologic environment. As has been historically demonstrated by the previous 24 years of operations at the St. Cloud Zeolite Mining Operations, there are no acid generating or other toxic materials that will be generated from the zeolite mining operation.

(iv) (the proposed permit modification project) is not located in a designated critical habitat area as determined in accordance with the federal Endangered Species Act of 1973 or in areas determined to the Department of Game and Fish likely to result in an adverse impact on an endangered species designated in accordance with the Wildlife Conservation Act, Sections 17-2-37 through 17-2-46 NMSA 1978 or by the State Forestry Division for the Endangered Plants Act, Section 45-6-1 NMSA 1978.

a. Documentation addressing endanger species, on the federal and state levels, were determined utilizing searches on appropriate governmental websites with current information on those areas. These include, US Fish & Wildlife Service website https://www.fws.gov/southwest/es/MSO_critical_habitat.html; State of New Mexico Game and Fish Dept. website map showing locations of USFWS Critical Habitat for Endangered Species and NM important plant areas https://www.bison-m.org/Index.aspx# and http://nmert.org/content/map. In addition, correspondence through the NM State Clearinghouse process, in response to the application for the Little Hermosa Exploration Project, which addressed the area included in this Permit Modification 20-1, included responses from the NM Game and Fish Dept. and the EMNRD Forestry Division, which are included here as Attachments 2 and 3. Consistent with the NMDG&F determination and federal agencies website search, there is no critical habitat of any Endangered Species within the project area. In addition, the email correspondence from the Forestry Division of the EMNRD of March 30, 2017, noted the potential for the presence of Wright's marsh thistle (*Cirsium wrightii*) within the project area. Wright's marsh thistle habitat is wet, alkaline soils in spring seeps and marshy edges of streams and ponds at elevation of 3,450 to 8,500 ft. While the Permit Modification Project Area is within this elevation range, there are no wet, spring seeps or marshy edges of stream or ponds located on or near the Permit Modification area. A clearance survey was conducted by John C. Bokich of GMB16, LLC, a Certified Wildlife Biologist and experienced botanist in this region, in March 2020, and there is no presence of these habitat types or indication of this plant species. Provided as Attachments 1 and 3.

(v) (the proposed permit modification project) Will not adversely impact cultural resources listed on either the National Register of Historic Places or the State Register of Cultural Properties.

a. NM Department of Cultural Affairs Historic Preservation Division, addressed to Mr. James Hollen of NM MARP in April 26, 2017 for the Little Hermosa Exploration Project, which address the area included in this Permit

Modification 20-1, shows no properties listed on the National Register of Historic Places. Provided as Attachment 4.

(vi) (the proposed permit modification project) will not be located in a known cemetery or other burial ground,

(vii) (the proposed permit modification project) will not be located in an area designated as a Federal Wilderness Area, Wilderness Study Area, Area of Critical Environmental Concern, or an area within the national Wild and Scenic River System.

a. The project area is located entirely of privately owned surface under ownership or lease by St. Cloud Mining Company, and there is no Federal Wilderness Area, Wilderness Study Area, Area of Critical Environmental Concern, or an area within the national Wild and Scenic River System within or near to the project area.

(b) The proposed change will not result in a significant increase in the amount of financial assurance as will be determined by the Director,

(i) In March 2020, St. Cloud Mining contracted an update of the Land Appraisals for the parcels of land that are held as collateral for Financial Assurance by the State of New Mexico with Dr. Vincent Barrett, of Barrett Land Appraisal Services, LLC, who has conducted the previous appraisals of these lands for use as Financial Assurance for Permit IS006RE. These appraisals are for the parcel on land located near Winston, Sierra County and is of 48.25 acres in size, and a second parcel located near the St. Cloud Zeolite Mining Operation, but not within the permit Design Limits Boundary, and is of 316.28 acres in size. These updated Land Appraisals were submitted to NM MARP on March 16, 2020, and are included by reference to this Permit Modification Application. The new 2020 Land Appraisals increase the total lands included as collateral and Financial Assurance to a gross value of $527,000. The previous gross value of these same land was $462,000, resulting in a gross increase in the collateral of $65,000.

1) March 2020 Land Appraisal for 48.25 acres in Winston, Sierra County. Valuation of $190,000.

2) March 2020 Land Appraisal for 316.28 acres near the St. Cloud properties, Sierra County. Valuation $337,000.

3) Total Appraised Land valuations = $527,000.

4) FA allowed for land collateral, at 85% of appraised land value = $447,950.

In the approval of the last Permit Modification to Permit SI006RE, Modification 13-1, Section 3(13-1) FINDINGS OF FACT, Item H, "The total amount of financial assurance required for the closeout plan at the Winston Facility (St. Cloud Zeolite Operations), was $157,719.00 prior to the approval of this permit modification (through Modification 07-1, Yellowjacket Phase I & II). The total amount of financial assurance for the closeout plan at the Winston Facility following approval of the permit modification is $171,149.00." This is a comprehensive number for the entire operation, prior to submittal of this permit modification application, including the Plant Site, Old Main Zeolite Pit, Yellowjacket Phase I & II, and identified roads.

Therefore, with the FA allowed from the Land Collateral Appraised value of $447,950 (85% of total value of the March 2020 appraisals), less the encumbered FA of $171,149 for operations through the approved Permit Modification 13-1, this results in a current condition of the project having approximately $276,801 in excess collateral for use as FA for Permit Modification 20-1, the proposed South Side 1 Project.

(c) The proposed change will not significantly depart from the nature or scale of the permit.

(i) The proposed change of the Permit Modification 20-1, will not significantly depart from the nature of scale of the permit. The mining methods and scale of operations are significantly similar in all aspects to those of all previous operations for the St. Cloud Zeolite Operations over the past 24 years.

This Permit Modification 20-1 to Permit SI006RE, only addresses the proposed modification to operations that will allow mine development of an area south of the existing Yellowjacket or East Pit mining operations, referred to as the South Side 1 Project Area. A map of the area of Permit Modification 20-1 is provided as Figure 1. This modification application includes a Reclamation Cost Estimate only for the Permit Modification 20-1 area, and is not a comprehensive St. Cloud Zeolite Operations project Reclamation and Closeout Plan. Other operation components such as the Plant Site, Old Main Pit and Yellowjacket or East Pit areas are not included or addressed in this application for a Permit Modification, 20-1 for the South Side 1 Project, but will be addressed in the comprehensive 5-year update of the project Close Out and Reclamation Plan in 2022.

Mining Operations have remained, and will continue to remain within the established Design Limits Permit Area, and are of the same scope and nature as they have been since operations began in 1996: basically a surface mining operation utilizing typical surface mining equipment and techniques, including bulldozers, front-end loaders, road graders, excavators, backhoes, haulage trucks, fuel-lube truck, and drills to develop roadways and access to mining areas, drill and blast overburden and zeolite ore, to move overburden and interburden to expose zeolite ore where necessary, to mine, load and haul zeolite ore to the process plant, to backfill mined-out areas, to shape and to grade overburden/interburden to a 3H:1V maximum slope so that the post-mining topography blends in with surrounding topography and controls surface water flows from precipitation. If required, growth medium including suitable overburden and interburden materials, is then placed on the graded surfaces, seeded, fertilized and mulched.

St. Cloud has reclaimed past and ongoing areas of the mine site concurrently within the Mine Permit Area, and has provided numerous updates to the cost estimates for reclamation of the Permit Area. These reclamation cost estimates have supported the estimates for the amount of financial assurance posted for the permitted mining operations. There is no review or reconsideration of these previous cost estimates in this application for Permit Modification 20-1, and the Reclamation and Closeout Plan for the entire operation will be updated as scheduled in the year 2022.

Permit Modification 20-1 relies comprehensively, by reference, on submittals to MMD in 1995, 1998, 2007, 2013 and 2014, and responses to MMD Technical Comments sent to St. Cloud in 2013, 2015, for the mine expansion amendment update, and 2015 and 2017 updates.

As previously described, the Reclamation Cost Estimate provided herein is only for the proposed new work associated with the Permit Modification 20-1, the South Side 1 Project. Major components of this cost estimate are earth material volume calculations, earthmoving costs, labor costs for operation of the equipment during reclamation, revegetation costs, monitoring of reclamation for post mine use, and indirect costs.

In Permit Modification 20-1 South Side 1 Project, the zeolite beds occur in a northwest to southeasterly general geologic strike, with the beds outcropping at the surface. The zeolite beds dip generally to the southwest. There is also a geologic fault visible in some areas that trends southeast to northwest between higher and lower elevation areas within what will be the surface mine pit area.

Mining will begin in the northwestern part of the proposed modification area, and the mine face will progress generally to the southwest. Figure 1 indicates the general mining area for the South Side 1 Project Area. The high walls will be benched with 25 foot benches to maintain slope stability as mining progresses. Some areas of the pit will have the zeolite ore mined without benching on the pit floor where the bed is of a low angle slope and the zeolite extends for the length of the pit floor.

Where overburden and interburden cannot be directly relocated from the direction of pit advancement into mined out pit areas for backfill, this material will be placed along the north, west and south sides of the proposed pit area, as field determinations provide the shortest distance for material movement.

Reclamation will parallel methods currently used for the Zeolite East Pit, and all previous mine areas. Areas of the open pit, as zeolite is developed to its economic or geologic limit, will be backfilled with non-zeolite rock and materials, interburden and overburden, and the areas regraded. Disturbed areas will be graded to a 3 horizontal:1 vertical slope (3H:1V) or less, and the final graded areas reseeded, fertilized and mulched during the first growing season following regrading.

Reclamation Plan

General

Reclamation at the St. Cloud Zeolite Operation has been ongoing since 1996. Reclamation of the South Side 1 Permit Modification 20-1 will be of the same nature and methods as all previous disturbed areas have been reclaimed.

All mined and associated disturbed areas will be regraded to a 3H:1V slope. As needed, growth media will be placed on all final graded areas that have been prepared for final reclamation, and disturbed areas will be reseeded with the approved seed mix the areas mulched with straw or bark chips. Reclaimed/reseeded areas will be protected as needed, and monitored to ensure regrowth of native vegetation. The post mining land use (PLMU) for the Permit Modification 20-1 South Side 1 Project Area is consistent with all previously reclaimed areas. St. Cloud formally proposed in the 2014 update that the mine site areas will be utilized for grazing and wildlife habitat, and this continues as the PLMU.

Zeolite South Side 1 Project – Permit Modification 20-1

Zeolite will be mined from the Zeolite South Side 1 Project Area pit using similar methods currently in use in the Zeolite East Pit - Phases 1 & II (Yellowjacket) and all previous mining operations. The zeolite occurs in beds of variable thickness which pinch and swell horizontally along strike and down dip. The zeolite beds are interbedded with mudstone, sandstone, non-zeolite or low quality zeolite tuff and conglomerate, and are overlain by a weakly indurated, interbedded mudstone, sandstone, and sandy, pebble to cobble conglomerate. All of these materials are of a non-reactive, generally alkaline geochemical nature, and have been used as backfill and demonstrated to be excellent growth media in all previous St. Cloud Zeolite mining operations.

In some areas, where mining will be initiated, the zeolite outcrops at the surface and little work will be required to remove weathered materials to allow development of the zeolite resource. Other areas have topmost beds comprised of the overburden materials which will be removed during mining and stockpiled for final reclamation. Beds of high quality zeolite ore are extracted and transported to the plant for processing. Interburden material is moved out of the way in the pit during mining or removed from the pit and placed in a stockpile to be used to backfill the pit during reclamation, or as growth medium where areas are available for final grading and preparation for revegetation. Cross sections that show the strata and location of materials to be moved during mining and reclamation are shown in Figures 2, 3 and 4.

Estimates of material volumes for the Zeolite South Side 1 Pits were determined utilizing standard mining industry techniques, which have been historically utilized at the St. Cloud Zeolite Operations. Basic assumptions, as were utilized in earlier estimates for closeout plans and updates completed for the St. Cloud Zeolite Operations, have been repeated for the South Side 1 Project Area. Elevation information is from U.S. Geological Survey topographic maps, aerial photography taken by Cooper (2017), and from hand held global positioning system data. Volume estimates were made by establishing 3 cross sections of the surface topography from the established topographic maps developed from the Cooper aerial photography, and subsurface geology was plotted based on results from exploration drill holes that were drilled by St. Cloud. The cross sections were plotted on graph paper at the scale of 1”=50’, and ore and non-ore materials were manually tabulated from grid blocks. Calculations were performed utilizing Microsoft Excel. Volume estimations for the Zeolite South Side 1 surface mining pits, are provided in the Reclamation Cost Estimate for Permit Modification 20-1, Attachment 7.

Access Road

County road Co04 will not be effected during operation of the Zeolite South Side 1 mining activities. The access road to the new South Side 1 Project mining operations will spur off of the existing Hermosa Road, County Road Co03. The new road will be left in place during reclamation to allow access during reclamation operations. Bar ditches along the road will control precipitation runoff from the operations areas. During mining operations, overburden and interburden piles will be separated from the road surface with ditches that divert runoff back to the sediment control ponds shown on Figure 1. Diversion structures and sediment control ponds will be regraded and ripped, as needed, during final reclamation and graded with 3:1 slopes. The reclamation costs for grading and revegetation of the diversion and sediment control

structures is included in the cost estimate for earthwork shown in the attached Reclamation Cost Estimate (Attachment 7).

Revegetation

Regraded surfaces of areas to be reclaimed and revegetated will be covered with a total of at 12 to 18 inches of suitable store-and-release cover growth medium material. The textural characteristics of the cover material will be supportive of a self-sustaining ecosystem and will consist of a 12 to 18 inch layer of overburden/interburden salvaged during excavation work resulting from pit development construction activities. If timing does not allow direct application to a regraded area, the growth medium cover material will be stockpiled for storage adjacent to the pit to be applied evenly over the backfilled and regraded pit surfaces, seeded and mulched as described in the approved closeout and reclamation plan.

St. Cloud will leave areas to be revegetated in a roughened condition to reduce overland flow and promote infiltration of water. Seed will be broadcast by hand at a rate of 16 pounds per acre, and covered using a chain or tire drag or harrow. Straw or chipped bark mulch will be applied at a rate of at least two (2) tons per acre. If used, straw will be stabilized in place by crimping with bulldozer grousers.

Seed will be broadcast by hand on all graded and disturbed areas at a rate of 16 pounds live seed (PLS)/acre with the seed mix shown in Table 1. Seed will be broadcast in the first growing season after areas are regraded, growth media applied and prepared, and the area mulched. Vegetation growth will be monitored for a 12 year span following the year in which the disturbed area was seeded.

Table 1. St. Cloud Zeolite Operations reclamation seed mix.

Common Name	Scientific Name	Rate (lbs./acre)	Proportion (%)
Blue grama grass	*Bouteloua gracilis*	1.0	6.2
Sand dropseed grass	*Sporobolus cryptandrus*	0.1	0.6
Sideoats grama grass	*Bouteloua curtipendula*	4.4	27.5
Indian ricegrass	*Achnatherum hymenoides*	4.0	25.0
Western wheatgrass	*Pascopyrum smithii*	0.5	3.1
Desert globemallow	*Sphaeralcea ambigua*	0.2	1.3
Blue flax	*Linum perenne*	4.0	25.0
Yellow prairie coneflower	*Ratibida columnifera*	1.0	6.2
Apache plume	*Fallugia paradoxa*	0.2	1.3
Antelope bitterbrush	*Purshia tridentata*	0.2	1.3
Fourwing saltbush	*Atriplex canescens*	0.4	2.5
	Total	**16**	**100**

Reclamation Schedule

Reclamation of the St. Cloud South Side 1 Project site will ongoing concurrently with ongoing mining operations, and areas that become available to reseeding will be seeded generally in June or July of each year. Following seeding, areas will be mulched. Time required for the

reclamation earthwork, grading, and ripping are shown in the accompanying Reclamation Cost Estimate (Attachment 7).

Reclamation Cost Estimate

General

The Reclamation Cost Estimate utilizes standard mining industry techniques and practices that have historically been utilized at the St. Cloud Zeolite Operations. Basic assumptions were derived from earlier estimates for closeout plans completed for the St. Cloud Zeolite Operation in 2014, 2015 and 2017, and used for each of the closeout plans completed by St. Cloud beginning in 1998. The Reclamation Cost Estimate contains many of the basic foundation assumptions for the 1998 cost estimate, and these have not changed through time. The attached Reclamation Cost Estimate Attachment 7, includes the calculated bond (Financial Assurance) amount.

Cost information included in this Permit Modification Application and Reclamation Cost Estimate utilizes direct costs of the actual reclamation work experienced at St. Cloud Zeolite mining operations based on the existing on-site conditions, modified to reflect costs utilizing a third party contractor, adding third party contractor mobilization and demobilization and profit and overhead costs as indirect costs.

Cost estimates of reclamation using only a bulldozer is realistic and has been utilized historically for the St. Cloud Zeolite mining operation. It also has been used in previous approved Reclamation Cost Estimates and maintains the Reclamation Plan and estimate as a realistic and applicable tool if performed by St. Cloud or a third party contractor. This is consistent with earlier Reclamation Cost Estimates, Closure Plans and Updates for this project. Bulldozer productivity is estimated using the updated Caterpillar Performance Handbook 48 (2018) information and methods.

The following is a description of the data and assumptions utilized in the Reclamation Cost Estimate. Some data appears below; however all of the data, formulas, and calculations appear in the attached Reclamation Cost Estimate, Attachment 7. This information is provided as a component of the Reclamation Cost Estimate to aid in the understanding of how the volumes and cost estimates for earth moving during reclamation of the proposed St. Cloud Zeolite South Side 1 Project were developed. The major components of the cost estimate are earth material volume estimates needed for regrading, the cost for moving the material to backfill the pit and regrading the slopes to 3H:1V, cost of ripping disturbed areas and costs for revegetation and revegetation growth monitoring. Summaries of these components appear below, and pertinent parts of the estimate are shown in the Reclamation Cost Estimate.

Cost Estimate Assumptions

1) Costs for a third party contractor contracted by the MMD to implement and complete the Reclamation Plan for the St. Cloud Zeolite South Side 1 project area.
2) All disturbed areas will be graded to a 3H:1V slope, and to blend with the surrounding topography and seeded with the approved seed mix and mulched.

3) A swell factor of 20% is used throughout this estimate for conversion from bank cubic yards (bcy) to loose cubic yards (lcy). This number is based on existing St. Cloud experience and data.
4) All reclamation earth work can be accomplished with a bulldozer. A Caterpillar D9T bulldozer was utilized for this cost estimate based on experience at the St. Cloud Zeolite Operation.
5) Indirect cost proportion and distribution is based on current requirements and from guidance from MMD for previous permit modification applications and approvals.
6) Costs from earlier years and the escalation factor for this estimate are adjusted using the U.S. Bureau of Labor Statistics published consumer price index for all urban users (CPI-U) available from https://www.bls.gov/cpi/detailed-report.htm .

Earthmoving Costs

Earthmoving at the St. Cloud Zeolite Operations will be accomplished utilizing a D9T Caterpillar bulldozer, or equivalent.

The bulldozer cost estimate consists of two components, the average hourly production for the amount of material that can be moved by the bulldozer and equipment ownership and operating costs.

Bulldozer Productivity

A Caterpillar D9T bulldozer or equivalent with a hydraulic-controlled semi-universal blade and direct drive transmission will be used for reclamation. This is consistent with the 1998, 2007, 2013, 2014, 2015 and 2017 cost estimate updates.

Calculated bulldozer productivity using the Caterpillar Performance Handbook 48 method, shown on pages 19-16, 19-23, 19-25, 19-47, 19-50, 19-51, 19-52, 19-55 and 19-56 of Caterpillar Performance Handbook No. 48 (CAT HB 48) were utilized. Bulldozer production was determined by applying the average dozing distance to a production curve, then modifying the maximum production by a series of correction factors. The factors that are applied include a material factor, grade correction, soil weight correction, cut method factor, operator experience factor, job efficiency factor, visibility factor, and elevation factor. The correction factors reflect on-site conditions based on experience at the St. Cloud Zeolite Operations mining operations. Push distance and grade were estimated from the cross sections and the topographic base map drawn for the pit (Figures 1, 2, 3 and 4). Push distance and grades are reflected on page 3, Material Volumes of the attached Reclamation Cost Estimate.

Good visibility conditions at an elevation of 6,000 feet above mean sea level were utilized, so the visibility factor and elevation factor did not vary from 1.0. An average experience operator was conservatively utilized (0.75). The weight of the material to be moved was estimated to be a combination of overburden gravels, overburden and waste tuff, and zeolite tuff. A weighted average was calculated based on the proportion of each type of material that would be moved during reclamation and the current density data (bank bulk density from Dan Eyde (Chief Technical Officer and Geologist, St. Cloud Mining Company data, personal communication, October 2020), except overburden clay and gravels which was estimated from the U.S. Bureau of Land Management, Mineral Examiners Handbook, 1989, (Appendix IV-B); the weighted

average for loose material is 2,615 pounds/loose cubic yard. All other job condition factors were estimated specific to each pile of material that had to be backfilled into the pit.

The material factor correction, cut method factor correction, operator experience correction, job efficiency factor, and grade correction were determined utilizing information provided in CAT HB 48. These were included in each of the tables under the dozer page 3 in the Reclamation Cost Estimate for each bulldozer cut.

Productivity was calculated with CAT HB 48 and calculated in loose cubic yards per hour. Material volume was divided by the loose cubic yards per hour to arrive at the number of hours required to move the material in the pit given the cost estimate assumptions.

Bulldozer Ownership and Operating Costs
A D9T bulldozer was chosen for consistency because a D9 was used in the 1998 reclamation estimate developed by St. Cloud, and has been utilized for every estimate since. St. Cloud now owns and utilizes a D9T bulldozer at the St. Cloud Zeolite Operations site, and has built a database for actual costs.

Total ownership and operating costs
In the September 20, 2017 Reclamation Cost update submitted by St. Cloud, the Caterpillar performance cost estimation method utilized with a market ownership insurance rate applied for a D9T, results in an ownership and operating cost estimate of $155.44/hr. (based on 1,700 annual hours of operation).

For determination of costs for rented or leased equipment, which is the most likely price for a third party contractor to utilize, Wagner Equipment Rentals was contacted and quoted a cost of $180/hr. for rental of a D9T ($31,720/month, based on a 176 hours month; Bob Freiberg, Branch Manager, Wagner Equipment Rentals, Las Cruces, NM, personal communication, March 25, 2020). Wagner adds a 16% insurance surcharge if the client does not have insurance. Thus, without fuel, the market rate to rent an insured D9T would be $208.80/hr. The rate with fuel at the current price would be about $236.00/hr. This rental cost can be used as an indicator of the high end market ownership and operating costs for a bulldozer.

The equipment rental rate used by Wagner includes profit to the rental company. Based on experience, add-on profits by equipment leasing companies may vary from 15% to 30%. If profits of 15% to 30% are subtracted from the rental rate charged by Wagner, the rental rate range without fuel would be from $146 (with 30% profit subtracted from total rental rate), to $178/hr. (with 15% profit subtracted from total rental rate). With current fuel costs added, the range of costs for an insured D9T with fuel cost would be from $171/hr. to $203/hr. The average is about $187/hr. for bulldozer rental, and this value is utilized in the calculations for this Reclamation Cost Estimate.

Bulldozer Labor Costs
Labor cost for a bulldozer operator was estimated from U.S. Department of Labor Davis-Bacon Act information (www.beta.SAM.gov), obtained March 25, 2020, lists a rate of $34.17/hr. for Sierra County, New Mexico, (Zone 4: Extending more than 30 miles beyond Zone 1, shall receive 26% above Zone 1 rate ($22.07/hr. + $5.05 Fringe = $27.12/hr. + 26% = $34.17/hr.), including burden and benefits.

Therefore, total bulldozer ownership and operating costs, plus Operator costs are about $221/hr.

Grading
Grading is the final contouring and smoothing of slopes to meet the slope specifications. Grading costs consists of three components, the grading production, cost of the bulldozer, and cost of the operator.

Grading Production
This cost estimate utilizes the same assumptions used in the cost update in 2017, and was updated as appropriate from CAT HB 48 pages 19-47, 19-50, 19-52, 19-55 and 19-56. Grading is moving earth to smooth and blend slopes, production was calculated by estimating the amount of time it would take for a bulldozer to push a small amount of dirt over the expanse of the acreage to be graded.

For calculations in this update, an assumed speed of two miles per hour for the bulldozer, a 50 minute operating hour, and a blade width of 14.2 feet. Assumed one pass over the graded area. Multiplied miles per hour x 5,280 feet per mile x 14.2 foot blade width x 1 acre per 43,560 square feet, then applied material, grade, soil, blade, visibility, elevation, and operator factors to the calculation. All the factors are insignificant (i.e., they are a factor of one) except for the soil, operator experience, and grade factors. For a moderately experienced operator, a factor of 0.75 was utilized. For soil, the same weighted average rock and soil weight of 2,606 pounds per loose cubic yard was utilized, instead of the standard 2,300 pounds per loose cubic yard standard given in CAT HB 48, page 19-50.. This is the same value for all material estimates in this reclamation cost estimation. Grade is variable throughout the areas that would need to be graded, but most of the grading is downhill at about 30% grade with a few areas near the pit bottom at 5% uphill or downhill. Thus a grade factor of 1.4 was utilized.

The amount of time it would take for a bulldozer with a 14.2 foot blade to cover an acre of land was calculated to be 0.36 hours, or 2.76 acres could be graded in one hour. The total acreage to be graded was estimated to be approximately 47.0 acres, resulting in total hours for grading. The 47.0 acre figure was determined from a measurement of the disturbed areas as shown in Attached Figure 1, which identifies the pit, access road(s), sediment control ditches and ponds, overburden/interburden stockpiles and reclaimed slopes. Measurements were made using aerial photography (Cooper 2017), and AutoCAD. Grading and ripping calculations are shown in the attached Reclamation Cost Estimate spreadsheet Page 5, Grading and Ripping (Attachment 7).

Grading Bulldozer and Operator Costs
The ownership, operating and labor costs of the bulldozer for grading are the same costs as bulldozer work for earthmoving. Therefore, bulldozer costs for grading are estimated at $187/hour, and labor costs for the bulldozer work are estimated at $34.17/hr.

Ripping
Ripping costs consists of three components, the production rate for ripping, the cost of the bulldozer per hour, and the cost for an operator.

Production Rate for Ripping

The CAT HB 48 methodology was utilized to estimate ripper production. An example of a ripper production calculation is given on page 19-73 through 19-75 of CAT HB 48. A hydraulically variable pitch multi-shank ripper with shank width set at 5 feet was utilized in the calculations.

The only area to be ripped for reclamation of the South Side 1 Project, are some of the roads interior to the mining area which will be utilized during operation for light vehicle access, equipment and haulage trucks, measured to be about 200 feet in length and about 100 feet wide (~ 0.5 acres).

A ripper with an effective width of five feet would be used for the ripping operation with a 1.5 foot penetration depth. Based on the ground conditions where the soil to be ripped is a loosely indurated gravel and St. Cloud experience, the estimated speed of ripping is at least 1.0 mile per hour or about 88 ft/min. A turn-around time of 0.25 minutes, the ripping distance or area, the calculated minutes per cycle, an assumed 50 minute hour, the calculated number of cycles per hour was estimated. Based on the ripper width, depth, and distance, the number of bank cubic yards ripped per cycle was calculated. Multiplying the bank cubic yards per cycle by the number of cycles per hour gives bank cubic yards per hour ripped. This value is multiplied by an efficiency factor of 0.8, assumed from CAT HB 48 and St. Cloud operating experience. This provides an estimate of the number of bank cubic yards ripped per hour.

The total distance, width, and depth of the access road was calculated to determine the total bank cubic yards to be ripped. So, the production rate in bank cubic yards per hour divided by the number of cubic yards gives the time needed to rip the road. These assumptions and calculations are shown in the Reclamation Cost Estimate on page 5, Grading & Ripping, of the Reclamation Cost Estimate (Attachment 7).

Ripping Bulldozer and Operator Costs

The ownership and operating and labor costs of the bulldozer for ripping are the same costs as bulldozer work for earthmoving. So, bulldozer costs for grading are estimated at $187/hour, and labor costs for the bulldozer work are estimated at $34.17/hour.

Access Road

The Access Road to be constructed for the South Side 1 Project (Figure 1) is located entirely on privately owned surface lands that are either owned or under lease to St. Cloud Mining Company. This road will be retained after mining operations and reclamation to be utilized as a component of the Post Mining Land Use of Livestock Grazing. Presence of this road will greatly facilitate livestock grazing operations by allowing access for vehicles for supplying supplemental feed, water, and for gathering livestock from the area, as needed, and increased the utility and value of the area for the private surface owners.

Earth Material Volumes

The proposed plan for the pit and placement of overburden and waste is shown in Figure 1. St. Cloud determined elevation and bench configuration information to help determine the volume of material to be excavated from the pit area and the final reclamation configuration.

Rock unit boundaries for cross sections used to estimate material volumes (Figures 2, 3 and 4) were provided by Dan Eyde (Chief Technical Officer and Geologist, St. Cloud Mining Company data, October 2020). This information, combined with rock description data collected on site in 2019 and 2020, and compiled cross sections based on the geologic data.

The area of the pits was determined based on utilization of a topographic base map Figure 1, geologic drill cross sections and geologic field observations. Locations for cross sections to adequately represent the average volume of material to be moved in mining and reclamation were determined based on ground topography and drill logs from exploration drilling. Elevation information was developed from a topographic base recently completed for the St. Cloud Zeolite Operations (verified with the U.S. Geologic Survey 7.5' Winston topographic quadrangle map, 1999, and aerial photography by Cooper, 2017), combined with the geologic data from recently completed exploration drilling program.

Three cross sections developed from the exploration drilling program, plus topographic considerations were utilized to estimate the volume of material that had to be mined and would be available for backfilling of the pits for reclamation. The pit benches are shown on the cross sections, Figures 2, 3 and 4. Final reclaimed slopes and final pit bottom are shown on the cross sections. All the material within the pit outline will be moved either during mining or reclamation.

The overburden is comprised of an overlying soil, sand, clay, and gravel unit (gravels), and the interburden consists of interbedded thin sedimentary units and a non-zeolite tuff. Both of these materials have historically been utilized as backfill and/or growth media, and have proven excellent materials for either use. These materials will be stripped from the top of the higher quality zeolite units and placed in overburden/interburden stockpiles, or, when feasible, dozed from adjacent areas as backfill or growth media as the pit advances. If there is not available area within the pit perimeter/mined out areas, material will be left along the upper, southern, western and northern margins of the pits to eventually be pushed downhill into the pit or final regraded slopes as growth media after mining. Much of the interburden will be left in the pits during mining to be utilized as backfill for completion of the final reclamation slope grade.

A final 3H:1V reclamation slope is shown for each of the cross sections. The areas for each excavation block was scaled from the cross sections. Volumes of overburden/interburden material were calculated by tabulating grids on the cross sections, utilizing a 1”=50’ scale. All material volume estimates for the pits are included in Reclamation Cost Estimate (Attachment 7).

A swell factor of 20% for all geologic units was utilized to calculate loose cubic yards. Push distance and grade were estimated from the cross sections (Figures 2, 3 and 4) and Figure 1, the Plan View Base Map showing project components and locations. Material weight was estimated from recent bank bulk density data. All dozer push of material for reclamation is downhill. All push distances and grades are reflected on page 3, Material Volumes, in the attached Reclamation Cost Estimate.

Earthmoving Cost Estimate
Total direct costs of earthmoving for reclamation at the South Side 1 Project pits is shown in the Summary of Earthmoving Costs, page 6, of the Reclamation Cost Estimate, Attachment 7.

Revegetation
Revegetation costs are made up of two components, the acreage that needs to be seeded and the cost per acre for the seeding process and monitoring. Cost of seed, fertilizer and mulch are provided on the Revegetation Costs page (page 7) of the Reclamation Cost Estimate (Attachment 7).

Revegetation Acreage
Acreages provided in the Reclamation Cost Estimate, Revegetation Costs, page 7, are to revegetate all disturbed areas based on survey data and areas derived from Figure 1. The total area that will be revegetated and monitored is 43.5 acres. Monitoring of the vegetation regrowth will be ongoing for 12 years after revegetation for each area is completed.

Revegetation Costs
The material cost of the seed mix, as shown in Table 1 is $163 per acre and mulch is approximately $172 per acre. Labor and equipment costs for seeding and applying mulch is approximately $765 per acre, for a total cost of $1,100 per acre. This cost is provided on the Revegetation Costs on page 7 the Reclamation Cost Estimate (Attachment 7).

A 5% per year failure rate was utilized to estimate direct cost adjustment for five years for the cost of revegetation at $1,100 per acre as shown in the Reclamation Cost Estimate (Attachment 7) summary given on page 7, Revegetation Costs. Historically, revegetation has been very successful at the St. Cloud Zeolite Operation. A 5% failure rate for each year for the full 12 years of monitoring was utilized as a conservative estimate. Historically, vegetation is generally well established within three years, therefore the 5% failure rate was utilized for five years since the estimates utilized in the 2013 and 2017 reclamation cost estimates.

Indirect Costs
Indirect costs for this estimate were applied in accordance with the MMD suggestions in previous correspondence for the Permit Modification 13-1 in 2017. Indirect costs include the administrative costs that would be borne by the State of NM in the event of default by St. Cloud. Reasonable contractor profit and overhead is included with the indirect costs, and is shown on page 10, Reclamation Bond Summary, of the Reclamation Cost Estimate (Attachment 7).

The Close Out plan is updated in five year increments, and an escalation factor for five years was utilized, even though the five year term since the last update will not be until 2022. A 20-year average (1999-2019) consumer price index (Consumer Price Index for All Urban Users (CPI-U)) for the escalation factor. The 20-year average cost escalation rate is 2.1% (shown in Attachment 9).

Costs shown in the Reclamation Cost Estimate under all pages except the page entitled Reclamation Bond Summary (page 10), are estimates of the actual costs for doing the work without regard for the indirect costs associated with accomplishment of work. This cost estimate

accounts for the indirect costs for third party work in lump sum format in the final calculations of the Reclamation Cost Estimate (Attachment 7) on the Reclamation Bond Summary, page 10.

Indirect costs as shown on the Reclamation Bond Summary, page 10 of the Reclamation Cost Estimate (Attachment 7), are calculated as a percentage of the total actual costs. The percentages and allocation are based on information provided by the MMD in its 2017 letter to St. Cloud for Permit Modification 13-1, and Consumer Price Index for All Urban Users (CPI-U). Indirect costs may vary from project to project, however it is believed that the percentages used herein accurately and reasonably account for all costs over and above actual costs that would be incurred by the State of NM in the event that a third party contractor had to utilized to complete the project reclamation.

Cost Summary

The Reclamation Cost Estimate is shown in its entirety in Attachment 7 to this document, and also provided in an electronic copy of the Permit Modification 20-1 Application.

Financial Assurance

The Financial Assurance for the existing St. Cloud Operations, as presented in the Closeout Plan Update submitted with the updated Permit Modification 13-1, dated September 20, 2017. The Financial Assurance (FA) was provided by lands owned by St. Cloud Mining and utilized as collateral for the FA. The FA was, and is, for deeded land that encompasses one 48.251-acre tract and two 3/4-acre residential lots near Winston, NM, in the S1/2 of the N1/2, Section 22, T. 11 S., R. 8 W., NMPM. The two residential lots are identified as lots 17 and 18 of the Fairview Estates Subdivision. The property is owned by St. Cloud as recorded in the WD Book 93, page 4813 and Book 94, page 4389, on June 25, 2001, Sierra County, NM. It was approved as financial assurance in modification SI006RE-Modification 03-1, and Permit Modification 13-1.

As described earlier in this application:

(i) St. Cloud Mining contracted an update the Land Appraisals for the parcels of land that are held as collateral for Financial Assurance by the State of New Mexico. These appraisals are for the parcel on land located near Winston, Sierra County and is of 48.25 acres in size, and a second parcel located near the St. Cloud Zeolite Mining Operation, not within the permit Design Limits Boundary, and is of 316.28 acres in size. These updated Land Appraisals were submitted to NM MARP on March 16. 2020, and are included by reference to this Permit Modification Application. The Letters of Transmittal for both appraisals, which provide a summary of the appraisals, are provided here as Attachments 5 and 6. The new 2020 Land Appraisals increase the total lands included as collateral and Financial Assurance to a gross value of $527,000. The previous gross value of these same lands was $462,000, resulting in a gross increase in the collateral of $65,000.

1) March 2020 Land Appraisal for 48.25 acres in Winston, Sierra County. Valuation of $190,000.
2) March 2020 Land Appraisal for 316.28 acres near the St. Cloud properties, Sierra County. Valuation $337,000.
3) Total Appraised Land valuations = $527,000.

4) FA allowed for land collateral, at 85% of appraised land value, March 2020 = $447,950.

In the approval of the last Permit Modification to Permit SI006RE, Modification 13-1, Section 3(13-1) FINDINGS OF FACT, Item H, "The total amount of financial assurance required for the closeout plan at the Winston Facility (St. Cloud Zeolite Operations), was $157,719.00 prior to the approval of this permit modification (through Modification 07-1, Yellowjacket Phase I). The total amount of financial assurance for the closeout plan at the (St. Cloud) Winston Facility following approval of the permit modification is $171,149.00." This is a comprehensive number for the entire operation, including the Plant Site, Old Main Zeolite Pit, Yellowjacket Phase I & II and identified roads.

Therefore, with the FA allowed from the Land Collateral Appraised value of $447,950 (85% of total value of the March 2020 appraisals), and from the 2018 Modification 13-1, the encumbered FA of $171,149 for operations through Modification 13-1, this results in a current condition of the project having approximately $276,801 in excess collateral for use as FA for Permit Modification 20-1, the proposed South Side 1 Project.

The summary Letters of Transmittal to the appraisals are included here as Attachments 5 and 6. The entire Land Appraisal was submitted in paper copy, and electronically to NM MARP in March 2020.

Figure 1

Project Base Map of
South Side 1 Permit Modification 20-1

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

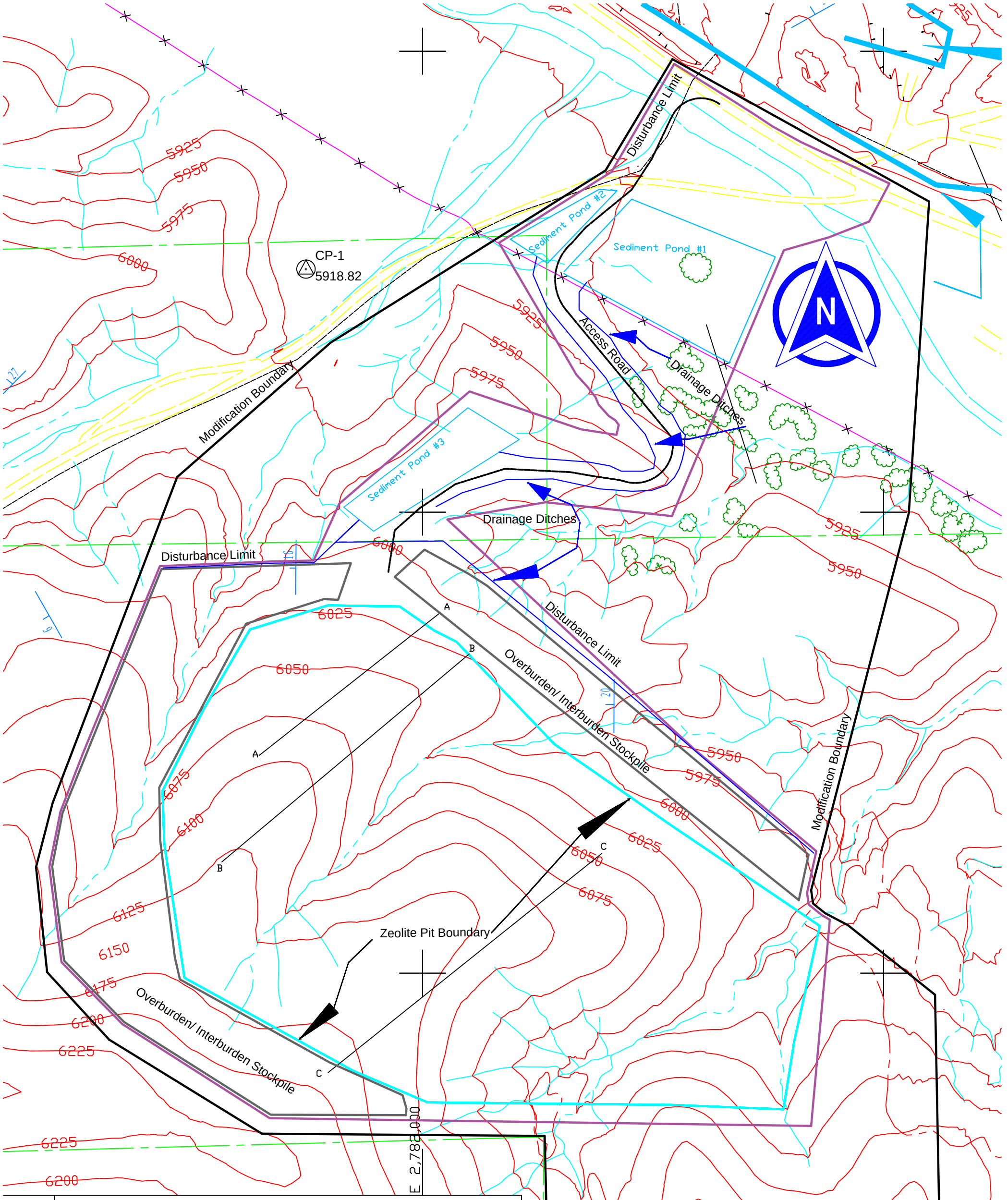


Figure 1 April 28, 2020
Permit NO SI006RE
Permit Modification 20-1
Sections 10&11,T12S,R8W
Sierra Co., NM

SCALE 1'' = 200'

St Cloud Mining Company

Figures 2, 3 and 4

South Side 1 Permit Modification 20-1
Geologic Cross Sections of Pit Areas

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

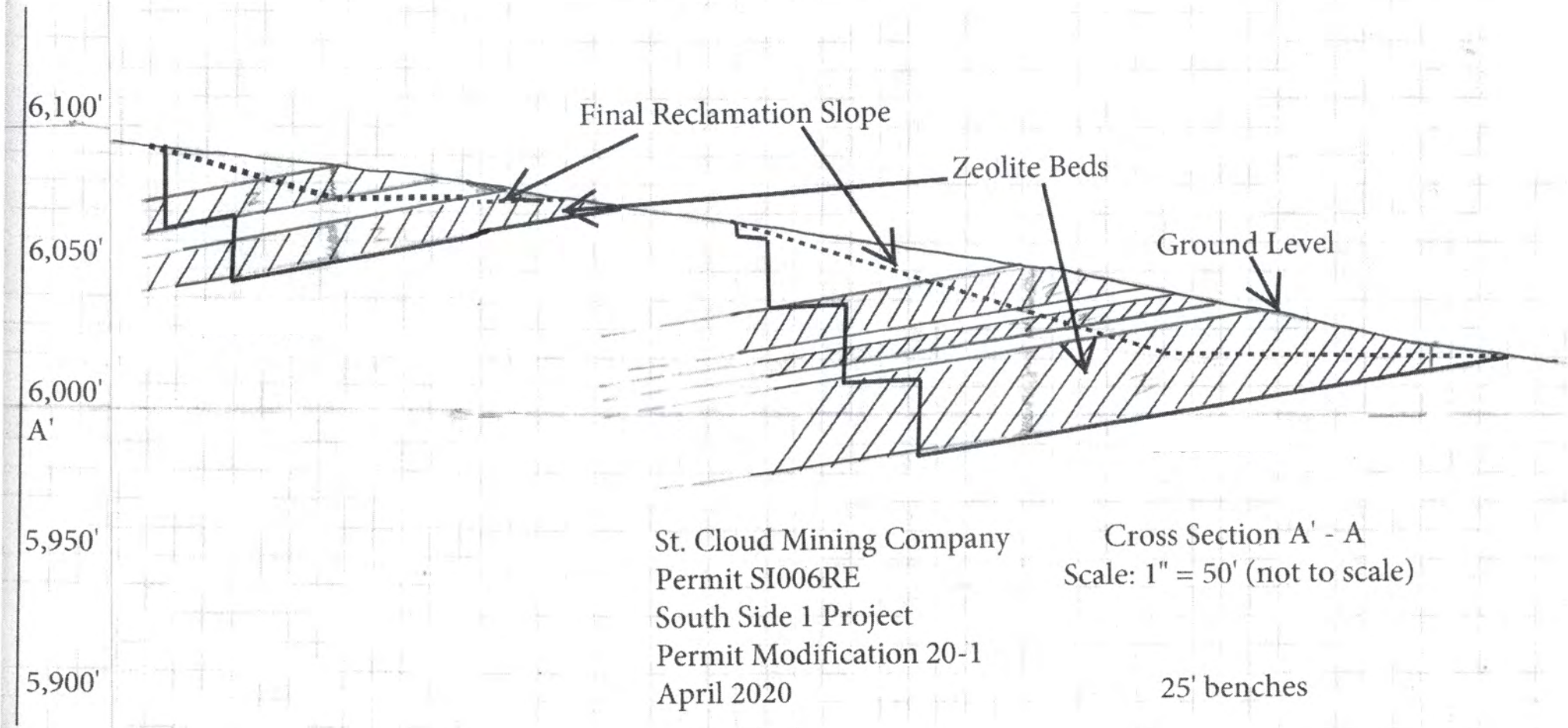
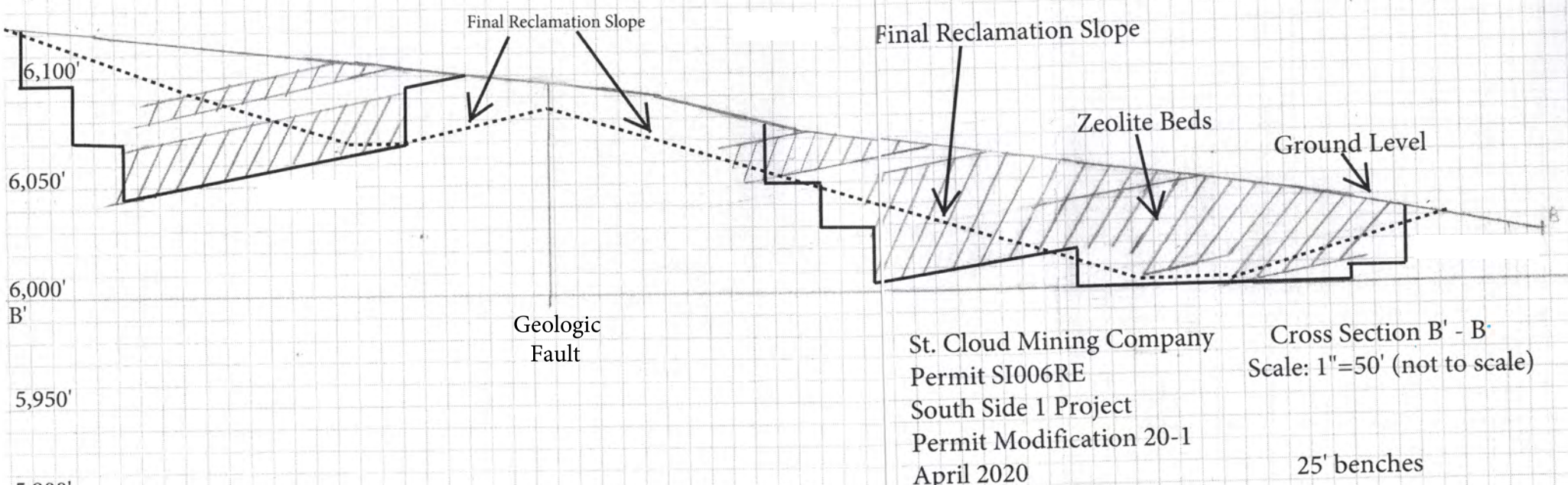


Figure 2. NW Area of Pit
Geologic Cross Section

Figure 3. Mid Area of Pit
Geologic Cross Section



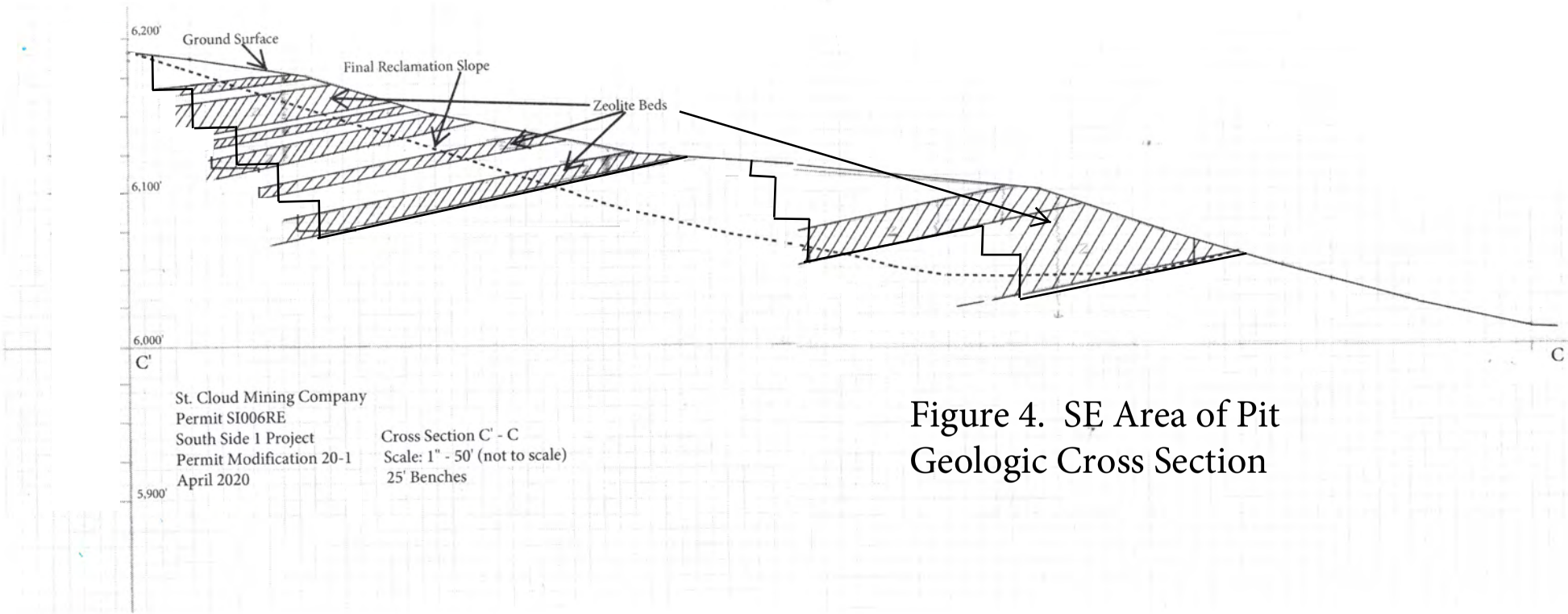


Figure 4. SE Area of Pit
Geologic Cross Section

ATTACHMENT 1

Field Reconnaissance/Clearance Survey for
Presence of potential habitat for
Wright's marsh thistle (*Cirsium wrightii)*

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

Threatened and Endangered Plant Habitat
Field Review

Field Reconnaissance/Clearance Survey
for presence of potential habitat or presence of
Wright's Marsh Thistle (*Cirsium wrightii)*

for the St. Cloud Mining Company
Zeolite Mining Operations South Side 1 Project Area

New Mexico Mine Reclamation Act

Reclamation Permit SI006RE
Permit Modification 20-1

16 March 2020

GMB16, LLC
PO Box 1474
Elephant Butte, NM 87935
Ph: 575-740-2840
jbokich@gmail.com

Executive Summary

On 16 March 2020, John Bokich of GMB16, LLC performed a field review of the area identified as the South Area Permit Modification area of St. Cloud Mining's Zeolite Mining Operations, NM Mining Act (19.10.1.1 NMAC), to determine whether there was potential habitat or presence of the state endangered plant species, Wright's Marsh Thistle (*Cirsium wrightii).* The area of the proposed project, and areas downgradient of the project were walked and potential habitat searched for. The area vegetation is of upland species, and no wet seeps, springs or other habitat, nor indication of vegetative species that occupy those habitat types were located on or adjacent to the proposed project area.

Project Location and Setting

The Project Area for the proposed Permit Modification 20-1 of NM Mining Reclamation Permit No. SI006RE is located in Sierra County, Township 12 South, Range 8 West, NE/4 of SE/4 of Section 10, and NW/4 of SW/4 of Section 11. The elevation of the project area ranges between 5,900 ft. and 6,200 ft. Annual rainfall is approximately 8 to 14 inches, and vegetation is an upland assemblage of grasses including primarily Blue Grama (*Bouteloua gracilis*) and Side Oats Grama (*Bouteloua curtipendula*), and shrubs including Mountain Mahogany (*Cercocarpus ledifolius*) and 4-wing Saltbush *(Atriplex canescens)*, and trees including One-seeded Juniper (*Juniperus monosperma)* and Piñon Pine (*Pinus edulis*).

Field Review

John Bokich, Principle of GMB16, LLC, a Certified Wildlife Biologist and graduate Ecologist from the University of Texas at El Paso. 1973 Bachelor's Degree and 1975 Master's Degree performed a Field Reconnaissance of the proposed Permit Modification area for St. Cloud Mining South Area of Permit No. SI006RE, to determine if there were any potential habitat for the state endangered plant species, Wright's Marsh Thistle (*Cirsium wrightii).*

The downgradient, north perimeter of the proposed Permit Modification Area was walked, and four (4) ephemeral water features were observed. Each ephemeral feature was walked southward (uphill) until they were undefined.

Each ephemeral feature is described below, and its location shown on Figure 1.

Feature 1. Easternmost ephemeral feature, and largest within the proposed Permit Modification area. There is a poorly defined channel, with a gravely bottom of 3 to 6 feet across. Perennial, upland vegetation species occurred in the bottom and sides of the ephemeral feature. Vegetation consisted primarily of Blue Grama Grass (*Bouteloua gracilis*), Sideoats Grama Grass (*Bouteloua curtipendula*), and One-seeded Juniper tree (*Juniperus monosperma*). No obligate wetland or mesic vegetation was present.

Feature 1. Easternmost ephemeral feature

Feature 2. The second ephemeral feature reviewed was located approximately 400 feet west of Feature 1. Like Feature 1, there is a poorly defined channel, with a gravely bottom of 2 to 5 feet across. Perennial, upland vegetation species occurred in the bottom and sides of the ephemeral feature. Vegetation consisted primarily of Blue Grama Grass (*Bouteloua gracilis*), Sideoats Grama Grass (*Bouteloua curtipendula*), and One-seeded Juniper tree (*Juniperus monosperma*). No obligate wetland or mesic vegetation was present.


Feature 2.

Feature 3. The third ephemeral feature reviewed was located approximately 300 feet west of Feature 2. Like Features 1 and 2, there is a poorly defined channel, with a gravely bottom of 2 to 5 feet across. Perennial, upland vegetation species occurred in the bottom and sides of the ephemeral feature. Vegetation consisted primarily of Blue Grama Grass (*Bouteloua gracilis*), Sideoats Grama Grass (*Bouteloua curtipendula*), and One-seeded Juniper tree (*Juniperus monosperma*). No obligate wetland or mesic vegetation was present.

Feature 4. The fourth ephemeral feature reviewed was located approximately 500 feet west of Feature 3, and is the western most ephemeral feature within the project area. Like Features 1, 2 and 3 there is a poorly defined channel, with a gravely bottom of 3 to 8 feet across. Perennial, upland vegetation species occurred in the bottom and sides of the ephemeral feature. Vegetation consisted primarily of Blue Grama Grass (*Bouteloua gracilis*), Sideoats Grama Grass (*Bouteloua curtipendula*), Mountain mahogany (*Cercocarpus ledifolius*) and One-seeded Juniper tree (*Juniperus monosperma*). No obligate wetland or mesic vegetation was present.

Findings

In summary, the Field Review of the area of the proposed Permit Modification for the St. Cloud Mining Reclamation Permit No. SI006RE, for its Zeolite Mining Operation determined that all of the water features on this area are entirely ephemeral in nature, carrying water only in the response to precipitation, that all vegetation is upland perennial and that there are no suitable habitat for Wright's Marsh Thistle (*Cirsium wrightii).*

ATTACHMENT 2

Letter from NM Dept. of Game and Fish
Regarding T&E Species and Habitat

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

GOVERNOR
Susana Martinez

DIRECTOR AND SECRETARY
TO THE COMMISSION
Alexandra Sandoval

DEPUTY DIRECTOR
Donald L. Jaramillo

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

Post Office Box 25112, Santa Fe, NM 87504

Tel: (505) 476-8000 | Fax: (505) 476-8123

For information call: (888) 248-6866

www.wildlife.state.nm.us

17 April 2017

James Hollen, Permit Lead
Mining Act Reclamation Program
Mining and Minerals Division (MMD)
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: St. Cloud Mining, Little Hermosa Project, Minimal Impact Exploration Permit SI039EM; NMDGF No. 17687

Dear Mr. Hollen,

The New Mexico Department of Game and Fish (Department) has reviewed the project referenced above. St. Cloud Mining Company (SCMC) is proposing to drill up to 32 holes to a depth of 60 feet. The total area to be disturbed will not exceed two acres. Following drilling, SCMC will be backfill and plug all holes, and reclaim areas of surface disturbance using approved methods. The Department, MMD, New Mexico Environment Department and SCMC conducted a site inspection on 4 April 2017. The habitat in the area is mature pinyon-juniper woodland with scattered oaks present.

The Department does not anticipate any significant impacts to wildlife or sensitive habitats during the exploratory drilling phase of the project. However, the Department provides the following recommendations to minimize impacts to wildlife when the mining operations commence.

To avoid potential destruction of occupied migratory bird nests, eggs or nestlings and to comply with the Migratory Bird Treaty Act, ground disturbance and vegetation removal activities should be conducted outside of the breeding season for songbirds and raptors (15 April – 1 September). If ground disturbing and clearing activities during the breeding season cannot be avoided, the area should be surveyed for active nest sites prior to any disturbance. For any active nests detected, an adequate buffer zone should be established to minimize disturbance. Buffer distances should be at least 100 feet from songbird and raven nests, and 0.25 mile from raptor nests. Active nest sites in trees or shrubs that must be removed should be mitigated by qualified biologists or wildlife rehabilitators. Department biologists are available for consultation regarding nest site mitigation, and can facilitate contact with qualified personnel.

Thank you for the opportunity to review and comment on the proposed project. If you have any questions, please contact Ron Kellermueller, Mining and Energy Habitat Specialist, at (505) 476-8159 or ronald.kellermueller@state.nm.us.

Sincerely,

Matt Wunder, Ph.D.
Chief, Ecological and Environmental Planning Division

cc: USFWS NMES Field Office

ATTACHMENT 3

Email from EMNRD Forestry Division Regarding T&E plant Species and Habitat

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

Hollen, James, EMNRD

From: Roth, Daniela, EMNRD
Sent: Thursday, March 30, 2017 10:02 AM
To: Hollen, James, EMNRD
Subject: RE: Little Hermosa Exploration Project - Modification 17-1 (SI039EM)

Dear James Hollen:

Thank you for giving me the opportunity to review and comment on the St. Cloud Mining Company's Minimal Impact Exploration Permit Application, Modification 17-1, near Winston, Sierra County, NM (SI039EM).
There is one state listed endangered plant that has the potential to occur on the project site, the Wright's marsh thistle (*Cirsium wrightii*). Please refer to the New Mexico Rare Plants website for additional information on this species (http://nmrareplants.unm.edu/index.html). This plant is also a federal candidate for listing under the Endangered Species Act.
In an effort to avoid potential impacts, I highly recommend evaluating the occurrence of potential habitat on the project site for the Wright's marsh thistle and perform clearance surveys for any areas that might provide suitable habitat. Should the species be located on the project site, I recommend avoiding the plants if possible, or minimizing impacts.

Please let me know if I can be of further help.

Sincerely,

Daniela Roth

BOTANY PROGRAM COORDINATOR
EMNRD-Forestry Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505
(505)476-3347 (Phone)
(505)476-3330 (Fax)

ATTACHMENT 4

Letter from NM Historic Preservation Division
Department of Cultural Affairs

Regarding National Register of Historic Places

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

Susana Martinez
Governor

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

April 26, 2017

James Hollen
Permit Lead
Mining Act Reclamation Program
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: St. Cloud Mining Company, Little Hermosa Project, Minimal Impact Exploration Permit Renewal Application, Permit No. SI039Em, Sierra County (HPD log 105539)

Dear Mr. Hollen:

I am writing in response to your request for review and comment on the above referenced minimal impact exploration permit application received March 31, 2017.

The locations of the proposed drill holes are indicated by Lat/Long coordinates, which fall within T12S, R8W, NW ½ of the SE ¼ of Section 10, and the W ½ of the SW ¼ of Section 11. Although St Cloud's 2013 permit application indicates private ownership of both surface and mineral rights, the review strongly suggests that the minerals are owned by the New Mexico State Land Office (SLO).

Please check the Mining and Minerals Divisions (MMD) records to verify the ownership of the minerals in the project area.

According to our files, the project area contains no cultural resources listed on the State Register of Cultural Properties or the National Register of Historic Places. In addition, a review of our archaeological records database shows that there are no archaeological sites located within the project area.

Although our records show that there are no archaeological sites within the project area, no surveys of have been conducted. Surveys conducted within Section 11 and adjacent sections of land identified significant archaeological sites, therefore there is a potential for unknown archaeological sites to exist within the permit area.

The operator is encouraged to have a cultural resources survey conducted by a professional archaeologist to ensure that significant archaeological sites are not inadvertently damaged or

destroyed. SHPO also recommends that the MMD consult with the SLO concerning land status, mineral rights, and any requirements they may have concerning cultural resources surveys.

If you have any questions, please do not hesitate to contact me. I can be reached by email at bob.estes@state.nm.us or by telephone at (505) 827-4225.

Sincerely,

Bob Estes

Bob Estes Ph.D.
HPD Staff Archaeologist

Log: 105539

STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

Susana Martinez
Governor

BATAAN MEMORIAL BUILDING
407 GALISTEO STREET, SUITE 236
SANTA FE, NEW MEXICO 87501
PHONE (505) 827-6320 FAX (505) 827-6338

April 5, 2013

Chris Eustice
Permit Lead
Mining Act Reclamation Program
Mining and Minerals Division
1220 South Saint Francis Drive
Santa Fe, NM 87505

Re: Request for Review and Comment, St. Cloud Mining Company, Little Hermosa Project, Minimal Impact Exploration Permit Application, Permit No. SI039EM, Sierra County

Dear Mr. Eustice:

I am writing in response to your request for review and comment on the above referenced application received March 18, 2013. According to our records, there are no properties listed on the National Register of Historic Places or the State Register of Cultural Properties. In addition, a review of our archaeological records shows that there are no known archaeological sites.

Please note, that contrary to what the permit states, a cultural resources survey has not been conducted of the permit area. However, a survey is not required under 19.10.3.302 NMAC because the permit area is private surface and private minerals. Based on this information, this permit appears to meet minimal impact status.

Although there are no known archaeological sites within the permit area, there is a potential for unknown archaeological sites to exist. It is HPD's opinion that an archaeological survey should be conducted of the area to be disturbed by mining activities in order to identify archaeological sites that may exist. However, if a survey is not conducted, we encourage avoidance and protection of any artifacts (i.e. pottery sherds, animal bone, flaked stone, etc.) that may be found.

If you have any questions regarding these comments, please do not hesitate to contact me. I can be reached by telephone at (505) 827-4064 or by email at michelle.ensey@state.nm.us.

Sincerely,

Michelle M. Ensey
Archaeologist

Log: 96454

ATTACHMENT 5

Transmittal Summary Letter from Barrett Appraisal Services, LLC
for

Land Appraisal of 48.25 acres of undeveloped land in Winston, Sierra County, NM

Utilized as collateral for Financial Assurance

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

BARRETT APPRAISAL SERVICES, LLC

Land Appraisal Report
Narrative Summary Report

48.25 Acres M/L of Undeveloped Land
And Two Adjacent Residential Lots
Winston, Sierra County, NM

Prepared for:

St Cloud Mining Company
P.O. Box 1670
Truth or Consequences, NM 87901

March 2020

Prepared by:
G. Vincent Barrett, Ph.D., MAI
NM Certification #00506-G

A report is one that is transmitted to the client upon completion of an assignment. Any appraisal report or review report transmitted or shown to the intended users that has a previous date from this document is null and void and should not be relied upon by anyone including the intended users. The report is the final document with the latest date. All previous submissions are not reports as defined by USPAP. The assignment and client are defined by contract. There may be multiple submissions before a document becomes a report. However, there is only one completion of an assignment. Any document submitted or shown to the client will be dated when transmitted. Only the named intended users should rely on this document because only the named intended user would know if a previous submission is superseded by a later report. Furthermore, the target of a report is the intended user. No one else should rely upon this report except the named intended users. Even the client & named intended users should not rely upon this document if it was superseded by a report with a later date

Aerial View of Subject Property—Boundaries are Approximate

Barrett Appraisal Services, LLC
P.O. Box 1244, 505 Hwy 195, Elephant Butte, NM 87935
575 644 2306 gvincent4@hotmail.com

March 3, 2020

Mr. Audie Padilla, Superintendent
St. Cloud Mining Company
P.O. Box 1670
Truth or Consequences, NM 87901

Letter of Transmittal RE:**48.251 acres of undeveloped land and two residential lots Winston, Sierra County, NM**

Dear Mr. Padilla:

At your request, BAS has completed an estimate of the current market value of the above referenced property. A complete appraisal has been conducted which is presented in a summary report. The subject of this appraisal is 48.25 acres and two adjoining residential lots. The property is currently owned by St. Cloud Mining Co. as recorded in WD Book 93 page 4813 and Book 94, page 4389 on June 25, 2001, Sierra County, NM.

The objective of this appraisal is to estimate the current Market Value of the Fee Simple interest in the above property, subject to the assumptions and limiting conditions stated in the report. The attached complete appraisal/summary format describes the data, methodology and reasoning used in the analysis. **It is the opinion of the appraiser that on the effective date of the appraisal March 2, 2020 that the current market value of the property (48.25 acres and two lots) that is the subject of this report is $190,000.**

In preparing the report, the conduct of the Appraiser has been governed by the professional standards and code of ethics of the Appraisal Institute and the Appraisal Foundation. The appraiser is not involved in any collection efforts of the client and my compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, a loan amount, the amount of the value estimate, the attainment of stipulated result or the occurrence of a subsequent event.

This is an appraisal Report that is intended to comply with the reporting requirements set forth under Standards Rule 2 of the Uniform Standards of Professional Appraisal Practice 2012 for an Appraisal Report. The material presented in the report is directed to the specific needs of the client and as such, it may only present summary discussions of the data, reasoning, and analyses that were used in the appraisal process to develop the appraiser's opinion of value. The appraisal report was prepared to answer specific questions of the client and may not fully address issues related to other's concerns or purposes. Where not presented directly in the report, then supporting documentation concerning the data, reasoning, and analyses is retained in the appraiser's file. The depth of discussion contained in this report is specific to the needs of the client and for the intended use as stated below. The appraiser is not responsible for unauthorized use of this report.

The analysis contained in this appraisal may be based upon hypothetical assumptions and estimates that are subject to uncertainty and variation. These estimates may be based on data obtained in interviews with third parties or documents obtained from third parties, and such data may not always be completely accurate or reliable. In addition, the analysis makes assumptions as to the future behavior of consumers, and the general economy, which are uncertain by their nature. It may be that some assumptions will not materialize and that unanticipated events may occur that could cause actual achieved results to differ from the analysis contained in this report. These differences may be material. Therefore, while the analysis was conscientiously prepared on the basis of the experience and knowledge of the appraiser as well as prudent research of the available data no warranty can be made of any kind that the projected results will, in fact, be achieved.

Additionally, Barrett Appraisal Services, LLC has not been engaged to evaluate the effectiveness of management/marketing, and is not responsible for future management/marketing efforts and actions upon which actual results may depend. Nor did we ascertain the legal, engineering, and regulatory requirements that may be applicable to the property, including zoning certification and other state and local government regulations, permits and licenses. No effort has been made to determine the possible effect on the property of present or future federal, state or local legislation, including any environmental or ecological matters or interpretations thereof. With respect to market demand analysis, our work did not include analysis of the potential impact of any significant rise or decline in local or general economic conditions.

It is the supported opinion of the appraiser, based on the assumptions employed in the investment parameters for the subject, that the value conclusion represents a market value achievable within 18-24 months exposure on the open market. No responsibility for any event, condition, or circumstance affecting the market that may take place subsequent to the last day of our fieldwork, i.e., Ma 2020.

The investigation, analysis, property inspection and appraisal were conducted and prepared by Dr. G. Vincent Barrett, MAI. There was no significant professional assistance provided by any other party. The appraiser has satisfied all competency requirements of USPAP and the Appraisal Institute and states that he is qualified to conduct the appraisal assignment. All FIRREA and USPAP research and reporting guidelines have been met.

Barrett Appraisal Services, LLC appreciates the opportunity to be of service to you. Should you or any other authorized user of this appraisal have further questions arising from the report, they will be welcomed. Please note that this letter is invalid as an opinion of value if detached from the report, which contains the text, exhibits, and addenda.

Barrett Appraisal Services, LLC

Dr. G. Vincent Barrett, MAI

ATTACHMENT 6

Transmittal Summary Letter from Barrett Appraisal Services, LLC
For

Land Appraisal of 316.28 acres of undeveloped land in Sierra County, NM

Utilized as collateral for Financial Assurance

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

BARRETT APPRAISAL SERVICES, LLC

Land Appraisal Report
Narrative Summary

316.28 Acres M/L of Undeveloped Land
Winston, Sierra County, NM

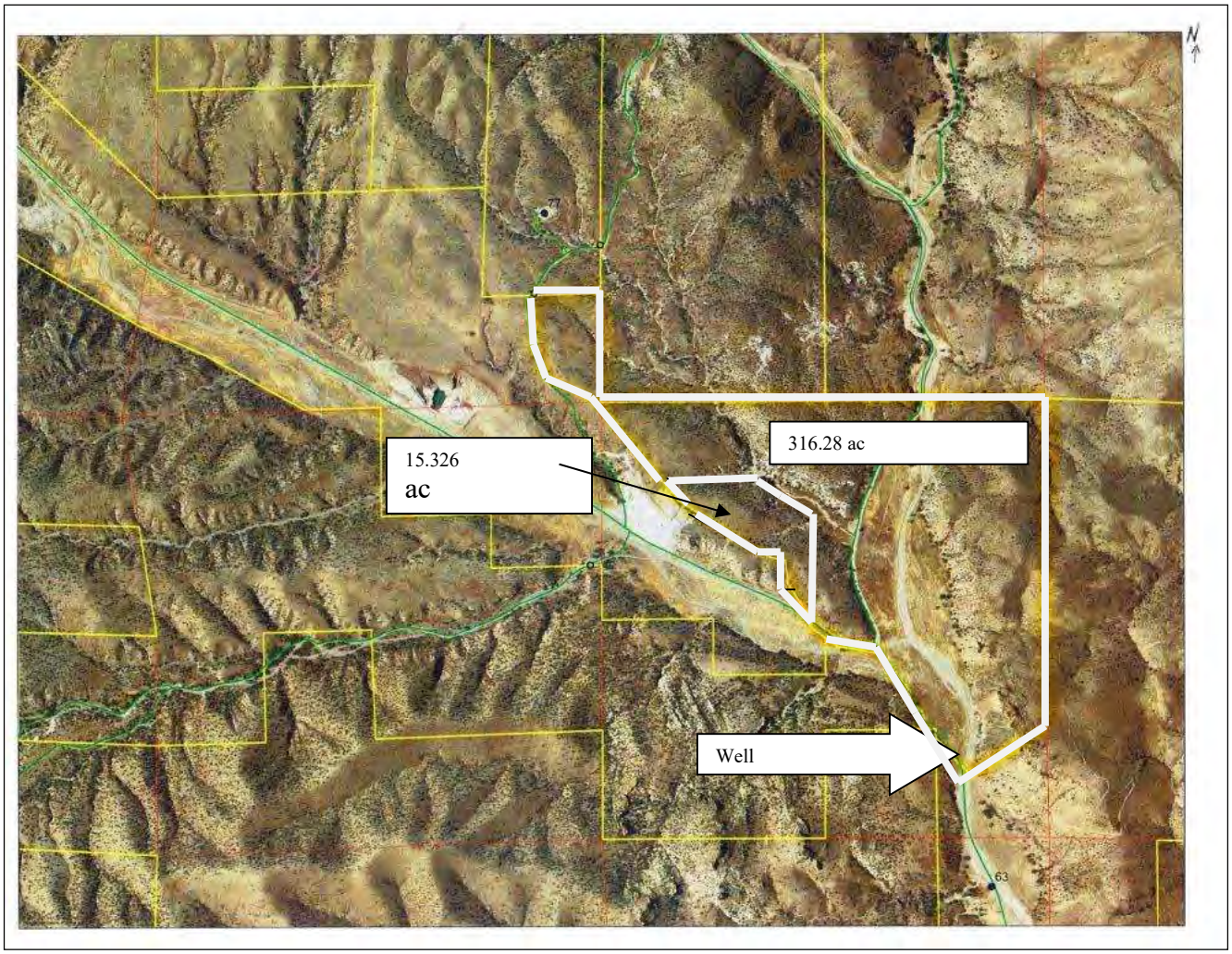
Prepared for:

St. Cloud Mining Company
P.O. Box 1670
Truth or Consequences, NM 87901

March 2020

Prepared by:
G. Vincent Barrett, Ph.D., MAI
NM Certification 506-G

A report is one that is transmitted to the client upon completion of an assignment. Any appraisal report or review report transmitted or shown to the intended users that has a previous date from this document is null and void and should not be relied upon by anyone including the intended users. The report is the final document with the latest date. All previous submissions are not reports as defined by USPAP. The assignment and client are defined by contract. There may be multiple submissions before a document becomes a report. However, there is only one completion of an assignment. Any document submitted or shown to the client will be dated when transmitted. Only the named intended users should rely on this document because only the named intended user would know if a previous submission is superseded by a later report. Furthermore, the target of a report is the intended user. No one else should rely upon this report except the named intended users. Even the client & named intended users should not rely upon this document if it was superseded by a report with a later date



Aerial View of Subject 316.28 Acre Property—Boundaries are Approximate

Barrett Appraisal Services, LLC
P.O. Box 1244, 505 Hwy 195, Elephant Butte, NM 87935
575 644 2306 gvincent4@hotmail.com

March 3, 2020

Mr. Audie Padilla, Superintendent
St. Cloud Mining Company
P.O. Box 1670
Truth or Consequences, NM 87901

Letter of Transmittal RE: 316.28 acres of undeveloped land approximately 3.5 miles South of Winston, and 3 miles SE of Chloride, Sierra County, NM.

Dear Mr. Padilla:

At your request, BAS has completed an estimate of the current market value of the above referenced property. An appraisal has been conducted which is presented in a narrative report. The subject of this appraisal is a 316.28 acre tract of vacant undeveloped mountainous land. The property is currently owned by St. Cloud Mining Co. as recorded in WD Book 114 page 1047 Reception # 200901707 on June 22, 2009, Sierra County, NM. The appraiser did conduct an appraisal on this same parcel in December of 2016. However, note that one year prior to that report the original parcel contained 331.61 acres as recorded in County records. The client had surveyed out a small parcel of 15.326 acres to be excluded, for mining purposes. Therefore, the current appraisal is again for the remaining 316.28 acres.

The objective of this appraisal is to estimate the current Market Value of the Fee Simple interest in the above property, subject to the assumptions and limiting conditions stated in the report. Although the property has water rights attached to a well on the property the water rights will not be included in the value of the subject at the request of the client. The attached complete appraisal/summary format describes the data, methodology and reasoning used in the analysis. **It is the opinion of the appraiser that on the effective date of the appraisal March 2, 2020 that the current market value of the property that is the subject of this report is $337,000**.

In preparing the report, the conduct of the Appraiser has been governed by the professional standards and code of ethics of the Appraisal Institute and the Appraisal Foundation. The appraiser's compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, a particular loan amount, the amount of the value estimate, the attainment of stipulated result or the occurrence of a subsequent event.

This is the appraiser's *Land Appraisal Report* which is intended to comply with the reporting requirements set forth under Standards Rule 2 of the Uniform Standards of Professional Appraisal Practice for an Appraisal Report. As such, it will only present statements and/or brief summary discussions of the data, reasoning, and analyses that were used in the appraisal process to develop the appraiser's opinion of value. Where not presented

directly in the report, then supporting documentation concerning the data, reasoning, and analyses is retained in the appraiser's file. The depth of discussion contained in this report is specific to the needs of the client and for the intended use as stated below. The appraiser is not responsible for unauthorized use of this report.

The analysis contained in this appraisal may be based upon hypothetical assumptions and estimates where noted in the report that are subject to uncertainty and variation. These estimates may be based on data obtained in interviews with third parties or documents obtained from third parties, and such data may not always be completely accurate or reliable. In addition, the analysis makes assumptions as to the future behavior of consumers, and the general economy, which are uncertain by their nature. It may be that some assumptions will not materialize and that unanticipated events may occur that could cause actual achieved results to differ from the analysis contained in this report. These differences may be material. Therefore, while the analysis was conscientiously prepared on the basis of the experience and knowledge of the appraiser as well as prudent research of the available data no warranty can be made of any kind that the projected results will, in fact, be achieved.

Additionally, Barrett Appraisal Services, LLC has not been engaged to evaluate the effectiveness of management/marketing and is not responsible for future management/marketing efforts and actions upon which actual results may depend. Nor did we ascertain the legal, engineering, and regulatory requirements that may be applicable to the property, including zoning certification and other state and local government regulations, permits and licenses. No effort has been made to determine the possible effect on the property of present or future federal, state or local legislation, including any environmental or ecological matters or interpretations thereof. With respect to market demand analysis, our work did not include analysis of the potential impact of any significant rise or decline in local or general economic conditions.

It is the supported opinion of the appraiser, based on the assumptions employed in the investment parameters for the subject, that the value conclusion represents a market value achievable within 18-24 months exposure on the open market. No responsibility for any event, condition, or circumstance affecting the market that may take place subsequent to the last day of our fieldwork, i.e., March 2, 2020.

The investigation, analysis, property inspection and appraisal were conducted and prepared by Dr. G. Vincent Barrett, MAI. There was no significant professional assistance provided by any other party. The appraiser has satisfied all competency requirements of USPAP and the Appraisal Institute and states that he is qualified to conduct the appraisal assignment. All FIRREA and USPAP research and reporting guidelines have been met.

Barrett Appraisal Services, LLC appreciates the opportunity to be of service to you. Should you or any other authorized user of this appraisal have further questions arising from the report, they will be welcomed. Please note that this letter is invalid as an opinion of value if detached from the report, which contains the text, exhibits, and addenda.

Barrett Appraisal Services, LLC
G. Vincent Barrett, Ph,D, MAI,
NM General Certification 506-G

ATTACHMENT 7

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

Reclamation Cost Estimate
&
Bond Calculations

St. Cloud Mining Company Zeolite Operation

BOND AMOUNT CALCULATION — Permit No. SI006RE
New Mexico Mining and Minerals Division — Permit Modification 20-1
General Information — South Side 1 Project
April 28, 2020

Applicant	St. Cloud Mining Company	Contact:
	PO Box 198	Joe McEnaney
	Winston, New Mexico 87943	(575) 743-5215
Permit Number	SI006RE	
Number of Acres	43.4	
Type of Operation	Existing Surface Mine / Zeolite	
Location	Sierra County, New Mexico	
Cost Estimate Calculation		**$171,426**
Escalated Estimate		**$190,197**

	Area/Acres
Earthmoving	
Backfill South Side 1 Project Pits	24.5
Ripping	
Rip 1,575 x 100 feet of project access road	3.61
Grading	
Regrade reclaimed South Side 1 Project Pit	24.5
Regrade overburden/interburden stockpile areas	9.3
Regrade Sediment Ponds (3)	3.2
Regrade Total:	37
Revegetation	
Revegetation of Pit area, overburden/interburden stockpile area, sediment ponds and ditches	43.5
Other	
Monitor vegetation regrowth	43.5

≤ 3H : 1V Final Reclamation Slopes

Item	**South Side 1 Project Pit** Description	Backfill Volume (lcy)	Origin	Destination	ave. Haul/Push Distance (ft)	Grade	Equipment
1	NW area of Pit _ backfill/final grade	56,296	E, W & S OB/IB + Stockpile	pit	150	-30%	D9T
2	Mid area of Pit _ backfill/final grade	42,963	E, W & S OB/IB + Stockpile	pit	150	-30%	D9T
3	SE area of Pit _ backfill/final grade	53,611	E, W & S OB/IB + Stockpile	pit	200	-30%	D9T
	Earth volume to move (lcy)	152,870					

BOND AMOUNT CALCULATION			St. Cloud Mining Co.		Permit No. SI006RE	
New Mexico Mining and Minerals Division					Permit Modification 20-1	
Page 4					South Side 1 Project	
Bulldozer Performance					April 28, 2020	
Description:	**Backfill NW Area of Pit with advancement of Pit to SE**					
Equipment:	D9T					
	Adjacent areas + OB/IB stockpile; 200' average push downhill					
Volume	**56,296**	**cy**	**Time**	**66.44**	**hours**	
			Productivity	**847**	**cy/hr-dozer**	
PERFORMANCE FACTORS						
material	1.20		operator	0.75		
grade	1.60		work hour	50	min/hr	
soil weight correction	2,606	lb/cy	visibility	1.00		
prod. method/blade	1.00		elevation	1.00		
normal production	800	cy/hr	direct drive trans.	1.00		
Description:	**Backfill Mid Area of Pit with continued advancement of Pit to SE**					
Equipment:	D9T-					
	Adjacent material + OB/IB stockpile; 200'average push downhill					
Volume	**42,963**	**cy**	**Time**	**51**	**hours**	
			Productivity	**847**	**cy/hr-dozer**	
PERFORMANCE FACTORS						
material	1.20		operator	0.75		
grade	1.60		work hour	50	min/hr	
soil weight correction	2,606	lb/cy	visibility	1.00		
prod. method/blade	1.00		elevation	1.00		
normal production	800	cy/hr	direct drive trans.	1.00		
Description:	**Backfill SE Pits (N + S) with advancement of Pit to SE**					
Equipment:	D9T-					
	Adjacent material + OB/IB stockpile; 250' average push downhill					
Volume	**53,611**	**cy**	**Time**	**63**	**hours**	
			Productivity	**847**	**cy/hr-dozer**	
PERFORMANCE FACTORS						
material	1.20		operator	0.75		
grade	1.60		work hour	50	min/hr	
soil weight correction	2,606	lb/cy	visibility	1.00		
prod. method/blade	1.00		elevation	1.00		
normal production	800	cy/hr	direct drive trans.	1.00		

Description: Recontour all disturbed areas
Rip / scarify compacted soils

Equipment: D9T-Grade reclaimed slopes at -30% grade or flat at pit bottom

Area	**43.5**	**ac**	**Time**	**16.4**	**hours**
			Productivity	**2.66**	**ac/hr-dozer**
PERFORMANCE FACTORS					
material	1.00		operator	0.75	
grade	1.40		work hour	50	min/hr
soil weight correction	2606	lb/cy	visibility	1.00	
prod. method/blade	1.00		elevation	1.00	
effective blade width	14.2	feet	direct drive trans.	1.00	
speed	2	miles/hr			

Includes grading of mine pit areas after backfilling

BOND AMOUNT CALCULATION		St. Cloud Mining Co.			Permit SI006RE		
New Mexico Mining and Minerals Division		Zeolite Operations			Permit Modification 20-1		
Summary Calculation of Earthmoving Costs					South Side 2 Project		
Page 6							
	Total Cost	**$43,801**			April 28, 2020		

Equipment Type	Ownership / Operating Cost ($/hr)	Labor Cost ($/hr)	Time Req'd (hrs)	Total Cost ($)	Total Production	Prod. Unit	Unit Cost ($/unit)
Dozers-Earthmoving - Cross Section Area A- A'							
D9T	$187	$34.17	66.4	$14,695	56,296	cy	$0.26
Dozers-Earthmoving - Cross Section B - B'							
D9T-	$187	$34.17	50.7	$11,215	42,963	cy	$0.26
Dozers-Earthmoving - Cross Section C ' C'							
D9T-	$187	$34.17	63.3	$13,994	53,611	cy	$0.26
Dozers-Grading & Ripping							
D9T-Grade reclaimed slopes at -30% grade	$187	$34.17	16.4	$3,619	43.5	ac	$83.20
Rip interior roads	$187	$34.17	1.3	$278	1,210.0	bcy	$0.23
TOTALS			198.0	**$43,801**			

	Area/Acres
Earthmoving	
Backfill South Side 1 Project Pits	24.5
Ripping	
Rip 1,575 x 100 feet of project access road	3.61
Grading	
Regrade reclaimed South Side 1 Project Pit	24.5
Regrade overburden/interburden stockpile areas	9.3
Regrade Sediment Ponds (3)	3.2
Regrade Total:	37
Revegetation	
Revegetation of Pit area, overburden/interburden stockpile area, sediment ponds and ditches	43.5
Other	
Monitor vegetation regrowth	43.5

Revegetated Area 43.5

Activity	Quantity	Unit	Unit Cost ($/unit)	Item Cost ($)
Vegetation monitoring	12	years	700	$8,400
Total				**$8,400**

Pits Backfill Volume Calculations - South Side 1 Project Pit

Cross Section Area Calculations
Northwest Section (Scale 1"=50')

Area conversion: 1 inch = 50 feet

Material Volume determine by plotting cross sections on graph paper at a scale of 1" = 50', with cells measuring 5 cells per inch = each cell equaling 10 square feet. Cells falling within geologic units were manually tabulated to determine volumes within area of cross sections.

Backfill volume requirements were determined by calculating average pit length x average pit width x average pit backill depth to achieve ≤3H : 1V final reclamation ground slope.

Zeolite ore shown as cross hatch in cross sections.
Pit benches ≤25 feet
All non-zeolite geologic material left unshaded and categorized as Overburden/Interburden
Overburden/Interburden mined materials volume is given in loose cubic yards (lcy), with a 20% swell factor.

NW AREA _ Upper and Lower Pits

	Upper Pit	Lower Pit
Pit area average length	150 ft	250 ft
Pit area average width	200 ft	200 ft
Average Backfill material deptl	19 ft	19 ft

Pit backfill volume to achieve final Reclamation Ground Slope = 56,296 lcy

MID AREA _ Upper and Lower Pits

	Upper Pit	Lower Pit
Pit average length	150 ft	200 ft
Pit area average width	200 ft	200 ft
Average Backfill material deptl	24 ft	11 ft

Pit backfill volume to achieve final Reclamation Ground Slope = 42,963 lcy

SW AREA _ Upper and Lower Pits

	Upper Pit	Lower Pit
Pit average length	150 ft	120 ft
Pit average width	250 ft	250 ft
Average Backfill material deptl	29 ft	12 ft

Pit backfill volume to achieve final Reclamation Ground Slope = 53,611 lcy

TOTAL: 152,870

Material Weight Calculations for Reclamation Cost Estimate

loose overburden/interburden weight = 97 lbs / cu ft

2,606 lbs / cu yd

DIRECT COSTS	1st time revegetation		$52,200
	Earthmoving		$43,801
	Revegetation @ 5%/yr failure rate	25%	$10,875
	Other (vegetation monitoring, etc)		$8,400
	Subtotal		**$115,276**
	Cost Escalation Period (years)	0	
	Cost Escalation Rate	0.0%	
	Adjusted Actual Cost Subtotal		**$115,276**
INDIRECT COSTS	Mobilization and Demobilization (1%-10%)	5%	$5,764
	Contingencies (2%-10%)	6%	$6,917
	Engineering Redesign Fee (2%-10%)	4%	$4,611
	Contractor Profit and Overhead	15%	$17,291
	Project Management Fee	10%	$11,528
	MMD Procurement Cost (2%-10%)	5%	$5,764
	Bonding and Insurance	4%	$4,275
	Subtotal		**$56,149**
TOTAL BOND AMOUNT		49%	**$171,426**
	Cost Escalation Period	5 years	
	Cost Escalation Rate	2.1 %	
TOTAL ESCALATED BOND AMOUNT			**$190,197**

(Escalation applied to both direct and indirect costs.)

ATTACHMENT 8

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Updated

Stormwater Pollution Prevention Plan
SWPPP

26 March 2020

St. Cloud Mining Company

STORM WATER POLLUTION PREVENTION PLAN

ST. CLOUD ZEOLITE OPERATION

WINSTON, NEW MEXICO

Updated March 26, 2020

EXECUTIVE SUMMARY

This Storm Water Pollution Prevention Plan (SWP3) was developed for the St. Cloud Mill Site, Winston, New Mexico, to satisfy the requirements for National Pollution Discharge Elimination System (NPDES) general permits for storm water discharges associated with industrial activity, as described in Federal Register, Volume 57, No. 175, Part III September 9, 1992. This site has been active since 1983 and is currently a zeolite and aggregate processing facility owned and operated by St. Cloud Mining Company.

Zeolites are a natural mineral material that is formed as a volcanic tuff with unique chemical and physical properties. The natural zeolites occurring and mined and processed at the St. Cloud facility are characterized as clinoptilolite. Clinoptilolite is an aluminosilicate lattice structured mineral which acts as a molecular sieve, binding with elements with a positive electrical charge, hydrocarbons and organic materials. It is widely used as animal feed supplements and for environmental purposes in air and water filtration, odor control and absorbent products.

Copies of the Notice of Intent for storm water discharges, associated with industrial activity under the NPDES general permit and the storm water general permit coverage notice, can be found in Appendix A. Throughout this document are specific terms and abbreviations that have specific meaning relative to the Environmental Protection Agency's (EPA's) stormwater management. A glossary of terms is provided in Appendix B to clarify the usage of these terms to the reader.

This is an updated, preliminary plan that will cover the responsibilities of the pollution prevention team, the assessment of potential pollution sources, the plan design and best management practices, and the implementation and evaluation of the pollution prevention plan. When the site is completely reclaimed, a Notice of Termination will be submitted to EPA.

STORM WATER POLLUTION PREVENTION PLAN
ST. CLOUD MILL SITE
WINSTON, NEW MEXICO

EPA BASELINE GENERAL PERMIT REQUIREMENTS

CERTIFICATION

In order to ensure that this Storm Water Pollution Prevention Plan is completely developed and adequately implemented, the NPDES storm water permit requires that authorized representative(s) of the operator sign and certify the plan.

Reports/Documents Certification Statement; **Appendix B. Standard Permit Conditions.**
B.11 Signatory Requirements.

B. Your SWPPP, including changes to your SWPPP to document any corrective actions taken as required by Part 3.1, and all reports submitted to EPA, must be signed by a person described in Appendix B, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in Appendix B, Subsection 11.A;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

E. Any person signing documents in accordance with Appendix B, Subsections 11.A or 11.B above must include the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature:_____ Date 3/26/2020

Joe McEnaney, President
St. Cloud Mining Company

STORM WATER POLLUTION PREVENTION PLAN
ST. CLOUD MILL SITE, WINSTON, NEW MEXICO 87943
(Mailing Address: P.O. Box 196 Winston, NM 87943)

Emergency Contact:

Joe McEnaney	Work Phone:	(575) 743-5215
Title: President	Cell Phone:	(203) 209-6084
	Emergency Phone:	(575) 743-5215
	Email:	jmcenaney@stcloudmining.com

Secondary Contacts:

Audie Padilla, Supt.	Emergency Phone:	(575) 740-0385
Linda Arnett, Office Mgr.	Emergency Phone:	(575) 743-2514
Raymond Rodriguez, Plant foreman	Emergency Phone:	(575) 740-5101

Type of Operation: Zeolite and aggregate rock processing and packaging facility

Operating Schedule: M-F, 7:30 a.m. to 4:00 PM or as needed.

Number of Employees: 15- 35 full time employees

Wastewater Discharge: No wastewater is generated at the St. Cloud Zeolite Operation, and no water is discharged from this site. Any available water is used for dust abatement, blending and mixing of products, reclamation purposes and y use by employees

NPDES Permit Number: NMR00A058

TABLE OF CONTENTS

Tables

Figures

Plates

Appendices

STORMWATER POLLUTION PREVENTION PLAN
ST. CLOUD MILL SITE, WINSTON, NEW MEXICO

1. POLLUTION PREVENTION TEAM

EPA GENERAL PERMIT REQUIREMENTS
Pollution Prevention Team
Part IV.D.1

Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water pollution prevention team that are responsible for developing the Storm Water Pollution Prevention Plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's Storm Water Pollution Prevention Plan.

Leader:

Joe McEnaney

Title: President

St. Cloud Mining Company
P.O. Box 196
Winston, NM 87901

Office Phone: (575) 743-5215
Fax: (575) 743-3333
email: deyde@stcloudmining.com

Responsibilities:

Plan development and implementation
Develop best management practices
Assign appropriate personnel to specific functions

Qualifications:

Mr. McEnaney is the President of St. Cloud Mining Company. He has been with St, Cloud since 2004 serving as Sr. Vice President before being named President in 2016. He has 42 years of mining industry experience including mineral exploration, mine development, operations, finance, domestic and international sales, and senior management responsibilities encompassing the gold, silver, diamonds, coal and industrial minerals sectors. He holds a BA from Franconia College

Team Members

Audie Padilla

Title: Operations Superintendent
Office Phone: (575) 743-5215
Cell Phone: (575) 740-0385

Responsibilities:

Construct and maintain structural containments
Plan development and implementation
- Develop best management practices

Inspections and monitoring
- Identify toxic and hazardous materials in the facility
- Identify potential spill sources
- Establish incident reporting procedures

Housekeeping
Preventative maintenance
- Fuel leak spill and tank rupture prevention and response

Form and record preparation

Qualifications:

Mr. Padilla began work for St. Cloud Mining Company in 1994 and has been continuously employed in positions of increasing responsibility. Mr. Padilla is working on an Associate's Degree from Western New Mexico University, and has extensive experience in heavy construction operations and equipment maintenance. He currently is the Operations Superintendent and is responsible for all site employees, operations supervision and regulatory obligations. He has attended a number of educational seminars including specialization in supervision skills, concrete production and installation, crushing and screening operations, in other maintenance and operational categories, and has received MSHA training and is an approved instructor. He is a Licensed NM Contractor.

Linda Arnett

Title: Office Manager
Office Phone: (575) 743-5215

Responsibilities:

Training
- Establish best management practice for training plant personnel

Recordkeeping and Reporting
- Review process changes
- Review environmental incidents
- Determine and implement necessary changes to this plan
- Coordinate incident response, cleanup and notification of authorities
- Maintain records

Qualifications:

Ms. Arnett has worked in positions of increasing responsibility for St. Cloud Mining Company since 2002, currently serving as Office Manager. She has extensive experience and is responsible for maintaining records and regulatory reporting including personnel records and training

Raymond Rodriguez

Responsibilities:

Construct and maintain structural containments
Plan development and implementation
Develop best management practices
Inspections and monitoring
Identify toxic and hazardous materials in the facility
Identify potential spill sources
Establish incident reporting procedures
Housekeeping
Preventative maintenance
Fuel leak spill and tank rupture prevention and response
Form and record preparation

Qualifications:

Mr. Rodriguez began working for St Cloud Mining in 1994 until 2007 when he left to work in other construction. In 2020 he returned and has been continuously employed in positions of increasing responsibilities. Raymond has completed MSHA training to be an instructor. While employed he has attended training seminars on the crusher and screening plant.

Site Drainage and Potential Pollutant Sources

5.1.2 Site Description.

Your SWPPP must include the following:

• *Activities at the Facility. Provide a description of the nature of the industrial activities at your facility.*

• *General location map. Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your stormwater discharges.*

2. DESCRIPTION OF POTENTIAL SOURCES OF MATERIALS THAT COULD AFFECT STORM WATER QUALITY

The site is located approximately nine miles southwest of Winston, New Mexico in Sec. 4, T 12 S., R. 8 W. This facility has been used since 1991 by St. Cloud Mining Co. for crushing, milling and stockpiling a variety of mineral products. Since February 1991, zeolite rock has been processed, packaged and transported from the site. The processing facilities are operated under various New Mexico Environment Department (NMED) air quality permits, and are under the jurisdiction and regular inspection of the Mine Safety and Health Administration (MSHA) and other regulatory authorities. A summary of environmental permits and registrations for St. Cloud Mill are listed in Appendix C.

Zeolite is a natural mineral material that is formed as a volcanic tuff with unique chemical and physical properties. The natural zeolites occurring and mined and processed at the St. Cloud facility are characterized as clinoptilolite. Clinoptilolite is an aluminosilicate lattice structured mineral which acts as a molecular sieve, binding with elements with a positive electrical charge, hydrocarbons and organic materials. It is widely used as for environmental purposes in air and water filtration, odor control and absorbent products.

St. Cloud natural zeolite mined is crushed, dried, sized and packaged without beneficiation or chemical treatment other than blending or mixing with fertilizers, surfactants, or other natural ingredients used to enhance the environmental or agricultural properties of the products.

The climate is typical desert southwest environment with a mean annual precipitation of about 12 inches. Surface water runoff occurs mainly during the summer thunder storm season, for the rest of the year drainages are typically dry. Ground water is used for dust abatement, mixing and blending of products and employee facilities.

Structures to divert upstream storm waters away from the plant and zeolite production area and containments for storm water runoff from the plant and mine site were in place prior to operating the facility. When possible, the storm water runoff collected from the site is used for dust abatement or is otherwise contained.

2.A Drainage

The plant and mine site is isolated by diversions and structural controls from natural drainage areas. The South Fork of the Cuchillo Negro Creek (South Fork) is adjacent to the operation to the south, but no water that contacts unreclaimed process facilities connects with this ephemeral watercourse. South Fork, generally dry throughout most of the year, is a tributary to the Rio Grande (approximately 35 miles to the east). A more general map of the site and surrounding area, with drainage areas and water courses, are shown in Figure 1.

Figure 1 Site Map showing location of major water course and drainage surrounding the St. Cloud Zeolite Operation.

2.A.1 Site Map

- the size of the property in acres;
- the location and extent of significant structures and impervious surfaces;
- directions of stormwater flow (use arrows);
- locations of all existing structural control measures;

- locations of all receiving waters in the immediate vicinity of your facility, indicating if any of the waters are impaired and, if so, whether the waters have TMDLs established for them;
- locations of all stormwater conveyances including ditches, pipes, and swales;
- locations of potential pollutant sources identified under Part 5.1.3.2;
- locations where significant spills or leaks identified under Part 5.1.3.3 have occurred;
- locations of all stormwater monitoring points;
- locations of stormwater inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall No. 1, No. 2, etc), indicating if you are treating one or more outfalls as "substantially identical" under Parts 4.2.3, 5.1.5.2, and 6.1.1, and an approximate outline of the areas draining to each outfall;
- municipal separate storm sewer systems, where your stormwater discharges to them;
- locations and descriptions of all non-stormwater discharges identified under Part 2.1.2.10;
- locations of the following activities where such activities are exposed to precipitation:
- fueling stations;
- vehicle and equipment maintenance and/or cleaning areas;
- loading/unloading areas;
- locations used for the treatment, storage, or disposal of wastes;
- liquid storage tanks;
- processing and storage areas;
- immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
- transfer areas for substances in bulk; and
- machinery; and
- locations and sources of run-on to your site from

The facility site map must include:

An outline of the drainage area of each storm water outfall

Location of any existing structural control measures used to reduce pollutants in storm water runoff

Surface water bodies

- Location where significant materials are exposed to precipitation
- Location where major spills or leaks have occurred
- Location for each of the following activities (where exposed to storm water):
  - Fueling stations
  - Vehicle and equipment maintenance and/or cleaning areas
  - Loading/unloading areas
  - Treatment, storage, or waste disposal areas
  - Liquid storage tanks
  - Processing and storage areas

A detailed map of the site area with locations of buildings, exposed materials, diversion and retention structures, and with other details required by the EPA General Rule are illustrated in Plate 1.

2.A.2 Direction of Storm Flows

The arrows on Plate 1 show the direction of storm water runoff. The processing facility is an area in which potential sources exist which could affect storm water if not contained. To minimize the potential for effects, containment embankments, diversion dikes and other structures have been built in and around the area. These structures collect and contain storm water runoff from the site and divert upstream storm water flow from the operating area. Water at the site is used for dust abatement, and does not discharge outside of containment facilities.

2.A.3 Description of Facility Areas that Could Potentially Generate Storm Water Runoff

EPA GENERAL PERMIT REQUIREMENTS
Description of Potential Pollutant Sources
5.1.3

You must document areas at your facility where industrial materials or activities are exposed to stormwater and from which allowable non-stormwater discharges are released. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. Material handling activities include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For each area identified, the description must include:

The St. Cloud Zeolite Operation has minimal potential to add significant amounts of any material to storm water discharges that would be deleterious to water quality. Sediment from zeolite or aggregate processing operations has some potential to enter storm water run off from the site area; however, storm water containment and settling ponds minimize this potential. Other potential materials on the site that could affect storm water quality include contained fuels and oils used for mobile equipment operation and general lubrication. An updated list of these materials and their locations are in Table 1.

2. B Inventory of Exposed Materials

EPA GENERAL PERMIT REQUIREMENTS
Inventory of Exposed Materials
5.1.3.1 Activities in the area.

A list of the industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams).

Conduct an inventory of materials that may be exposed to storm water at the site, and include a narrative description of:

Significant materials that have been handled, treated, stored, or disposed in a manner to allow exposure to storm water between the time of three years prior to the date of permit issuance and the present;

Method(s) and location of onsite storage or disposal;

Materials management practices employed to minimize contact of these materials and with storm water runoff between the time of three years prior to the date of the issuance of the permit and the present'

Table 1 MATERIAL INVENTORY 2013	Worksheet #3 Completed by: Audie Padilla Title: Operations Superintendent Updated: 8/18/15

Instructions: List all materials used, stored, or produced onsite. Assess and evaluate these materials for their potential to contribute pollutants to storm water runoff. Also complete Worksheet 3A if the material has been exposed during the last 3 years.

Material	Purpose/Location	Quantity (Units)			Quantity Exposed in last 3 years	Likelihood of contact with storm water. If yes, describe reason	Past Significant Spill or Leak	
		Used	Produced	Stored			Yes	No
1. Diesel Fuel	Fuel for mobile equipment/generators. Located within containment area E. of shop within zeolite processing facility.	Yes	No	Up to 12,000 gallons	None	No, contained in storage tanks and within secondary containment		X
2. Motor and Hydraulic Oils	Equipment Operation & Lubrication. Located within containment area E. of shop within zeolite processing facility.	Yes	No	Up to 1,000 gallons	"	No, kept in containment area in approved 550 gallon and 350 gallon bulk storage totes, and in approved 55 gal drums		X
3. Paint, solvents	Equipment Maintenance and Steel fabrication. Within shop and mill buildings.	Yes	No	Up to 50 Gallons	"	No, kept in approved sealed 1- 5 gal buckets until used		X
4. Used Oil	Recycled from Equipment Maintenance. Located within containment area E. of shop within zeolite processing facility.	No	Yes	Up to 11,000 gallons	"	No, kept in containment area in approved 400 gal bulk tank and transferred to a bulk storage tank of 10,276 capacity until collected and removed by recycle firm.		X

5. Fertilizers	Blending with zeolite products or reclamation purposes. Located in containment area within processing facility boundary.	Yes	No	Up to 10 tons	"	No, kept in bags on pallets in containment area or warehouse as needed.		X
6. Zeolite Stockpiles	All natural hydrated calcium – potassium aluminum silicates produced and saleable products. Located within zeolite processing facility boundary.	No	Yes	Up to 50,000 tons as needed	> than 500 tons	Within pit or containment area as processed and bagged for customers as needed,		X
7. Surfactants	Surface treatment of zeolite product to customer specification. Located within zeolite processing facility boundary.	Yes	No	Up to 20 drums	"	No, kept in vender supplied 55 gal drums until applied to zeolite product for bagging and sales to customers.		X
8. Aggregate Products	Untreated, Natural Construction and Highway aggregates. Located south and southwest of zeolite processing facility.	Yes	Yes	Up to 50,000 tons	> than 1000 tons as road surfacing materials	Saleable products stockpiled in containment area. Material used for road maintenance and construction subject to erosion.		X
9. Explosives	Blasting Media for Mining Operations. Located near zeolite mine.	Yes	No	Up to 30 tons	None	No. Stored in approved and inspected magazines.		X
10. Propane	Product drying and general utility purposes. Located in NE quadrant of zeolite processing facility.	Yes	No	Up to 12,000 gal	None	No. Gaseous material stored in pressured vessels.		X

11. Spare parts, machinery & materials	General repair and spare components. Located in and around zeolite processing facility, and in "boneyards"	N/A	N/A	Up to 50 tons	None	Yes, but in contained area.		X

EPA GENERAL PERMIT REQUIREMENTS
Inventory of Exposed
5.1.3.2 Pollutants.

A list of the pollutant(s) or pollutant constituents (e.g., crankcase oil, zinc, sulfuric acid, and cleaning solvents) associated with each identified activity. The pollutant list must include all significant materials that have been handled, treated, stored, or disposed, and that have been exposed to stormwater in the 3 years prior to the date you prepare or amend your SWPPP.
Existing structural and nonstructural control measures to reduce pollutants in storm water runoff, including their locations; and any treatment of storm water runoff.

Reclaimed tailings impoundments, zeolite stockpiles and products at the processing site, and miscellaneous aggregate materials and spare parts and components are the most common materials exposed on the site. An inventory and record of exposed materials, listed in Table 2 will be kept on site. This inventory will be kept updated as new materials are brought onto the site or removed from the site.

All materials will be contained and disposed of in accordance with Best Management Practices (BMP) discussed in Section 3.

2. C Spills and Leaks

EPA GENERAL PERMIT REQUIREMENTS
Spills and Leaks
5.1.3.3 Spills and Leaks.
You must document where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. You must document all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the 3 years prior to the date you prepare or amend your SWPPP. Note: Significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 USC §9602. This permit does not relieve you of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

EPA has defined "significant spills" to include releases within a 24-hour period for hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act and Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERLA). Reportable quantities are set amounts of substances in pounds, gallons, or other units and are listed in Appendix D. The National Response Center must be notified at (800) 424-8802 if there re any releases of the substances listed in Appendix D in excess of the reportable quantity. Releases are defined to include any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.

Small spills of fuel oil, hydraulic oil, and motor oil have occurred in the vicinity of the maintenance shop and generator buildings on the site. All spills and leaks of materials that may impair the quality of storm water discharge will be reported. No significant spills or leaks that have occurred to date at the operation.

Table 2 DESCRIPTION OF EXPOSED SIGNIFICANT MATERIAL	Completed by: Audie Padilla Title: Operations Superintendent Date: 3/26/2020

Instructions: Based on your material inventory, describe the significant materials that were exposed to storm water during the past three years and/or are currently exposed. For the definition of "significant materials" see page 5 of this summary.

Description of Exposed Significant Material	Period of Exposure	Quantity Exposed (units)	Location (as indicated on the site map)	Method of Storage or Disposal (e.g., pile, drum, tank)	Description of Material Management Practice (i.e., pile, covered, drum sealed)
Motor and Hydraulic Oil	20 years	Up to 1,000 gal	Within containment area north of mill building	Bulk tote storage containers	Bulk tote storage containers sealed and stored in cement containment pad with 29505 gal Capacity.
Fuel - Diesel	20 years	Up to 12,000 gallons	Within containment area east of shop	Bulk storage tanks	Bulk storage tank within zeolite constructed concrete containment area. Capacity 16,000 gal.
Used Oil	10 years	Up to 11,000 gallons	Within containment area east of (400 gallon tote) and within containment area east of shop & generator buildings (10, 300 gallon tank)	Bulk storage tote and tank	Bulk storage tote and tank within concrete containment areas. Capacity 29,505 gal.
Mill tailings	20 years	300,000 tons	South of operation facilities	In approved, permitted and reclaimed tailings facilities	Tailings facilities closed and reclaimed, with financial assurance released by agencies.
Used equipment, parts, metal components, spare drums	15 years	Misc. materials, several tons	In operations yard, north of yard in "boneyard"	Stored on pads or within "boneyards" within storm water containment areas	Materials, parts and machinery stored to prevent spillage, trash or leakage of materials or fluids that could degrade storm water
Zeolite ores and products	10 years	Up to 300 tons	In and around zeolite processing facility	Stored within storm water containment areas or covered facilities	Stored within storm water containment areas or covered facilities
Aggregate materials	10 years	Up to 500 tons	In and around zeolite processing facility	Stored within storm water containment areas	Stored within storm water containment areas

Table 3 LIST OF SIGNIFICANT SPILLS AND LEAKS	Completed by: Audie Padilla Title: Operations Superintendent Date:

Directions: **Record below all significant spills and significant leaks of toxic or hazardous pollutants that have occurred at the facility.**
None to date

Definitions: **Significant spills include, but are not limited to, releases of oil or hazardous substances in excess of reportable quantities.**

				Description				Response Procedure		
Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Type of Material	Quantity	Source, if Known	Reason	Amount of Material Recovered	Material No longer Exposed to Storm Water (True/False)	Preventative Measure Taken

				Description				Response Procedure		
Date (month/day/year)	Spill	Leak	Location (as indicated on site map)	Type of Material	Quantity	Source, if Known	Reason	Amount of Material Recovered	Material No longer Exposed to Storm Water (True/False)	Preventative Measure Taken

2. D *Sampling Data*

EPA GENERAL PERMIT REQUIREMENTS
Sampling Data
4.2
Quarterly Visual Assessment of Stormwater Discharges.

Once each quarter for the entire permit term, you must collect a stormwater sample from each outfall (except as noted in Part 4.2.3) and conduct a visual assessment of each of these samples. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but should be collected in such a manner that the samples are representative of the stormwater discharge.

The visual assessment must be made:

Of a sample in a clean, clear glass, or plastic container, and examined in a well-lit area;

On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge from your site; and

For storm events, on discharges that occur at least 72 hours (3 days) from the previous discharge. The 72-hour (3-day) storm interval does not apply if you document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period.

You must visually inspect the sample for the following water quality characteristics:

- *Color;*
- *Odor;*
- *Clarity;*
- *Floating solids;*
- *Settled solids;*
- *Suspended solids;*
- *Foam;*
- *Oil sheen; and*
- *Other obvious indicators of stormwater pollution.*

Storm water runoff from the plant site is contained and storm-water runoff that is diverted around the plant site. The sampling will be taken from the primary containment pond located west of the plant. Named as Z-5 containment pond on site map Plate 1, Containment Area E. Due to the semi arid climate sampling will be distributed to times when enough perception occurs that there is a runoff into our containment pond according to **4.1.3** of the General Permit.

4.2.2 Quarterly Visual Assessment Documentation.

You must document the results of your visual assessments and maintain this documentation onsite with your SWPPP as required in Part 5.4. You are not required to submit your visual assessment findings to EPA, unless specifically requested to do so. At a minimum, your documentation of the visual assessment must include:

- *Sample location(s)*
- *Sample collection date and time, and visual assessment date and time for each sample;*
- *Personnel collecting the sample and performing visual assessment, and their signatures;*
- *Nature of the discharge (i.e., runoff or snowmelt);*
- *Results of observations of the stormwater discharge;*
- *Probable sources of any observed stormwater contamination,*
- *If applicable, why it was not possible to take samples within the first 30 minutes.*

Any corrective action required as a result of a quarterly visual assessment must be performed consistent with Part 3 of this permit.

Storm water runoff from the plant site is contained and storm-water runoff that is diverted around the plant site. The sampling will be taken from the primary containment pond located west of the plant. Named as Z-5 containment pond on site map Plate 1, Containment Area E. Due to the semi arid climate sampling will be distributed to times when enough perception occurs that there is a runoff into our containment pond according to **4.1.3** of the General Permit.
Storm water sampling will be documented as required and filled within this SWPPP in Apendix E of this SWPPP.

2. E Risk Identification and Summary of Potential Pollutant Sources

EPA GENERAL PERMIT REQUIREMENTS
Risk Identification and Summary of Potential Pollutant Sources
Part IV.D.2.e

Include in your plan a narrative description of the potential pollutant sources and identify any pollutant of concern that may be generated by the following activities at your facility:

Loading and unloading operations
Outdoor storage activities
Outdoor manufacturing or processing activities
Onsite waste disposal practices

Raw Materials: The mining, crushing and stockpiling of rock material is done outdoors. Crushing operations are a potential source of dust, and only pose a potential source of silt to storm water discharge. Airborne dust is controlled by dust abatement and regulated by air quality permits. Materials presently produced during crushing are sold and removed from the site or stockpiled. Certain particle sizes of

zeolites not readily saleable are placed in an impoundment for future recovery and sales or capping and reclamation as required by Ground Water Permit DP # 314 with the New Mexico Environment Department (NMED), or as required by the NM Mining Act of 1993 and St. Cloud's approved Close Out Plan.

Fuels: Loading and unloading operations represent the greatest risk of spills of diesel fuels and oils. Fuel oil and other oils are stored and contained outdoors within concrete containment areas. Used oil is collected in a portable 400 gallon tote, and within a 10,300 gallon holding tank within the containment area, and pumped out and removed by companies qualified and licensed to engage in waste oil disposal, treatment, and transportation.

Waste Products: Sewage from on site toilet and shower facilities are treated by a septic tank and leach field system permitted through the NMED. The leach field is isolated from site runoff. Trash such as waste paper from the office and empty boxes from the shop and warehouse are collected and hauled off-site to the approved Sierra County Landfill located near Winston, NM.

Evaluations of storm water flow direction and an estimate of materials likely to be present in storm water discharge at the site were conducted. Results from this evaluation indicated that there is minimal threat of pollutants entering storm water discharge, due to the containment of storm water on site, and due to the nature of the operation, and lack of materials that have the potential to degrade storm water.

3. MEASURES AND CONTROLS

Measures and controls correspond to the pollution sources identified in Section 2 of this document. The Best Management Practices outlined below will be used as standard guidelines for preventing pollution of storm water runoff.

3. A Good Housekeeping

EPA GENERAL PERMIT REQUIREMENTS

2.1.2.2 Good Housekeeping

Good housekeeping requires the maintenance of areas which may contribute pollutants to storm water discharges in a clean, orderly manner.

Good housekeeping consists of keeping the facility clean and orderly. This is a source control Best Management Practice, which involves removing empty containers off site or to a safe disposal site, and moving waste material to a storage or disposal site.

3. A.1 Method of Onsite Storage and Disposal

Fuels: Methods of proper handling of fuels on the site include:

Minimization of the area where fuels are used.
Removal of empty containers.
Proper disposal of fuel containers.
Concrete containment around fuel tanks.
Regular inspection of fuel facilities and maintenance of piping and tanks.
Employee training in safe handling and inspection procedures.

Preventative and response plans for fuel and oil tank leaks will be implemented. Reports will be recorded on this plan under Table 3.

Ores and processed rock: Efforts will be made to minimize dust and accumulation of fine grained materials around the processing facility.

Storm water disposal: Storm water collected onsite will be used for dust abatement or left in settling ponds for evaporation.

3. B Preventative Maintenance

EPA GENERAL PERMIT REQUIREMENTS
Preventative Maintenance
Part IV.D.3.b

The preventative maintenance program must include:

Timely inspection and maintenance of storm water management devices (e.g., catchment basins, berms); inspection and testing of facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters; and proper maintenance of facility equipment and systems.

Materials: The amount of exposed materials on the site will be minimized in accordance with good housekeeping policies.

Storm water containments: Settling ponds, diversion structures and impoundments will be inspected periodically, and will be cleaned out and otherwise maintained as necessary. Inspections will include: structural stability of ponds, capacity of ponds, and leakage. Ponds and structures may be expanded from time to time as may be appropriate to maintain containments and such work shall be noted on appropriate reports.

3. C Spill Prevention and Response Procedures

EPA GENERAL PERMIT REQUIREMENTS
2.1.2.4 Spill Prevention and Response Procedures.

•Procedures for plainly labeling containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides," etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

•Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

•Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your stormwater pollution prevention team (see Part 5.1.1); and

•Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC, metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

There is one 12,117-gallon and two 500-gallons above ground fuel storage tanks near the maintenance building area. (See Plate E). A Spill Prevention Control and Countermeasure Plan has been developed for the site. Good housekeeping procedures will be used to prevent fuel spills in the use and storage areas. Care is used during fueling and maintenance of machinery to avoid spillage. In the event of a leak or minor spill, the contaminated area is treated with absorbent, excavated, removed form the area, and contained. Any affected soils will be remediated in accordance with all applicable state and federal regulations. Within the zeolite facility, any spills of hydrocarbons would be adsorbed by zeolite material, which would then be routed through the dryer. Hydrocarbons in the zeolite would volatilize and act as fuel in the dryer system.

3. D Inspections

EPA GENERAL PERMIT REQUIREMENTS
Visual Inspections
4.1.1 Routine Facility Inspection Procedures.

Conduct routine facility inspections of all areas of the facility where industrial materials or activities are exposed to stormwater, and of all stormwater control measures used to comply with the effluent limits contained in this permit. Routine facility inspections must be conducted at least quarterly (i.e., once each calendar quarter) although in many instances, more frequent inspection (e.g., monthly) may be appropriate for some types of equipment, processes, and control measures or areas of the facility with significant activities and materials exposed to stormwater. Perform these inspections during periods when the facility is in operation. You must specify the relevant inspection schedules in your SWPPP document as required in Part 5.1.5. These routine inspections must be performed by qualified personnel (for definition see Appendix A) with at least one member of your stormwater pollution prevention team participating. At least once each calendar year, the routine facility inspection must be conducted during a period when a stormwater discharge is occurring.
Track results of inspections to ensure that appropriate actions are taken; and

Maintain records of all inspections.

Routine visual inspections are not meant to be comprehensive evaluations of the entire Storm Water Pollution Prevention Plan. The visual inspection is simply a way to confirm that the measures chosen are in place and working and should periodically take place during storm events. Inspections of all potential pollution sources, storm-water diversion structures, and containments will be done at least twice a year by one of the prevention team members. A record of inspection findings will be kept on the forms in Appendix E of this SWPPP. Actions, if any need be taken, will be recorded, and the Pollution Prevention Plan will be revised in order to accommodate the response and actions taken. Visual observation of discharge will be noted on the site map. Any site mitigation resulting from the visual inspection will also be noted on the map.

3. E Employee Training

EPA GENERAL PERMIT REQUIREMENTS
Employee Training
Part IV.D.3.e

Employee training programs must inform personnel at all levels of responsibility of the components of this pollution prevention plan; including how and why tasks are to be implemented. Topics will include:

Spill prevention and response
Good housekeeping
Material management practices

Safety and Environmental Awareness training of employees is held once a week and includes the following topics:

1. Employee safety and response
2. Review and familiarization of the Pollution Prevention Plan.
3. Housekeeping.
4. Fuel leak and spillage prevention and clean-up.
5. Components of the storm water system.
6. Maintenance of the storm water system.

3. F Recordkeeping and Internal Reporting Procedures

Recordkeeping and reporting will include plan changes and updates, inspections, training, spill response procedures, corrective action, and maintenance. An updated copy of this plan, complete with records of all activities and information related to the Pollution Prevention Plan, will be kept at the facility office.

3. G Non-Storm Water Discharges

The site is isolated from non-storm flows by diversion dikes. No sampling of this flow has been done, although ground water is routinely sampled and reported to the NMED as required by permits. Non-storm discharge does not occur from the site. If non-storm water discharges were to occur on the site, then a water sample will be collected and analyzed, so an assessment could be made and reported. Reports of non-storm water discharge will be recorded on the appropriate form provided in Appendix F.

3. H Sediment and Erosion Control

EPA GENERAL PERMIT REQUIREMENTS
Sediment and Erosion Control
Part IV.D.3.h

Identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

All areas of significant water flow within the site are well compacted, and do not present a high potential for erosion. If erosion of a diversion channel occurs, then erosion control devices will be installed according to the EPA recommended guidelines provided in Appendix G. This may include tasks such as lining channels with natural materials to reduce the channel flow.

The one exception to this is the diversion channel that was constructed north of the No. Tailing Impoundment, this has been converted to a zeolite storage facility. This channel was constructed in 1982, when the No. Tailings Impoundment was constructed, as required by the NM State Engineer for dam safety purposes. The diversion is cut through a hillside to prevent off site water from flowing into what was at that time a tailing impoundment, and which is now a zeolite storage facility. This area is in its final configuration and is not proposed to be modified in the approved Closure and Reclamation Plans for the site. While some erosion of the cut slope took place in early years after construction, the slope is currently weathered and has a natural armoring that minimizes erosion.

3.I Management of Runoff

EPA GENERAL PERMIT REQUIREMENTS
Management of Runoff
Part IV.D.3.i

> *The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the source of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharge from the site. The plan shall provide that measures determined to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source).*

Storm water from the site is collected in settling ponds and should not enter into storm water discharge areas off the site premises. If storm water runoff from the site occurs, then a discharge report will be made and the diversion system will be repaired and/or improved.

Updates on BMP evaluations will be recorded on the forms provided in Appendix H. This includes source identification, BMP identification and BMP implementation. Employee training records are maintained separately in a Safety and Environmental Awareness notebook.

4. *COMPREHENSIVE SITE COMPLIANCE EVALUATION*

EPA GENERAL PERMIT REQUIREMENTS
Comprehensive Site Compliance Evaluation
Part IV.D.4

Qualified personnel must conduct site compliance evaluations at appropriate intervals specified in the plan at least once a year (at least once in three years for inactive mining sites). As part of your compliance evaluations you are required to:

Inspect storm water drainage areas for evidence of pollutants entering the drainage system;

Evaluate the effectiveness of measures to reduce pollutant loadings and whether additional measures are needed;

Observe structural measures, sediment controls, and other storm water BMPs to ensure proper operation;

Inspect any equipment needed to implement the plan, such as spill response equipment;

Revise the plan as needed within two weeks of inspection (potential pollutant source description and description of measures and controls);

Implement any necessary changes in a timely manner, but at least within 12 weeks of the inspection;

The pollution prevention team must implement this plan and conduct annual inspection to:

a. Verify that potential pollution sources are accurately described and accounted for.

b. Update the site map, adding new buildings, activities, storage locations, or other changes that might influence storm-water runoff.

c. Verify procedures for revision of plan and implementation of corrective action has been taken.

d. Describe potential pollution sources found during inspection.

6.2 Required Monitoring.

This permit includes five types of required analytical monitoring, one or more of which may apply to your discharge:

1. Quarterly benchmark monitoring (see Part 6.2.1)
2. Annual effluent limitations guidelines monitoring (see Part 6.2.2);
3. State- or Tribal-specific monitoring (see Part 6.2.3);
4. Impaired waters monitoring (see Part 6.2.4); and
5. Other monitoring as required by EPA (see Part 6.2.5).

When more than one type of monitoring for the same parameter at the same outfall applies (e.g., total suspended solids once per year for an effluent limit and once per quarter for benchmark monitoring at a given outfall), you may use a single sample to satisfy both monitoring requirements (i.e., one sample satisfying both the annual effluent limit sample and one of the 4 quarterly benchmark monitoring samples).
All required monitoring must be conducted in accordance with the procedures described in

B.10 Monitoring and Records.

A. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of EPA at any time.

C. Records of monitoring information must include:

1. The date, exact place, and time of sampling or measurements;

2. The individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed

4. The individual(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of such analyses.

D. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

6.2.1 Benchmark Monitoring.

This permit stipulates pollutant benchmark concentrations that may be applicable to your discharge. The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data are primarily for your use to determine the overall effectiveness of your control measures and to assist you in knowing when additional corrective action(s) may be necessary to comply with the effluent limitations in Part 2.

6.2.1.1 Applicability of Benchmark Monitoring.

You must monitor for any benchmark parameters specified for the industrial sector(s), both primary industrial activity and any co-located industrial activities, applicable to your discharge. Your industry-specific benchmark concentrations are listed in the sector-specific sections of Part 8. If your facility is in one of the industrial sectors subject to benchmark concentrations that are hardness-dependent, you are required to submit to EPA with your first benchmark report a hardness value, established consistent with the procedures in Appendix J, which is representative of your receiving water. Samples must be analyzed consistent with 40 CFR Part 136 analytical methods and using test procedures with quantitation limits at or below benchmark values for all benchmark parameters for which you are required to sample.

6.2.1.2 Benchmark Monitoring Schedule.

Benchmark monitoring must be conducted quarterly, as identified in Part 6.1.7, for your first 4 full quarters of permit coverage commencing no earlier than April 1, 2009. Facilities in climates with irregular stormwater runoff, as described in Part 6.1.6, may modify this quarterly schedule provided that this revised schedule is reported to EPA when the first benchmark sample is collected and reported, and that this revised schedule is kept with the facility's SWPPP as specified in Part 5.4.

Data not exceeding benchmarks: After collection of 4 quarterly samples, if the average of the 4 monitoring values for any parameter does not exceed the benchmark, you have fulfilled your monitoring requirements for that parameter for the permit

term. For averaging purposes, use a value of zero for any individual sample parameter, analyzed using procedures consistent with Part 6.2.1.1, which is determined to be less than the method detection limit. For sample values that fall between the method detection level and the quantitation limit (i.e., a confirmed detection but below the level that can be reliably quantified), use a value halfway between zero and the quantitation limit.

Data exceeding benchmarks: After collection of 4 quarterly samples, if the average of the 4 monitoring values for any parameter exceeds the benchmark, you must, in accordance with Part 3.2, review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit, and either:

Make the necessary modifications and continue quarterly monitoring until you have completed 4 additional quarters of monitoring for which the average does not exceed the benchmark; or

Make a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the technology-based effluent limits or are necessary to meet the water-quality-based effluent limitations in Parts 2 of this permit, in which case you must continue monitoring once per year. You must also document your rationale for concluding that no further pollutant reductions are achievable, and retain all records related to this documentation with your SWPPP. You must also notify EPA of this determination in your next benchmark monitoring report.

In accordance with Part 3.2, you must review your control measures and perform any required corrective action immediately (or document why no corrective action is required), without waiting for the full 4 quarters of monitoring data, if an exceedance of the 4 quarter average is mathematically certain. If after modifying your control measures and conducting 4 additional quarters of monitoring, your average still exceeds the benchmark (or if an exceedance of the benchmark by the 4 quarter average is mathematically certain prior to conducting the full 4 additional quarters of monitoring), you must again review your control measures and take one of the two actions above.

***Natural background pollutant levels*:** Following the first 4 quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than 4 quarters of data, see above), if the average concentration of a pollutant exceeds a benchmark value, and you determine that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, you are not required to perform corrective action or additional benchmark monitoring provided that:

The average concentration of your benchmark monitoring results is less than or equal to the concentration of that pollutant in the natural background;

You document and maintain with your SWPPP, as required in Part 5.4, your supporting rationale for concluding that benchmark exceedances are in fact

attributable solely to natural background pollutant levels.

You must include in your supporting rationale any data previously collected by you or others (including literature studies) that describe the levels of natural background pollutants in your stormwater discharge; and You notify EPA on your final quarterly benchmark monitoring report that the benchmark exceedances are attributable solely to natural background pollutant levels.

Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources which are not naturally occurring.

6.2.2 Effluent Limitations Monitoring.

6.2.2.1 Monitoring Based on Effluent Limitations Guidelines. Table 6-1 identifies the stormwater discharges subject to effluent limitation guidelines that are authorized for coverage under this permit. Beginning in the first full quarter following April 1, 2009 or your date of discharge authorization, whichever date comes later, you must monitor once per year at each outfall containing the discharges identified in Table 6-1 for the parameters specified in the sector-specific section of Part 8.

Table 6-1. Required Monitoring for Effluent Limits Based on Effluent Limitations Guidelines

Regulated Activity	Effluent Limit	Monitoring Frequency	Sample Type
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	See Part 8.A.7	1/year	Grab
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	See Part 8.C.4	1/year	Grab
Runoff from asphalt emulsion facilities	See Part 8.D.4	1/year	Grab
Runoff from material storage piles at cement manufacturing facilities	See Part 8.E.5	1/year	Grab
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	See Part 8.J.9	1/year	Grab
Runoff from hazardous waste landfills	See Part 8.K.6	1/year	Grab
Runoff from non-hazardous waste landfills	See Part 8.L.10	/year	rab

Runoff from coal storage piles at steam electric generating facilities	S See Part 8.O.8	1 1/year	G Grab

6.2.2.2 Substantially Identical Outfalls.

You must monitor each outfall discharging runoff from any regulated activity identified in Table 6-1. The substantially identical outfall monitoring provisions are not available for numeric effluent limits monitoring.

6.3 Follow-up Actions if Discharge Exceeds Numeric Effluent Limit.

You must conduct follow-up monitoring within 30 calendar days (or during the next qualifying runoff event, should none occur within 30 days) of implementing corrective action(s) taken pursuant to Part 3 in response to an exceedance of a numeric effluent limit contained in this permit. See Part 9 for specific monitoring requirements applicable to individual States or Tribes. Monitoring must be performed for any pollutant(s) that exceeds the effluent limit. If this follow-up monitoring exceeds the applicable effluent limitation, you must comply with both Parts 6.3.1 and 6.3.2.

6.3.1 Submit an Exceedance Report.

You must submit an Exceedance Report consistent with Part 7.3.

6.3.2 Continue to Monitor.

You must continue to monitor, at least quarterly, until your discharge is in compliance with the effluent limit or until EPA waives the requirement for additional monitoring.

7. Reporting and Recordkeeping

7.1 Reporting Monitoring Data to EPA.

All monitoring data collected pursuant to Parts 6.2 and 6.3 must be submitted to EPA using EPA's online eNOI system (www.epa.gov/npdes/eNOI) no later than 30 days (email date or postmark date) after you have received your complete laboratory results for all monitored outfalls for the reporting period. If you cannot access eNOI, paper reporting forms must be submitted by the same deadline to the appropriate address identified in Part 7.6.1. If you are using paper reporting forms, EPA strongly recommends that you use the MSGP discharge monitoring report (MDMR) available at www.epa.gov/npdes/stormwater/msgp. See Part 9 for specific reporting requirements applicable to individual States or Tribes.

For benchmark monitoring, note that you are required to submit sampling results to EPA no later than 30 days after receiving laboratory results for each quarter that you are required to collect benchmark samples, in accordance with Part 6.2.1.2. If you collect multiple samples in a single quarter (e.g., due to adverse weather conditions, climates with irregular stormwater runoff, or areas subject to snow), you are required to submit all sampling results to EPA within 30 days of receiving the laboratory results.

7.2 Annual Report

You must submit an annual report to EPA that includes the findings from your Part 4.3 comprehensive site inspection and any corrective action documentation as required in Part 3.4. If corrective action is not yet completed at the time of submission of this annual report, you must describe the status of any outstanding corrective action(s). In addition to the information required in Parts 3.4 (Corrective Action Report) and 4.3.2 (Comprehensive Site Inspection Documentation), you must include the following information with your annual report:

- Facility name
- NPDES permit tracking number
- Facility physical address
- Contact person name, title, and phone number

EPA strongly recommends that you submit this report using the Annual Reporting Form provided as Appendix I. You must submit the annual report to EPA within 45 days (postmark date) after conducting the comprehensive site inspection to the address identified in Part 7.6.1.

7.3 Exceedance Report for Numeric Effluent Limits

If follow-up monitoring pursuant to Part 6.3 exceeds a numeric effluent limit, you must submit an Exceedance Report to EPA no later than 30 days after you have received your lab results. Your report must include the following:

NPDES permit tracking number;

Facility name, physical address and location;

Name of receiving water;

Monitoring data from this and the preceding monitoring event(s);

An explanation of the situation; what you have done and intend to do (should your corrective actions not yet be complete) to correct the violation; and
An appropriate contact name and phone number.

7.5 Recordkeeping.

You must retain copies of your SWPPP (including any modifications made during the term of this permit), additional documentation requirements pursuant to Part 5.4 (including documentation related to corrective actions taken pursuant to Part 3), all reports and certifications required by this permit, monitoring data, and records of all data used to complete the NOI to be covered by this permit, for a period of at least 3 years from the date that your coverage under this permit expires or is terminated.

7.6 Addresses for Reports

7.6.2.6 Region 6: Arkansas, Louisiana, Oklahoma, Texas, and New Mexico (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands).

U.S. EPA Region 6
Stormwater Coordinator
Compliance Assurance and Enforcement Division (6EN-WC)
EPA SW MSGP
P.O. Box 50625
Dallas, TX 75205

Appendix A
Glossary of Terms

Appendix B

Notice of Intent

Appendix C

Summary of Environmental Permits

Appendix D

EPA Recommended Design Criteria, Materials, and Construction Specifications for Sediment and Erosion Control Structures

Appendix E

Inspection and Maintenance Report Forms

Appendix F

Best Management Practice Forms

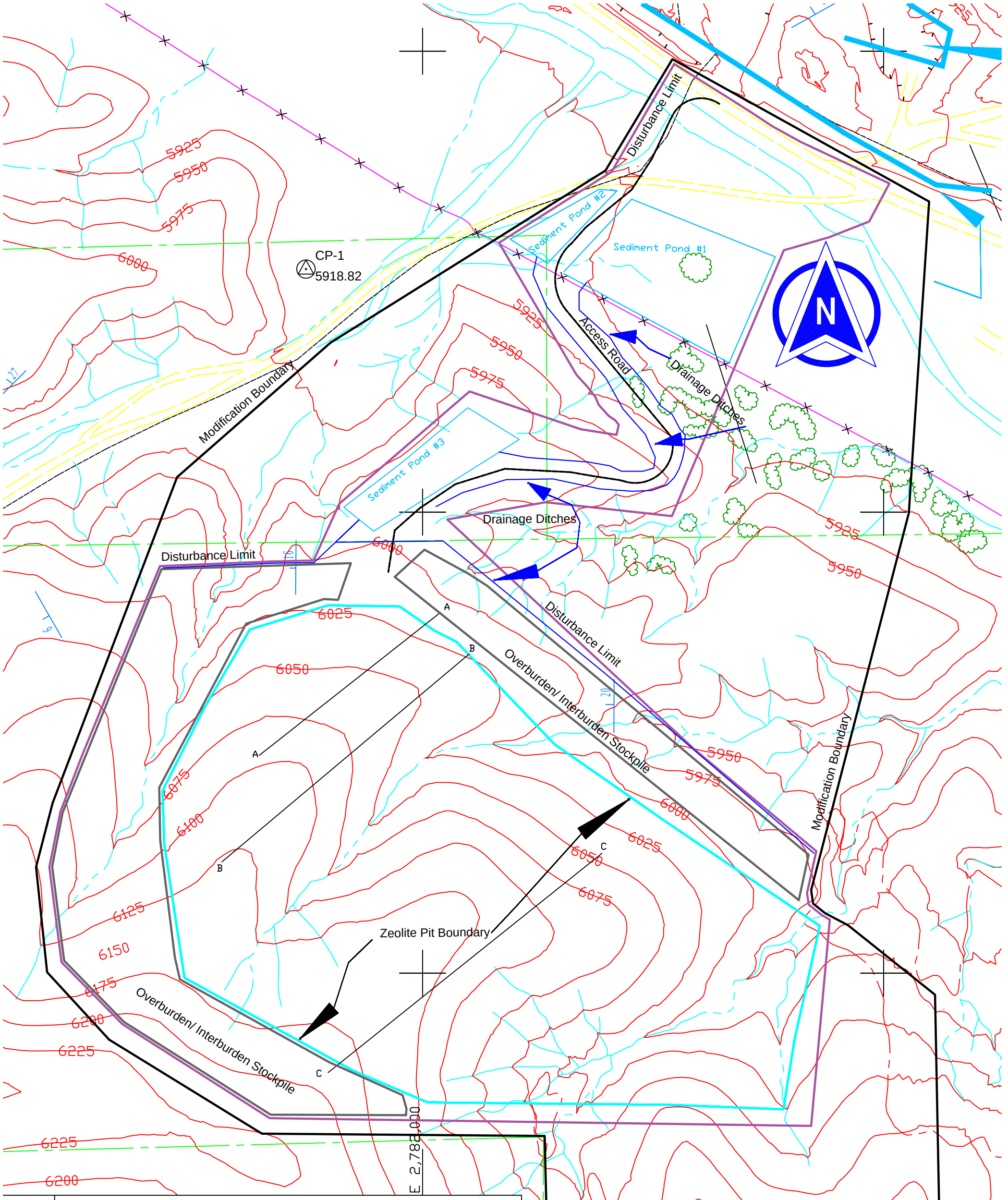


Figure 1 April 28, 2020
Permit NO SI006RE
Permit Modification 20-1
Sections 10&11,T12S,R8W
Sierra Co., NM

SCALE 1'' = 200'

St Cloud Mining Company

ATTACHMENT 9

St. Cloud Mining Company
Zeolite Operations

Permit SI006RE

Permit Modification 20-1

Consumer Price Index Data
1999-2019

Attachment 9. Comsumer Price Index Data 1999 - 2019

Consumer Price Index Data 1999 through 2019
Source:
https://www.usinflationcalculator.com/inflation/consumer-price-index-and-annual-percent-changes-from-

Year	Annual	Percentage Change
1999	2.7	2.2%
2000	3.4	3.4%
2001	1.6	2.8%
2002	2.4	1.6%
2003	1.9	2.3%
2004	3.3	2.7%
2005	3.4	3.4%
2006	2.5	3.2%
2007	4.1	2.8%
2008	0.1	3.8%
2009	2.7	-4.0%
2010	1.5	1.6%
2011	3	3.2%
2012	1.7	2.1%
2013	1.5	1.5%
2014	0.8	1.6%
2015	0.7	1.0%
2016	2.1	1.3%
2017	2.1	2.1%
2018	1.9	2.4%
2019	2.3	1.8%
		2.1%