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BUTCH TONGATE
Cabinet Secretary

J.C. BORREGO
Deputy Secretary

MEMORANDUM

DATE: March 9, 2017

TO: Holland Shepherd, Program Manager, Mining Act Reclamation Program

THROUGH: Jeff Lewellin, Mining Act Team Leader

FROM: John Moeny, Surface Water Quality Bureau
George Llewellyn, Mining Environmental Compliance Section
Neal Butt, Air Quality Bureau

RE: **NMED Comments, Updated Closeout Plan and Financial Assurance Proposal, Deming Mill and Tailing Impoundment, GEO Southwest, Ltd., Luna County, New Mexico MMD Permit No. LU009RE**

The New Mexico Environment Department (NMED) received correspondence from the Mining and Minerals Division (MMD) on February 2, 2017 requesting NMED review and provide comments on the above referenced MMD permitting action. NMED was provided an updated closeout plan (Plan) and financial assurance proposal of the permitted facility referenced above. Portions of the land in the MMD permitted facility are proposed to be used as collateral to satisfy Mining Act financial assurance requirements. MMD requested comments within 30 days of receipt in accordance with Section 19.19.5.505.B (3) NMAC.

Background

The Deming Mill was constructed in 1949 and was operated by ASARCO until 1979 to process lead and zinc ores. Mine tailings were deposited in a tailing impoundment constructed north of the Mimbres River by ASARCO during this time period. During the time period of 2007 – 2008 ASARCO remediated fugitive mill tailings through the New Mexico Voluntary Remediation Program (VRP). On March 17, 2014 representatives of ASARCO submitted a copy of the Covenant Restricting Property to Non-Residential Use to NMED in accordance with the Conditional Certificate of Completion issued by the Voluntary Remediation Program. The property has been issued VRP Site No. 53043001. In a letter from NMED to Gerald Smith, General Partner, GEO Southwest, Ltd. (MMD permittee) dated June 13, 2014, NMED issued a Covenant Not to Sue declaration for VRP Site No. 53043001 effectively transferring the VRP site from ASARCO to GEO Southwest, Ltd.

The comments contained herein are based on review of the Plan, NMED file copies of documents submitted for the VRP site contained within the permit boundary or area of disturbance, satellite imagery, and site inspections. A site inspection was conducted by personnel from MMD, VRP and NMED Mining Environmental Compliance Section (MECS) on February 9, 2017 to evaluate current conditions associated with the referenced facility. An additional NMED inspection by personnel from MECS and the Surface Water Quality Bureau (SWQB) was conducted on February 16, 2017. Both inspection reports are attached to this comment memorandum.

The Plan states that GEO Southwest, Ltd. (GEO SW) purchased 1193.84 acres from the ASARCO Multi-State Custodial Trust on April 9, 2014. The Plan further states that the MMD permit area includes approximately 163 acres of the total of the 1193.84 acres purchased. To remain consistent with the naming nomenclature utilized in the Plan, the following terms will be utilized in the comments from MECS for various areas of the property. The area referenced as the Site in the Plan includes the existing mill, ancillary buildings, shipping and utilities infrastructure, and paved roadways. The mill tailings and borrow pit will be referenced as Tailings. The vacant land outside the MMD permit area will be referenced as Land.

Air Quality Bureau

The Air Quality Bureau comments are attached under separate letterhead.

Surface Water Quality Bureau

The Surface Water Quality Bureau comments are attached under separate letterhead. Please reference the memorandum for additional comments related to review of the updated Plan.

Mining Environmental Compliance Section

The Plan provided by the permittee does not include a map that clearly delineates the Mining Act permit area. In accordance with 19.10.5.506 B. (3) NMAC, the Plan shall include "A topographic map of the anticipated surface configuration of the permit area upon completion of the closeout plan. The map shall be at a scale approved by the Director to accurately represent the permit area." The permit area should be surveyed and a map created to include the permit area, the VRP site, and, any monitor wells on the property. Ownership of monitor wells should be determined and designated on the map. The southern boundary of the permit area that abuts the Freeport-McMoRan, Inc. (FMI) tailings impoundment south of the GEO SW property has not been clearly defined in previous submissions to NMED. NMED requests the Plan be revised to include the referenced map.

Areas of intermittent, exposed tailings were observed on the ground surface from the southern boundary of the land that abuts the FMI tailings impoundment to the southern bank of the Mimbres River. The area that abuts the FMI tailings impoundment has rills with exposed tailings with sparse vegetation. The Plan should include a proposed work plan and schedule for reclamation of this area which is estimated to be approximately 10 acres in areal extent. NMED does not concur with the statement on page six, Section C of the Plan that the area of exposed tailings is one acre or less.

Also, please reference the comments of the SWQB relating to exposed tailings on the north bank of the Mimbres River and the two attached inspection reports for additional details.

A report submitted to NMED and utilized by the VRP titled *Deming Mill Windblown Tailings Remedial Plan, ASARCO LLC, September 2007* was reviewed and utilized to provide these comments. In Figure 2 of the report, three monitor wells designated AD-1, AD-2 and AD-3 are depicted on the map. These wells are installed in the area north of the Mimbres River, within the assumed permit area proximal to the tailings impoundment (VRP site). The Plan should include discussion related to the monitor wells that are installed within the permit boundary and who owns or controls the monitor wells. NMED concurs with the statements made on page six, sections B and C related to abandonment of three monitor wells but requests that the three monitor wells be clearly identified prior to abandonment. In addition, NMED request that GEO SW determine the depth to ground water in the three monitor wells discussed in the Plan. If the monitor wells are dry, then they should be abandoned in accordance with regulations of the Office of State Engineer and NMED Monitor Well Construction and Abandonment Guidelines (attached). If the three monitor wells that GEO SW references as scheduled for abandonment contain ground water, then NMED requests the monitor wells be sampled to ensure compliance with Water Quality Control Commission regulations. NMED should be notified seven days prior to determination of ground water levels in the three monitor wells or subsequent sampling events. The financial assurance cost estimate for determining the absence or presence of ground water in the three monitor wells and potential sampling event should be included in the Plan in the event sampling cannot be facilitated prior to final submittal.

On page five of the Plan, the area referenced as the Site is proposed to be closed to achieve a post mining land use as a non-mining dependent industrial facility. On the bottom of page five and continuing to page six, milling equipment is listed that would be scheduled for removal. GEO SW should determine if any of the equipment to be removed contains solid or liquid waste that would require removal and disposal in accordance with regulations at a permitted waste disposal facility. The Plan should be revised to include the determination of the absence or presence of regulated waste at the Site and the cost for disposal in accordance with regulations. In addition, the cost for reprocessing or disposal and transportation of any remnant ore remaining within the milling circuit should be included in the Plan.

On page four of the Plan it is implied that a company identified as ENVIRON remediated soil and contaminated driveway material at the Site on behalf of the Trust established by ASARCO. Satellite imagery on Google Earth was reviewed with the following observations. No apparent surficial soil contamination or staining around the Mill is observed in the November 25, 2011 satellite image. Satellite images from February 23 and November 5, 2016 indicate conditions at the Site have changed with observed staining of soil in and around the Mill. A satellite image of the Site is attached to this memorandum and included for reference. The Plan should be revised to include a section to determine the nature and extent of any contamination or stained soil at the Site. Costs associated with the determination of the nature and extent of contamination at the site including potential disposal at a permitted facility should be included in the financial assurance submitted with a revised Plan.

Holland Shepherd, Program Manager
March 9, 2017
Page 4 of 4

NMED Summary Comment

NMED requests that the permittee take these comments into consideration and revise the Plan for submission to the Mining and Minerals Division. NMED is withholding the environmental determination required at 19.10.5.506 J. (5) NMAC until review of a revised Plan.

If you have any questions, please contact Jeff Lewellin at (505) 827-1049.

cc: Bruce Yurdin, Division Director, NMED-WPD
Shelly Lemon, Acting Bureau Chief, SWQB
Richard Goodyear, Bureau Chief, AQB
Fernando Martinez, Division Director, EMNRD-MMD
James Hollen, Lead Staff, EMNRD-MMD
Kurt Vollbrecht, Program Manager, MECS
Ali Furmall, Program Manager, VRP

Attachments:

NMED Monitoring Well Construction and Abandonment Guidelines
November 5, 2015 Satellite Image
MECS Inspection Report, February 9, 2017
MECS Inspection Report, February 16, 2017

**NEW MEXICO ENVIRONMENT DEPARTMENT
GROUND WATER QUALITY BUREAU
MONITORING WELL CONSTRUCTION AND ABANDONMENT GUIDELINES**

Purpose: These guidelines identify minimum construction and abandonment details for installation of water table monitoring wells under ground water Discharge Permits issued by the NMED's Ground Water Quality Bureau (GWQB) and Abatement Plans approved by the GWQB. Proposed locations of monitoring wells required under Discharge Permits and Abatement Plans and requests to use alternate installation and/or construction methods for water table monitoring wells or other types of monitoring wells (e.g., deep monitoring wells for delineation of vertical extent of contaminants) must be submitted to the GWQB for approval prior to drilling and construction.

General Drilling Specifications:

1. All well drilling activities must be performed by an individual with a current and valid well driller license issued by the State of New Mexico in accordance with 19.27.4 NMAC. Use of drillers with environmental well drilling experience and expertise is highly recommended.
2. Drilling methods that allow for accurate determinations of water table locations must be employed. All drill bits, drill rods, and down-hole tools must be thoroughly cleaned immediately prior to the start of drilling. The borehole diameter must be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.
3. After completion, the well should be allowed to stabilize for a minimum of 12 hours before development is initiated.
4. The well must be developed so that formation water flows freely through the screen and is not turbid, and all sediment and drilling disturbances are removed from the well.

Well Specifications (see attached monitoring well schematic):

5. Schedule 40 (or heavier) polyvinyl chloride (PVC) pipe, stainless steel pipe, carbon steel pipe, or pipe of an alternate appropriate material that has been approved for use by NMED must be used as casing. The casing must have an inside diameter not less than 2 inches. The casing material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. The casing material and thickness selected for use must have sufficient collapse strength to withstand the pressure exerted by grouts used as annular seals and thermal properties sufficient to withstand the heat generated by the hydration of cement-based grouts. Casing sections may be joined using welded, threaded, or mechanically locking joints; the method selected must provide sufficient joint strength for the specific well installation. The casing must extend from the top of the screen to at least one foot above ground surface. The top of the casing must be fitted with a removable cap, and the exposed casing must be protected by a locking steel well shroud. The shroud must be large enough in diameter to allow easy access for removal of the cap. Alternatively, monitoring wells may be completed below grade. In this case, the casing must extend from the top of the screen to 6 to 12 inches below the ground surface; the monitoring wells must be sealed with locking, expandable well plugs; a flush-mount, watertight well vault that is rated to withstand traffic loads must be emplaced around the wellhead; and the cover must be secured with at least one bolt. The vault cover must indicate that the wellhead of a monitoring well is contained within the vault.
6. A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools must not be used. The screen material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. Screen sections may be joined using welded, threaded, or mechanically

locking joints; the method selected must provide sufficient joint strength for the specific well installation and must not introduce constituents that may reasonably be considered contaminants of interest at the facility. A cap must be attached to the bottom of the well screen; sumps (i.e., casing attached to the bottom of a well screen) should not be installed. The bottom of the screen must be installed no more than 15 feet below the water table; the top of the well screen must be positioned not less than 5 feet above the water table. The well screen slots must be appropriately sized for the formation materials and should be selected to retain 90 percent of the filter pack. A slot size of 0.010 inches is generally adequate for most installations.

7. Casing and well screen must be centered in the borehole by placing centralizers near the top and bottom of the well screen.
8. A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand. The filter pack must be properly sized to prevent fine particles in the formation from entering the well; clean medium to coarse silica sand is generally adequate as filter pack material for 0.010-inch slotted well screen. For wells deeper than 30 feet, the sand must be emplaced by a tremmie pipe. The well should be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.
9. A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch in size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before installation of the annular space seal.
10. The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremmie pipe must be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals must extend from the top of the bentonite seal to the ground surface (for wells completed above grade) or to a level 3 to 6 inches below the top of casing (for wells completed below grade).
11. For monitoring wells finished above grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the shroud and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the wellhead. The installation of steel posts around the well shroud and wellhead is recommended for monitoring wells finished above grade to protect the wellhead from damage by vehicles or equipment. For monitoring wells finished below grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the well vault and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the well vault.

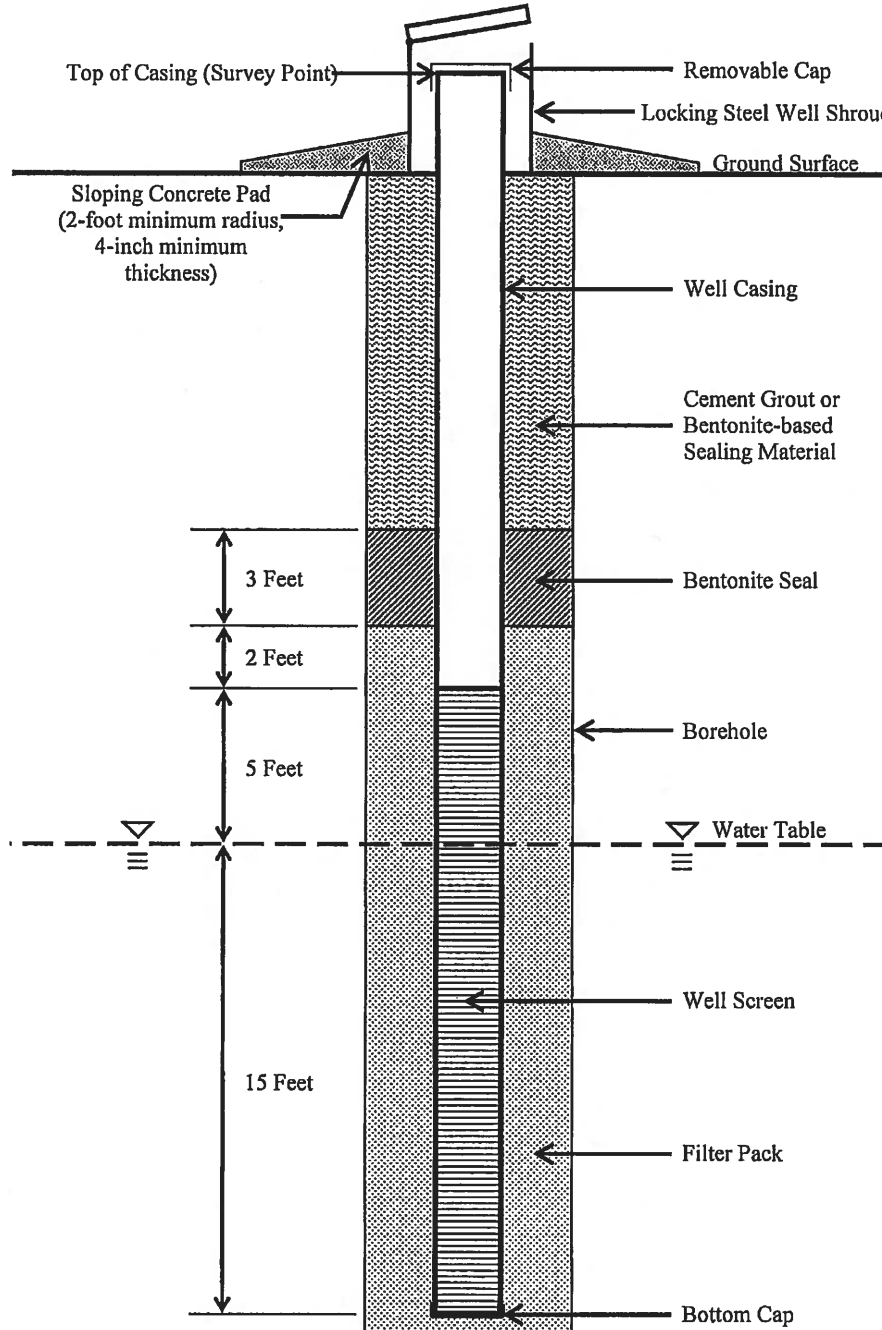
Abandonment:

12. Approval for abandonment of monitoring wells used for ground water monitoring in accordance with Discharge Permit and Abatement Plan requirements must be obtained from NMED prior to abandonment.
13. Well abandonment must be accomplished by removing the well casing and placing neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer for wells that encounter water pursuant to 19.27.4 NMAC from the bottom of the borehole to the ground surface using a tremmie pipe. If the casing cannot be removed, neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer must be placed in the well using a tremmie pipe from the bottom of the well to the ground surface.
14. After abandonment, written notification describing the well abandonment must be submitted to the NMED. Written notification of well abandonment must consist of a copy of the well plugging record submitted to the State Engineer in accordance with 19.27.4 NMAC, or alternate documentation containing the information to be provided in a well plugging record required by the State Engineer as specified in 19.27.4 NMAC.

Deviation from Monitoring Well Construction and Abandonment Requirements: Requests to construct water table monitoring wells or other types of monitoring wells for ground water monitoring under ground water Discharge Permits or Abatement Plans in a manner that deviates from the specified requirements must be submitted in writing to the GWQB. Each request must state the rationale for the proposed deviation from these requirements and provide detailed evidence supporting the request. The GWQB will approve or deny requests to deviate from these requirements in writing.

MONITORING WELL SCHEMATIC

(Not to Scale)





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J. C. BORREGO
Deputy Secretary

MEMORANDUM

TO: Jeff Lewellin, Mining Act Team Leader
Mining Environmental Compliance Section
Ground Water Quality Bureau (GWQB)

FROM: John Moeny, Surface Water Quality Bureau

SUBJECT: Request for Comments, Revised Closeout Plan and Financial Assurance Estimate, Deming Mill and Tailings Facility, Permit LU009RE

DATE: February 27, 2017

On February 2, 2017 the NMED received a request for comments for the Revised Closeout Plan and Financial Assurance Proposal for the Deming Mill and Tailing Impoundment, Luna County, MMD Permit No. LU009RE. The Surface Water Quality Bureau inspected the Deming Mill and Tailings facility on February 16, 2017. Areas visited include the Mill Site, the "Area of Concern" east of the mill and north of the Freeport McMoRan Inc. (FMI) Cyprus tailings impoundment, the land adjacent to both banks of the Mimbres River, the ASARCO tailings impoundment on the north side of the Mimbres River, and the Borrow Pit. Comments for each area are included below.

Mill Site:

The closeout plan details the removal of milling equipment including storage buildings and bins, conveyance equipment, tanks and thickeners. All remnant ore within this milling circuit must be removed and properly disposed of, either by completing the milling and extraction process at an approved facility or be included in a separate workplan within the revised Closeout Plan. Any new industrial facility at the Mill Site will require a Multi Sector General Permit from the Environmental Protection Agency and Stormwater Pollution Prevention Plan.

Area of Concern:

This area lies east of the mill, and north of the FMI tailings impoundment. It has seen extensive grading in an attempt prevent stormwater impact to previously reclaimed areas. Rilling and erosion of cover material is apparent as are numerous pockets of exposed tailing material. A test

of the soil pH during the site visit showed that the tailings acidic (pH 4.5) and likely contains high concentrations of lead and arsenic. These fugitive tailings will be subject to both wind and water erosion and must be addressed in the Closeout Plan.

Land Adjacent to the Mimbres River:

There are isolated pockets of tailing on both side of the Mimbres River. Most of the patches are stabilized by deeply rooted vegetation including giant sacaton, willow and soapberry trees and are not subject to erosion except in the largest of flood events. However, there is one location of concern on the north bank of the Mimbres River at approximately lat: 32.2897, long: -107.7863. This location lies at the outer bend of the Mimbres River and is consequently subject to the highest stream velocities and bank stress. There are several erosional channels that have cut through remnant tailings creating a direct discharge into the Mimbres. Tailing erosion is exacerbated by off-highway vehicle "ATV" use which is preventing natural revegetation and stabilization of the tailings. This area is approximately 0.25 acres in size and must be included in the closeout plan either through in-situ stabilization and containment, or by removal and recontouring/revegetation of the streambank.

ASARCO Tailings Impoundment:

The impoundment on the north side of the Mimbres River appears to be functioning adequately to prevent surface water pollution. The vegetation is well established and the berm along the perimeter of the impoundment which prevents flow to the Mimbres River is in good condition and continues to perform as a stormwater BMP.

Borrow Pit:

The site visit did not reveal any surface water concerns at the borrow pit.

As currently written, the Closeout Plan does not adequately address existing and potential impacts to surface water for all areas covered under Permit LU009RE. The SWQB recommends expanding the Closeout Plan to address unreclaimed tailings at the "Area of Concern" and adjacent to the Mimbres River.

If you have any questions, please phone me at (575) 956-1545.



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Cabinet Secretary - Designate

J.C. Borrego
Deputy Secretary

MEMORANDUM

DATE: February 10, 2017

TO: Jeff Lewellin, Mining Act Team Leader
Mining Environmental Compliance Section, Ground Water Quality Bureau

FROM: Neal Butt, Environmental Analyst
Air Quality Bureau

RE: Request for Review and Comment, Revised Closeout Plan and Financial Assurance Proposal; Deming Mill and Tailing Impoundment Permit No. LU009RE

The New Mexico Air Quality Bureau (AQB) has completed its review of the above mentioned mining project. Pursuant to the New Mexico Mining Act Rules, the AQB has the following comments:

Air Quality Permitting History

The AQB has not issued any air quality permits for this operation.

Details

On October 19, 2016, the New Mexico Mining and Minerals Division ("MMD") received a response from GEO Southwest ("GSW") providing supplemental information and addressing comments that were provided to GSW by MMD in response to a request for additional information in support of GSW's Closeout Plan and Financial Assurance ("FA") estimate. Previously, comments were provided to MMD from the New Mexico Environment Department ("NMED") on GSW's Closeout Plan submittal in letters to MMD dated December, 2014.

Project Description

This Closeout/Reclamation Plan for the Deming Mill Site (Site), Mill Tailings and Borrow Pit (Tailings) and 54.283 acres of vacant land (Land), previously owned by ASARCO Incorporated

(ASARCO) has been prepared by GSW pursuant to Section 69-36-IIB of the New Mexico Mining Act of 1993 (Act) and the New Mexico Mining Act Rules (Rules). This Closeout/Reclamation Plan references and will be part of Permit No. LU009RE (currently in standby status) which was transferred to GSW by MMD on August 5, 2014. On April 9, 2014, GSW purchased from the ASARCO Multi-State Custodial Trust (Trust) 1193.84 acres (Property) near Deming, New Mexico. The Property included the Permit Area which consists of approximately 163 acres including the Site, Tailings and Land.

GSW purchased the Property with the intent of renovating and operating the mill to process ore. The Site is located on County Road 394 in Sections 20 and 21, Township 23 South, Range 9 West, approximately one mile northwest of Deming, New Mexico. The purpose the Closeout/Reclamation Plan is to establish the amount of financial assurance that will be required from GSW for Permit Number LU009RE

In addition to upgrading Permit Number LU009RE to active status, GSW will need other permits in order to operate the mill including a groundwater discharge permit for a new tailings impoundment and an air quality permit for the crushing unit. Current plans include tailings impoundments below the size requiring a dam site permit.

NMED requires notification of demolition activities 10 days prior to initiation of work. The purpose of the notification is to inform NMED of the presence or absence of asbestos. In addition, lead emissions, particulate matter and/or dust emissions, and emissions resulting from remedial activities may be governed by state and federal regulations. If potential emissions exceed the threshold levels as specified below, GSW may have to file a Notice of Intent and/or obtain an air quality permit

Air Quality Requirements

The New Mexico Mining Act of 1993 states that “Nothing in the New Mexico Mining Act shall supersede current or future requirements and standards of any other applicable federal or state law.” Thus, the applicant is expected to comply with all requirements of federal and state laws pertaining to air quality. Current requirements which may be applicable in this mining project include, but are not limited to the following:

Subsection A of 20.2.72.200 NMAC, *Application For Construction, Modification, NSPS, And NESHAP - Permits And Revisions*, states that: “Permits must be obtained from the Department by:

(1) “any person constructing a stationary source which has a potential emission rate greater than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico Ambient Air Quality Standard. If the specified threshold in this subsection is exceeded for any one regulated air contaminant, all regulated air contaminants with National or New Mexico Ambient Air Quality Standards emitted are subject to permit review. . .”; and

(3) “Any person constructing or modifying any source or installing any equipment which is subject to 20.2.77 NMAC, *New Source Performance Standards*, 20.2.78 NMAC, *Emission Standards for*

Hazardous Air Pollutants, or any other New Mexico Air Quality Control Regulation which contains emission limitations for any regulated air contaminant;”

Also, Paragraph (1) of Subsection A of 20.2.73.200 NMAC, *Notice of Intent*, states that:

(1) “Any owner or operator intending to construct a new stationary source which has a potential emission rate greater than 10 tons per year of any regulated air contaminant or 1 ton per year of lead shall file a notice of intent with the department.”

The above is not intended to be an exhaustive list of all requirements that could apply. The applicant should be aware that this evaluation does not supersede the requirements of any current federal or state air quality requirement.

Recommendation

The applicant is expected to comply with all requirements of federal and state laws pertaining to air quality. The AQB has no objection to the current request for Revised Closeout Plan and Financial Assurance Proposal. This written evaluation does not supersede the applicability of any forthcoming state or federal regulations.

If you have any questions, please contact me at (505) 476-4317.

Field Trip Report
 Mining Environmental Compliance Section (MECS)

Start Date: **02/09/2017** End Date: **02/09/2017** Report Date: **02/17/2017 (AR)**
 Discharge Plan #(s): **None – Mining Act LU009RE**

Facility Name: **Deming Mill & Tailing Impoundment**
 Type of Operation: **Inactive mill & tailing impoundment**
 Contact: **GEO Southwest, Gerald Smith** Location: **Deming**

Inspector(s): **Jeff Llewelin, Ali Furmall, Amber Rheubottom, George Llewelyn, James Hollen (MMD)**

Company Representative(s): **Gerald Smith (owner), Nelson (caretaker)**

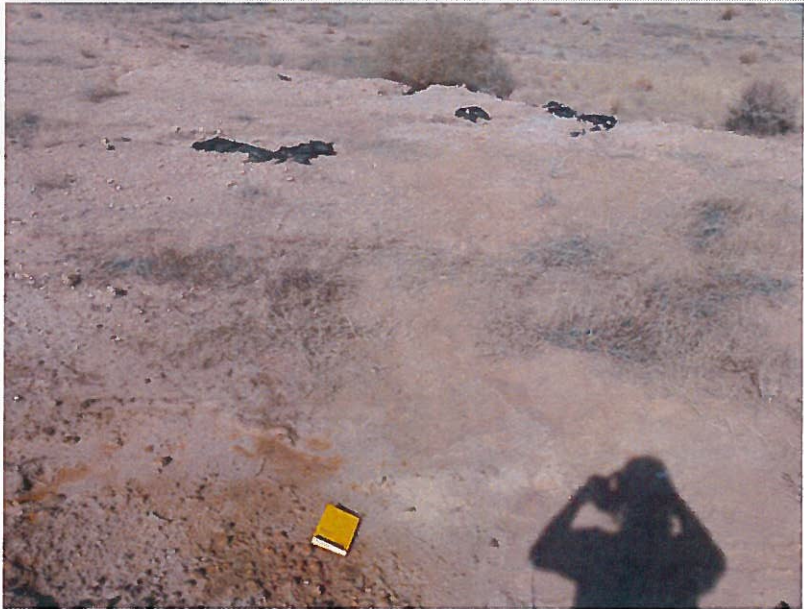
Inspection Summary: **Arrive at site 10:30am, depart 1:00pm**

Activities

Samples Taken: **Yes** Photos Taken: **Yes**
 Sample – field pH of discolored soil on west side of impoundment

Objective: **Inspect site for comments on Supplemental information to Closeout plan and Financial Assurance proposal dated January 6, 2017.**



Observations and Information Obtained: **Site vegetation, maintenance and condition overall good. Observed an area of approximately 10 acres where spot repairs (additional cover, removal of industrial remnant waste, regrading) may be needed. Awaiting site well information from James Hollen to make determination on current ground water status.**



TIME	DESCRIPTION	PHOTO
10:40am	Observed discolored soil, exposed tailings, poor vegetation on area proximal to FMI Cyprus Deming Tailing Facility owned property and Mimbres River.	




10:45am
Erosion gullies on the one-acre north slope of FMI Cyprus Deming Tailing Facility, on GEO Southwest owned property.



<p>11:00am</p>	<p>Area of acceptable cover and vegetation, closer to Mimbres River than area of concern.</p>			
<p>11:15am</p>	<p>Mimbres River with surface flow.</p>			

<p>11:30am</p>	<p>Borrow area, minor erosion, adequate vegetation.</p>	
<p>12:00pm</p>	<p>Adequate vegetation observed across impoundment. No erosion issues observed. Variation in soil color on small area of the west side. A field pH test determined it to be neutral.</p>	

<p>12:30pm</p>	<p>Impoundment perimeter berm, varies from 1-3'</p>	
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Discussion:



Inspection Report
Ground Water Quality Bureau

Start Date: 02/16/2017 (9:30 AM)

End Date: 02/16/2017 (12PM)

Facility Information

Facility Name: Deming Mill and Tailings Impoundment
Contact: Gerald Smith

Type of Operation: Lead & Zinc Milling and Tailings
Location: Deming

Inspector(s): George Llewellyn, John Moeny

Inspection Summary

Purpose: Inspection of the site to obtain information for comments to MMD related to a Revised Closeout Plan.

Activities

Samples Taken: Yes, soil paste pH

Observations and Information Obtained

Information contained in this inspection report includes observations, photographs and the results of colorimetric pH testing of soil from the February 16, 2017 NMED inspection of the Deming Mill & Tailings Impoundment. Using a Hellig Truog paste pH test kit, the pH of discrete, stained areas of apparent tailings and soil were evaluated from the southern property line (proximal to the FMI-Cyprus Tailings) to the Mimbres River (north bank). Location coordinates were documented at each site evaluated. The sample sites (DMS 1 through 11) are shown on the attached map and the field data and notes are in Table 1 on page 2. The photographs on page 3 and 4 are labeled by the sample designator (e.g. DMS 1).

Eroded Slope:

An eroded slope with rills exists adjacent to the FMI-Cyprus Tailings. A small area of tailings (DMS-1) was observed in the East-West swale on the slope. The tailings are orange in color and fine grained. The tailings exhibited acidic conditions with an approximate pH of 4.5 standard units as indicated with the colorimetric pH test kit. Erosional rills were observed at the toe of the slope with orange fine grained tailings exposed. The tailings in two locations (east and west end) exhibited acidic conditions with an approximate pH of 4.5 standard units. The center of this area exhibited a pH of 6.0 standard units. The pH of the black tailings in the area exposed at the toe of the slope exhibited a pH of 7.0 standard units.

Flat Area Between the Slope and the Mimbres River:

Intermittent areas of tailings were observed at the surface in the area between the eroded slope discussed above and the south bank of the Mimbres River. Vegetation in this area is sparse. Results of colorimetric testing for pH of sites DMS 6 and 7 are in Table 2. A reference area outside the area of intermittent tailings observed at the surface that was well vegetated was photographed and tested for pH. The results are included in Table 2, site DMS 8. In an area east of Peru Mill Road and south of the Mimbres River, partially buried solid waste was observed.



North of the Mimbres River:

In a drainage that is proximal to the north bank of the Mimbres River, orange colored tailings were observed. See the pH testing results and a photograph of DMS 11 below.

Table 1

DMS	pH	Latitude	Longitude	Notes
DMS 1	4.5	32.28524	-107.78633	Orange colored tailings on slope, swale between BMP berms
DMS 2	6.0	32.28555	-107.78639	Orange colored tailings in erosion gulleys, toe of slope (center)
DMS 3	4.5	32.28571	-107.78688	Orange colored tailings in erosion gulleys, toe of slope (west end)
DMS 4	4.5	32.28567	-107.78590	Orange colored tailings in erosion gulleys, toe of slope (east end)
DMS 5	7.0	32.28560	-107.78602	Black colored tailings in erosion gulleys, toe of slope
DMS 6	7.0	32.28600	-107.78586	Flat area north of slope with little vegetation
DMS 7	4.5	32.28616	-107.78606	Flat area north of slope with little vegetation, orange tailing mixed in.
DMS 8	7.0	32.28649	-107.78594	Native area north of slope with intent vegetation, reference area for DMS 7
DMS 9	7.0	32.28910	-107.78687	Graded area north of slope, east of Peru Mill Rd (northeast corner)
DMS 10	7.0	32.28809	-107.78838	Graded area north of slope, east of Peru Mill Rd (southwest corner)
DMS 11	4.5	32.28968	-107.78609	North bank of Mimbres River

Summary:

Intermittent areas of exposed tailings were observed during the site inspection in the area of disturbance or Minerals Management Division permit area. Extensive work was performed at the site in the 2006 – 2008 timeframe which included consolidation of fugitive tailings and cleanup associated with the NMED Voluntary Remediation Program. Areas of tailings observed proximal to the north bank of the Mimbres River may have resulted from erosion since work was completed in 2006 – 2008.

If you have any questions regarding this inspection and report, please contact George Llewellyn at 575-956-1549.



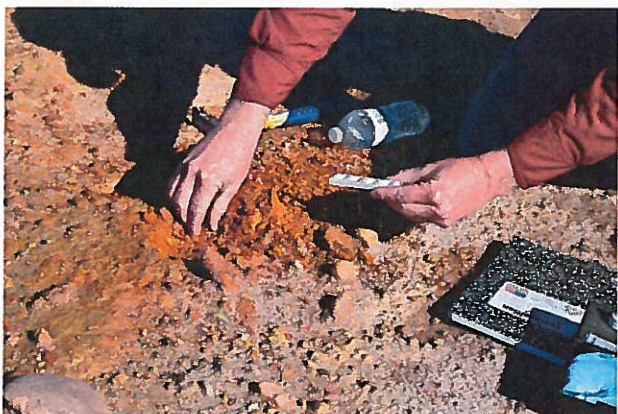
Photos:



DMS 1



DMS 2



DMS 3



DMS4



DMS 5



DMS6



DMS 8



DMS 11