Ennis, David, EMNRD

From: Martinez, Fernando, EMNRD
Sent: Thursday, October 27, 2016 10:31 AM
To: Shepherd, Holland, EMNRD; Ennis, David, EMNRD
Subject: FW: Chino Mine ground water contamination

From: Carol Martin [mailto:richard.martin101@att.net]
Sent: Wednesday, October 26, 2016 9:32 PM
To: Martinez, Fernando, EMNRD <fernando.martinez@state.nm.us>
Subject: Chino Mine ground water contamination

- Please save our groundwater. The only way it can be recharged is by rain and snow melt. Do not make it easier for any mine to take advantage of our people's precious resource.
-
- **Groundwater protection is imperative in an arid state such as New Mexico in which 9 out of 10 residents rely on groundwater for drinking water.**

- **Enforce the NM Mining Act and require the Chino Mine to use best management practices at the new North Lampbright Stockpile to prevent groundwater contamination** - According to the NM Mining Act, "the mining operation and the reclamation plan shall be designed and operated using the most appropriate technology and the best management practices" (NMAC 19.10.5.508 A).

- **Liner systems reflect current engineering design best practices and should be required at the new North Lampbright Waste Rock Stockpile** - The International Network for Acid Prevention's (INAP) Global Acid Rock Drainage (GARD) Guide "is intended as a state-of-the-art summary of the best practices and technology to assist mine operators and regulators to address issues related to sulphide mineral oxidation." Freeport-McMoRan Inc. is a member of INAP that developed the GARD Guide. According to the guide, engineered barriers are low-permeability materials, ranging from synthetic to geosynthetic to natural, that can be utilized "as a barrier for contaminant flow from the overlying waste into the receiving environment." Why is Freeport not following this guidance on best practices for controlling acid rock drainage? MMD should require a liner system at the North Lampbright Waste Rock Stockpile as it reflects industry best practice.

Thank you for paying close attention to a very important issue for the following generations,
Carol A. Martin
Tyrone Mine neighbor

SILVER CITY GRANT COUNTY Chamber of COMMERCE
silvercity.org

October 27, 2016

Fernando Martinez, Director
Mining and Minerals Division
NM Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: North Lampbright Stockpile

Sir,

The Silver City Grant County Chamber of Commerce, representing 291 chamber members, requests that your department approves Freeport-McMoRan's Chino Mine application for the expansion of the North Lampbright Stockpile. The Chino Mine continues to exhibit the highest level of professionalism regarding the health and safety of their workers, the surrounding community, and the environment.

As Grant County's largest employer, the Chamber of Commerce takes great interest in the operations of the mines. We are pleased that the company has made a commitment to strong and efficient environmental programs. It is our understanding that Chino has literally hundreds of ground water monitoring wells to measure and insure the water quality. It is our understanding that the environmental staff at Chino works closely with not only your department's offices, but also the staff of other regulatory and safety agencies... and to date that work relationship continues to be exemplary.

In Grant County, Freeport-McMoRan's operation provides an economic impact of over $176 million. As a community, we need Freeport-McMoRan to be able to grow their operations to provide jobs and economic stability for the future of the people of Grant County.

The Silver City Grant County Chamber of Commerce believes that Freeport-McMoRan has a strong plan for future mining projects that include precise safety development for our people, for our communities and for our local environment. We respectfully ask that you approve their plans for the North Lampbright Stockpile expansion.

Respectfully submitted,

Scott C. Terry – President, CEO

Post Office Box 1028
Silver City, New Mexico 88062-1028

Office: (575) 538-3785
website: www.silvercity.org

Fax: (575) 597-3790
Email: sterry@silvercity.org

Ennis, David, EMNRD

From: Martinez, Fernando, EMNRD
Sent: Friday, October 28, 2016 9:03 AM
To: Shepherd, Holland, EMNRD; Ohori, David, EMNRD; Ennis, David, EMNRD
Subject: FW: NM Groundwater

From: Jene Moseley [mailto:shalcass05@yahoo.com]
Sent: Friday, October 28, 2016 6:44 AM
To: Martinez, Fernando, EMNRD <fernando.martinez@state.nm.us>
Subject: NM Groundwater

I want to go on record as opposing the toxic polluting of NM groundwater. When corporate profits take precedence over public safety, something must be done to protect the environment and people's health. Freeport McMoran has shown little concern for anything except greed at the expense of our groundwater supply. I urge you to consider the long term consequences of your callousness and how it will impact the entire copper mining industry in years to come.

Jene Moseley
Silver City. NM
shalcass05@yahoo.com

It's better to keep one's mouth shut and be thought a fool than to open it and remove all doubt.
Mark Twain

Ennis, David, EMNRD

From: Martinez, Fernando, EMNRD
Sent: Friday, October 28, 2016 12:47 PM
To: Shepherd, Holland, EMNRD; Ohori, David, EMNRD; Ennis, David, EMNRD
Subject: FW: Compliance to uphold groundwater quality

From: nik shelton [mailto:nikshelton@gmail.com]
Sent: Thursday, October 27, 2016 7:13 PM
To: Martinez, Fernando, EMNRD <fernando.martinez@state.nm.us>
Subject: Compliance to uphold groundwater quality

Greetings,

We are property owners in the neighborhood so naturally we get concerned when we hear that Freeport would not be following guidance on best practices for controlling acid rock drainage. MMD should require a liner system at the North Lampbright Waste Rock Stockpile as it reflects industry best practice.

Nik Shelton
480.600.4444

State of New Mexico
Mining and Minerals Division
Wendell Chino Building
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

November 4, 2016

Re: Permit No. GR009RE, Revision 16-1 (North Lampbright Stockpile New unit Expansion and Updated Closeout Plan, Chino Mine

Dear David (DJ) Ennis,

As neighbors we try to be *good neighbors* respecting the property of others and expecting the same respecting our property. Last night (10/27/2016 hereafter in this letter to be referred to as "last night 10/27/2016") at the hearing for the Lamp Bright Stockpile Extension Project hearing in Silver City information was given which I want to address and then I want to also comment to the overall permit.

My concerns are that of clean air, clean water and a clean environment. The air in the area for which the permit is requested is already smelling of acid, the air, especially on hot days is heavy with dust. The air, it is claimed to be monitored by the company as to not contaminate the air in the surrounding areas. Yet we feel and smell the acid on our property and as one drives on Hwy 152 as we approach the area of the SX-EW plant. It was also stated during the information meeting held the week before that people in Bayard and Santa Clara also feel and see the effects in the air as dust. Might it not be a good idea to place monitors where the public is? The acid spray falls farther than where it is intended to go therefore affecting the environment and the people downwind from where it is being used. Are we to understand that that the wind blows only toward the mine? No. The environment is already hurting visibly in multiple ways such as acidic ponds of standing water in areas where domestic animals are being hurt. My dog visited the SX-EW guard shack a few years ago and according to the guards on duty, they helped my dog after he had gone in the pond of standing water. Soon thereafter my dog became ill and was found to have kidney cancer by the local veterinarian. This too could also be affecting the wild animals in the area such as deer, bears, elk, turkey, skunks, foxes, etc. to name a few. What are the physical conditions of these animals?

It was stated last night (10/27/2016) that the extension project would not be leached. I asked and I ask again, how can waste rock be placed along side and even on a stockpile which is currently being leached and it (waste rock) not be leached? My question was answered by saying that the waste rock would not be leached. I asked how is the water and or solution to know where it is to go if the material is within the same stock pile? Does it not make sense that if two piles are being placed adjacent to one another that what is being performed to one pile would affect the other pile, especially when the waste rock will overflow to the leached pile? We request that extra precautions be done if in fact the project must go forward and that liners be placed between (between waste rock and leach stockpile) and underneath the waste rock. Water does not always go where man thinks it goes and the problem is that most water tends to go down contaminating the precious water table of Southwestern New Mexico.

It was stated last night (10/27/2016) that the permit was to extend to the north, crossing Hwy 152 north of the proposed project as an area resembling an hour glass. When questioned as to why they were requesting an area beyond the proposed waste rock project it was stated that they were looking to the future. They were also questioned as to if there were any plans for such a request of extension to the boundary and the response was 'no plans'. And the consolation given was that at which time of a new project that the process would be the

same as to what they are presently doing for the waste rock project at Lamp Bright. I find such request for expansion of boundary to be problematic in that they could come back and state that they already have an approved boundary extension and an expansion of a "project" already in process will be expanded without much trouble on their part and no overview by the public or others will be warranted. My additional concern is that my property boarders said extended boundary and the dirt road to my home sit feet away from that boundary.

A gentleman stating that he meant no disrespect after I completed my testimony, stated something to the effect of "Have you (I) ever approached the company to see if another property could be exchanged for the property you (I) currently own?" Basically stating that we are all for sale in one way or another. I responded that not with that request but that I had approached the company's SX-EW's plant foreman when the plant had recently been put in operation, to request that something be done about the dust from the dirt road from the Hwy 152 up to the SX-EW plant, maybe having the road paved. He responded, basically making fun at my comment, that would be impossible and very expensive, it could not and would not be done. In response the gentleman in the audience commented that we should have realized that the company owned the neighboring property and that we should have foreseen the problems and not purchased the property. I had just given a synopsis of the events leading to the purchase of the property stating that the property had been purchased with money being sent by my Dad to my grandparents when he was in the service during WWII. In reference to WWII I was referring to the 1940's at which time the town of Santa Rita was still growing and going strong. This gentleman works at a local bank and this previous information did not compute to him as to the time of purchase and the present, therefore his question.

We are not "for sale" and what we have invested on our property is <u>just as important to us</u> as is the mine property to the company (which ever company owns it at the present time). We too need to protect what we and our ancestors worked so hard for, we are not for sale and neither is our health or environment.

Another gentleman who works for PNM testified as to the jobs that would be lost if this project was not approved. He did not tell the audience that his wife had just been employed by the mine. We all know that this project would not close the mine, since what would close the mine would be, the price of copper or their own doings. That man who spoke has also previously been employed by the Small Business Development in the area, yet while employed did not do what is needed for the community by bringing additional businesses to the area to provide additional jobs for the community. This is what is really needed for the community, diversity in businesses, businesses which would be independent of the roller-coaster financial effect that the mine brings to the area.

I request, that the mine be held to the highest environmental standards possible in respect of the environment, the air we breathe and the water we use and drink. Clean air and clean water are things that man will not be able to return to its purist state, only the originator, the creator is able to do this and yet man is doing their best to ruin this earth. Help us keep our environment as clean as possible. We will not be able to purify it back to its present state, even if it is already contaminated.

Respectfully,

Rosemary Grijalva-Arzate

Rosemary Grijalva-Arzate
575-313-5909 cell
5791 Hwy 152,
Hanover, New Mexico 88041

Gila Resources Information Project

Promoting Healthy Communities by Protecting Our Environment Since 1998

November 18, 2016

Fernando Martinez, Director
Mining and Minerals Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Via e-mail: Fernando.martinez@state.nm.us

RE: Public Comments on GR009RE Chino Mine and Mill - Regular, Existing Mine Revision 16-1, North Lampbright Stockpile

Dear Mr. Martinez:

Gila Resources Information Project (GRIP) submits the following public comments on the application for a revision to permit GR009RE to develop the Lampbright Waste Rock Stockpile as a new unit under the New Mexico Mining Act. These comments augment our oral public comments presented at the Mining and Minerals Division (MMD) public hearing on Thursday, October 27, 2016 in Silver City.

GRIP generally does not oppose the construction of the Lampbright Waste Rock Stockpile. However, we have serious concerns about permitting the new unit at this time given the lack of information to adequately assess the application.

We recommend that MMD not grant this permit at this time and that the agency allow the public an opportunity to further comment on the application when the following information is available:

- Proper identification of discrete mine features and design limits is completed;
- Groundwater quality issues are resolved under DP-376;
- Chino's financial assurance proposal is publicly available for review and comment.

GRIP's specific comments are summarized below. Additionally, the attached memo from consulting engineer Jim Kuipers discusses these concerns in more detail. Please note that Mr. Kuipers comments also include some additional recommendations for MMD that are more broadly applicable to the Chino site-wide closure/closeout plan, calculation of reclamation cost estimates, and some preliminary comments on DP-376, among others.

Application fails to identify discrete mine features and design limits

As discussed in more detail in Jim Kuipers attached comments, the application is extremely confusing and difficult to understand what the applicant is proposing. We strongly recommend that MMD not grant the permit revision until an application with proper designation of discrete units and corresponding design limits together with corrections to the language describing those units be provided by the applicant.

Application does not describe future plans for leaching on top of Lampbright Waste Rock Stockpile

Freeport-McMoRan staff told the public at its September 1, 2016 Open House that it is intending to leach on top of the new North Lampbright Waste Rock Stockpile. Nowhere in this permit application is that mentioned. How that leaching is done may have implications for the design of the new waste rock stockpile. This is a potentially significant omission that needs to be addressed.

Evaluation of groundwater impacts is not complete

Contrary to what was said by a commenter at the public meeting, the NM Environment Department has not yet made a determination on this permit application and is still in the process of evaluating groundwater quality impacts from the proposed Lampbright Waste Rock Stockpile under DP-376. (See agency comments at: http://www.emnrd.state.nm.us/MMD/MARP/documents/2016-05-05AgencyComments_ChinoRev16-1_NorthLampbright_GR009RE.pdf)

The application to MMD provides no details on how the applicant proposes to protect groundwater quality as part of its proposal. The application tells the reader that groundwater issues will be addressed as part of DP-376. It is impossible to adequately review the application to MMD and understand how groundwater will be protected.

GRIP had to file an Inspection of Public Records Act with the NM Environment Department to obtain documents under DP-376. We have not completed our analysis of these documents yet and we are unclear if NMED is still awaiting a response from the applicant on key technical questions. It may still be another four months before a permit application under DP-376 is considered administratively complete.

GRIP recommends that the MMD Director not grant the permit until a modified draft DP-376 is made available by NMED and until additional time is provided for both agency and public review and comment on this information.

Reclamation of existing features is not described in application

No information is provided in the application concerning the reclamation and closure of the existing sumps (Sumps 1, 2 and 3) prior to them being covered by the Lampbright Waste Rock Stockpile. According to the CCP "Chino is submitting a separate application to NMED to obtain approval for the modification of the PLS collection and impacted stormwater

system currently in place along the northern toe of the existing Main Lampbright Stockpile."

The MMD Director should require that the information on the revision or reclamation and closure of the existing sumps 2 and 3, as well as other existing features be submitted and time provided for agency and public comment prior to approving this permit.

Application does not consider appropriate technology and best practices

The Mining Act requires that the mining operation and the reclamation plan are designed and operated using the most appropriate technology and the best management practices (NMAC 19.10.5.508 A.) It appears that Chino has not considered the use of a liner system to prevent pollutants from migrating from the acid generating waste rock stockpile into groundwater. Under the Copper Rule groundwater quality standards apply since the new unit will be located outside of the Open Pit Capture Zone and Open Pit Surface Drainage Area. Because the stockpile will be a permanent source of acid rock drainage, it makes sense to prevent pollution from entering groundwater by installing a liner underneath the stockpile.

Liner systems reflect current engineering design best practices as outlined in the Global Acid Rock Drainage (GARD) Guide developed by the International Network for Acid Prevention's (INAP). The GARD Guid is a state-of-the-art summary of the best practices and technology to assist mine operators and regulators to address issues related to sulphide mineral oxidation. According to the guide, engineered barriers are low-permeability materials, ranging from synthetic to geosynthetic to natural, that can be utilized "as a barrier for contaminant flow from the overlying waste into the receiving environment."

The MMD Director should require the applicant to submit an evaluation of the proposal with respect to appropriate technology and best practices, including the use of a liner system below the waste rock pile to assist in the collection of seepage.

Stormwater design objectives do not meet industry best practice

We are concerned that the application proposes to use minimal 100-year storm events as required by regulations rather than more conservative 200-year to 500-year storm events as suggested by engineering best practice. This is done not only as a more conservative measure, but also in recognition of the fact that National Oceanic and Atmospheric Administration data is outdated, as evidenced by repeated occurrences of storm events greater than 100-yr recurrence interval on a much greater frequency as has occurred in the Silver City area over the past 30 years. It is also being recommended as a measure to address the predicted impacts of climate change. Here in the southwest, climate modeling suggests both more frequent and severe storm events.

In fact, the Chino mine area (Bayard, NM) reported a 4.1 inch rain event on Thursday, November 4 that caused flooding forcing a 2-hour delay for area schools. (NM CoCoRaHS - http://www.cocorahs.org/ViewData/CountyIntensePrecipReports.aspx?state=NM&county=GR) This depth of rainfall in a 24-hour period for Fort Bayard, NM has an average recurrence interval of 200-years according to the National Weather Service

(http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=nm - select for Fort Bayard). Please note that this recurrence interval is likely a conservative estimate since the rainfall occurred over a shorter time period than 24 hours.

We strongly recommend that MMD require stormwater designs for the Lampbright Waste Rock Stockpile to withstand the 200-year/24-hour to 500-year/24-hour storm event in order to protect public safety, ensure mining facilities are not impacted by un-diverted stormwater resulting in property loss, potential water quality impacts, and impacts to reclamation post-closure.

Closure/Closeout Plan does not address stockpile and borrow materials characteristics

In terms of actual material characteristics the only information provided in the application states "The mine rock that will be placed in the proposed NLS extension is characterized as material that may produce degraded water quality." The information provided is entirely inadequate and does not meet any level of best practice in terms of proper characterization of mine material characteristics such as are recommended by the International Network for Acid Prevention's (INAP) Global Acid Rock Drainage (GARD) Guide or any other credible reference on this matter.

The MMD Director should require that a complete characterization of stockpile materials be provided consistent with accepted professional standards.

According to the application, "The remaining cover material required for the NLS extension will be sourced from the unmineralized volcanic conglomerate deposit that occurs east of the Main Lampbright Stockpile." "Ripping tests conducted by Chino indicate that the materials can be worked to produce a viable cover material. Chino proposes to use this material as cover for the CCP since it is broadly similar to the Kneeling Nun Tuff, which is approved for use in the North Mine Area." This information is also entirely inadequate for characterization of cover materials suitable to support revegetation.

The MMD Director should require that a complete characterization of borrow materials intended for revegetation purposes be provided consistent with accepted professional standards.

Closure/Closeout Plan O&M cost estimates for new unit are not comprehensive

The only operations and maintenance (O&M) costs identified in the estimate are based on vegetation failure identified as "annual vegetation failure is conservatively estimated to be 2% failure every year for a total of 12 years, starting the year reclamation is completed."

It is our assumption that the actual site operation and maintenance costs, for the proposed addition, related to long-term operations and maintenance of roads, stormwater diversions, covers, vegetation, monitoring wells, groundwater and surface water capture and diversions, site security and other aspects of long-term O&M incidental to a mining mega-site such as Chino, would be accounted for within the larger site O&M costs which in those estimates has been based on a 100-yr duration. This to a large extent would be true

based on our knowledge, however, additional costs for groundwater capture and treatment, monitoring, and other aspects are still likely to occur. The estimate should have addressed this issue. The MMD Director should either require these additional costs to be estimated, or at the least require as a condition of the permit that Chino identify and update the next site O&M estimate to account for this addition.

Closure/Closeout Plan indirect cost calculation is incomplete

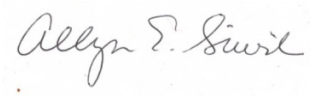
According to both MMD and OSM guidance, the indirect costs should be calculated as a function of the total capital costs. Therefore, it is not possible to have a substantive discussion concerning the proposed indirect costs without knowing the total capital costs for the entire FCMCM mine site.

Application does not provide financial assurance proposal for public review

Given the dire financial situation of Freeport-McMoRan Inc. and its continuing failure to pass the Mining Act's Financial Soundness Test, GRIP is very concerned about Freeport's proposal for financial assurance that outlines what instruments will be used to cover financial assurance for the Lampbright Waste Rock Stockpile. This information is currently not publicly available. This is a significant omission from the application. We strongly recommend that MMD not accept a Third Party Guarantee given the company's poor finances and instead require more certain forms of FA that don't pose a large environmental and financial risk to the public. GRIP also recommends that the public comment period remain open until the FA proposal is publicly available for review and comment.

Thank you for consideration of our comments.

Sincerely,



Allyson Siwik
Executive Director

Attachment: Memorandum from Jim Kuipers, Kuipers & Associates

Cc: Jim Kuipers, Kuipers & Associates
Holland Shepherd, Program Manager, EMNRD-MMD
David Ennis, Lead Staff, EMNRD-MMD
Kurt Vollbrecht, Program Manager, NMED-MECS
Brad Reid, Lead Staff, NMED-MECS

James Kuipers, PE
Principal Consulting Engineer
jkuipers@kuipersassoc.com

Kuipers & Associates, L L C

PO Box 145
Wisdom, MT 59761
406-689-3464

November 18, 2016

To: Allyson Siwik, Gila Resources Information Project

From: Jim Kuipers PE, Kuipers & Associates

Re: **FMCMC Application to Revise Mining Permit GR009E for North Lampbright Waste Rock Stockpile and DP-376 Revision**

I have reviewed the above referenced application dated January 19, 2016 and other documents as referenced and the following comments are provided for your consideration.

1. Application to Revise Mining Permit GR009E for North Lampbright Waste Rock Stockpile

a. Identification of Discrete Mine Features and Design Limits.

NMAC 19.10.5.502.D.(5) requires that "A map(s) showing all existing and proposed pits, shafts, adits, stockpiles, waste units, impoundments, leach piles, processing facilities, and support facilities such as office buildings. The map(s) shall identify the proposed permit area and design limits of each unit of the operation." NMAC 19.10.5.505.D requires that "A permit modification or revision for a mining operation is required for each new discrete processing, leaching, excavation, storage or stockpile unit located within the permit area and not identified in the permit and for each expansion of such a unit identified in the permit that exceeds the design limits specified in the permit for such units."

According to the Application cover letter[1] Freeport-McMoRan Chino Mines Company (FMCMC) proposes to "revise the Santa Rita Beneficiation Design Limit (DL) and update the CCP in accordance with 19.10.5 NMMA. The increase in the DL will enable Chino to expand the Main Lampbright Stockpile (MLS) to the north. This part of the stockpile will be constructed from mine waste rock and thus will not be part of the leach system. This portion of the stockpile is called the North Lampbright Waste Rock Stockpile (NLS)." However, this description is no supported by the references in the text to the Santa Rita Beneficiation Design Limit and North Lampbright Waste Rock Stockpile Extension and Figures 2 and 3. In Figure 2 no identification is provided for the "Santa Rita Beneficiation Design Limit" but instead the Figure identifies the "Proposed Chino Mine Design Limit Boundary Adjustment, the Current Chino Mine Design Limit Boundary, and the MMD permit boundary. Figure 2 also identifies the design limit for the proposed North Lampbright Stockpile and shows it adjacent to the Lampbright Stockpile. Figure 3, although titled "Santa Rita Beneficiation Design Limit," similarly does not identify that limit but instead identifies the Proposed Chino Mine Design Limit Boundary and the MMD permit boundary. Figure 3 also identifies the Main Lampbright Leach Stockpile. The logical interpretation without additional clarification would be to assume the "Santa Rita Beneficiation Design Limit" refers to the area of the SX/EW and reservoirs 6 and 7 as well as the Main Lampbright Leach Stockpile as all are part of the copper leaching

[1]Letter dated January 20, 2016 from T. Shelley, Freeport-McMoran to C. Eustice, EMNRD, MMD, MARP, re Freeport-McMoRan Chino Mines Company — Permit No. GROO9RE: Design Limit Expansion and North Lampbright Waste Rock Stockpile Closure Closeout Plan.

beneficiation process used at the Chino Mine. It would also be logical to assume the "Lampbright Stockpile" was incorrectly labeled in Figure 2 and instead was correctly labeled as the "Main Lampbright Leach Stockpile" (MLLS). As a result, it would similarly be logical to designate the proposed NLS as a discrete unit since there are no plans to leach the waste rock material in the NLS, as opposed to treating it as an addition to the MLLS, where leaching has taken place. This is further suggested by FMCMC's assumption in the Application cover letter that the expansion of the MLS should be treated as a new unit which states "…that the portion of the stockpile facility that occurs beyond the current DL will be subject to Section 19.10.5.508 NMAC." The only logical reason to consider the NLS to be an addition to the MLLS would be if the proponent eventually plans to leach the NLS.

It is our recommendation that the MMD Director not grant the permit modification until an application with proper designation of discrete units and corresponding design limits together with corrections to the language describing those units be provided by the proponent.

a. Groundwater Impacts

As mentioned by the Application, "Chino's existing Lampbright facilities and operational activities are authorized by NMED under Discharge Permit 376 (DP-376) and also occur within the GROO9RE permit design limit boundary. Chino is separately submitting an application to NMED to modify DP-376 to authorize the NLS and construction of a stormwater impoundment on the east side of the NLS. The east impoundment is designed to manage impacted stormwater from the NLS and incidental seepage from the NLS." This is the only information provided in the Application concerning seepage from the NLS or means to mitigate it.

As we have mentioned to MMD in numerous prior comments, without the inclusion of at least a draft DP it is not possible to substantively comment on the proposal with regards to potential ground water impacts, potential mitigation measures, or reclamation and closure requirements. And while MMD might be excused from considering those requirements for existing mining units, given that the proponent as identified the NLS as a new unit, NMAC 19.10.5.508 requires the following: "A. Most Appropriate Technology and Best Management Practices. The mining operation and the reclamation plan shall be designed and operated using the most appropriate technology and the best management practices." The majority of the concerns with any reclamation plan are with respect to water quality, and the technology and best management practices used in reclamation are highly relative to prevention of water quality impacts. NMAC 19.10.5.502 requires that the applicant provide "(11) Any additional information necessary for evaluation of the permit application as required by the Director."

It is our recommendation that the MMD Director not grant the permit until a modified draft DP-376 is made available by NMED and until additional time is provided for both agency and public review and comment on this information. Additionally, the MMD Director should require the proponent to submit an evaluation of the proposal with respect to appropriate technology and best practices including the use of a liner system below the waste rock pile to assist in the collection of seepage.

a. Reclamation of Existing Features

According to the Application, "Two sumps (Sumps 1 and 2) exist at the toe of the Main Lampbright Leach Stockpile and collect pregnant leach solution (PLS) which is delivered to Chino's SX/EW production facility. Sump 3 consists of both a french drain and open sump that gravity feeds PLS to Sump 2. Sumps 1, 2, and 3 will be covered by the NLS. No information is provided in the application concerning the reclamation and closure of the existing sumps prior to them being covered by the NLS. According to the

CCP "Chino is submitting a separate application to NMED to obtain approval for the modification of the PLS collection and impacted stormwater system currently in place along the northern toe of the existing Main Lampbright Stockpile."

The MMD Director should require that the information on the modification or reclamation and closure of the existing sumps 2 and 3 as well as other existing features be submitted and time provided for agency and public comment prior to approving this permit.

b. Stormwater Design Objectives

NMAC 19.10.5.508 requires that "(4) Hydrologic Balance Operations shall be planned and conducted to minimize negative impact to the hydrologic balance in both the permit and potentially affected areas" and "(d) All diversions of overland flow shall be designed, constructed and maintained to minimize adverse impacts to the hydrologic balance and to assure the safety of the public." It goes on to require "(ii) Unless site-specific characteristics require a different standard which is included in the approved permit, diversions which have watersheds larger than 10 acres shall be designed, constructed and maintained to safely pass the peak runoff from a 10-year, 24-hour precipitation event."

The supporting document to the Application[2] (Attachment 3) titled Hydrologic and Hydraulic Analyses: Non-Impacted Stormwater Diversion Channel, used a 100-year/24-hour storm event "per Freeport McMoran Chino Mines Company." MMD and the Environment Department should both be aware the current best professional design standards, which are typically recommended by firms such as Knight Piesold in my experience throughout the U.S. and Canada and by other major engineering firms, are to use a 200-year/24-hour storm event. The fact that KP felt the need to clarify that the assumption was at the direction of FMCMC and not based on their professional recommendations or best professional practice confirms our concerns and recommendations in this regard.

It is our recommendation that the MMD Director recognize that the current design standards in the NMAC are grossly inadequate to protect public safety as well as to ensure the mining facilities are not impacted by undiverted stormwater resulting in both property loss as well as potential water quality impacts as well as impacts to reclamation post-closure. Executive Order 11988[3] was issued "as part of a national policy on resilience and risk reduction" consistent with the President's Climate Action Plan. The resulting Federal Flood Risk Management Standard defines one way of determining a floodplain as "(iii) the area subject to flooding by the 0.2 percent annual chance flood." Given that New Mexico's existing stormwater design criteria are antiquated with regard to climate change considerations, we recommend that the NMED recognize a 500-yr storm event standard as a measure of risk reduction related to both public and worker safety as well as minimization of property damage. The MMD Director should require at least a 200-yr/24-hour storm event and preferably a 500 yr/24-hour storm event, and should adopt it as an executive action given the department's direct experience with the current standard being inadequate and the Department's own frequent observations of significant stormwater events exceeding the 100-yr standard at mine sites in New Mexico.

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[2] FREEPORT-MC MORAN CHINO MINES COMPANY: APPLICATION TO REVISE MINING PERMIT GROO9RE FOR NORTH LAMPBRIGHT WASTE ROCK STOCKPILE, January 19, 2016.

[3] https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and-

2. Closure/Closeout Plan

The following comments are directed towards the North Lampbright Waste Rock Stockpile Extension Closure/Closeout Plan prepared by FMCMC and dated January 15, 2016.

a. Section 2.3.8 Material Characteristics

Stockpile Materials. According to the permit, "Pursuant to Subsection A, 20.6.7.21 NMAC, a material characterization plan and if applicable a material handling plan for all waste rock excavated at the copper mine facility will be included in an application." In terms of actual material characteristics, the only information provided states "The mine rock that will be placed in the proposed NLS extension is characterized as material that may produce degraded water quality." The information provided is entirely inadequate and does not meet any level of best practice in terms of proper characterization of mine material characteristics such as are recommended by the International Network for Acid Prevention's (INAP) Global Acid Rock Drainage (GARD) Guide or any other credible reference on this matter.

The MMD Director should require that a complete characterization of stockpile materials be provided consistent with accepted professional standards.

Borrow Materials. According to the permit. "The remaining cover material required for the NLS extension will be sourced from the unmineralized volcanic conglomerate deposit that occurs east of the Main Lampbright Stockpile." "Ripping tests conducted by Chino indicate that the materials can be worked to produce a viable cover material. Chino proposes to use this material as cover for the CCP since it is broadly similar to the Kneeling Nun Tuff, which is approved for use in the North Mine Area." This information is also entirely adequate for characterization of cover materials suitable to support revegetation.

The MMD Director should require that a complete characterization of borrow materials intended for revegetation purposes be provided consistent with accepted professional standards.

b. Section 4.0 NORTH LAMPBRIGHT WASTE ROCK STOCKPILE EXTENSION RECLAMATION PLAN

Stockpile Erosion and Drainage Control. See previous comments "4. Stormwater Design Objectives."

c. Section 7.0 BASIS FOR CAPITAL AND OPERATION AND MAINTENANCE COST ESTIMATES

According to the CCP, "A detailed cost estimate for the purpose of determining the value of the financial assurance performance bond will be prepared following approval of the proposed NLS extension reclamation plan included in this CCP. The following sections provide the basis upon which these cost estimates will be developed." It has been our past experience with the submittal of CCP's as a requirement of the NMMA that actual cost estimates are submitted with the CCP, and not following approval of the CCP, and in fact this has been our own process in submitting CCPs for approval at mine sites such as U.S. Hill to the MMD under the NMMA.

As required by NMAC 19.10.5.506 H. As soon as practicable after receiving notice that the closeout plan is approvable, the applicant shall submit a proposal for financial assurance in accordance with 19.10.12 NMAC. The MMD Director should have informed the applicant the closeout plan was approvable and required the submittal of a proposal for FA prior to initiating the public comment period. As an

example, despite the writer's relative familiarity the MMD's public records system, the existence of an FA estimate that was submitted by FCX on September 29, 2016 was not discovered until November 18, 2016.

3. North Lampbright Waste Rock Stockpile Reclamation Cost Estimate

The following comments are directed towards the North Lampbright Waste Rock Reclamation Cost Estimate prepared by Telesto for FMCMC and dated September 28, 2016.

a. Capital Costs

The methods used by Telesto to develop and present the cost estimate are consistent with present standards of professional engineering practice for hardrock mining reclamation and closure cost estimation. The approach does not utilize a standardized approach such as the Standard Reclamation Cost Estimator that would result in a more consistent and comparable result and also minimize the effort that the responsible regulators should take in reviewing a cost estimate. It is suggested that Telesto, FMCMC and MMD and ED as well as the public would benefit by consideration of the use of a more standardized approach to financial assurance cost estimation customized to New Mexico specific cost data and indirect costs.

b. Operation and Maintenance Costs

The only operations and maintenance (O&M) costs identified in the estimate are based on vegetation failure identified as "annual vegetation failure is conservatively estimated to be 2% failure every year for a total of 12 years, starting the year reclamation is completed."

It is our assumption that the actual site operation and maintenance costs, for the proposed addition, related to long-term operations and maintenance of roads, stormwater diversions, covers, vegetation, monitoring wells, groundwater and surface water capture and diversions, site security and other aspects of long-term O&M incidental to a mining mega-site such as Chino, would be accounted for within the larger site O&M costs which in those estimates has been based on a 100-yr duration. This to a large extent would be true based on our knowledge, however, additional costs for groundwater capture and treatment, monitoring, and other aspects are still likely to occur. The estimate should have addressed this issue. The MMD Director should either require these additional costs to be estimated, or at the least require as a condition of the permit that FMCMC identify and update the next site O&M estimate to account for this addition.

c. Indirect

According to the estimate, Capital Indirect Costs, total indirect costs of 22.5% were applied to the capital direct costs per MMD (1996) and Office of Surface Mining (OSM, 2000) guidance. The indirect costs are comprised of: Mobilization and Demobilization (1.0%), Contingencies (2.0%), Engineering Redesign Fee (2.5%), Contractor Profit and Overhead (15.0%), and Project Management Fee (2.0%). The indirect costs for long-term tasks were decreased to 17.5% based on a reduction in Contractor Profit and Overhead to 10%.

It should be noted that according to both MMD and OSM guidance, the indirect costs should be calculated as a function of the total capital costs. Therefore, it is not possible to have a substantive discussion concerning the proposed indirect costs without knowing the total capital costs for the entire FCMCM mine site.

It is recommended that consideration be given to revising MMD's 1996 guidance relative to indirect costs. The rationale for this recommendation is contained in the attached reference dated April 2015 and titled MINE CLOSURE AND RECLAMATION COST ESTIMATION GUIDELINES: INDIRECT COST CATEGORIES prepared for the Alaska Department of Natural Resources. As noted by the report, "Estimation of a mine's direct R&C costs is a relatively straight-forward exercise; however, estimating indirect costs presents a greater challenge. Each category of indirect costs – contractor profit, contractor overhead, performance and payment bonds, liability insurance, contract administration, engineering redesign, and contingency – exhibits a degree of variability." As evidenced by the material within the report, indirect cost category ranges by agency were from a low of 29% to a high of +80%, but in no case at the 22.5% total proposed by FMCMC.

4. Application for Renewal of Discharge Permit 376 (DP-376)

a. Identification of Mine Features

According to Section A-8, "The Main South Lampbright Leach Stockpiles are leached through the application of acidic leach Solution (raffinate). Pregnant leach solution (PLS) and impacted water is collected in seepage collection trenches, lined wing walls, pump back wells and the Lampbright East Sump and conveyed to the Stainless Steel PLS Tank. During upset conditions overflow from the Stainless Steel PLS Tank discharges into the lined Reservoir 8. Impacted stormwater is collected in concrete lined settling ponds and conveyed to Un-lined 8 Dam. Impacted stormwater may also discharge to un-lined Reservoir 8 via overland flow during rainfall events.

This description is difficult to understand in several ways. First, we assume "Main South Lampbright Leach Stockpiles" actually refers to the Main Lampbright Leach Stockpile and the South Lampbright Leach Stockpile. From this information, we also assume the Southwest Lampbright Stockpile, because it is not mentioned, is not a "leach" stockpile. The information provided describes a "lined Reservoir 8" and "unlined Reservoir 8" in addition to suggesting the conveyance occurs to "Un-lined 8 Dam." Are their two different Reservoir 8's or is the Reservoir segmented into unlined and lined sections? And how is something discharged to a "Dam." We assume the discharge occurs at the Dam into Reservoir 8 that is described elsewhere as an "earthen and HDPE lined" pond.[4] The application and at least the DP should be changed to clearly describe the reservoir facility.

According to Section A-9, discharge locations include the Main Lampbright Stockpile, South Lampbright Stockpile, and Southwest Lampbright Stockpile. Based on the earlier description in Section A-8, shouldn't at least the Main Lampbright and South Lampbright Stockpiles be identified as "Leach" stockpiles? And whether the Southwest Lampbright Stockpile is a leach pile or a waste rock pile should be further clarified. We recommend in the future that instead of using the non-descriptive term "stockpile" that the application and at least the DP should use accurate terms of description such as "waste rock" for material that is not planned to be leached, and "leach pile" for material that is planned to be leached. The use of the word "stockpile" is both confusing and misleading.

b. Chino North Mine Area Application Requirements for a Copper Mine Facility's Discharge Permits 20.6.7.11 NMAC

i. 20.6.7.11(J)(6) Stormwater Management

[4] Chino North Mine Area Application Requirements for a Copper Mine Facility's Discharge Permits 20.6.7.11 NMAC, Table C1.

As noted in comment "4", the proposed stormwater design criteria of a 100-year, 24-hour event is not consistent with current best management practices (BMPs). Executive Order 11988[5] was issued "as part of a national policy on resilience and risk reduction" consistent with the President's Climate Action Plan. The resulting Federal Flood Risk Management Standard defines one way of determining a floodplain as "(iii) the area subject to flooding by the 0.2 percent annual chance flood." Given that New Mexico's existing stormwater design criteria are antiquated with regard to climate change considerations, we recommend that the NMED recognize a 500-yr storm event standard as a measure of risk reduction related to both public and worker safety as well as minimization of property damage.

c. Missing Information Critical to the Application

The Mining Permit Application implied that any requirements or tasks related to the closure/closeout of existing features such as PLS ponds and capture systems affected by the proposed new waste rock pile, as well as issues concerning the effectiveness of the existing PLS capture system and its application to the proposed new waste rock pile, would be addressed in the modification of the DP. However, our review suggests that none of these issues is addressed in the DP application submitted by FMCMC. The application provides potentiometric maps that raise questions about leachate capture, even though it states that all the leachate is captured. It is therefore our conclusion that the revision for the North Lampbright Waste Rock Stockpile has not been accompanied by a revised DP-376 addressing closure of the existing features that would be affected by the new stockpile area, and the capture of leachate from waste rock in the new stockpile area, not to speak of the effectiveness of the existing leach pile PLS capture system. This raises the question of how Secretary of the Environment Department provides a determination as required by NMAC 19.10.5.506(5)?[6]

[5] https://www.whitehouse.gov/the-press-office/2015/01/30/executive-order-establishing-federal-flood-risk-management-standard-and-

[6] NMAC 19.10.5.506 (5) a written determination has been received from the Secretary of the Environment Department stating that the application has demonstrated that the activities to be permitted or authorized will be expected to achieve compliance with all applicable air, water quality, and other environmental standards if carried out as described in the closeout plan. This determination shall address applicable standards for air, surface water and ground water protection enforced by the Environment Department or for which the Environment Department is otherwise responsible;