

State of New Mexico
Energy, Minerals and Natural Resources Department

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March 27, 2015

Bruce D. Taylor, Manager
Freeport-McMoRan-Cobre Mining Company
P.O. Box 10
Bayard, New Mexico 88023

RE: Agency and Public Review Comments on Freeport-McMoRan Cobre Mining Company's Proposed New Unit Permit Revision Incorporating the Cobre Haul Road; Continental Mine Permit No. GR002RE Revision 14-1

Dear Mr. Taylor:

The Mining and Minerals Division (“MMD”) received an application dated August 22, 2014, to revise Permit No. GR002RE by increasing the permit boundary and design limits in order to facilitate the construction of a haul road between Freeport-McMoRan - Cobre Mining Company (“Cobre”) and Freeport-McMoRan Chino Mines Company (“Chino”), linking the two mining facilities. The application identifies the haul road as the Cobre Haul Road (“CHR”) that will be approximately 3.5 miles long and 120 feet wide. The CHR will expand the Cobre Permit Boundary by approximately 31 acres and will expand the Cobre design limits to encompass approximately 100 additional acres.

The application provided information on the construction and reclamation of the proposed CHR and included a cost estimate for reclaiming the proposed CHR. Cobre provided MMD with additional information in support of the application on September 17, 2014, October 6, 2014, November 3rd and November 10th, 2014. MMD conducted a site visit to the proposed CHR on October 24, 2014, and has reviewed the above referenced application and supporting information from Cobre. Pursuant to 19.10.5.505.B(3) NMAC, MMD sent copies of the application to other state and federal agencies, requesting their review and comments. MMD has received agency comments on the application. This letter provides comments from MMD on the submittal as well

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as copies of comment letters from the New Mexico Environment Department ("NMED"), the New Mexico Office of the State Engineer ("NMOSE"), the New Mexico Energy, Minerals and Resources Department – State Forestry Division ("EMNRD" "SFD"), the New Mexico Department of Cultural Affairs ("NMDCA"), the Gila Resources Information Project ("GRIP") and the Hopi Tribe. MMD provides the following comments on the application and requests that you respond to them within 30 days following your receipt of this letter.

General Comments:

MMD reviewed the application and deemed it administratively complete, pursuant to §19.10.5.503 B NMAC, in a letter to Cobre dated October 7, 2014. Since then, Cobre has revised and resubmitted certain portions of the permit revision application. MMD has reviewed the application and found it to be technically incomplete until receipt of acceptable supplemental information as requested by this letter.

Specific Comments:

1. Please find the attached comment letters from NMED Ground Water, Surface Water and Air Quality Bureaus ("GWQB" "SWQB" "AQB", respectively) and address the issues raised by the SWQB in the final paragraph of the December 12, 2014, letter regarding the application's description of erosion control and maintenance for the CHR. Also, page 3 of the AQB's November 24, 2014, letter indicates that the potential for emissions from equipment and construction activities that may be associated with construction of the CHR must all be considered in determining applicability under 20.2.72 NMAC and may necessitate permit control strategies and conditions regarding air quality impacts that may result from construction and operation of the CHR. Please address these air quality issues raised on page 3 and page 4 of the AQB's letter to MMD. Additionally, the GWQB indicates on page 2 of its December 12, 2014, letter to MMD that it is not providing an environmental determination at this time pending a suitable response from Cobre addressing the SWQB's concerns regarding the application's description of erosion control and maintenance for the CHR. Be advised that a written environmental determination from NMED is required by MMD (19.10.5.506 J (5) NMAC) prior to approving this permit revision.
2. For the attached e-mail dated November 19, 2014, from NMOSE please address both comments regarding the use of water as a best management practice for controlling fugitive dust, whether any additional water rights may be required to do so, or if there are any changes that are necessary to any existing water rights that would require review and approval by NMOSE prior to use of water for controlling fugitive dust during construction and operation of the CHR. Also, NMOSE has identified two water well permits (M-10566 POD23 and M-10566 POD24) that may be located near or within the proposed CHR route for which NMOSE has no well logs or records to indicate whether or not these two wells exist. Please address the status of these wells and provide records detailing the location and construction specifications of the wells.

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3. Please find the attached letter dated December 19, 2014, from NMDCA. Within the letter to MMD, NMDCA indicates that although there are no cultural properties listed on either the State or the National Registers, a cultural resources survey for the proposed CHR was conducted in August 2012, for the Bureau of Land Management ("BLM"). This survey documented 17 archaeological sites. According to the application, only 8 sites were documented on BLM land, one of which was determined to be eligible for listing and that this site will be avoided by relocating the road alignment. However, the application does not mention the sites that are located on private land or whether these other sites will be impacted or avoided. In addition, NMDCA's letter also indicates that certain areas of the proposed CHR may not have been included within the original archaeological survey area and may need to be surveyed in order to determine whether any operational or closeout activities could affect any previously unidentified archaeological sites that may be located within these potentially un-surveyed areas.

Additionally, the letter from NMDCA indicates that it has requested additional consultation with the BLM on the project due to potential adverse effects to sites in the project area that may be eligible for listing on the National Register of Historic Properties. According to the NMDCA letter, the BLM has not responded to the NMDCA's request for additional consultation and these issues remain unresolved. Please address the comments and concerns within the December 19, 2014, letter from NMDCA to MMD. It is not clear that the NMDCA was properly consulted in regard to the avoidance strategy associated with the eligible site, nor is it clear as to how much buffer the avoidance strategy will provide between the road and the archaeological site boundary.

Furthermore, as part of MMD's required compliance with our tribal consultation policy and the State Tribal Collaboration Act of 2009 ("STCA"), MMD reaches out to tribal entities for comments when we process permit applications. In response to MMD's tribal consultation request, we received a letter (enclosed) from the Hopi Tribe requesting a copy of the 2012 cultural resources survey(s) report(s) related to the proposed CHR. MMD is requesting courtesy copies of these surveys from FMI so that we can provide them to the Hopi Tribe as requested.

4. Please find the attached letter dated December 19, 2014, from GRIP, and address each of the six comments provided within the letter.
5. The application indicates that \$302,000 of financial assurance will be necessary to cover the disturbance associated with the CHR Unit. However, MMD is continuing to review the proposed cost estimate for reclaiming the CHR and may have additional comments in the future depending upon changes to the proposed CHR Closeout Plan that result in changes to the overall cost estimate. For example, the cost estimate included with the application does not consider any costs that may be associated with the plugging and abandonment of monitoring wells, removing culverts or maintaining or eventually removing fencing along the route of the proposed CHR. MMD anticipates that the cost estimate will require an update to include all disturbances contemplated by the construction of the CHR.

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6. The application states that the permit boundary will be expanded by 31 acres and the design limits will expand to 100 acres. Please provide an estimate of the total acreage of the revised permit boundary and design limits and show these on an updated map.
7. The application states that the proposed CHR will be fenced to exclude wildlife and domestic animals as well as unauthorized persons. However, Cobre included no details regarding the type and specifications of the proposed fencing to be installed, details regarding potential use or location of wildlife-friendly access corridors (i.e. jumps, ramps, crossings or passes) that limit the potential for trapping animals within the fenced corridor or fragment high quality wildlife habitat that surrounds the mine permit boundary. Also, Cobre must address whether the fencing will remain following reclamation of the CHR and if so, provide more details on the location of fencing proposed to be left in place following reclamation as a component of the wildlife PMLU for this unit. Currently, fencing is not included in the financial assurance cost estimate. If fencing is proposed to remain post-reclamation, the financial assurance estimate must include maintenance costs covering the post-reclamation monitoring period in addition to costs for eventually removing the fence. Attached, please find NMDG&F specifications for fencing. MMD requires fencing to be in accordance with NMDG&F guidelines in areas designated as wildlife PMLU.
8. The application indicates that Cobre will conduct bat surveys to determine whether any suitable habitat exists within the disturbance area associated with construction of the CHR and mentions that sites or areas that are determined to be suitable and safe for bat habitat will have appropriate protection measures installed. However, it makes no indication of what areas within the CHR footprint are considered to be suitable bat habitat and how Cobre intends to determine whether this habitat is suitable and inhabited.
9. The application indicates that a smaller scale service road intended for mining-related access and ranching activity will remain in the footprint of the CHR following reclamation of the larger CHR footprint; however, no plans or specifications are provided for this road nor any mention of whether or not this road will require culverts, will be fenced or how it will interface with the proposed wildlife PMLU of the CHR following reclamation. Please provide these additional details, to include a map that indicates all landowners. MMD requires a statement from each of the landowners indicating their agreement with leaving a permanent road in place following reclamation of the CHR.
10. To improve upon the preliminary design, the final design must include locations, design criteria (size, length, slope, available upstream height of road above culvert invert, etc.) and evaluations for the safety and effectiveness of culverts and sediment traps as well as the scale of watersheds that feed them. Cobre must also explain its intention for leaving the culverts in place and how leaving the culverts in place following reclamation might positively enhance or contribute to the wildlife PMLU. Additionally, Cobre must provide complete details for the structures proposed to span a public U.S. Forest Service Road and Hanover Creek and also the crossing at Highway 152, including where applicable: demolition and reclamation plans for removing the concrete structures and abutments, traffic control, N.M. Department of Transportation approval, etc.

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11. The Application indicates that the surface of the CHR will be maintained by “minor grading” to support proper drainage and that the graded material from the road will be integrated into the berms surrounding the road. Since this material is scraped from the surface of the CHR, it seems that - over the long term, this process of integrating this material into the berms could contaminate the berm material and make it difficult to promote eventual revegetation in this material. Please explain how this road base and berm material presumably contaminated and compacted by constant traffic, will remain as a suitable growth media at reclamation, or will it be buried at the time of reclamation? Several of the Figures depicting segments of the CHR show very steep outslopes along the outer perimeter of certain segments of the CHR (e.g., Figure A9) with some appearing to be at or near angle of repose. These steep outslopes may present a stability problem during operation. How does Cobre intend to manage the enlargement of the berms over time as additional road base materials are added and integrated from the road surface into the berms and how does Cobre intend to contain this berm material and prevent sediments from cascading over the outside toe of the berm during storm events and spreading these sediments to the surrounding areas and watersheds? Will the berm be stabilized with interim vegetation?
12. Regarding stormwater flows along the path of the CHR, how does Cobre intend to reduce or eliminate channelized surface flows of stormwater along the CHR during high intensity storm events?
13. Although Cobre states in the application that the CHR is a non-discharging feature and that no toxic or acidic substances will be used on the CHR, it appears that at least some contamination will become imbedded within the road material and the compacted upper crust of the CHR surface, potentially including spilled ore material, diesel fuel, hydraulic fluid, tire rubber residues and other vehicle borne contaminants. How does Cobre expect this material to eventually perform as a viable seedbed given the potential for contamination and severe compaction throughout the upper crust of the roadbed and the berm materials surrounding the road? How many and what are the proposed distances to be set between each of the ripper bars used for ripping the road material and how does Cobre ensure that ripping the compacted road material to depths of 18-24 inches is adequate? Does Cobre intend to test the CHR road material for its suitability to perform as a growth media? Also, how does Cobre intend to manage impacted stormwater that may be released from the road? Will any stormwater from the CHR be discharged to Hanover Creek?
14. The application indicates that stormwater runoff from the CHR will be diverted in some places into natural drainages; explain potential impacts to quality of this water in terms of both sediment in the water and potential contaminants of concern. Where will this runoff (sediment and water) be discharged to? Will it be sampled and monitored and if so, where and how? What are the contingency plans in place for Cobre if sampling and monitoring of this runoff shows significant levels of contamination to be emanating from the road?

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15. Based on the requirement to use the most appropriate technology and best management practices, Cobre will need to salvage topsoil and/or topdressing materials to be used for cover on the CHR. MMD understands the limits of salvaging topsoil given the constraints of this area to be disturbed. Other topdressing materials can be used to supplement topsoil that is in short supply. These materials may be available in the surrounding area, or can be taken from subsoil materials to be salvaged from the road construction. MMD will need more information from FMI concerning the identification, salvage, storage and eventual re-application of these materials.
16. The application indicates that Cobre intends to salvage topsoil for reapplication at reclamation. However, the application does not provide detail concerning the type or volume of topsoil, and/or other topdressing material, to be salvaged. Page 7 of the Application indicates that Cobre intends to salvage and stockpile topsoil materials scraped from the CHR corridor for later use during mine reclamation. Please further describe the process of how Cobre intends to scrape and salvage the topsoil material, or other topdressing material. In addition to how much topsoil will be salvaged, provide an estimate for how much of an area it will cover and to what depth. A mass balance equation should be provided to estimate topsoil/topdressing, for the amount of material to be salvaged and then applied as topsoil or topdressing. The mass balance equation needs to address where the material is coming from and where it is going.
17. Also, describe where and how the stockpile will be constructed and maintained in good condition as viable, living topsoil until ready for use during reclamation. How will Cobre maintain the stockpile to protect it from erosion, mass movement and operational impacts? Cobre's description of the stockpile must also include an estimate for the amount of soil to be removed from the CHR corridor for the stockpile. Additionally, provide an estimate of the size of the footprint for the stockpile area.
18. Regarding the topsoil to be removed from the CHR corridor, how can Cobre assure that this topsoil material will be suitable growth media for use in reclamation? How will Cobre assure that overburden materials that are to be salvaged from the cut and filled areas and that are very similar to the overburden materials observed in the general area of the mine (i.e. Hermosa Mountain and Hanover Mountain Leached Cap) and that are being tested in the Cobre Test Plot Program will be suitable sub surface growth media and supportive of revegetation efforts at reclamation? Considering the current failure rates of revegetation efforts in the Cobre Test Plot Program, what is the contingency plan given the likelihood of higher potential for failure of these salvaged overburden materials as seen with revegetation in the test plots? For the most part, it appears as though the CHR will be constructed on bedrock surfaces. Explain how cut and fill areas within the CHR footprint that occur on exposed blasted bedrock will be reclaimed and revegetated. Will they be ripped first then covered with topsoil, or topdressing, and then to what depth will they be covered?

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19. What type of revegetation methodology will be applied to the cover material, at reclamation? What is the seeding and mulching sequence? Will the seed be broadcast or drill seeded? What other amendments will be applied?
20. Regarding the live and dead standing timber and brush in the forested areas within the CHR footprint, please provide a description of how Cobre intends to remove this material. How and where does Cobre propose to process or dispose of the material? MMD would support chipping and masticating this woody material as an organic soil amendment to be incorporated into and to maintain overall viability and integrity of the topsoil stockpile. MMD discourages burning of this timber and brush resource.
21. Cobre must also develop a weed management plan for the Closeout Plan for the CHR to address the identification, management and control of invasive and noxious species throughout the term of active use of the road and following reclamation.
22. Page 8 of the application describes an overpass structure that will route the CHR over Hanover Creek and the USFS Road at the north end of the CHR. Another overpass structure on the south end of the CHR will evidently cross Highway 152. However, the footprint of the CHR as shown in the application ends abruptly at the southern Cobre Permit Boundary and the application provides no other details describing how the CHR will exit the Cobre Permit Area and re-enter the northern Chino Mine Permit Boundary at the southern extent of the CHR. Has Cobre obtained the necessary approvals from the USFS and the NMDOT to build and reclaim these structures at the end of mine life? If so, are there any plans and specifications for these structures available? Furthermore, the CHR terminates abruptly at the Cobre Permit Boundary and does not appear to cross Highway 152 as no plans or specifications in regard to addressing how the CHR will enter the Chino Permit Area were provided. Does Cobre intend to submit an application to MMD to address the portion of the CHR that extends into the Chino Mine Permit Boundary?
23. The application states that no underground activities are associated with the proposed construction of the CHR; however, there are numerous known and unknown historic and abandoned mine workings and voids in the area underneath the CHR. It is apparent that a real potential exists throughout the length of the CHR for subsidence to occur over these relatively shallow underground workings, particularly the unreclaimed abandoned mine workings (i.e. the Jim Fair, Snowflake and Philadelphia areas). With the constant volume of heavy traffic and the associated vibration that is to occur along the CHR, in addition to drilling and the use of explosives in the area during and after construction of the CHR, MMD is concerned with the potential for subsidence and collapse in areas where the CHR spans these underground voids. How does Cobre intend to address this risk and any safety issues that may be associated with potential subsidence? What is the contingency for such a mass-failure situation if subsidence were to occur?
24. There are many known and unknown historic and abandoned mine workings and voids in the area underneath and adjacent to the CHR footprint. It seems plausible that the balanced cut and fill process of removing certain higher elevation terrain within the footprint of the

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CHR could expose these workings and voids that may extend to hundreds of feet in depth. What contingency plans are in place should Cobre expose shallow underground mine workings and voids during construction of the CHR?

25. Currently, there are several monitoring wells that are located within the CHR footprint that must be abandoned and relocated. Please provide a map identifying the locations of these relocated monitoring wells. MMD will also require that the costs associated with plugging and abandonment of the monitoring wells be included in the reclamation cost estimate for financial assurance.
26. The application indicates that the CHR meets the requirements of the BLM's surface management regulations and is in the process of updating the Mine Plan of Operations ("MPO") while conducting an Environmental Assessment ("EA") of the proposed action. Has the BLM approved the updated MPO and EA and, if so, please provide these documents to MMD for our records.
27. Figure A4 of the application should show the thickness of the compacted material, to be placed during construction of the CHR. Does Cobre intend to remove this compacted layer prior to ripping the surface of the CHR or does Cobre intend to integrate this (potentially contaminated) compacted layer into the seedbed?
28. Figure A5 of the application appears to cut-off the permit boundary along the east and west sides of the Figure. Please revise the Figure to include the entire permit area. Furthermore, certain areas shown on the maps included with the application indicate that the permit boundaries for Cobre and Chino overlap in some places while also leaving slivers of empty spaces between the two permit boundaries. These maps should be revised to more accurately reflect the boundaries for both permits.
29. Aside from a generalized cross section of the CHR included with the application, there are no other cross-sections included in the application that show cross sections of the CHR at other critical areas. Additional cross sections are necessary to understand the proposed crossings at Highway 152 and Hanover Creek, the areas over or near historic workings as well as for multiple other areas where deep cut and fill will take place.

If you have any questions concerning this letter, please contact me at (505) 476-3436 or via email at: james.hollen@state.nm.us.

Sincerely,



James Hollen, Permit Lead, Permit GR002RE
Mining Act Reclamation Program ("MARF")
Mining and Minerals Division

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Enclosures: NMED, NMOSE, NMDCA, SFD, GRIP and Hopi Tribe Comment Letters
NMDG&F Fencing Guidelines

cc: Holland Shepherd, Program Manager, MARP/MMD
Kurt Vollbrecht, Program Manager, NMED/GWQB-MECS
Matthew Wunder, Ph.D., Chief, Conservation Services Division, NMDG&F
Michelle Ensey, Archaeologist, Historical Preservation Division, NMDCA
Mike Johnson, P.G., Chief, Hydrology Bureau, NMOSE
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Silver City Ranger District
Allyson Siwik, Executive Director, GRIP
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