

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Susana Martinez**  
Governor

**Ken McQueen**  
Cabinet Secretary-Designate

**Matthias Sayer**  
Deputy Cabinet Secretary

**Fernando Martinez, Director**  
Mining and Minerals Division



**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

7012 0470 0000 0880 5958

January 31, 2017

Thomas L. Shelley, Manager  
Freeport-McMoRan Copper and Gold  
Cobre Mining Company  
P.O. Box 10  
Bayard, New Mexico 88023

**RE: Agency and Public Review Comments**

**Freeport-McMoRan Copper and Gold-Cobre Mining Company**

**Permit Revision Ending Standby Status and Incorporating an Updated Closure-Closeout Plan  
Continental Mine Permit No. GR002RE Revision 15-1**

Dear Mr. Shelley:

The Mining and Minerals Division (“MMD”) received an updated Closure-Closeout Plan (“CCP”) enclosed with a letter dated December 12, 2014, from Freeport-McMoRan Copper and Gold-Cobre Mining Company (hereinafter may be referred to interchangeably as “Permittee” “FMI” or “Cobre”). Cobre supplemented its CCP submittal with a letter dated December 23, 2014, requesting a revision of Permit No. GR002RE (Revision 15-1) to end Cobre’s current standby status and reactivate the Continental Mine through Cobre’s updated Closure-Closeout Plan (“CCP”) submittal pursuant to Condition EE of MMD Permit Revision 12-1 to Permit GR002RE.

The Continental Mine has been inactive and in standby status since approval was granted for standby status by MMD on February 6, 2007, through Permit Revision 05-2; with standby status for the mine being subsequently renewed for a second 5-year term approved by MMD on November 4, 2013, through Permit Revision 12-1, with a five-year term that is set to end on February 6, 2017. In a letter dated August 3, 2016, Cobre has requested renewal of standby status for a third term that would end no later than February 6, 2022, pursuant to Condition BB

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of Permit GR002RE Revision 12-1; however, Cobre's standby status would end upon MMD's pending approval of the request to return to operating status (Revision 15-1) should that approval occur prior to the expiration of the renewal periods, and Cobre would then presumably withdraw its August 2016, request for standby status renewal.

The updated CCP describes the closeout measures to address disturbances at the Continental Mine that will be undertaken upon return to operating status and included a cost estimate for reclaiming the Continental Mine and provided updated information regarding closeout and reclamation as it applies to plans Cobre may have for expansion of certain mine units at the Continental Mine that may occur throughout the next five years, including the construction and reclamation of the Cobre to Chino Haul Road, expansion of existing waste rock disposal facilities into the expanded South Waste Rock Disposal Facility, creation of the North Overburden Stockpile and also covering new mining activity within the Hanover Mine Unit. Cobre provided MMD with additional information in support of its Revision 15-1 application in letters dated February 12, 2015, March 18, 2015, September 14, 2016, and via email dated February 8, 2016. MMD has reviewed the updated CCP and the above referenced application (Revision 15-1) 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 updated CCP and Revision 15-1 application. This letter provides comments from MMD on the submittals as well 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") the Pueblo of Acoma ("POA"), The White Mountain Apache Tribe ("WMAT") and The Hopi Tribe ("Hopi").

MMD provides the following comments on the application and requests that you respond to them within 60 days following your receipt of this letter.

**General Comments:**

1. MMD reviewed the application and deemed it administratively complete, pursuant to §19.10.5.503 B NMAC, in a letter to Cobre dated February 19, 2015. Since then, MMD has reviewed the application and updated CCP and found it to be technically incomplete until receipt of acceptable supplemental information as requested by this letter.
2. On February 18, 2015, MMD received (via email) a letter from GRIP requesting a public hearing regarding Revision 15-1 and Cobre's intent to end standby status and resume mining at the Continental Mine. MMD determined that the request was timely and has granted the request from GRIP; however, MMD has not yet determined a date, time or venue for holding the public hearing and anticipates tentatively that the public hearing may be scheduled during the first quarter of 2017, after MMD has received suitable responses to

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comments presented herein and before MMD has received the pending environmental determination from NMED pursuant to §19.10.5.506 J (5) NMAC.

3. Cobre's reclamation cost estimate included with the CCP appears to utilize the NPV basis that MMD has agreed to in the past with FMI for the 3A stockpile at Chino, and more recently, the CHR at Cobre. The agreed to NPV basis uses the most recent 25-year timeframe for the indices and use of either the mean or geometric mean (FMI's choice) of that timeframe. Thus, the NPV used by Cobre in the CCP appears approvable. Cobre's cost estimate (direct and indirect) included with the CCP remains under review and MMD is not prepared to make any comments now; however, comments are forthcoming, following completion of our review of the cost estimate.

**Reviewing Agency and Public Comments:**

1. Please find the attached letters provided to MMD within a Memorandum from NMED dated April 23, 2015, and including comments from the Ground Water, Surface Water and Air Quality Bureaus ("GWQB" "SWQB" "AQB", respectively). Within the SWQB's comments, it assumes that if the permit requirements are adhered to and best management practices are implemented and maintained, the SWQB doesn't anticipate any negative impacts to surface water quality following a return to operating status at the Continental Mine, no response to SWQB's comments from Cobre is necessary. Page 2 and page 3 of the AQB's April 3, 2105, letter indicates that the potential for emissions from equipment and construction activities that may be associated with construction activity when mining is resumed within the permit area must 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 ground disturbing activities and construction and operation of certain mine units within the permit area. Please address these air quality issues raised on page 2 and page 3 of the AQB's letter to MMD. The GWQB indicates within NMED's April 23, 2015, memorandum to MMD that it will review the application for Revision 15-1 and the updated CCP pursuant to Water Quality Act and the Water Quality Control Commission Regulations, including the Copper Mine Rule and, as such, comments will be submitted to FMI by the GWQB under separate letterhead with copy to MMD. To that end, NMED provided its comments on the updated CCP to MMD and FMI in a letter dated June 29, 2016. NMED has granted FMI an extension to January 30, 2017, to respond to comments presented within its June 29, 2016, letter. NMED also indicates within the April 23, 2016, Memorandum that it is not providing MMD with an environmental determination regarding Revision 15-1 or the updated CCP until after additional technical information has been received and is suitable to support its determination. Be advised that a written environmental determination from NMED is required by MMD (§19.10.5.506 J (5) NMAC) prior to approving the updated CCP or Permit Revision 15-1.

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2. For the attached e-mail dated March 16, 2015, from NMOSE, please respond to each of the four (4) comments based on NMOSE's review of Cobre's updated CCP.
3. Please find the attached letter dated April 27, 2015, from NMDCA. Within the letter to MMD, NMDCA indicates that within its records there are no cultural resources located within the Permit Area that are listed on either the State or the National Registers, but states that numerous cultural resource surveys have been conducted in the permit area with the most recent survey being conducted in August 2012, for the Bureau of Land Management ("BLM") pursuant to the BLM's recent renewal of Cobre's Mine Plan of Operation (Amendment No. 5). NMDCA's letter also indicates that certain areas within the Permit Area where Cobre has proposed new mining disturbance may not have been included within any of the previous or original archaeological survey areas and may need to be surveyed 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 encourages FMI to discuss proposed mine facilities with a professional archaeologist to determine which archaeological sites, if any, might be impacted by mining activities and indicates that Cobre should make an effort for additional consultation with the BLM due to potential adverse effects to sites in the Permit Area that may be eligible for listing on the National Register of Historic Properties. Please address the comments and concerns within the April 27, 2015, letter from NMDCA to MMD.

Furthermore, as part of MMD's required compliance with our tribal consultation policy and the State Tribal Collaboration Act of 2009, MMD reaches out to tribal entities for comments when we process permit applications. In response to MMD's tribal consultation request, we received letters (enclosed) from POA, WMAT and Hopi. The letter from POA dated March 12, 2015, included a request for a face-to-face, government-to-government meeting between the Director of MMD and staff, and the Governor of POA and staff, to discuss sensitive issues surrounding any POA cultural resources that may be affected by the resumption of mining at the Continental Mine. MMD Director Martinez and staff met with POA and its representatives on April 22, 2015, and during the meeting MMD provided POA with a summary of the updated CCP and status of Revision 15-1 and discussed the process relating to Cobre's request to end standby status and resume active mining. The letter from WMAT, dated March 3, 2015, indicated that while the proposed plans should not have an impact on any of the WMAT's historic and/or traditional cultural properties in the area, but suggests that any ground disturbing activities should be monitored. Hopi's letter of March 6, 2015, requested a copy of the 2012 cultural resources survey report relating to the BLM's recent renewal of Cobre's Mine Plan of Operation (Amendment No. 5). MMD provided a copy of the 2012 cultural resources survey report to Hopi as requested. At this time, no further action is required by Cobre and MMD has enclosed herewith each of the tribal collaboration comment letters for your records.

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4. Please find the attached letter dated April 27, 2015, from GRIP, and address each of the comments provided within the letter.

**Specific Comments**

The following are comments relating to each Section of the CCP and are grouped in succession by Section as presented in the updated CCP:

**1.1 Purpose**

The CCP indicates that estimated closure cost for the facility is \$25.6M in “nominal dollars” what are nominal dollars?

The cost estimate indicates that it is based upon facility conditions anticipated for EOY 2019, is this comprehensive enough to cover all disturbance costs? Should the CCP be revised to indicate a more accurate estimate of maximum disturbance year and revise the CCP to reflect a new date of maximum disturbance at the facility? The Cost Estimate should be revised to reflect MMD’s revised Cost Estimating Guidelines and Financial Assurance estimates should reflect these guidelines.

Pg. 5 states that “Adequate cover materials exist on site to meet reclamation conditions for current disturbance, planned mine expansion and unconstructed facilities” What is meant by reclamation conditions? Please provide backing for this statement with an updated cover mass balance sheet that demonstrates there are adequate cover materials existing on site to meet reclamation conditions for current disturbance, planned mine expansion and unconstructed facilities, and that these materials will achieve standards.

Pg. 8 indicates that the 2014 Cobre Haul Road (“CHR”) Closeout Plan is attached as Appendix B.4 of the revised Cobre CCP. Please revise the 2014 CHR Closeout Plan so that it reflects and updates any required technical changes that may be necessary per comments provided to Cobre in a letter from MMD dated March 2015, and since the CHR was approved by MMD.

Pg. 9 Table 2 lists permitted facilities and shows several unconstructed units that are apparently permitted under GR002RE Rev. 01-1; are these permitted unconstructed units covered under FA? Cobre should verify which of these units are covered and which are not covered under the current FA cost estimate. Several unconstructed units were permitted initially; however, it is unclear whether these units are permitted and covered under FA. Cobre should provide additional discussion regarding the status of FA for unconstructed but permitted facilities. These unconstructed units should also be updated and presented upon an updated map showing the boundaries of these mine units and their design limits.

**2.4 BLM Permitting**

Indicated that BLM permitting actions involved with the BLM Amendment No. 5 proposes to utilize approximately 36 additional acres of BLM Land for resumption of mining at Cobre, but

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only uses approximately 8 acres for the CHR construction; what about the status of the other 28 acres of BLM Land? Is there any disturbance proposed for these lands?

### **3.1.1 Main Tailings Impoundment**

A description is provided within this section for the Main Tailing Impoundment (“MTI”). This description doesn’t mention new stockpiling of magnetite tailing material upon the flat surfaces of the MTI and doesn’t provide a reclamation plan or cost estimate for dealing with these stockpiled materials; how will this stockpile affect reclamation plans of the greater MTI? Does Cobre have any additional or long-term plans to continue stockpiling magnetite tailings upon the MTI? This Section should be revised to include additional details, if any, regarding magnetite stockpiling on the MTI.

### **3.1.2 Magnetite Tailings Impoundment**

Magnetite Tailing Impoundment. Approximately 379,000 tons of embankment material exists in the dam structure of this feature; is this suitable for use in reclamation as a cover material? Does Cobre have any plans to characterize the material to determine its suitability as a growth media? In a recent letter dated August 12, 2016, Cobre requested a 15-year extension to its permit issued by the NMOSE for the delisting and removal of the magnetite dam structure which expired in the third quarter of 2016. MMD understands that in the current 5 year CCP no changes are proposed for the reclamation or reconfiguration of the impoundment; please provide a revised schedule of activities and milestones, similar to one that was provided to NMED and MMD in a letter dated Oct. 29, 2012. Additionally, Cobre should address the status of a pending closeout plan for the magnetite tailing impoundment

### **3.1.3 Continental Pit**

Cobre describes a pit lake that began forming in the Continental Pit during March of 2012, due to discontinued dewatering of the Continental Mine underground workings in August 2000, and states that the pit lake will continue to expand, as well as the overall size and configuration of the Continental Pit that contains the pit lake, which will also increase to nearly twice its current size, to approximately 262 acres. Cobre must address the existing pit waiver granted by MMD in 2005 and explain how the expanding pit and the expansion of the pit lake might affect and/or change the terms and conditions upon which the pit waiver for the Continental Pit was granted. MMD may require that Cobre modify the existing pit waiver in consideration of these changes to the Continental Pit. Additionally, this subsection is not clear about when Cobre intends to increase the overall pit size to 262 acres and if this is planned to occur during the next 5-year closeout plan term or during the term of maximum buildout, i.e. when does Cobre intend to expand the Pit to its maximum size? Cobre must also address whether it plans to dewater and drain the pit or, pump and treat this water within the open pit, as these details may be important considerations for reevaluating the extension of MMD’s Conditional Pit Waiver through the next 5-year Closeout Plan term.

### **3.1.4 Waste Rock Facilities**

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Describes Cobre's waste rock facilities ("WRF") as being five contiguous stockpiles; however, it should be noted that until these stockpiles are eventually coalesced into a single unit, MMD recognizes each waste rock facility as separate, individual mine-units within the MMD Permit Boundary, with an understanding that these individual units must be reclaimed pursuant to Section 9.F of Permit GR002RE Rev. 01-1, but will eventually become one single contiguous mine unit during the construction of the South Waste Rock Disposal Facility. Cobre should redress this Subsection to include more detail about the timeframe for the proposed coalescence and expansion of the WRF's from approximately 300 acres as currently configured to approximately 400 acres as estimated and must also revise Section 9.F of Permit GR002RE Rev. 01-1 to more accurately portray this expansion in the MMD Permit. This subsection also states that test plots were constructed on the East WRF and the West WRF per Condition 77 of DP-1403 to evaluate cover performance, erosion rates and revegetation success; Cobre should also mention that the test plots are also a requirement of Section 9.M.1 of Permit GR002RE Rev. 01-1 and include this information within the subsection.

### **3.1.5 Other Stockpiles**

Describes other stockpiles, including several overburden stockpiles (OB1 through OB5) that are proposed for use as reclamation cover materials at closeout. These stockpiles have been poorly characterized and have unknown or a questionable depositional history being some of the earliest stockpiled overburden materials at Cobre and are composed of Hermosa Mountain Colorado Fm. materials derived from surface stripping operations during the initiation and early advancement stages of the Continental Pit. This material (Hermosa Mtn. Colorado Fm. Overburden) is currently the subject of the ongoing test plot program at Cobre and, to date, these materials that were specifically derived from OB-3 and used to construct the test plots on the WWRDF and from OB-5 to construct the test plots on the MTI, have not performed as expected. The underperformance of these materials has been an ongoing issue relative to revegetation since these test plots were first seeded in June 2008, and suggests that there are inherent acidity issues related to the material derived from these OB Stockpiles (OB-3 and OB-5) possibly due to the poorly characterized nature of the material and the unknown depositional history of OB-3 and OB-5. Does Cobre intend to pursue any additional characterization or testing of this material, or pursuing different material handling techniques to identify, segregate and remove the less acidic materials from these stockpiles?

#### **3.1.10 Pearson-Barnes Mine Area**

Here, Cobre mentions that by EOY 2019, the Pearson Barnes Site ("PB") will likely be in its existing configuration and would require additional reclamation efforts in accordance with existing closure agreements (see joint NMED-MMD Letter dated April 11, 2011). Given the transient nature of mine plans, the possibility exists that, due to unforeseen changes to the current proposal to cover the PB area with approx. 95 feet to 145 feet of mostly alkaline waste rock material having excess buffering capacity may not be realized within an appropriate time frame or in the manner proposed (buried in waste rock). Further, the current design of the SWRDF does

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not include covering the PB area. Cobre must address these uncertainties and develop plans for final reclamation procedures at PB, currently, it's not clear if the area will remain in the currently reclaimed configuration, mined out and removed with the advancement of the Continental Pit mining or covered in up to 145 feet of alkaline waste rock as has also been previously proposed.

The PB area also appears to be included within the design limit area of the Continental Pit. Cobre should revise the design limit boundary of the Continental Pit to exclude the PB area. There are other disturbed areas located between the Continental Pit design limit boundary, the SWRDF design limit boundary and the Fierro Leach Pad design limit boundary that do not appear to be included within any design limit or mine unit boundary, as well as other mine units in this general vicinity that appear to overlap. Cobre should provide a description and update these areas to include them within a revised design limit and mine unit boundary map where applicable.

### **3.1.11 Other Ancillary Facilities, Buildings and Systems**

Describes other ancillary facilities, buildings and systems; i.e. pipelines, wells etc., are these "ancillary" facilities included in the cost estimate and covered by financial assurance? Cobre must address the recent addition to infrastructure relating to the construction and support of the CHR and include the Kearney Pipeline within relevant PMLU sections addressed in the CCP; it is our understanding the Cobre recognizes this pipeline as an improvement to existing mining-related infrastructure at the mine and that Cobre intends to leave the pipeline in place post mine closure in support of PMLU activities approved in the area. Cobre must also address any areas that are outside of the permit boundary and that are defined as "affected areas" pursuant to §19.10.1.7.A.3 NMAC, and Section M.1.3 of Permit GR002RE Rev. 01-1. A workplan dated March 1, 2006, was submitted to MMD for review; however, in this workplan Cobre indicated that its approach would be to review and evaluate relevant environmental investigations of environmental elements potentially affected by Cobre mining and mineral processing operations and to provide a summary of these investigations, including the identification of any data gaps or areas that have not been covered by other investigations and that may be relevant to the Affected Areas Study.

### **3.2 Description of Planned Mine Facilities**

This section describes Hanover Mountain ("HM") excavation area and how by 2019, will not be completely mined out and that stormwater runoff from the unit would be contained within the unit at the HM excavation area; Cobre should describe where this stormwater will be routed and stored within the HM excavation area and how it intends to manage stormwater within the Unit, e.g. re-routing stormwater into channels or other conveyances within Cobre's existing water management plan, and address whether Cobre anticipates that the HM excavation area will become a pit feature or could eventually contain a pit lake feature. If no pit is anticipated by Cobre, when (approx.) does Cobre intend to initiate reclamation of the HM excavation area and begin backfilling this excavation area? Cobre cannot leave an un-reclaimed pit feature within the HM excavation area. This Section also describes the North Overburden Stockpile ("NOBS") where Cobre intends to stockpile overburden and other topsoil resources as these materials are



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stripped from the HM excavation area and from the Cobre Haul Road (“CHR”); given this material may remain stockpiled for at least 10 to 20 years, how does Cobre intend to assure that these reclamation cover resources are protected from erosion, properly stored and maintained (e.g. application of temporary veg cover, other BMP’s) as viable cover materials, particularly any topsoil that is stripped and salvaged from HM and the CHR areas? MMD may require the construction of additional test plots using the Colorado Fm. overburden and reclamation cover materials that are to be stripped and salvaged from HM in furtherance of testing suitability of reclamation cover materials available at Cobre.

Cobre describes coalescing the existing WRDF’s by dumping additional waste rock on undisturbed areas located between these individual existing units to form the South Waste Rock Disposal Facility (“SWRDF”). Recently, Cobre expanded upon this proposal and provided a conceptual plan to NMED and MMD illustrating how it intends to build-out the SWRDF by initially placing carbonate materials within the exposed drainages to act as a buffering medium. Cobre would then stack additional waste rock over the carbonates by segregating various waste materials and categorically differentiating these materials using a material handling plan that is based upon visually identifying and segregating the material based upon its potential or, potential lack thereof, for the materials ability to either produce acid or to neutralize acid. Finally, Cobre would cover the entire unit of stacked waste of the greater coalesced SWRDF using a growth media comprised of overburden materials stripped from Hanover Mountain and stored in the NOBS. This handling procedure would create a layered depositional sequence based on various potential placement options of various types of waste rock. Cobre must supplement this Section within the CCP to include its conceptual plan describing the staged development of the SWRDF.

A description of planned mine activities within this section should be modified to include the recently revised long-term plans including an explanation for the time frame required for mining the remaining magnetite from the Magnetite Tailings Impoundment. In a letter to the NM Office of the State Engineer, dated August 12, 2016, Cobre requested a 15-year extension towards the delisting and the eventual removal of the Magnetite Tailings Impoundment Dam. Within the letter, Cobre indicated that to date, it estimates that its mining contractor has removed approximately 700,000 tons of magnetite since 2012, yet current estimates suggest that the Impoundment contains approximately 1,000,000 tons of magnetite remaining within the impoundment that is to be mined out to fully remove this material and to be able to decommission the dam structure and initiate reclamation of this Unit. Cobre indicates that its mining contractor plans to increase its rate of mining to approximately 66,000 tons per year in the future; however, Cobre states that this is contingent upon its mining contractor’s ability to pursue and secure contracts to accomplish this. Given the transient nature of mine plans, the possibility exists that, due to unforeseen changes the current proposal to mine this material out may not be realized within an appropriate time frame or in the manner proposed given that it is based upon Cobre’s mining contractor’s ability to secure contracts for the sale of this material. Further, Cobre bases its reclamation plan and cost estimate upon its outdated 2004 Closeout Plan and cost estimate as there is currently no up-to-date closeout plan or cost estimate covering the Unit. Additionally, Cobre has yet to submit its material handling and characterization report for

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this Unit. Cobre must address these uncertainties and develop plans for final reclamation procedures at the Magnetite Tailings Impoundment. Currently, it's not clear if the area will remain in the currently un-reclaimed configuration as an active mining unit, or mined out and reclaimed with the advancement of mining within the Unit. Cobre must provide a schedule and update the CCP accordingly.

### **5.1.1 Tailings Impoundments**

Describes tailing impoundments at Cobre and indicates that, for the Main Tailing Impoundment ("MTI") Cobre has no intention to resume tailing deposition to the MTI; however, Cobre has recently deposited magnetite tailings that were mined out from the Magnetite Tailing Impoundment and placed the tailing material on the top surface of the MTI. Cobre must address the potential for continued deposition of additional tailing material on the MTI and provide a basis for this in the CCP and cost estimate for reclaiming this additional material being placed on the top surface of the MTI.

Further, relating to the MTI, there is the Reclaim Pond located to the north and upgradient of the MTI and serves as a surface water impoundment feature at Cobre that captures surface water run-on from surrounding natural ground surfaces and prevents this storm-related run-on from flowing directly onto the top surfaces of the MTI. However, it is unclear as to how much of this surface water is seeping into the main body of the MTI from the Reclaim Pond due to inflow into the MTI directly from the water impounded in the Reclaim Pond. Cobre has indicated in the past that inflow to the MTI from water impounded within the Reclaim Pond is negligible, nonetheless, any infiltration allowed into the MTI from the Reclaim Pond has the potential to create long-term problems i.e. structural integrity of the MTI dam, surface water infiltration through the MTI and into groundwater. Does Cobre have any plans for creating any surface water diversions or otherwise re-routing the surface water run-on flowing into the Reclaim Pond to further reduce the water content infiltrating into the MTI? Cobre should address closeout and reclamation of the Reclaim Pond and include a reclamation plan and cost estimate for this feature within its closeout plans for the greater MTI within the CCP.

Cobre suggests within the CCP that the buttressed out slopes of the MTI are consistent with its wildlife PMLU and thus, the buttressed out slopes comprising the main dam feature of the MTI are stable in their current configuration and will remain as such (un-reclaimed) at closeout. Cobre must address reclamation and revegetation of the out slopes within its reclamation plans for the MTI and consider decreasing the steep slope angles which are currently, more-or-less at or only slightly above angle of repose, as well as revegetation of these out slopes pursuant to Appendix C of GR002RE-01-1 and include these additional reclamation elements for the MTI within the CCP. If layback of the buttressed out slopes of the MTI has the potential to affect the eventual footprint for final buildout of the Continental Pit, or if the layback affects the boundaries of any other mine units adjacent to the Continental Pit, Cobre should consider whether any of these potential changes might affect the approved Pit Waiver for the Continental Pit. Cobre must also address how it intends to reclaim the extensive windblown tailing deposits

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that are blanketing most of these outcrops and the buttresses of the MTI, in the CCP. MMD agrees with Cobre regarding the potential for the wildlife PMLU designation for the outcrops; however, not in the current configuration (unvegetated, steep slopes, presence of windblown tailing material and no storm water control etc.). Cobre indicates within the CCP that drainage channels are to be integrated into the MTI buttresses; however, no explanation or description is included.

Cobre describes the Weber Pond Area as a feature existing upon the top surface of the MTI and indicates that it contains valuable wildlife habitat and that this area in general should be unreclaimed and left preserved in its current state. Please provide additional details regarding the description of the Weber Pond Area i.e. what is its purpose, and explain why this area contains such valuable wildlife habitat within the MTI and why it should not be reclaimed with the MTI but left in its present condition.

### **5.1.3 Continental Pit**

Cobre should address whether the water contained in the pit lake within the Continental Pit is subject to surface water quality standards pursuant to 20.6.4 NMAC? Cobre maintains that the pit lake water is not subject to any regulatory groundwater quality standards and it is unclear whether surface water quality standards are applicable to the pit lake. Further, this Section doesn't mention any wildlife preclusion measures describing how Cobre intends to discourage wildlife from using the pit lake.

### **5.1.4 Hanover Mountain**

Cobre addresses the potential for ARD emanating from the exposed pit walls of the Hanover Mountain deposit by reclaiming only the accessible flat surfaces at each 50' interval of the pit benches by ripping and seeding these areas. If these flat surfaces as well as the exposed pit walls above each bench will be exposed mineralized rock that is likely ARD producing and is devoid of any soil medium capable of supporting vegetation, how does Cobre intend to abate the ARD emanating from the pit walls above each bench surface and successfully revegetate the flat surfaces below by only ripping and seeding exposed mine rock without any soils or other suitable growth media present in these areas? Aside from covering and revegetating these benched surfaces, how does Cobre intend to otherwise eliminate ARD from the pit walls from adversely affecting the revegetation efforts on the flat surfaces?

Cobre describes Hanover Mountain as being mined out by EOY 2019, in addition to making several other similar estimations throughout the CCP in anticipation that EOY 2019, will represent Cobre's maximum extent of mining disturbance at the mine; Cobre must revise this estimate where applicable throughout the CCP if Cobre's estimate that EOY 2019, as its maximum disturbance threshold for maximum mining disturbance is not achievable and utilize a more generalized time frame that is based on more realistic outcomes instead of mining rates and schedules that are difficult to meet given the transient nature of mining relative to financial situations that arise and alter mine plans and closure estimates; it doesn't seem practical to base

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the CCP upon specific dates and unachievable goals, especially with the CCP being updated incrementally every 5 years.

### **5.1.5 Roads**

The CCP indicates in this Section that any haul and/or exploration or other access roads that are located outside of the post mining land use area will be reclaimed. Cobre must list and identify on a map, any haul and/or exploration or other access roads that are located outside of the post mining land use area and not necessary for post closure access that are to be reclaimed. Aside from the access road to remain within the footprint of the reclaimed CHR at post closure, MMD is unaware of any additional roads that may be necessary at post closure.

### **5.1.6 Borrow Areas**

Cobre estimates that adequate borrow sources for overburden are available or will become available at closure from various sources at the mine including the stripping of overburden at the Hanover Mountain Unit. Cobre indicates further that all existing borrow sources at the mine at closeout will be completely consumed and will be removed for use in various reclamation and closure activities and thus, no reclamation of these areas will be necessary. Cobre should provide additional details and a plan for reclamation of these borrow source areas if these areas are not fully exhausted at reclamation and will require reclamation.

## **5.2 Cover Design and Materials**

Cobre cites Condition 76 and Condition 77 of NMED DP-1403 as being the only regulatory conditions requiring a comprehensive cover performance evaluation and the cover, erosion and revegetation test plot study; however, given that the CCP represents closure and closeout plans covering both NMED and MMD permits, Cobre should also indicate within the Section that Conditions 76 and 77 of DP-1403 are incorporated into Section 8 of as requirements of MMD Permit GR002RE-01. Cobre should also cite MMD Condition M.1 of Permit GR002RE-01 within this Section which is like NMED DP-1403 Condition 77, and requires the cover, erosion and revegetation test plot study.

Further within this Section, Cobre indicates that run-of-mine carbonate waste rock materials show a propensity to be an effective reclamation cover material but doesn't include any description or other details within the Section describing the blended leached cap and carbonate materials currently being tested in the Test Plots at the WWRDF at Cobre. To date, the test plot studies ongoing at the WWRDF have shown that the blended leached cap and carbonate cover materials may perform better as a growth media and could have a greater propensity for becoming a more effective cover material than the carbonate materials alone. Cobre should include a description within this section also summarizing the blended leached cap and carbonate cover materials.

Section 5.2 also suggests that Cobre intends to enhance the availability of suitable cover material and states that where practicable, pre-stripping of native soils and regolith will happen prior to

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construction of the SWRDF and prior to mining the Hanover Mountain Deposit. The overburden materials that are stripped from these facilities are to be stockpiled within the NOBS for eventual use in final reclamation; however, it is unclear whether Cobre has included the amount of existing overburden materials that may be available from the base of the NOBS area within the mass balance cover calculations. Cobre should also include discussion of any pre-stripping operations planned for the NOBS within this Section, including an estimate for the quantity of suitable existing cover material that is available for salvaging from the NOBS and include these estimates within the mass balance cover calculations.

### **5.3 Water Management and Water Quality Monitoring**

Cobre states within this Section that waters not meeting applicable standards for discharge as required by DP-1403 and the groundwater abatement process will not be discharged but will be “managed”. Cobre should provide additional details explaining how it intends to manage any impacted water that doesn’t meet applicable standards for discharge and indicate whether Cobre anticipates that such water management will involve construction of any additional infrastructure or mining-related facilities that may require reclamation during closeout and if any, include these water management facilities in the CCP.

Water management within the Hanover Mountain Deposit (“HMD”) is also described within this Section, including a statement indicating that Cobre intends to capture runoff from the HMD but makes no distinction of how or where it intends to capture and store any runoff and whether this may require construction of additional facilities, e.g. down-drains, channels, ponds, pipelines etc., or any significant other infrastructure that may require reclamation during closeout activities. Cobre should provide additional discussion within this Section addressing the eventual fate of any runoff or potentially impacted runoff emanating from the HMD unit, how Cobre intends to manage this runoff and whether it may require construction of additional facilities that could require reclamation during closeout. Furthermore, Cobre should provide more discussion relating to how Cobre intends to remove, store or otherwise manage any captured runoff given that no pit or pit lake is contemplated for post-mining land use and Cobre intends to reclaim the HMD as wildlife habitat to meet standards for self-sustaining ecosystem.

On page 33, Cobre indicates that water collection systems required by DP-1403 will remain in place at locations throughout the permitted mine area as long as required for the collection and containment of any impacted water from disturbed areas of the mine that do not meet applicable standards for discharge. Cobre should include additional discussion within this Section providing details regarding how and where and any duration of time that it intends to store impacted water and whether such activity may require construction of additional facilities or other infrastructure requiring reclamation during closeout activities. Cobre indicates that after these impacted waters are determined to meet applicable standards for discharge, it intends to discharge the water, then remove and reclaim any associated water collection systems and reclaim the associated disturbance and implies that additional disturbance for such infrastructure is contemplated and reclamation of these water management facilities should be included within the closeout plan and cost estimate. The discussion should also address how Cobre intends to preclude wildlife from

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these storage and collection systems during the duration in which Cobre intends to store this impacted water.

### **6.3 Continental Pit Waiver**

Here, Cobre states that “Studies and information collected since the conditional waiver was issued in 2005, support the assumptions and circumstances upon which the condition [sic] waiver approval was granted” and suggests that Cobre has included within the CCP, the closeout measures required by conditions in DP-1403, including Condition 84 and Condition 85 of the Conditional Waiver approval. Condition 84 required a study to supplement existing groundwater studies and evaluate the hydrologic conditions beneath the Continental Mine Facility. Condition 85 requires a study to address the hydrogeologic characterization of the pit lake water chemistry. Based on the assumed outcomes of the studies required by Condition 84 and Condition 85 of the Conditional Waiver approval, it is not clear within the CCP as to whether the pit lake and water quality conclusions and outcomes modelled by those studies have been validated, given that no pit lake was present within the Continental Pit during evaluation of the studies required by Condition 84 and Condition 85 or during the approval process of the Continental Pit Waiver. Cobre should provide a summary of the outcomes of these studies and indicate whether the modelling in which the studies are based have been validated and will meet the current setting and conditions of the Continental Pit and pit lake relative to the approved pit waiver.

Additionally, regarding the expected outcome of the mining configuration of the HMD; it is unclear in the CCP whether mining of the HMD will result in a pit feature within this mine unit or whether Cobre expects a pit lake to form within the pit. Cobre mentions in Subsection 5.1.4 that highwalls are expected as a final mining configuration within the HMD unit and proposes elsewhere to leave certain areas of the pit benches and highwalls in an un-revegetated state as “valuable” wildlife habitat. Cobre should provide additional discussion regarding the expected mining configuration of the HMD and address the potential for creation of a pit or pit lake feature within the mine unit given no pit waiver exists for the HMD.

### **6.4 Other Ancillary Facilities, Structures, and Systems**

On page 36 of this Section, Cobre indicates that all exploration holes have been closed in accordance with OSE conditions except for some located on Hanover Mountain. Cobre asserts that these drill holes will eventually be mined out when mining commences at Hanover Mountain; however, Cobre doesn’t make any statements regarding the fate of these open drill holes if mining is further delayed or never commences at Hanover Mountain. Cobre should provide additional details regarding the status of these drill holes and commit to properly plugging and abandoning these drill holes in the event should mining never commence or if proper plugging and abandonment of these drill holes are delayed for several more years.

### **6.5 Revegetation Success Guidelines**

Cobre makes an argument within this Subsection that the rocky buttresses of the MTI make excellent habitat and will be left in its current configuration to provide valuable wildlife habitat.

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The CCP indicates that although these areas have sparse vegetation and are unlikely to meet revegetation success and diversity criteria of Permit GR002RE 01-1, Cobre asserts that that these un-reclaimed buttresses of the MTI are to remain as currently configured because they represent a “critical component” of the overall SSE and will provide valuable wildlife habitat diversity. It has been noted during site inspections of the MTI that the buttresses forming the outslopes of the MTI are covered with sparse vegetation (mostly shrubs) among sand dunes composed of fugitive wind-blown tailing materials that have been blown from the MTI and deposited along the buttressed outslopes of the MTI prior to Cobre’s installation of the temporary dust cover over the top of the MTI. From MMD’s perspective, the lack of any significant vegetation coupled with the presence of sand dunes composed of fugitive tailing dust along these outslopes hardly qualifies on any level as a “critical component” of the overall SSE and should be reclaimed. Cobre should revise this Subsection to include a reclamation plan for dealing with the windblown fugitive tailings that includes the outslopes. Additionally, Cobre should revise the Affected Areas Section of this CCP to include additional details describing how it intends to contain or otherwise handle the fugitive tailings.

#### **7.4 Wildlife Monitoring**

Following the submittal of the CCP to MMD, Cobre requested to reduce the post-closure wildlife monitoring schedule approved by MMD in 2006, to coincide with the quantitative vegetation monitoring schedule to correlate wildlife use trends with vegetation cover density. The goal of the study pursuant to Section 9.O.3 of Permit GR002RE 01-1 is to understand wildlife use trends during establishment of a reclaimed area. Cobre asserts that the reduction in frequency of the scheduled monitoring is necessary due to it becoming predictable and redundant because wildlife typically do not begin utilizing reclaimed areas until after vegetation becomes established. Cobre proposes to conduct the wildlife monitoring study six years after seeding and two consecutive years of the four final years prior to bond release and should revise this Subsection of the CCP to reflect these proposed changes and provide a brief description of the new proposed post-closure wildlife monitoring process. MMD concurs with this proposal.

#### **8.0 Capital, Operation and Maintenance Cost Estimates**

Cobre states that NPV calculations to be applied to the cost estimate will be provided upon the agencies approval of the scope and the costs. For MMD to adequately evaluate the scope and the costs, MMD will need more time to evaluate this aspect of the CCP, and will provide comments on the proposed cost estimate at a later date. Cobre indicates that inflation and discount rates used in the NPV calculation will be based on available agency guidance. To that end, MMD has revised its 1996 Cost Estimating Guidelines and a copy of the revised, 2016, guidelines are enclosed for use in developing inflation and NPV discount rates. Cobre should update and revise costs to reflect current dollar costs based upon the most up-to-date unit rates.

#### **Table 2 – Permitted Facility Summary**

Table 2 provides a listing of several permitted, unconstructed facilities but doesn’t include the CHR, please revise Table 2 to include the CHR. Table 2 also lists a “No. 3 Shaft Stockpile”



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however, it is unclear within the CCP as to where this Stockpile is covered under any reclamation plans, cost estimate or whether it is included within the FA; Cobre should provide a description of this Stockpile within the CCP and address it within the cost estimate and FA, in addition to indicating this stockpile with a revised design limits and mine units map.

### Figures and Tables

Figure 2 represents a map depicting surface disturbance areas that are within the Permit Boundary of GR002RE. Figure 2 should be updated or replaced by a more recent disturbance map dated April 28, 2016, as this figure includes a more recent depiction of surface disturbance within the permit area, including the CHR.

Several other figures (Figure 2 through Figure 5, and Figure 8) within the CCP show 3 small enclosed areas that are evidently intended to be excluded from the boundaries of Permit GR002RE; however, it is unclear as to what Cobre's intentions or reasons are for excluding these areas from the Permit Boundary of GR002RE. Please explain the excluded areas shown on Figure 2 through Figure 5 and on Figure 8 and provide a basis for their exclusion from the Permit Boundary of GR002RE.

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

Sincerely,



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

**Enclosures:** NMED, NMOSE, NMDCA, GRIP, POA, WMAT and Hopi Comment Letters

*2016 MMD Guidance for Calculating Indirect Costs for Mine Reclamation and Closure Cost Estimates*

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Mine File - Permit GR002RE