



State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
and the
ENVIRONMENT DEPARTMENT

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Electronic Transmission

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Sherry Burt-Kested, Manager
Environmental Services
Freeport-McMoRan Chino Mines Company
P.O. Box 10
Bayard, NM 88023

Thomas L. Shelley, Reclamation Manager
Freeport-McMoRan Tyrone Inc.
P.O. Box 571
Tyrone, NM 88065

Re: Joint Agency Response for:

- 1) Task 2: Climate Change Projection for the Chino/Tyrone, New Mexico Mine**
- 2) Task 3: Closure Surface Water Conveyances Precipitation Analysis**

Dear Sherry Burt-Kested and Thomas Shelley,

The Energy, Minerals and Natural Resources Department (EMNRD), Mining and Minerals Division (MMD) and the New Mexico Environment Department (NMED) have reviewed the Freeport-McMoRan (FMI) New Mexico Operations submittals of 1) *Climate Change Projection for the Chino/Tyrone, New Mexico Mine* prepared by Applied Weather Associates, LLC dated October 2022 and submitted January 31, 2023 (Task 2 Report), and 2) *Closure Surface Water Conveyances Precipitation Analysis* prepared by WSP on June 16, 2023 and submitted June 20, 2023 (Task 3 Report). EMNRD and NMED have the following comments:

1. Table E.1, Table 6, Task 2 Report. The report recommends 14 percent as the summer 1-Day climate change adjustments percentage based on the RCP4.5 downscaling of global climate models. This represents a medium scenario of the middle of the ensemble global climate models. Given the wide range of uncertainty outlined in Section 4, the agencies recommend an approach that looks at additional scenarios to capture some of the uncertainty. Provide additional scenarios that go beyond the medium middle (14 percent) such as the medium high (27 percent) and high high (40 percent) for 1-Day Monsoon Projections.
2. Section 2.0 Scope of Assessment, Task 3 Report. Please include Condition 7.Q.3 from Revision 20-1 to the Little Rock Mine, Permit No. GR007RE and add consideration of any potential stormwater impacts to existing reclaimed mine units and performance of associated stormwater structures

for the Little Rock Mine Permit in the Task 3 Report. These considerations should include all areas of the Little Rock Mine where reclamation is to occur.

3. Section 3.2.6, Runoff Coefficient, Task 3 Report. The Runoff Coefficient model assumes mature vegetation with 40% cover. This assumption does not address newly reclaimed areas or areas after fires, which will be more vulnerable to erosion and high sediment loads until vegetation establishment. Provide an additional scenario that evaluates no vegetation.
4. Table 3, Intensity-Duration Frequency Curve Table, Task 3 Report. The second and fourth column with Chino 100-year (in/hr) data appear to be 1.5 to 1.9 times the Tyrone precipitation data for the return periods 30 minutes through 24 hours. The data in Table 3 do not match Atlas 14 tables. Recheck the data entered for Chino in Table 3 and all associated calculations that may have used the incorrect Chino precipitation intensity values.
5. Section 6.0 – Conclusions – NOAA Atlas 14 precipitation depths, Task 3 Report. The conclusion mentions the NOAA Atlas 14 precipitation values were used as the most conservative. As worded, it's unclear if the NOAA Atlas 14 precipitation values were used or whether the NOAA Atlas 14 values plus an additional 14 percent were used. Clarify the conclusion.
6. Section 7.0 – Closing - REPS tool recommendation, WSP Report. The conclusion recommends using the regionally based REPS tool because the NM State Engineer's office approved it in 2019. This REPS tool purpose is for use by dam safety and operation of dam spillways in the Colorado-New Mexico region. This Closing recommendation overlooks AWA Report's discussion of uncertainty and task 2's attempt to downscale global climate model to Grant County. Moreover, Atlas 14 will be revised to Atlas 15 over the next few years. Future evaluation may still be needed if subsequent changes in the recent precipitation data merit another evaluation. Even if the REPS tool was used for the Task 3 evaluation in lieu of the Task 2 Report recommendations, the agencies require looking at various scenarios, such as middle medium, high medium, and high high to capture the uncertainties from the assumptions and models used create the REPS tool. Consider whether the section title should be recommendations for future evaluation.
7. Condition 3 of the letter titled, "Conditional Approval of the Precipitation Analysis Work Plan," dated September 3, 2021, requires the Task 3 Report to include an analysis of stormwater containment and conveyance structures including, but not limited to, impoundments and pipelines proposed for use at closure and existing at the mine site to convey or contain stormwater at closure. The Task 3 Report does not include an analysis of any impoundments or pipelines proposed to convey or contain stormwater at closure. Table 5-1 of the Chino Mine Closure-Closeout Plan, dated February 14, 2018, and Table 5-1 of the Tyrone Mine Closure-Closeout Plan, dated April 29, 2020 indicate that several impoundments will be utilized for post-closure stormwater control. Please provide an analysis for impoundments and pipelines proposed for use at closure and existing at the mine site and include them in the appropriate figures.

8. Tables 5, 6, 8, and 9 of the Task 3 Report do not clearly distinguish which *Feature* or *Subbasin ID* is associated with each *Facility*. For instance, as listed in Table 6 on page 13, it is unclear which bench channel, top channel, or downchute are associated with *North of Tailing Pond 6 East, Tailing Pond 6 East, and Tailing Pond 6 West*. Similarly, Table 8 on page 17 displays a line between *Subbasin ID 2A/2B-A and 2A/2B-B* although both subbasins are associated with the *2A Leach/2B Leach Facility*. Similar issues are present in the other tables listed above. Please provide an updated version of these tables that clearly delineates which *Features* and *Subbasin IDs* are associated with each *Facility*. Also please ensure that Table 5 and Table 8 have the same column headers for peak flows adjusted for climate change.
9. The abbreviation for Articulated Concrete Block (ACB) is not defined in the Task 3 Report. Please include a definition for this abbreviation.
10. Table 10 of the Task 3 Report indicates that the channel dimension for the downchute with the largest catchment is not available and that assumed values were used. This leads to estimated freeboard values ranging between 0.2-1.3 feet (ft.) for riprap and 0.7-1.7 ft. for ACB for present conditions and estimated freeboard values between 0.6-1.6 ft. for ACB and 0.1-1.2 ft. for riprap for climate change conditions. Please clarify why the estimated freeboard values can vary by over a foot for the various channel linings.
11. Table 10 of the Task 3 Report indicates that the longest top channel will have an estimated freeboard of 0.5 ft. with desert pavement, 0.4 ft. with riprap for *present conditions*; and an estimated freeboard of 0.4 ft. with desert pavement, and 0.3 ft. with riprap for *climate change conditions*. Section 20.6.7.34.F NMAC of the Copper Mine Rule states, in part, “the final design and CQA/CQC plan shall include best management practices that will be employed during reclamation to address erosion and storm water management in a manner that meets the requirements of the Water Quality Act and commission regulations.” In addition, Section 20.6.7.17.D (2)(f) NMAC requires, “(o)pen channel conveyance structures intended to transport stormwater to an impoundment shall be designed to convey, at a minimum, the peak flow from a 100 year return interval storm event while preserving adequate freeboard, but not less than six inches of freeboard.” Please discuss how these criteria, including adequate freeboard, will be met considering the freeboard estimates listed in Table 10 and discussed above.
12. The Task 2 Report recommends a 14% increase of 100-year, 24-hr storm events to estimate the effects of climate change on surface water conveyance. Please indicate if the water holding capacity of current and proposed reclamation cover materials is sufficient to accommodate this estimated medium middle increase in precipitation.
13. In order to proceed with scheduling the Task 4 Working Session, please respond to the above comments within 45 days of the date of this letter.

Please contact respective MMD and NMED representatives, Kevin Myers at 505-490-0726 and Brad Reid at 505-372-8533, with any questions regarding the above comments.

Sincerely,



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Mining Environmental Compliance Section
Ground Water Quality Bureau - NMED

Kevin Myers
Mining Act Reclamation Program
Mining and Minerals Division-EMNRD

cc: Anne Maurer, Mining Act Team Leader, MECS (anne.maurer@env.nm.gov)
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