FREEPORT-MCMORAN

Tyrone Operations
P.O. Box 571
Tyrone, NM 88065

May 18, 2023

Via Electronic Mail

Ms. Carmen Rose
Energy, Minerals and Natural Resources Department
Mining and Minerals Division
Mining Act Reclamation Program
1220 South St. Francis Drive
Santa Fe, NM 87505

Dear Ms. Rose:

Re: Response to Comments on the Sampling and Analysis Plan for 9A/9AX Waste Rock Stockpiles; Modification 22-1 to Little Rock Mine, Permit No. GR007RE; and Modification22-1 to Tyrone Mine, Permit No. GR010RE; Freeport-McMoRan Tyrone Inc

In a letter dated April 21, 2023, Freeport McMoRan Tyrone, Inc. (Tyrone) received comments on the Sampling and Analysis Plan for the 9A/9AX Waste Rock Stockpiles. The plan was submitted to the Mining and Minerals Division (MMD) on March 31, 2023. The applications for Modification 22-1 to the Little Rock Mine Permit No. GR007RE and Tyrone Mine Permit No. GR010RE that would approve the use of Precambrian granite from the Little Rock Mine as reclamation cover material at both the Little Rock and Tyrone Mines.
Below are MMD's comments in italics, followed by Tyrone's responses.

1. Section 2.1 states, WSP will use a field protocol to compare the total volumetric rock ocular estimates with dry sieved samples to determine if estimates were within ±5 percent on average. Please elaborate on how the ocular total rock fragment estimates will be verified to ensure accuracy of rock fragment content.

The field procedure described in the workplan to evaluate rock volume is identical to the procedure used at the Continental Mine test plots constructed in June 2022 that was approved by MMD. The ocular estimate is verified by the field sieve procedure to determine the volume of gravels, then adjusted for rock fragment larger than 3 inches to determine the total rock volume for a sample location. This information is then used by field personnel to adjust subsequent ocular estimates during the sampling program to improve accuracy.

2. Section 2.1 describes reporting the physical soil characteristics based on USDA National Soil Survey Standard methods. When reporting, describe the USDA classification of the sampled material as a whole, rather than the fine earth fraction alone. For instance, "very cobbly sandy loam" for a sandy loam with 50% volume dominated by cobbles.

Though rock fragment modifiers for texture are more appropriate to describe native soils, this information can be provided in the report in addition to the volume of rock fragments by size class.

3. Section 2.1 describes how mass will be converted to volume to determine total rock content. Please explain why the conversion uses particle density (2.63g/mL) for gravels and a bulk density of 1.54g/mL for the fine earth fraction.

All samples of Precambrian granite collected to date have had a sandy loam fine-earth texture. The average bulk density for mineral sandy loam soil is 1.55 grams per cubic centimeter (g/cm^3). To convert the fine earth mass to volume, we multiply the mass by 0.65 ($1 \div 1.55 = 0.645$ rounded up to simplify the field procedure). Similarly, the 0.38 multiplier for the gravel fraction assumes a particle density of the Precambrian granite to be 2.65 g/cm^3 ($1 \div 2.65 = 0.377$).

Please contact Ms. Raechel Roberts at (575) 956-3290 if you have questions.

Sincerely,

Raechel Roberts for

Thomas L. Shelley
Environmental Services Manager

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c. David Ennis – MMD
Brad Reid – NMED
Ron Kellermueller – NMDG&F