

Appendix C
Highest Liability Year

TECHNICAL MEMORANDUM

DATE: 15 February 2023 **Telesto #** 200189h-001
TO: Christian Krueger – Freeport McMoRan Chino Mines Company
FROM: Taryn Tigges, PE – Telesto Solutions, Inc.
SUBJECT: Continental Mine Reclamation Cost Estimate – Highest Reclamation Cost Year Calculations

1.0 BACKGROUND

Freeport McMoRan Chino Mines Company (Chino) is in the process of completing an updated Closure/Closeout Plan for the Continental Mine. As part of the New Mexico Agencies¹ Closure/Closeout Plan process, Freeport-McMoRan New Mexico Operations is required to base their financial assurance reclamation cost estimate (RCE) upon the year with the highest reclamation cost for the upcoming 5-year mine plan period. This technical memorandum summarizes the approach, process, and results of the Continental Mine RCE highest reclamation cost year calculations as completed by Telesto Solutions, Inc. (Telesto).

2.0 APPROACH

Highest reclamation cost year calculations are typically only based on the earthwork RCE since water treatment is typically a consistent cost irrespective of the closure year in a 5-year period. Rather than run a full RCE for each year of the 5-year mine plan, a screening method is used to determine the highest reclamation cost year. The screening method entails the application of a weighting factor (relative cost index; RCI) to the reclamation area acreages for each year of the 5-year mine plan in calculation of the reclamation cost index. Reclamation cost indexes for each mine plan year are then compared to determine the highest reclamation cost year.

The RCI method is effective in calculating the highest reclamation cost year because it gives more weight to areas that require more effort to close. Reclamation areas considered typically include:

- Flat areas & roads
 - Tops of stockpiles
 - Roads
 - Yards
- Sloped areas constructed near reclamation grades
 - Newer stockpiles constructed at 3:1 to 3.5:1 overall out-slope grade

¹ New Mexico Environmental Department, Ground Water Quality Bureau, Mining Environmental Compliance Section, and New Mexico Mining and Minerals Division, Mining Act Reclamation Program.

- Tailings impoundment embankments
- Steeply sloped areas
 - Angle of repose stockpile out-slopes
 - Large cut embankments

The RCI values for each mine site are estimated based on previous RCE closure costs for each reclamation area type. Table 1 shows typical, historical RCI ranges and those utilized for the Continental Mine 2023 RCE.

Table 1 Relative Cost Index Values

Area	Historical RCI Ranges	Continental Mine 2023
Flat Areas & Roads	0.2 to 0.5	0.4
Reclamation Grade Slopes	0.4 to 0.9	0.7
Steep Slopes	1-2	1
Pit Lake	0	0

3.0 CALCULATIONS AND RESULTS

Telesto received mine plans from Chino for each of the 5 subsequent mining years (2023-2027). Telesto used these mine plans to determine reclamation acreages for each reclamation area type for the respective mining year. Existing conditions (end of 2022) are attached as Figures 1 and 2. Mine plans and subsequent reclamation areas and acreages for the Continental Mine (years 2023-2027) are attached as Figures 3-7. The pit lake shown on Figures 2-7 represents the ultimate pit lake area, at an elevation of 6,581 ft, that would form during post-closure if mining were to cease in the year noted (Telesto, 2022).

The tables presented on Figures 2-7 show reclamation acreages. Telesto calculated weighted totals using Equation 1 (Table 2).

Equation 1 Weighted Total

$$\begin{aligned}
 \text{Weighted Total} = & \text{Flat Area (ac)} \times \text{Flat Area (RCI)} \\
 & + \text{Reclamation Grade Slopes (ac)} \times \text{Reclamation Grade Slopes (RCI)} \\
 & + \text{Steep Slope (ac)} \times \text{Steep Slope (RCI)} + \text{Pit Lake (ac)} \times \text{Pit Lake (RCI)}
 \end{aligned}$$

Telesto then calculated the reclamation cost index for each mine plan year using Equation 2 (Table 1).

Equation 2 Reclamation Cost Index

$$\text{Reclamation Cost Index} = \frac{\text{Weighted Total}}{1,000}$$

Table 2 Highest Reclamation Cost Year Calculation Results

Year	Flat Areas (ac)	Reclamation Grade Slopes (ac)	Steep Slopes (ac)	Pit Lake (ac)	Total Area (ac)	Weighted Total	Reclamation Cost Index
RCI -->	0.4	0.7	1	0			
2022 (Existing)	431.0	0.0	339.8	48.6	819.5	512.2	0.5122
2023 (Year 1)	545.9	0.0	281.6	48.6	876.1	500.0	0.5000
2024 (Year 2)	571.4	0.0	255.2	48.6	875.2	483.8	0.4838
2025 (Year 3)	562.5	0.0	264.1	48.6	875.2	489.1	0.4891
2026 (Year 4)	534.0	0.0	292.6	48.6	875.2	506.2	0.5062
2027 (Year 5)	535.3	0.0	291.3	48.6	875.2	505.4	0.5054

A graphical representation of the values presented in Table 2 are shown on Figure 8 (attached).

4.0 DISCUSSION AND CONCLUSIONS

As shown in Table 2 and on Figure 8, mine plan year 4 (2026) has the highest reclamation cost index and is therefore determined to be the highest reclamation cost year. Since total acreages are similar between the 5 subsequent mine plan years, but plan year 4 has the largest predicted area of steep slopes (292.6 acres), which have been determined in earlier RCEs to have the highest relative reclamation costs, it is Telesto's opinion that the results of this analysis are valid based on the given mine plans.

TECHNICAL MEMORANDUM

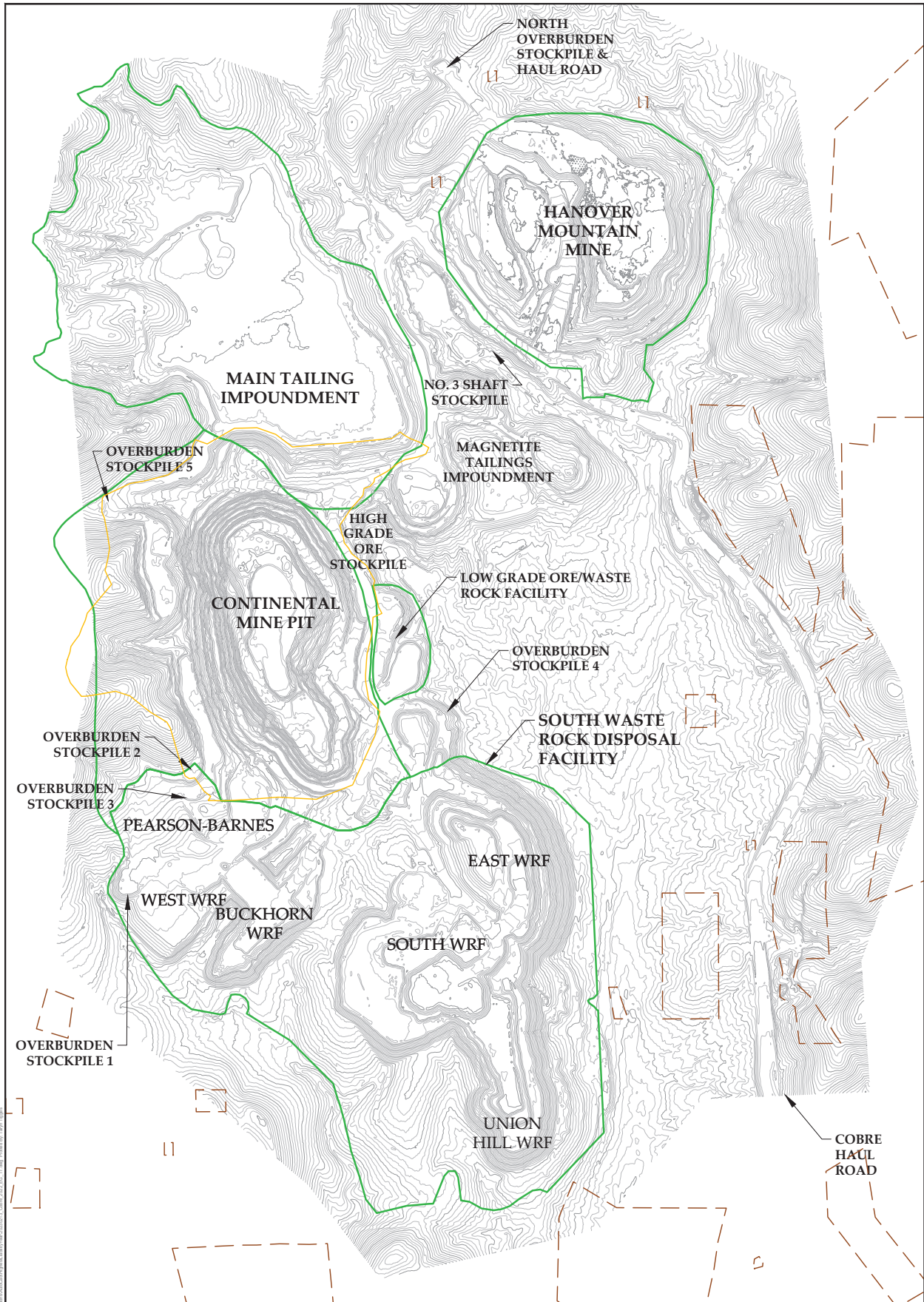
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REFERENCES

Telesto, 2022. *Current and Future Pit Lake Chemical Mass Balance Simulations and Predictions: Continental and Hanover Mountain Mines*. Telesto Solutions, Inc., Loveland, Colorado. July 2022.



2023 CONTINENTAL MINE CCP EXISTING CONDITIONS (END OF 2022)	SHEET NUMBER: 1 	REVISION NUMBER:	DATE: 2/14/2023	REVISIONS				DRAFT	LEGEND / NOTES PROPOSED OR APPROVED FACILITY LIMITS OPSDA CONTINENTAL MINE PERMIT BOUNDARY
	PREPARED BY:	PROJECT: 20018BH	# DESCRIPTION DATE BY	1 DRAFT FOR REVIEW 2/14/2023 TT JC			 COORDINATE SYSTEM CHRD LOCAL MINE		
	DRAWN BY: TT	PROJECT ENGINEER: JC	2 3 4 5	6 7 8 9					
	CHECKED BY: JC	PROJECT ENGINEER: JC	10 11 12	13 14 15					

Date: 2/14/2023 11:52 AM File Path: C:\Users\jcmoran\OneDrive\Documents\2023\2023 CCP\2023 CCP.dwg Author: jcmoran Plot Style: 2023.ctb Plot Device: HP DesignJet 5000