



**FREEPORT-McMoRAN**

Freeport-McMoRan Chino Mines Company  
P.O. Box 10  
Bayard, NM 88023

June 20, 2024

**Certified Mail # 70190140000026680020**

Mr. Brad Reid  
New Mexico Environment Department (NMED)  
Mining and Environmental Compliance Section  
P.O. Box 5469  
Santa Fe, NM 87502

**Certified Mail # 70190140000026680037**

Mr. David Ennis  
Minerals and Natural Resources Department  
Mining and Minerals Division (MMD)  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Dear Mr. Reid and Mr. Ennis:

**Re: Chino's Closure Closeout Plan- Highest Liability Year, Permit GR009RE and Discharge Permit 1340 (DP-1340)**

Freeport McMoRan Chino Mines Company (Chino) is currently updating the Closure/Closeout Plan (CCP) for Chino's North Mine Area (NMA) and South Mine Area (SMA). Chino must base the CCP and financial assurance reclamation cost estimate (RCE) upon the highest liability year for the upcoming 5-year mine plan. Pursuant to our meeting with NMED and MMD on April 30, 2024, we have revised the attached letter that summarizes the approach, process, and results of the Chino Mine's RCE highest reclamation cost year calculations. Your response confirming approval is appreciated.

If you have any questions or need additional information, please contact me at (575) 694-0013 or Mariana Lafon at (575) 912-5234.

Sincerely,



Tyler R. Johnson, Chief Engineer  
Environmental Services

TRJ:ml  
Enclosures  
20240617-001

ec: Jordan Anderson, NMED  
Kevin Barnes, MMD



June 16, 2024

**Via Electronic Mail**

Ms. Mariana Lafon  
Freeport-McMoRan Chino Mines Company  
99 Chino Mine Road  
Vanadium, New Mexico 88023

**Subject: Chino's Closure Closeout Plan  
Next 5-Year Highest Liability Year Update- based on Agencies'  
Comments**

Dear Mariana:

## **INTRODUCTION**

Telesto Solutions, Inc. (Telesto) utilized a method based on the change in areas over time to determine the highest liability year (HLY) in Freeport McMoRan Chino Mines Company's (Chino's) update to their Closure/Closeout Plan (CCP) for Chino's North Mine Area (NMA) and South Mine Area (SMA). Telesto determined that the HLY in the next 5-year CCP period would be End of Year 5 (EOY 5). The New Mexico Environment Department, Ground Water Quality Bureau, Mining Environmental Compliance Section (NMED) suggested that utilizing the reclamation cost index (RCI) approach would more clearly show the HLY and demonstrate how Chino expects the mine to change over the CCP period.

## **APPROACH**

Highest reclamation cost year calculations are typically based only on the earthwork reclamation cost estimate (RCE) at Chino because the amount of water requiring treatment at the end of mining varies little, and earthwork, thus, drives the difference between years. Rather than run a full RCE for each year of the five-year mine plan, Telesto relied on the RCI approach based upon individual areas for top surfaces, slopes near reclamation grade, and steep slopes. In this update, Telesto based the analysis on the footprint areas for significant facilities in the North Mine Area (NMA):

- 3A Stockpile
- Chino Pit
- Kessel Stockpile
- Southwest Lampbright
- Lampbright and North Lampbright Leach Stockpiles

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### **Colorado Office (Corporate)**

750 14<sup>th</sup> Street SW  
Loveland, Colorado 80537  
970-484-7704 / 970-484-7789 (FAX)

### **New Mexico Office**

1303 Pope Street  
Silver City, New Mexico 88061  
575-538-5620 / 575-538-5625 (FAX)

- South Stockpile
- West Stockpile

The facilities in the South Mine Area (SMA) change little over the 5-year CCP period. Thus, the SMA has little effect on the results and is omitted from the RCI analysis.

Telesto utilized GIS and elevation contours of the respective five EOY mine plans provided by Chino Mine Planning to create digital elevation models. We then summarized the total slope area per each category in the RCI analysis as follows:

- 0 to 5%, for areas needing little to no grading
- 6% to 33% (3H:1V) for slopes near acceptable reclamation angles requiring minimal grading
- >33% for steep slopes that require significant regrading to achieve reclamation angles

We then multiplied each area for each category by its respective RCI Factor<sup>1</sup> (Table 1) as described in Equation 1, grouping by year.

**Table 1 RCI Factor**

Category	Historical RCI Factor Ranges	RCI Factor for this Analysis
Flat Areas	0.2 – 0.5	0.4
Areas near Reclamation Grade	0.5 – 0.9	0.7
Areas with Steep Grades	1.0 – 2.0	1.5

**Equation 1**

$$WA_{year} = \sum Area_{category} \times F_{RCI}$$

Where:

- *WA<sub>year</sub>* is the weighted area for each year
- *Area<sub>category</sub>* is the area of each category for the respective year
- *F<sub>RCI</sub>* is the RCI factor for the respective category

We then calculate the RCI by dividing the *WA<sub>year</sub>* by 1000.

**CALCULATIONS AND RESULTS**

Figures 1 through 5 display the top surfaces, side slopes near reclamation grade, and steep slopes subject to reclamation for EOY1 through EOY5, respectively. Table 2

<sup>1</sup> The RCI Factor represents the relative cost of reclaiming the categorical areas relative to one another based on past RCEs.

presents the calculation results and shows that the EOY5 RCI is the highest cost reclamation year.

**Table 2 RCI Calculation Summary**

Slope Category	0-5%	5%-33%	>33%	Total
<b>Year</b>	<b>Slope Area (acre)</b>			
EOY1	620	550	1,000	2,170
EOY2	730	550	990	2,270
EOY3	720	590	1,030	2,340
EOY4	650	600	1,050	2,300
EOY5	760	670	1,060	2,490
RCI Factor	0.4	0.7	1.5	
<b>Year</b>	<b>Weighted Slope Areas</b>			<b>RCI</b>
EOY1	248	385	1,500	2.13
EOY2	292	385	1,485	2.16
EOY3	288	413	1,545	2.25
EOY4	260	420	1,575	2.26
EOY5	304	469	1,590	<b>2.36</b>

## DISCUSSION AND CONCLUSION

The five-year mine life utilized in this analysis corresponds to the internal timeframe for short-term planning used by Chino’s mine planners.

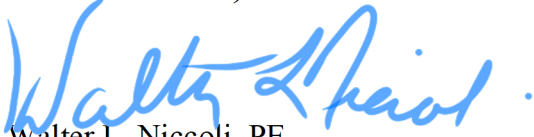
Buttressing of the Southwest Lampbright and Lampbright stockpiles’ slopes reduces the amount of steep slope needing regrading on the stockpiles, which reduces the RCE required. Buttressing is shown to occur between the EOY1 and EOY2, but due to safety concerns and availability of equipment, buttressing is planned for this year. Regardless of when the buttressing infill occurs, the Kessel Stockpile growth dominates reclamation costs, and EOY5 remains the highest liability year.

To: Mariana Lafon  
Date: June 16, 2024  
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Given that both the NMA and SMA highest reclamation cost year is EOY5, Telesto will base the CCP and RCE on the EOY5 mine plan with Agency concurrence.

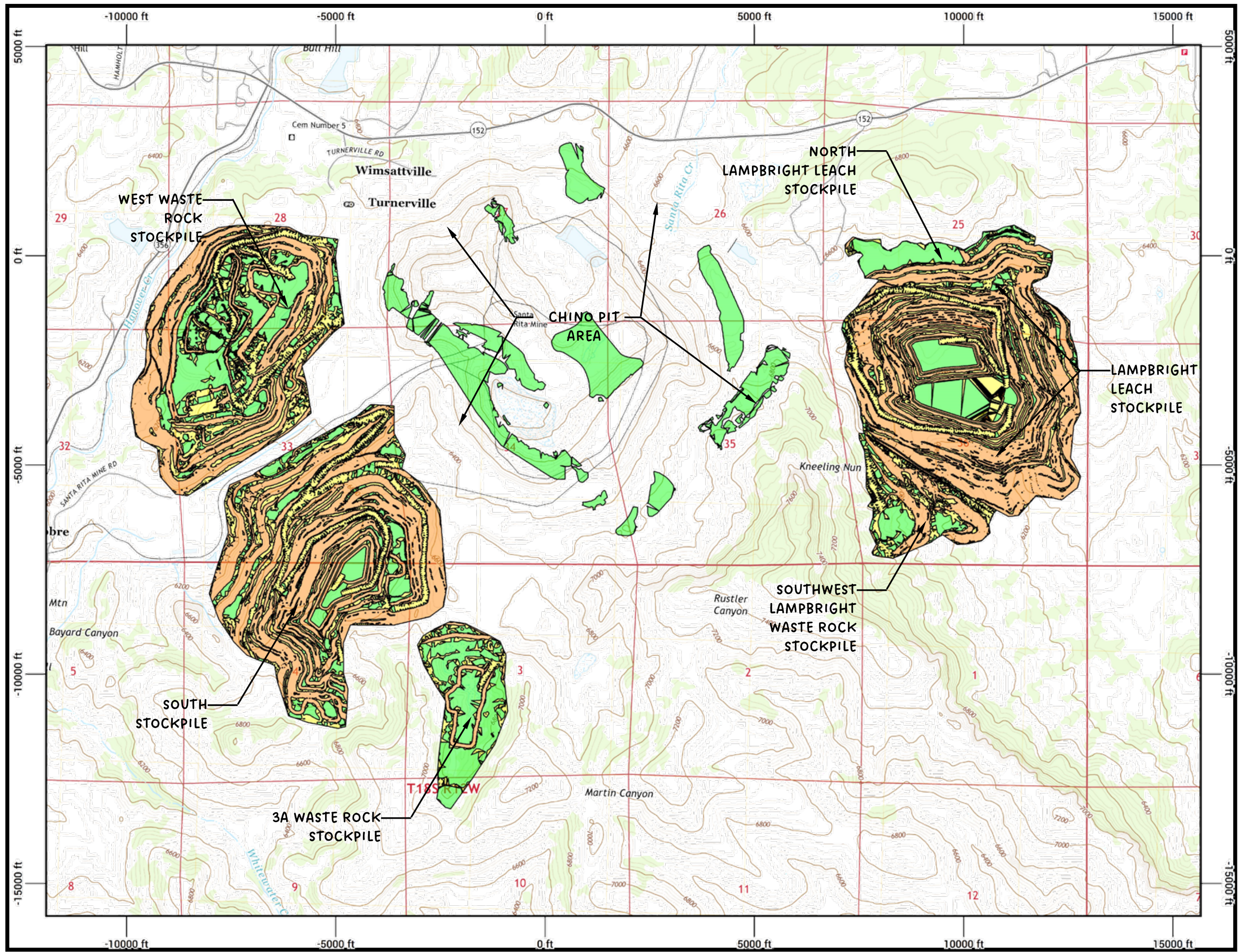
If you have any questions or concerns with this letter report, please do not hesitate to contact me or Jon Cullor at your earliest convenience.

Sincerely,  
***Telesto Solutions, Inc.***





Walter L. Niccoli, PE  
Principal/Senior Engineer

cc: Christian Krueger, Tyler Johnson, Sherry Burt-Kested, Tom Shelley



- NOTES:**
- 0-5%  
TOP AND FLAT AREAS  
MINIMAL GRADING
  - 5-33%  
RECLAMATION SLOPE AREAS  
AVERAGE GRADING
  - >33%  
STEEP AREAS  
MAXIMUM GRADING

  
  
 SCALE IN FEET  
 COORDINATE SYSTEM  
 NAD83 CHINO LOCAL

**FIGURE 1**  
**CCP EOY1 SLOPE AREAS**

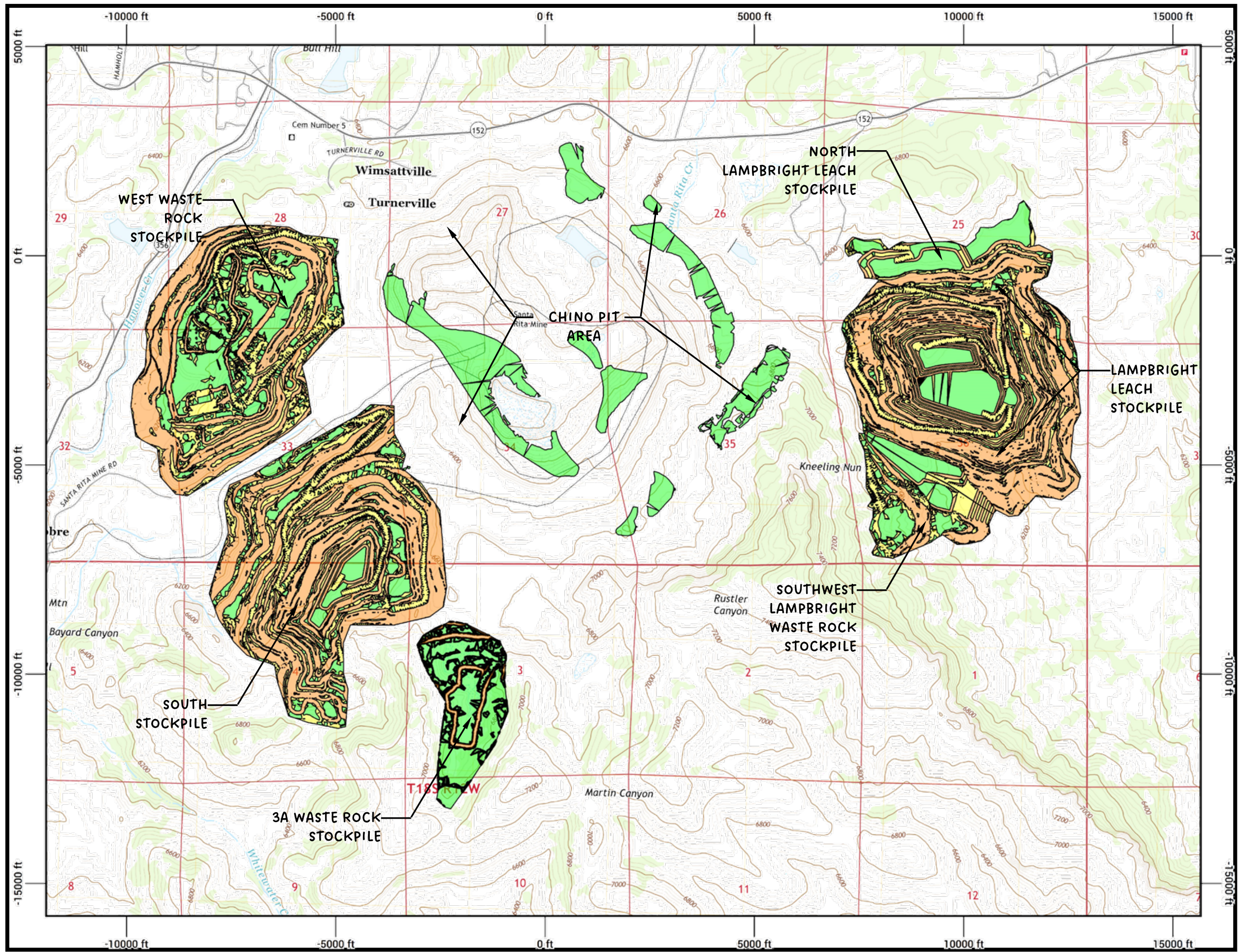
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TELESTO

SOLUTIONS INCORPORATED

PREPARED FOR:


**FREEPORT-McMoRAN**



**NOTES:**

- 0-5%  
TOP AND FLAT AREAS  
MINIMAL GRADING
- 5-33%  
RECLAMATION SLOPE AREAS  
AVERAGE GRADING
- >33%  
STEEP AREAS  
MAXIMUM GRADING


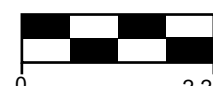
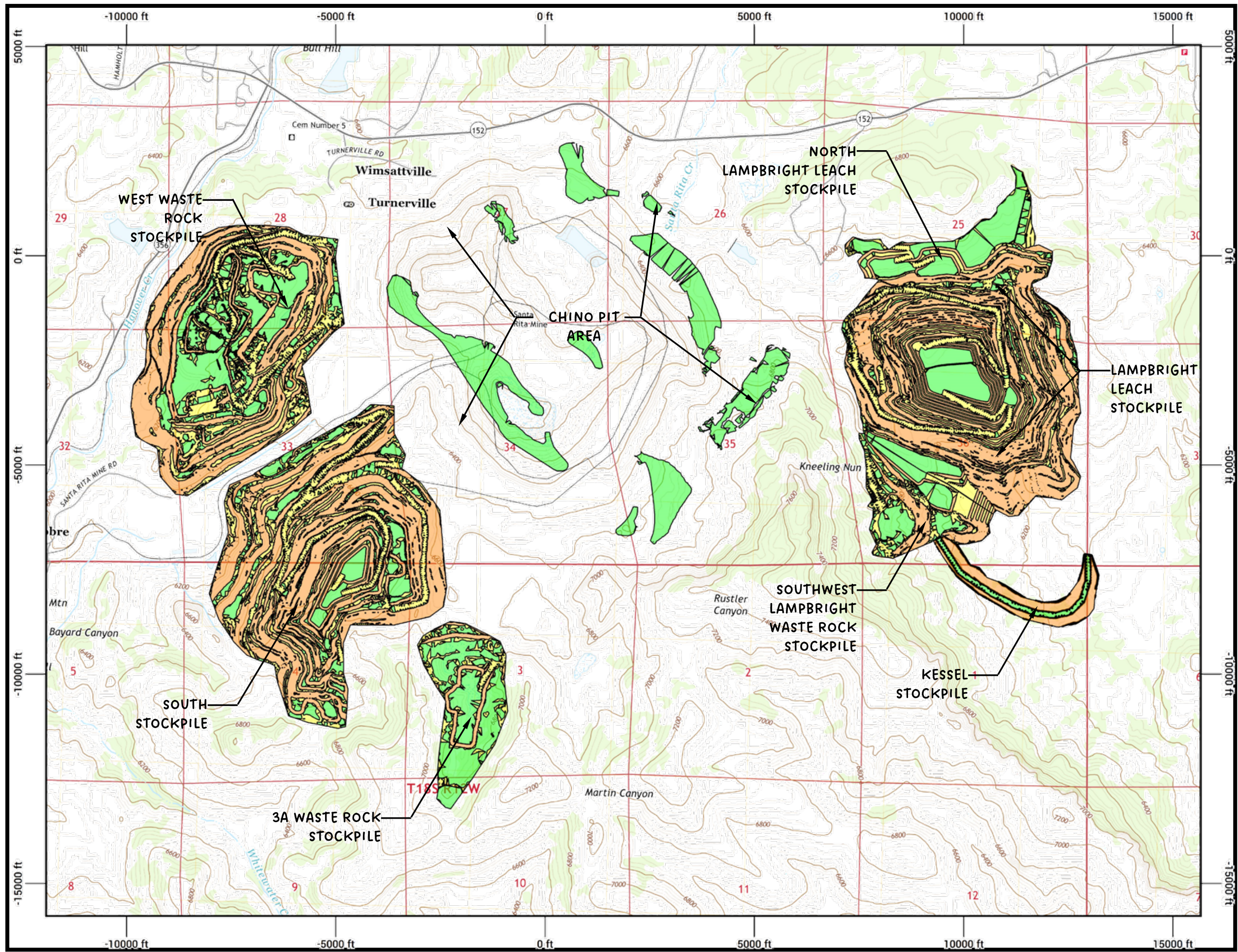
  
  
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FIGURE 2  
CCP EOY2 SLOPE AREAS

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PREPARED FOR:  

**NOTES:**

- 0-5%  
TOP AND FLAT AREAS  
MINIMAL GRADING
- 5-33%  
RECLAMATION SLOPE AREAS  
AVERAGE GRADING
- >33%  
STEEP AREAS  
MAXIMUM GRADING


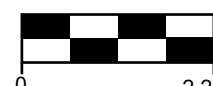
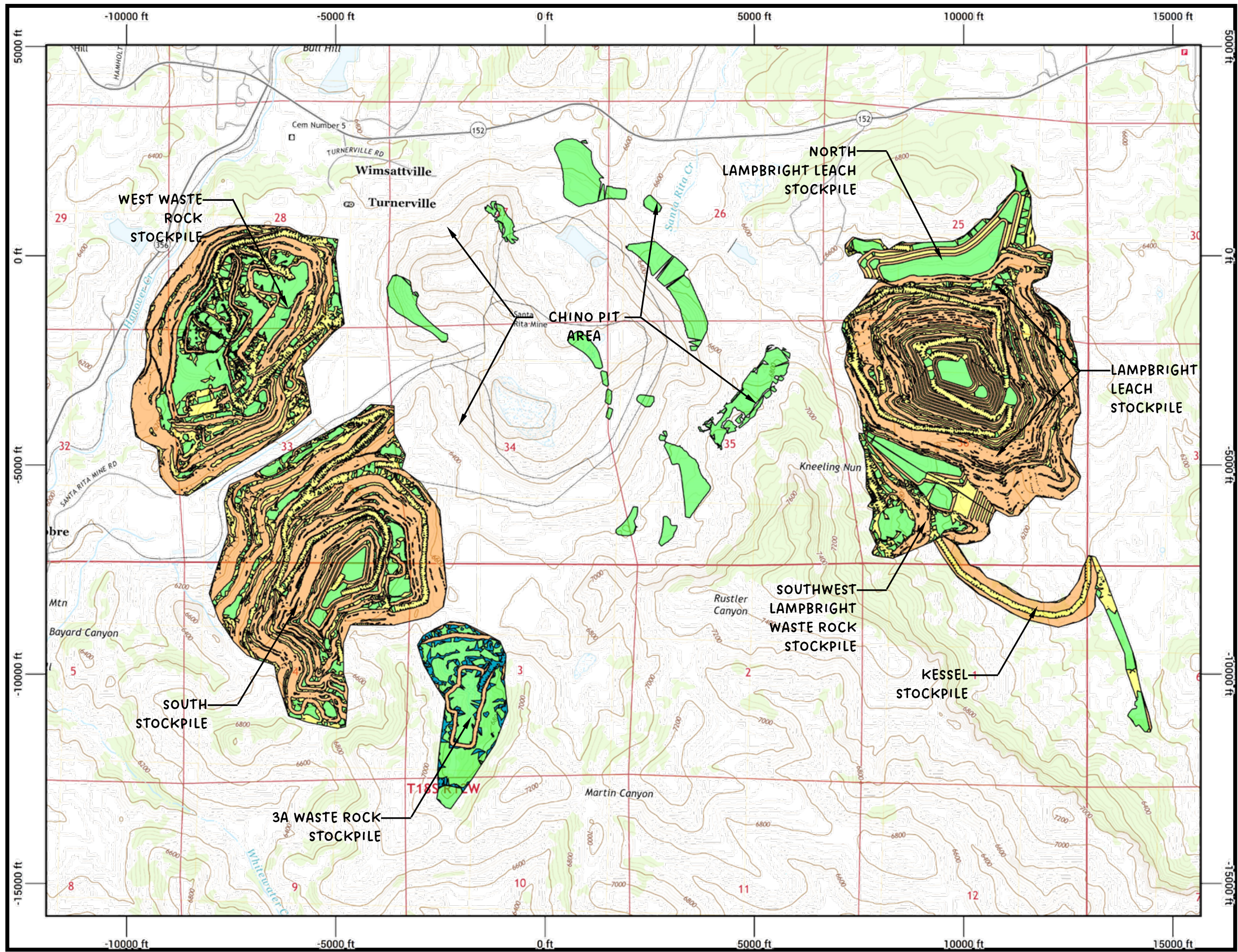
  
  
 SCALE IN FEET  
 COORDINATE SYSTEM  
 NAD83 CHINO LOCAL

FIGURE 3  
CCP EOY3 SLOPE AREAS

PREPARED BY:  


PREPARED FOR:  



**NOTES:**

- 0-5%  
TOP AND FLAT AREAS  
MINIMAL GRADING
- 5-33%  
RECLAMATION SLOPE AREAS  
AVERAGE GRADING
- >33%  
STEEP AREAS  
MAXIMUM GRADING


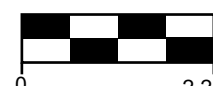
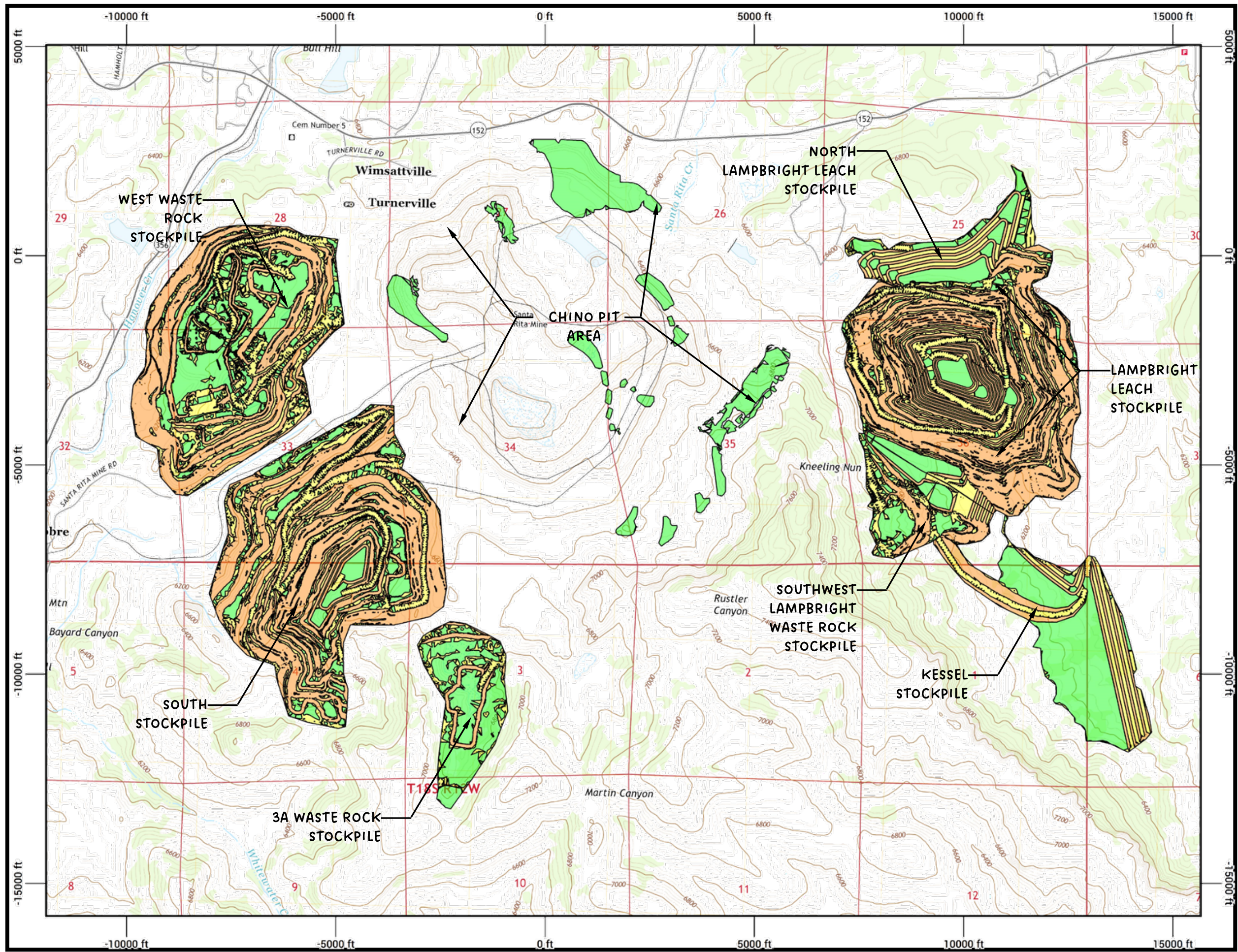
  
  
 SCALE IN FEET  
 COORDINATE SYSTEM  
 NAD83 CHINO LOCAL



FIGURE 4  
CCP EOY4 SLOPE AREAS

PREPARED BY:  


PREPARED FOR:  

- NOTES:**
- 0-5%  
TOP AND FLAT AREAS  
MINIMAL GRADING
  - 5-33%  
RECLAMATION SLOPE AREAS  
AVERAGE GRADING
  - >33%  
STEEP AREAS  
MAXIMUM GRADING

  
  
 SCALE IN FEET  
 COORDINATE SYSTEM  
 NAD83 CHINO LOCAL

**FIGURE 5**  
 CCP EOY5 SLOPE AREAS

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