



# San Juan Mine - Reclamation Bond Cost Estimate

Submitted To: New Mexico Mining & Minerals Division

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# SECTION 1

## 1. SUMMARY

### 1.1 Introduction

Westmoreland San Juan Mining LLC (WSJM) currently maintains a reclamation performance bond for San Juan Mine (SJM) payable to the State of New Mexico. The bond presently stands at \$50 million.

The cost of the SJM reclamation bond was calculated based on the worst case scenario occurring during the 2024 to 2029 permit period. Surface disturbance has been minimal since the cessation of surface mining operations in 2001. Surface disturbance since 2005 has been primarily limited to the construction of the underground mine's surface ventilation facilities, access roads used to support the underground mine. Mining for and coal sales to the San Juan Generating Station stopped in September 2022. Reclamation of all mine areas is ongoing.

The San Juan Mine bond was last updated in July 2019 for the 2019 permit renewal. The 2024 update accounts for significant earthwork completion since 2019 and changes in the unit costs and reclamation that have occurred since 2019. The updated bond amount is \$50 million.

### 1.2 Methodologies and Assumptions

The direct cost of each unit operation is based upon the expected productivity and cost for the operation. After the direct costs had been calculated, indirect costs were determined and added to the bond amount. These were calculated in accordance with OSM guidelines. Methodologies and assumptions are discussed in detail in Section 2.0. An explanation of volumes to be moved is presented in Section 3.0. A summary of disturbed areas is presented in Section 2.9. Detailed operation costs are presented in Section 4.0. The productivity assumptions for each unit operation are also presented in Section 4.0. Unit equipment and labor costs are presented in Section 4.1.

### 1.3 Works Summary

A general works summary is presented in Table 1.1.

# SECTION 1

Table 1.1 Relevant Works Summary

Activity	Work Area	Task	Area (acres)	Distance (feet)	Volume			Cost
					BCY	CCY	LCY	
Backfilling	Juniper	Truck Loader	321	4,076		8,200,000	8,610,000	\$10,878,307
		Scraper						
		Dozer	514	550		13,355,000	14,022,750	\$13,256,178
		Drilling - Blasting						
	Pinon	Sub-Total	835			21,555,000	22,632,750	\$24,134,485
		Truck Loader						
		Scraper						
		Dozer	2	110		10,000	10,500	\$2,458
		Drilling - Blasting						
		Sub-Total	2			10,000	10,500	\$2,458
Grading and Revegetation	Juniper - Pinon - Facilities	Ripping	268					\$47,684
	Juniper - Pinon - Facilities	Rough Grading	454					\$186,722
	Juniper - Pinon - Facilities	Final Grading	1,457					\$130,698
	Juniper - Pinon - Facilities	Channel Construction						\$330,169
	Juniper - Pinon - Facilities	Revegetation	2,053					\$3,672,692
	Sub-Total							4,367,965
Top Dressing Removal	Juniper	Truck Loader	101	3,000		155,190	162,950	\$288,876
	Pinon	Truck Loader						
	Sub-Total		101	3,000		155,190	162,950	288,876
Top Dressing Replacement	Juniper	Truck Loader	732			1,322,933	1,322,933	\$2,095,530
	Juniper - TDR	Truck Loader	101			162,950	162,950	\$288,876
	Pinon	Truck Loader	68			106,480	106,480	\$148,032
	Pinon - TDR	Truck Loader						
	Facilities	Truck Loader	428			621,787	621,787	\$1,309,076
	SJUG	Truck Loader	122			197,528	197,528	\$374,477
	Sub-Total		1,451			2,411,677	2,411,677	4,215,991
Facilities Removal	WSJM							\$3,112,171
	SJU							\$1,195,773
	Sub-Total							4,307,944
GRAND TOTAL						24,017,026	25,217,877	\$37,317,718

# SECTION 1

## 1.4 Cost Summary

The total estimated bond amount is \$50 million. A cost summary is presented below in Table 1.2.

**Table 1.2 San Juan Mine Reclamation Bond Cost Summary**

COST SUMMARY (\$ x 1000)		
<b>Direct Costs</b>		
Drill & Blast		\$0
Dozer Backfilling		\$13,259
Scraper Backfilling		\$0
Truck/loader Backfilling		\$10,878
Support Backfilling		\$0
Grading And Revegetation		\$4,368
Topdressing Removal		\$289
Topdressing Replacement		\$4,216
Facilities Removal		\$3,112
San Juan Deep Mine Facilities Removal		\$1,196
<b>Subtotal Direct Cost</b>		<b>\$37,318</b>
Supplemental Amount @ 1.30%		\$485
<b>Indirect Costs</b>		
Mobilization	2.0 % Direct	\$746
Contingency	3.0 % Direct	\$1,120
Engineering Redesign Fee	3.0 % Direct	\$1,127
Profit And Overhead	12.6 % Direct	\$4,702
Reclamation Management Fee	3.0 % Direct	\$1,120
<b>Subtotal Indirect Cost</b>		<b>\$8,814</b>
<b>Gross Receipts Tax (NM &amp; SJC @ 6.5000%)</b>		<b>\$3,030</b>
<b>Total Estimated Cost</b>		<b>\$49,647</b>

## SECTION 2

### 2. METHODOLOGIES AND ASSUMPTIONS

#### 2.1 Introduction

This reclamation cost estimate has been prepared by WSJM in accordance with 19 NMAC 8.2: Section 906.B (2) and OSMRE guidelines. The current estimate stands at \$47 million.

#### 2.2 Confidentiality

It is requested that MMD keeps this documentation in the confidential files for commercial reasons.

#### 2.3 Maximum Disturbance

Active surface mining ceased in 2001 and disturbance since that time has been primarily related to the construction of underground mining ventilation facilities, and their access roads and powerlines. Based on these facts, the maximum disturbance for the SJM during the bond period (2024 – 2029) already exists in 2024, because no mining is scheduled in the permit term (2024 - 2029). At the time of this estimate all underground buildings, fans, conveyors, stackers, substations, and fences have been removed.

Underground mine support roads and powerlines are all that remains for this bond estimate.

#### 2.4 Bond Post-Mine Topography (PMT) and Final Surface Contour (FSC)

The post-mining topography (PMT) map has been updated for Juniper pits using the existing topography data collected prior to end of December 2023. The final surface configuration (FSC) has not changed in two permit terms and remains the same as that used in the prior bond estimate. Highwalls will not be blasted and any necessary volume for pit fill will come from prior spoils. Mass balance was maintained between the FSC and the mined-out surface PMT present at the end of 2023. Steeper slopes in the bond topography will be constructed using complex slopes to keep soil loss within acceptable limits. Some areas in the Juniper Pits which are currently in Phase I Bond Releases will be re-affected to reach the proposed FSC. The cost to remove and replace all topdressing in these re-affected areas has been included in the bond estimate.

Carlson Mining 2022, by Carlson Software, was used to calculate material movement volumes. No significant volume movements are required for Pinon Pit for this bond estimate as the FSC has already been achieved for that area. For the Juniper Pit the latest aerial flight topography surface, at year end 2023, represents the PMT (see Exhibit 1). The FSC can be seen for Juniper Pit on Exhibit 2 (same as the permitted exhibit from section 906 of the permit. Polygons representing the backfilled areas were used to determine cut and fill volumes by subtracting the two surfaces from each other within the polygon limits. A material balance between the mined-out surface and PMT was obtained.

## SECTION 2

### 2.5 Unit Operations

The unit operations included in this bond estimate are:

- Truck/Loader Backfilling & Dozer Backfilling
- Grading & Re-vegetation
- Topdressing Replacement
- Facilities Removal (Demolition and Disposal).

Unit costs have been updated to 2024 values (original values from RSMeans data where applicable). A PPI index value generated using the U. S Bureau of Labor Statistics calculator was used to update values in cases where RSMeans data was unavailable or irrelevant.

The Backfilling unit operation includes all work required to backfill the remaining surface pits and ramps pre-existing the underground mine. Backfilling will be carried out with bulldozers and a truck/loader fleet.

Following the MMD bond guidelines, all non-dozer material will be moved by the lowest cost method available. This 2024 estimate has been calculated without this use of scrapers so no consideration for scraper oversize was needed.

The Grading unit operation includes the ripping, rough regrading and final regrading required to prepare the ground for topdressing replacement. The grading operation also includes costs for channel construction and rip rap placement for all drainage channels required in the FSC.

The Topdressing Replacement unit operation includes all work required to replace and level topdressing material and will be in accordance with the current permit at San Juan Mine. All topdressing material will be removed from stockpiles and placed on final graded areas using scrapers only.

The Re-vegetation unit operation includes contractor work, seeding, mulching and irrigation required to reestablish vegetation according to the current permit. The costs from the prior estimate have been escalated to the PPI change.

The Facilities Removal unit operation includes the removal and disposal of all structures such as the office buildings, shop complex, and the crushing plant. Allowance has also been made for the removal and disposal of concrete foundations, fences, power lines and pavement. The costs from the prior estimate have been escalated to the PPI change.

## SECTION 2

### 2.6 Software

A single software package was used to determine material volumes and to develop PMT and FSC surfaces; Carlson Mining 2022 (formerly SurvCADD). Fleet production analysis was completed using RPM Gloabl Talpac simulator.

### 2.7 Density Assumptions

Volumes obtained using Carlson Mining 2022 are assumed to be compacted cubic yards (CCY) with a material density of 3000 pounds per cubic yard. To calculate the volumes to be moved these volumes are increased an additional 5% to account for secondary swell from compacted cubic yards to loose cubic yards (LCY). Loose cubic yards have a density of 2857 pounds per cubic yard.

### 2.8 Material Movement Cost Calculation Assumptions

The following assumptions are used to calculate material movement costs for pit backfilling.

1. Primary backfilling will be completed using bulldozers and truck-loader fleets.
2. Primary backfilling by bulldozers was maximized by allowing material to be pushed up to 600 ft from centroid to centroid.
3. Trucks-loaders are used to move backfill material where the material cannot be handled by dozers.
4. No scrapers fleet was used in this estimate.
5. Equipment costs used were provided by James Smith of MMS in February 2024.
6. Labor costs used were provided by James Smith of MMS in February 2024.
7. Average operator efficiency for truck/loaders and trucks is 83%.
8. Average equipment availability for loaders, and trucks is 80%. Rolling resistance is 3% for dirt roadways maintained and watered fairly regularly and 6% for dumping and loading zones. Maximum speed of trucks is 45 mph.
9. Loader fill factor is 90%.

### 2.9 Disturbed Areas

Disturbed areas for bond maximum disturbance include all pits, haul roads and the facilities area. Some previously reclaimed areas are disturbed to allow creation of the post mining slopes. Please note that the re-vegetation acreage shown in these tables includes 405.8 redo re-vegetation acres that are already reclaimed (prior to April 2024) and 145.7 acres of redo re-vegetation for areas completed during the bond closure work (both assume a 10% rate of failure). Disturbed areas are listed in Table 2.1, along with the reclamation activities required for each area. The reclamation activities are described in detail in Section 3.3.

## SECTION 2

Table 2.1 Disturbed Area – Juniper and Pinon Grading and Reclamation Areas

JUNIPER & PINON GRADING AND RECLAMATION AREAS (2024)					
Area	Backfill Area (Acres)	Dozer Ripping (Acres)	Rough Regrade (Acres)	Final Grading (Acres)	Re-vegetation Area (Acres)
<b>JUNIPER AREA</b>					
Juniper Pit	732.0		183.0	732.0	732.0
Pre-2024 Reclamation - Reveg Redo (10%)				220.0	
Pre-2024 Reclamation - Redisturbed (to get fill)				101.0	101.0
Regrade Areas Not Yet Topsoiled ("lag")				32.0	32.0
TSS 7				13.5	13.5
TSS 12				5.5	5.5
TSS16				1.8	1.8
TSS 22				16.5	16.5
TSS 29				0.5	0.5
TSS 30				12.3	12.3
TSS 31				0.2	0.2
TSS ESS				1.4	1.4
TSS 4				10.8	10.8
TSS 4 OLD				2.9	2.9
TSS 28				1.9	1.9
TSS 38				1.5	1.5
Juniper Pond 14			1.3	1.3	1.3
Juniper Pond 19			1.7	1.7	1.7
Juniper Pond 23			2.4	2.4	2.4
Juniper Pond 29			0.1	0.1	0.1
Juniper Pond 42			0.5	0.5	0.5
Juniper Pond 46			0.9	0.9	0.9
Juniper Pond 47			1.0	1.0	1.0
Juniper Pond 50			0.2	0.2	0.2
Juniper Pond 52			1.4	1.4	1.4
Juniper Pond 53			2.6	2.6	2.6
Juniper Pond 54			3.5	3.5	3.5
Juniper Pond 55			3.2	3.2	3.2
Juniper Pond 56			1.6	1.6	1.6
Juniper Pond 57			2.4	2.4	2.4
Juniper Pond 58			2.0	2.0	2.0
Juniper Pond 61			0.5	0.5	0.5
Juniper Pond 62			2.1	2.1	2.1
Juniper Pond 64			3.0	3.0	3.0
Juniper Pond 67			1.9	1.9	1.9
Bond 'Redo' Re-Vegetation Efforts (10%)					96.6
<b>Totals Juniper Area</b>	<b>732.0</b>	<b>0.0</b>	<b>215.3</b>	<b>966.2</b>	<b>1,282.8</b>
<b>PINON AREA</b>					
Pinon Pit	2.0			41.4	41.4
Pre-2024 Reclamation - Reveg Redo (10%)				23.8	185.8
TSS 8				23.8	23.8
Pinon Pond 2			1.5	1.5	1.5
Pinon Pond 4			0.9	0.9	0.9
Pinon Pond 33			0.4	0.4	0.4
Pinon Pond 36			0.8	0.8	0.8
Pinon Pond 66			0.9	0.9	0.9
Pinon Pond 69			5.8	5.8	5.8
Pinon Pond 70			1.9	1.9	1.9
Bond 'Redo' Re-Vegetation Efforts (10%)					7.7
<b>Totals Pinon Area</b>	<b>2.0</b>	<b>0.0</b>	<b>35.9</b>	<b>77.3</b>	<b>270.9</b>

## SECTION 2

Table 2.2 Disturbed Area - Facilities and Underground Grading and Reclamation Areas Continued

UNDERGROUND & FACILITIES GRADING AND RECLAMATION AREAS					
UNDERGROUND AREA					
Primary Access Road		19.3	19.3	19.3	19.3
Gate Roads Ungraded Areas			40.0	40.0	40.0
Facilities Area (2 Fan Stations and HW Evap Pond)			4.7	4.7	4.7
Miscellaneous Regrade Areas			8.0	8.0	8.0
New Gate Roads			1.5	1.5	1.5
Coal Stockpile Area			1.0	1.0	1.0
TSS 32			0.7	0.7	0.7
TSS 33			1.8	1.8	1.8
TSS EES 206			0.8	0.8	0.8
TSS - MISC.					44.4
Gate Roads - Re-Seeded			40.0	40.0	40.0
Gravel Laydown, Walters, Pads			4.7	4.7	4.7
Miscellaneous Ungraded Areas					12.2
Other Failed Re-Vegetation Efforts (10%)*					
<b>Totals Underground Areas</b>	<b>0.0</b>	<b>19.3</b>	<b>122.4</b>	<b>122.4</b>	<b>179.1</b>
FACILITIES AREA					
Facilities (shop and roads)		172.0	43.0	172.0	172.0
Pavement				5.0	5.0
Ready Line		17.0		17.0	17.0
Gravel Haul Road		59.8		59.8	59.8
TSS 34-36			1.7	1.7	1.7
Facilities Pond 7			3.5	3.5	3.5
Facilities Pond 8			2.4	2.4	2.4
Facilities Pond 9			1.4	1.4	1.4
Facilities Pond 10			1.1	1.1	1.1
Facilities Pond 11			1.6	1.6	1.6
Facilities Pond 12			1.8	1.8	1.8
Facilities Pond 12B			1.2	1.2	1.2
Facilities Pond 48			1.1	1.1	1.1
Facilities Pond 49			0.2	0.2	0.2
Facilities Pond 51			3.0	3.0	3.0
Facilities Pond 63			0.5	0.5	0.5
Facilities Pond 65			17.7	17.7	17.7
Other Failed Re-Vegetation Efforts (10%)*					29.1
<b>Totals Facilities Areas</b>	<b>0.0</b>	<b>248.8</b>	<b>80.1</b>	<b>290.9</b>	<b>320.0</b>

## SECTION 3

### 3. VOLUMETRICS AND MATERIAL MOVEMENT

#### 3.1 Primary Regrade Calculations

The post-mining topography (PMT) map has been developed for Juniper Pit using the existing topography at the end of December, 2023 (start of 2014). The approved final surface configuration (FSC) for the mine was used as the bond FSC. Mass balance was maintained between the FSC and the mined-out surface PMT developed for end of 2023. Steeper slopes in the bond topography will be constructed using complex slopes to keep soil loss within acceptable limits. Some areas in the Juniper Pit which are currently in Phase I Bond Release will be re-affected to reach the proposed FSC. The cost to remove and replace all topdressing in these re-affected areas has been included in the bond estimate.

Carlson Mining 2022, by Carlson Software, was used to calculate material movement volumes. For Juniper Pit one surface representing the PMT at the completion of 2023 (Exhibits 1) and another representing the FSC (Exhibit 2), as approved, were created. Polygons representing the backfilled areas are used to determine cut and fill volumes by subtracting the two surfaces from each other within the polygon limits. A material balance between the mined-out surface and FSC is obtained.

The general sequence for estimating the total backfilling volumes was as follows;

1. Use the Final Surface Contour (FSC) Map for the Juniper Pit (in the 2024 case this is the approved Permit FSC);
2. Create triangulation Digital Terrain Models (DTM) files for each surface (PMT and FSC);
3. Calculate cut and fill volumes between the two triangulation surfaces using software;
4. Verify that the cut and fill volumes balance (no rebalance was needed based on the approved FSC accounting for mining completion in 2022).

Once the cut/fill is balance was verified, the software can then create a map showing the cut areas with cut depths and fill areas with fill depths. Using this map, we first develop polygons for the proposed dozer cut areas which have a maximum 600 foot from centroid to centroid push. It is assumed that dozer cut material is pushed into an adjacent fill area. Polygons for the cut and fill areas were adjusted until a mass balance was a created from the cut and fill areas. MMD guidelines also require that the dozer material include an additional 10% rehandle. Volumes within these dozer polygons are then calculated to determine the dozing volume. There are no virgin materials to be drilled, blasted and swelled at 25% in the 2024 bond estimate.

## SECTION 3

All polygon volumes balance, dozers within and truck/loader cuts to fills. The volume moved and distance from centroid to centroid is recorded for each haul and used to calculate a weighted average haul distance that is used to model the Talpac haul simulator computer program.

Exhibits 3 illustrate the cut and fills for primary regrade. Areas to be handled by dozer operations as well truck-loader are indicated.

The cross-sections shown on Exhibits 4a, and 4 have been included for visual verification of the Carlson surface methods.

### 3.1.1 Dozer Push Backfilling

Dozers are used to push all material available that is located up to a maximum of 600 ft from its final location. Table 3.1 summarizes the quantity of material to be used as backfill through dozer-push operations. Note that the 10% rehandle is in the costing only, not in these summary volumes.

**Table 3.1 Summary of Dozer Backfilling Quantities**

Work Area	Area (acres)	Distance (feet)	Volume		
			BCY	CCY	LCY
Juniper	514	550	0	13,355,000	14,022,750
Pinon	2	110	0	10,000	10,500
<b>Total</b>	<b>516</b>	<b>550</b>	<b>0</b>	<b>13,365,000</b>	<b>14,033,250</b>
CCY To LCY Swell % 5.0%					

### 3.1.2 Truck-Loader Backfilling

A truck-loader fleet will be used to move backfill material to areas where trucks are more economical than dozers. Table 3.2 summarizes the quantity of material to be used as backfill through truck-loader operations.

**Table 3.2 Summary of Truck-Loader Backfilling Quantities**

Work Area	Area (acres)	Distance (feet)	Volume		
			BCY	CCY	LCY
Juniper	321	4,076	0	8,200,000	8,610,000
Pinon	0	0	0	0	0
<b>Total</b>	<b>321</b>	<b>4,076</b>	<b>0</b>	<b>8,200,000</b>	<b>8,610,000</b>
CCY To LCY Swell % 5.0%					

## 3.2 Secondary Regrade Calculations

### 3.2.1 Areas for Dozer Ripping

The ripping operation is required on haul roads and facilities areas and is completed using a D10T with a triple shank ripper.

## SECTION 3

### 3.2.2 Rough Grading Areas

The rough regrade operation is required where the truck loader fleet is used to backfill pits (material dumped from a scraper is already rough regraded) and in areas not included in the pit backfilling such as the facilities area and haul roads. Rough regrade is completed with a D11R.

### 3.2.3 Areas for Final Grading

The final regrade operation is required over all disturbed areas except topsoil stockpiles which will be regraded as they are stripped. Final regrading is completed with a 16H grader.

### 3.2.4 Channel Construction

Channel grading is required on all channels to be constructed as part of the PMT. A 20 foot average channel width is assumed. Channel grading is completed with a 16H grader.

### 3.2.5 Rip-Rap Placement

Rip Rap placement is assumed to be required on all channel sections steeper than 1.5%.

## 3.3 Topsoil and Re-vegetation

### 3.3.1 Topdressing Removal

Topdressing removal is required as a portion of the mine site already reclaimed awaiting release will have to be re-disturbed in order to complete the proposed Juniper and Pinon Pit backfilling and grading operations. It is assumed that topdressing removal would be performed entirely by truck/loader fleet. Any topdressing removed would be placed directly to the proposed laydown areas and therefore we used 2600 feet and 0% grade for the haul distance and grade for this work. Summaries of volumes, haul distances, grades, productivity and costs are presented in tables throughout Section 4.0, by task. Topsoil laydown is illustrated in Exhibits 6.

### 3.3.2 Topdressing Replacement

The volumes and haul distances for estimating topsoil replacement requirements are based on current stockpile locations and volumes as presented in the 2023 San Juan Mine Annual Report. The haul distance and grade is measured from the centroid of the stockpile to the centroid of the re-spread location.

## SECTION 4

### 4. COST DETAILS

Cost details for each of the unit operations are presented below along with unit cost and productivity calculations.

#### 4.1 Unit Costs and Assumptions

##### 4.1.1 Fleet Productivity Determination

RPM Global's Talpac program was used to determine the productivity of material movement by the loader fleets. The truck/loader fleet is also assumed to move all topsoil. Fleet size optimization was carried out, and the following fleets used.

- Truck – Loader; 1 X Cat 992G's loading into 2 or 3 Cat 777D's.

Factors such as equipment availability and operator efficiency were added into the program. The speed limit for hauling equipment was set at the site limit of 45 mph for trucks. Hourly operating costs are what MMD provided in February 2024.

For backfill material movement, volume- weighted average haul distances were calculated and used in Talpac. Backfill hauls are over varying terrain which have an overall downhill mass movement. For topsoil, the haul for each stockpile was calculated in Talpac separately. The output from the haul route analysis is presented in Appendix B.

##### 4.1.2 Unit Costs

Unit equipment costs are used as supplied by MMD in February 2024. Unit Equipment costs are presented in Table 4.1.

## SECTION 4

Table 4.1 Unit Equipment Costs

EQUIPMENT	UNIT EQUIPMENT COST			MMD SUPPLIED COST PER SCHED. HOUR
	EQUIPMENT OPERATOR COST / HOUR	EQUIPMENT OPERATION COST / HOUR	SUPPLIED LABOR	
			2024 TOTAL	
CAT D11R				
Adjusted Cost	\$41.45	\$283.70		\$325.15
CAT D10T				
Adjusted Cost	\$41.45	\$178.67		\$220.12
CAT 637G Push-Pull				
Adjusted Cost	\$41.45	\$234.11		\$275.56
CAT 992G				
Adjusted Cost	\$41.45	\$293.62		\$335.07
CAT 777D				
Adjusted Cost	\$41.45	\$170.83		\$212.28
Adjusted Cost				
6X4 DIESEL REAR DUMP TK.				
Adjusted Cost	\$41.45	\$12.12		\$53.57
CAT 16H GRADER				
Adjusted Cost	\$41.45	\$130.85		\$172.30
7000 gal Off-Hwy Water Truck				
Adjusted Cost	\$41.45	\$78.35		\$119.80

# SECTION 5

Unit labor costs are also from MMD in February 2024. The labor costs are presented in Table 4.2.

**Table 4.2 Unit Labor Costs**

JOB DESCRIPTION	2024 MMD Supplied Rates <sup>3</sup>	2024 Labor Rates Applied to Bond Est.
All positions	\$41.45	
CAT D11R Operator		\$41.45
CAT D10T Operator		\$41.45
CAT 637G Push-Pull Operator		\$41.45
CAT 992G Operator		\$41.45
CAT 777D Operator		\$41.45
6X4 DIESEL REAR DUMP TK. Operator		\$41.45
CAT 16H GRADER EROPS Operator		\$41.45
7000 gal Off-Hwy Water Truck Operator		\$41.45

**Notes:**

<sup>3</sup>As communicated from MMD email from James Smith to Derek Rawson, Westmoreland - dated 02FEB24.

## 4.1.3 Assumptions

Assumptions used in estimating removal of SJM facilities and infrastructure are as follows:

- All surface facilities including warehouses, shops, and offices, powerlines and other surface structures will be demolished and disposed on site.
- All concrete foundations and footing for all structures will be demolished and disposed of on site.
- All powerlines used to support the mine facilities and mine operation will be removed, sold off or disposed of on site.
- All fences not required to support reclamation will be removed and disposed of on site.
- All pavement from access roads and various parking lots will be ripped, removed and disposed of on site.
- All waste material generate by building, and concrete foundation demolition, powerlines, fences and other extraneous waste will be hauled to the lowest point and buried beneath the mine pit spoils.
- No chemicals will be disposed on site, all diesel fuel, gasoline, oil, greases or other similar waste will be removed from the mine site and disposed of in a certified facility.

## 4.2 Drill & Blast

No drilling and blasting is estimated in the 2024 bond.

# SECTION 5

## 4.3 Primary Grading

Backfilling is divided into three separate operations: dozer backfilling, truck/loader backfilling and backfilling support.

Dozers are used to push all material available that is located up to a maximum of 600 feet from its final location. Distance is measured from cut area centroid to final area centroid. Dozer productivity is calculated based on this push distance for each dozer block. The cost calculation for dozer backfilling is presented in Table 4.3. The distance and factor for grade varied for each push (see Table 4.4). Factors for operator skill, material density, slot dozing, visibility, and efficiency were applied consistently to every push and were 0.75, 0.80, 1.20, 0.94, and 0.83 respectively.

**Table 4.3 Dozer Backfilling Costs**

Dozer Backfilling - D11R - Productivity and Cost					
Haul	Volume (Icy)	Est. Avg. Push (ft)	Est. Avg. Grade (%)	Adj. Production (Icy/hr)	Cost (\$)
Juniper D1	57,750	97	-10.0%	1,888	\$10,941
Juniper D2	7,245,000	576	-8.5%	344	\$7,530,618
Juniper D3	1,785,000	310	-1.8%	558	\$1,143,838
Juniper D4	4,935,000	580	-16.1%	386	\$4,570,780
Pinon D1	10,500	109	-2.2%	1,528	\$2,458
<b>Total</b>	<b>14,033,250</b>	<b>541</b>	<b>-15.9%</b>	<b>613</b>	<b>\$13,258,635</b>
<b>Unit Cost (\$/LCY)</b>					<b>\$0.94</b>

Truck/loader will be used whenever the Talpac run dictates that it will have a lower cost compared to the dozers. The cost and scheduled hours required for these operations were calculated using Talpac as described previously. The cost of support equipment (a water truck and grader) is added, assuming that 1 hour of support equipment time is required for each 8 scheduled hours of backfilling time. Additionally, every truck/loader shift hour will be supported by a D10 (8 hours per 8 hour shift). These cost calculations are presented in Tables 4.4 and 4.5 (these support costs are already included in table 4.4).

## SECTION 5

**Table 4.4 Truck Loader Backfilling Cost – Material Movement**

<b>Juniper</b>		
Material Movement Required	8,200,000	CCY
	8,610,000	LCY
<b>Pinon</b>		
Material Movement Required	0	CCY
	0	LCY
<b>Total</b>		
Material Movement Required	8,200,000	CCY
	8,610,000	LCY
Haul Distance (Avg)	4,076	Ft
Scheduled Hours Required	9,444	Hrs
Avg. Trk/Ldr Backfilling Unit Cost	\$ 1.26	/LCY
Truck / Loader Backfilling Cost	\$ 10,878,307	
Support Cost	\$ -	(included)
<b>Trk / Ldr Backfilling Cost</b>	<b>\$ 10,878,307</b>	

**Table 4.5 Support Equipment Unit Cost Calculation**

<b>Ancillary Support</b>		
7000 Gal. Off-Highway Water Truck	\$119.80	/Hr
Cat 16h Motor Grader	\$172.30	/Hr
% Operating Time Per Sched. Hour	12.50%	(1hr/8hr sched)
Cost Per Sched. Hour	<b>\$36.51</b>	
<b>Dozer Support - Truck/Loader Unit Operation</b>		
Cat D11R Dozer	\$325.15	/Hr
% Operating Time Per Sched. Hour	100.00%	(8hr/8hr sched)
Cost Per Scheduled Backfilling Hour	<b>\$325.15</b>	

### 4.4 Grading and Re-vegetation Costs

Grading and re-vegetation costs are calculated as a unit cost per acre for each operation and multiplied by the number of acres requiring that operation. Channel grading and rip rap construction are calculated per foot of channel and added to the total. A summary of the grading and re-vegetation areas is presented in Section 2.0, Table 2.1. A summary of the unit costs and the total cost for each operation is presented in Table 4.6. Each of the unit operations is discussed below.

## SECTION 5

**Table 4.6 Grading and Re-vegetation Cost Summary**

<b>D10T Ripping</b>		
Ripping Unit Cost	\$177.89	/Ac
Ripping Area	268	Ac
Ripping Cost	<b>\$47,684</b>	
<b>D11R Rough Grading</b>		
Rough Grading Unit Cost	\$411.47	/Ac
Area To Grade	454	Ac
Rough Grading Cost	<b>\$186,722</b>	
<b>Final Regrading</b>		
Final Grading Unit Cost	\$89.71	/Ac
Area To Regrade	1457	Ac
Final Regrading Cost	<b>\$130,698</b>	
<b>Channel Construction</b>		
Grading	\$1,033	
Rip Rap Placement	<b>\$130,698</b>	
<b>Re-vegetation Cost</b>		
Re-vegetation Unit Cost	\$1,789	/Ac
Total Acres To Be Revegetated	2,053	Ac
Re-vegetation Cost	<b>\$3,672,692</b>	
<b>Total</b>	<b>\$4,367,965</b>	

The ripping operation is required on haul roads and facilities areas and is completed using a D10T with a triple shank ripper. The ripping productivity and cost calculations are presented in Table 4.7.

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**Table 4.7 Ripping Cost Per Acre Calculation**

D10T With Multishank Ripper		
Equipment Productivity		
Average Pass for Ripping	300	Ft
Ripping Depth	1.5	Ft
Ripping Width (Shank Gauge)	10.8	Ft
Ripping Speed	139	Ft/Min
Time Per Pass	2.4	Min
Turn Time	0.25	Min
Acres Per Hr.	1.86	Ac/Hr
Efficiency:	83%	
Availability:	80%	
Adjusted Productivity	66%	
Adjusted Productivity	1.24	Ac/Hr
D10T Hourly Cost	\$ 220.12	/Hr
<b>Unit Cost Per Acre</b>	<b>\$ 177.89</b>	<b>Per Acre</b>

The rough regrade operation is required where the truck loader fleet is used to backfill pits (material dumped from a scraper is already rough regraded) and in areas not included in the pit backfilling such as the facilities area and haul roads. Rough regrade is completed with a D11R, as negotiated and agreed upon by MMD. The rough regrade unit cost calculation is presented in Table 4.8.

**Table 4.8 D11R Rough Regrade Cost Per Acre Calculation**

D11R With Reclamation Blade - Productivity and Cost		
Equipment Productivity		
Push Distance (Avg)	200	Ft
Estimated Productivity	1400	LCY/Hr
Adjusted Productivity	669	LCY/Hr
Volume Per Acre	847	LCY/Ac
Adjusted Productivity Per Acre	0.79	Ac/Hr
D11R Hourly Cost	\$ 325.15	/Hr
<b>Unit Cost Per Acre</b>	<b>\$411.47</b>	<b>Per Acre</b>

The final regrade operation is required over all disturbed areas except topsoil stockpiles which will be regraded as they are stripped. Final regrading is completed with a 16H grader. The final regrade cost and productivity calculation is presented in Table 4.9.

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**Table 4.9 Final Regrade Cost Per Acre Calculation**

16H Grader Productivity and Cost			
Equipment Productivity			
500 Foot Average Pass			
Distance Per Hr.		9000	Ft/Hr
Width Per Pass		14	Ft
Maneuvering Time Per Pass		0.5	Min
Acres Per Hr.		2.89	Ac/Hr
Efficiency:	83%		
Availability:	80%		
Adjusted Productivity		1.92	Ac/Hr
16H Hourly Cost	\$ 172.30		/Hr
<b>Unit Cost Per Acre</b>		<b>\$89.71</b>	<b>Per Acre</b>

Channel grading is required on all channels to be constructed as part of the PMT. A 20 foot average channel width is assumed. Channel grading is completed with a 16H grader. The channel grading cost and productivity calculation is presented in Table 4.10.

**Table 4.10 Channel Grading Cost Calculation**

16H Grader Channel Grading - Productivity and Cost			
Estimated Length Of Channel Required			
Equipment Productivity			
Length Of Pass	300	Ft	
Forward Speed In 1st Gear	211	Ft/Min	
Reverse Speed In 2nd Gear	282	Ft/Min	
Reposition Time	0.25	Min	
Passes Per Section	4		
Cycle Time Per Section	12	Min	
Productivity	1,507	Ft/Hr	
Equipment Utilization:	83%		
Mechanical Availability:	80%		
Adjusted Productivity	1,001	Ft/Hr	
Required Operating Hours	6	Hr	
	\$ 172.30		/Hr
<b>Function Cost</b>		<b>\$1,033</b>	

Rip Rap placement is assumed to be required on all channel sections steeper than 1.5%. The productivity and cost for loading, hauling and spreading rip rap material using a 992 loader, 10 cubic yard trucks and a D10R is presented in Table 4.11.

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**Table 4.11 Rip Rap Placement Cost Calculation**

Rip Rap Channel Placement			
Estimated Channel Length Requiring Rip Rap			8,889 Ft
Riprap Material Requirement			19,753 CYD
Equipment Costs			
992G	\$ 335.07	/Hr	
10-12 CYD, 6x4 Rear Dump Truck (X2)	\$ 53.57	/Hr	
D10R	\$ 220.12	/Hr	
Equipment Productivity			
Round Trip Distance	15000	Ft	
Avg Speed	10	Mph	
Fixed Time	3	Min	
Cycle Time	20	Min	
Productivity (2 X 10 CYD Trucks)	60	CYD/Hr	
Equipment Utilization	83%		
Mechanical Availability	80%		
Adjusted Productivity	40	CYD/Hr	
Required Operating Hours			
992g (Excess Capacity)	497	Hrs	
10-12 CYD, 6x4 REAR DUMP TRUCK	994	HRS	
D10r (Excess Capacity)	497	Hrs	
<b>Total Cost</b>	<b>\$ 219,751</b>		

### 4.5 Topdressing Removal

Topdressing removal productivities, and ultimately costs, assumed to be performed with truck/loader operations. We assumed that any topdressing removed would be stored directly adjacent to the proposed removal areas and therefore we used 2600 feet and 0% grade for the haul distance and grade for this work. A summary of volumes, haul distances, grades, productivity and costs present in Table 4.12 (equipment productivities are reported on a per unit basis).

**Table 4.12 Topdressing Removal**

TOPDRESSING REMOVAL								
AREA	RESPREAD LOCATION	Average Haul			Productivity (BCY/HR)	Scheduled Hours Req'd	COST (\$/BCY)	TOTAL COST
		Volume (BCY)	Distance (Feet)	Grade (%)				
JUNIPER PIT	SAMES AS REMOVAL AREA	162,950	3,000	2.0%	690	236	\$ 1.77	\$288,876
PINON PIT	SAMES AS REMOVAL AREA	-	-	0.0%	199	-	\$ 1.77	\$ 0
<b>TOTAL (WEIGHTED AVERAGES)</b>		<b>162,950</b>	<b>3,000</b>	<b>2.0%</b>	<b>690</b>	<b>236</b>	<b>\$ 1.77</b>	<b>\$288,876</b>

NOTES

Topdressing from Phase I Bond Release areas will need to be removed so the Juniper Pit Backfilling Plan can be completed. Assumed that the topdressing which is removed will be placed on adjacent areas that have less than 2600 one way haul.

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## 4.6 Topdressing Replacement

As with topdressing removal, replacement productivities and costs, assuming the use of truck/loader fleet, were calculated using Talpac. The volumes and haul distances are based on current stockpile locations and volumes as presented in the 2023 San Juan Mine Annual Report. The haul distance and grade is measured from the centroid of the stockpile to the centroid of the re-spread location. A summary of volumes, haul distances, grades, productivity and costs is presented in Table 4.13 (equipment productivities are reported on a per unit basis).

**Table 4.13 Topdressing Replacement**

Stockpile Designation	Respread Location	Volume (cubic yards)	Avg. Haul Distance (feet)	Grade (Percent%)	Productivity (Cyd / Hour)	Sched. Hours Required	Cost (\$ per BCY)	TOTAL COST
TSS 8	TC1	450,120	8,142	-0.3%	693	650	\$1.77	\$797,968
TSS 7	D1	29,040	4,843	-0.5%	650	45	\$1.56	\$45,403
TSS 7	D2	358,160	2,971	-0.7%	695	516	\$1.46	\$524,096
TSS 28	D3	28,000	1,265	-0.2%	729	38	\$1.39	\$39,033
TSS 22	D3	131,720	5,110	-0.7%	662	199	\$1.54	\$202,209
TSS 22	TC2	43,560	2,184	-1.3%	701	62	\$1.45	\$63,150
TSS 4 NEW	D4	116,160	1,500	-2.6%	673	173	\$1.51	\$175,329
TSS 30	D4	83,000	1,794	-5.0%	713	116	\$1.43	\$118,303
TSS 7	D4	83,173	1,100	-1.3%	650	128	\$1.56	\$130,039
TSS 8	F & I <sup>1</sup>	410,030	2,600	0.0%	760	540	\$1.90	\$777,342
TSS 12	F & I <sup>1</sup>	116,000	2,600	0.0%	760	153	\$1.90	\$219,915
TSS 16	F & I <sup>1</sup>	35,000	2,600	0.0%	760	46	\$1.90	\$66,354
TSS 29	F & I1	3,000	1,100	0.0%	760	4	\$1.90	\$5,687
TSS 31 - 36	F & I <sup>1</sup>	19,130	2,600	0.0%	760	25	\$1.90	\$36,267
TSS 7	F & I <sup>1</sup>	38,627	2,600	0.0%	760	51	\$1.90	\$73,230
TSS 22	F & I <sup>1</sup>	68,720	2,600	0.0%	760	90	\$1.90	\$130,281
TSS8	PD1 <sup>2</sup>	106,480	1,127	0.0%	731	146	\$1.39	\$148,032
Juniper Pit	As Removed <sup>3</sup>	162,950	2,600	0.0%	199	819	\$1.77	\$288,876
Pinon Pit	As Removed <sup>3</sup>	-	2,600	0.0%	199	0	\$1.77	\$0
JUG <sup>4</sup>	SJUG - Main Roads	31,075	2,600	0.0%	760	41	\$1.90	\$58,912
JUG <sup>4</sup>	Gate Roads	101,977	2,600	0.0%	760	134	\$1.90	\$193,331
JUG <sup>4</sup>	Shaft Sites	64,475	1,643	1.2%	228	283	\$1.90	\$122,234
<b>TOTAL (weighted averages)</b>		<b>2,480,397</b>	<b>3,600</b>	<b>-0.4%</b>	<b>669</b>	<b>4,257</b>	<b>\$1.70</b>	<b>\$4,215,991</b>

Notes

Average haul determined as proposed haul route from centroid of stockpile to centroid of spread area. Productivity and costs determined from Talpac

<sup>1</sup> "F & I" is Facilities and Infrastructure areas.

<sup>2</sup> Topsoil placed in Pinon areas from TSS8 (66 acres at south end by Shumway).

<sup>3</sup> Topsoil returned to areas where removed.

<sup>4</sup> Reference Exhibit 6.

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### 4.7 Facilities Removal (SJM)

Facilities removal includes the demolition and disposal of all buildings and facilities for both the surface and underground mining operations. This operation includes office, warehouse and shop buildings, ventilation fan installations, the processing plant, conveyors, stockpiles, fences, power lines and paved areas. Unit costs are taken from RS Means Cost Works 2019 when applicable. Cost details are presented in Tables 4.14 and 4.15.

**Table 4.14 Surface Mine Building and Concrete Demolition Costs**

BUILDING DEMOLITION						
	AREA (SQ. FT.)	VOLUME (CU. FT.)		UNIT COST (\$ / CU. FT.)	TOTAL	
<b>STRUCTURAL STEEL</b>						
EQ WAREHOUSE / TRAILER	3,342	46,788		\$0.34	\$15,988	
CORE SHED	840	16,800		\$0.37	\$6,202	
LEARNING CENTER	7,500	90,000		\$0.37	\$33,225	
WELD / BUCKET SHOP	8,917	401,265		\$0.37	\$148,136	
SHOP / WAREHOUSE / CHANGEROOM	38,529	1,155,870		\$0.37	\$426,715	
ADMINISTRATION / OFFICES (done)	0	0		\$0.37	\$0	
FIELD MAINTENANCE	4,200	59,640		\$0.37	\$22,017	
COAL PREP PLANT (done)	0	448,648		\$0.37	\$165,628	
CONVEYOR TOWERS (done)	-	1,001,000		\$0.37	\$369,541	
CONVEYOR SHAFTS (done)	-	14,074		\$0.37	\$5,196	
OTHER BUILDINGS	689	9,646		\$0.37	\$3,561	
HAZARDOUS WASTE STORAGE	900	500		\$0.37	\$185	
<b>PRE-FAB CONCRETE</b>						
CONVEYOR SHAFTS (done)		0		\$0.37	\$0	
<b>SUBTOTAL BUILDING REMOVAL</b>					<b>\$1,196,395</b>	
<b>CONCRETE SLAB DEMOLITION</b>						
	AREA (SQ. FT.)	SLAB THICKNESS (INCHES)	DEMOLITION UNIT COST (\$ / SQ. FT.)	PERI- METER (FT.)	FOOTING DEMOLITION (\$ / FT.)	TOTAL
EQ WAREHOUSE	3,342	6	\$5.75	213	\$16.44	\$22,705
CORE SHED	840	6	\$5.75	168	\$16.44	\$7,589
LEARNING CENTER	7,500	6	\$5.75	351	\$16.44	\$48,865
WELD / BUCKET SHOP	8,917	24	\$24.84	418	\$16.44	\$228,377
SHOP / WAREHOUSE / CHANGEROOM	38,529	24	\$24.84	1016	\$16.44	\$973,791
ADMINISTRATION / OFFICES (done)	0	6	\$5.75	0	\$16.44	\$0
FIELD MAINTENANCE	4,700	6	\$5.75	334	\$16.44	\$32,497
WASH FACILITY	3,243	24	\$24.84	242	\$16.44	\$84,538
COAL PREP PLANT (done)	0	6	\$5.75	0	\$16.44	\$0
OTHER BUILDINGS	1,168	6	\$5.75	801	\$16.44	\$19,883
HAZARDOUS WASTE STORAGE	900	6	\$5.75	30	\$16.44	\$5,664
SIDEWALKS	15,309	6	\$5.75	0	\$16.44	\$87,960
<b>SUBTOTAL CONCRETE DEMOLITION</b>						<b>\$1,511,870</b>

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Table 4.15 Surface Mine Concrete, Fence, Powerline and Pavement Removal

CONCRETE REMOVAL						
	AREA (SQ. FT.)	SLAB THICKNESS (INCHES)	PERI-METER (FT.)	TOTAL VOLUME (CYD)	DISPOSAL ON-SITE (\$ / CU. YD.)	TOTAL
EQ WAREHOUSE	3,342	6	\$213.00	1020	\$9.80	\$10,000
CORE SHED	840	6	\$168.00	772	\$9.80	\$7,561
LEARNING CENTER	7,500	6	\$351.00	1718	\$9.80	\$16,840
WELD / BUCKET SHOP	8,917	24	\$418.00	2542	\$9.80	\$24,906
SHOP / WAREHOUSE / CHANGEROOM	38,529	24	\$1,016.00	7426	\$9.80	\$72,774
ADMINISTRATION / OFFICES (done)	0	6	\$0.00	0	\$9.80	\$0
FIELD MAINTENANCE	4,700	6	\$334.00	1590	\$9.80	\$15,582
WASH FACILITY	3,243	24	\$242.00	1329	\$9.80	\$13,026
COAL PREP PLANT (done)	0	0	\$0.00	0	\$9.80	\$0
OTHER BUILDINGS	1,168	6	\$801.00	3626	\$9.80	\$35,535
HAZARDOUS WASTE STORAGE	900	6	\$30.00	152	\$9.80	\$1,486
SIDEWALKS	15,309	6	\$0.00	284	\$9.80	\$2,778
<b>SUBTOTAL CONCRETE REMOVAL</b>						<b>\$200,489</b>
FENCE AND POWERLINE REMOVAL						
	LENGTH (FT.)				UNIT COST (\$ / FT)	TOTAL
FENCE	4,260				\$3.40	\$14,469
POWER LINES	47,520				\$2.06	\$97,849
<b>SUBTOTAL FENCE AND POWERLINE REMOVAL</b>						<b>\$112,317</b>
PAVEMENT REMOVAL						
	AREA (SQ. YD.)				UNIT COST (\$ / SQ. YD.)	TOTAL
ACCESS ROAD & PARKING LOTS	24,150				\$3.77	\$91,100
<b>SUBTOTAL PAVEMENT REMOVAL</b>						<b>\$91,100</b>

### 4.8 Facilities Removal (SJDM)

The reclamation bond cost estimate for the San Juan Deep Mine was calculated based on the ‘worst-case scenario’ during the 5 year permit term from 2024 to 2029. The point of maximum liability occurs in 2024 (exists today) for the underground mine area. Since the mine stopped producing 2022 the mine has been sealed and all associated buildings, conveyors, substations, and fences have been removed.

Main access and some support roads associated with the longwall panels still need to be reclaimed as required. It is assumed that mitigation for subsidence has all been completed. The unit operations included in the San Juan Deep Mine portion of the bond are:

- Culvert removals
- Road removals

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- Powerline remediation
- Channel Reconstruction

The power line repair unit operation includes replacing at most 2 power poles for each power line that enters and exits the subsidence area.

The channel reconstruction operation includes grading the subsided portion of channels to eliminate ponding and prepare steepened channels for riprap placement.

### 4.8.1 Cost Details

Cost details for each of the operations required for the San Juan Deep Mine are presented below. The detailed cost calculations are presented in Tables 4.16 through 4.20 below.

**Table 4.16 Underground Mine Facilities Removal Costs Summary**

SAN JUAN DEEP MINE RECLAMATION	
	TOTAL
<b>ACTIVITY</b>	
SEAL OPENINGS	\$0
FACILITIES REMOVAL	\$924,967
UTILITIES SUBSIDENCE MITIGATION	\$25,943
CHANNEL PROTECTION (SUBSIDENCE MITIGATION)	\$244,863
<b>SAN JUAN DEEP MINE DIRECT COST</b>	<b>\$1,195,773</b>

**Table 4.17 Underground Facility Removal**

BUILDING DEMOLITION				
	AREA (SQ. FT.)	VOLUME (CU. FT.)	UNIT COST (\$ / CU. FT.)	TOTAL
<b>STRUCTURAL STEEL</b>				
CULVERTS - 4 @ \$1,800 EACH				\$8,787
<b>SUBTOTAL BUILDING REMOVAL</b>				<b>\$8,787</b>

## SECTION 5

Table 4.17 Underground Facility Removal (Continued)

FACILITIES AREA AND SHAFTS			
	NUMBER	COST PER UNIT	TOTAL
POWERLINES	From Table 4.21		\$25,943
<b>SUBTOTAL UTILITY SUBSIDENCE MITIGATION</b>			<b>\$25,943</b>
CHANNEL REPAIR AND RIP - RAP	From Table 4.23		\$243,830
<b>SUBTOTAL CHANNEL SUBSIDENCE</b>			<b>\$243,830</b>
	TOTAL VOLUME (CYD)	DISPOSAL ON-SITE (\$ / CU. YD.)	TOTAL
<b>GRAVEL REMOVAL AND DISPOSAL</b>			
PRIMARY ACCESS ROAD REMOVAL	46,612	\$ 3.01	\$140,417
GATE ROADS UNGRADED	111,361	\$ 3.31	\$369,016
NEW GATE ROADS - NEXT 5 YEARS	20,164	\$ 3.65	\$73,499
MISCELLANEOUS REGRADE AREAS	15,831	\$ 4.01	\$63,476
<b>SUBTOTAL GRAVEL REMOVAL</b>			<b>\$646,408</b>

Table 4.18 Subsided Utilities Mitigation

UTILITIES SUBSIDENCE MITIGATION				
	DESCRIPTION	LENGTH DISTURBED	MITIGATION REQUIRED	TOTAL
<b>POWERLINES</b>				
FEUS #1 (on Hwy 64)	115 kV two pole	26,000	replace 2 poles	\$10,377
FEUS #2 (from SJGS)	115 kV two pole	5,500 "		\$10,377
EI Paso Gas	single pole	13,000	replace 1 pole	\$5,189
<b>SUBTOTAL POWERLINES</b>				<b>\$25,943</b>
<b>TOTAL UTILITY SUBSIDENCE MITIGATION</b>				<b>\$25,943</b>

## SECTION 5

Table 4.19 Subsided Channel Grading

SAN JUAN DEEP MINE RECLAMATION		
CHANNEL GRADING		
TOTAL LENGTH OF CHANNEL	6,000	FT
EQUIPMENT		
EQUIPMENT PRODUCTIVITY		
LENGTH OF PASS	300	FT
FORWARD SPEED IN 1ST GEAR	211	FT/MIN
REVERSE SPEED IN 2ND GEAR	282	FT/MIN
REPOSITION TIME	0	MIN
PASSES PER SECTION	4	
CYCLE TIME PER SECTION	12	MIN
PRODUCTIVITY	1507	FT/HR
EQUIPMENT UTILIZATION	83%	
MECHANICAL AVAILABILITY	80%	
ADJUSTED PRODUCTIVITY	1001	FT/HR
REQUIRED OPERATING HOURS	6	HR
16H COST	\$172.30	\$/HR
<b>TOTAL COST</b>	<b>\$1,033</b>	

Table 4.20 Subsided Channel Rip Rap Placement

SAN JUAN DEEP MINE RECLAMATION		
RIP RAP PLACEMENT		
RIPRAP MATERIAL REQUIREMENT	8,889	CYD
EQUIPMENT		
EQUIPMENT COSTS		
992G	335	/HR
10-12 CYD, 6x4 REAR DUMP TRUCK (x2)	54	/HR
D10R	220	/HR
EQUIPMENT PRODUCTIVITY		
ROUND TRIP DISTANCE	26,400	FT
AVG SPEED	10	MPH
FIXED TIME	3	MIN
CYCLE TIME	33	MIN
PRODUCTIVITY (2 x 10 CYD TRUCKS)	36	CYD/HR
EQUIPMENT UTILIZATION	83%	
MECHANICAL AVAILABILITY	80%	
ADJUSTED PRODUCTIVITY	24	CYD/HR
REQUIRED OPERATING HOURS		
992G (EXCESS CAPACITY)	368	HRS
10-12 CYD, 6x4 REAR DUMP TRUCK (x2)	736	HRS
D10R (EXCESS CAPACITY)	368	HRS
<b>TOTAL COST</b>	<b>\$243,830</b>	

## SECTION 5

### 5. INDIRECT COSTS

#### 5.1 Assumptions

Indirect costs are applied to direct costs calculated in Section 4 (above) and to a supplemental amount (for mine plan alterations).

Indirect costs, from MMD in February 2024, are assumed to comprise of the following and are based on the OSM guidelines:

- Mobilization costs, estimated at 2% of total direct costs
- A contingency of 3% of total direct costs
- An engineering re-design fee of 3%
- An assumed profit and overhead charge from the parties charged with performing closure work, estimated at 12.6% of total direct costs
- An assumed reclamation and management fee, estimated at 3% of total direct costs

#### 5.2 Costs

Indirect costs, as described above, are summarized in Table 5.1.

**Table 5.1 Summary of Indirect Costs (\$ X 1000)**

Indirect Costs		
Mobilization	2.0 % Direct	\$746
Contingency	3.0 % Direct	\$1,120
Engineering Redesign Fee	3.0 % Direct	\$1,127
Profit And Overhead	12.6 % Direct	\$4,702
Reclamation Management Fee	3.0 % Direct	\$1,120
<b>Subtotal Indirect Cost</b>		<b>\$8,814</b>

#### 5.3 Total Costs

The total of direct and indirect costs, which comprises the Bond estimate for the 2024 – 2029 period for San Juan Mine, is summarized in Table 5.2. In addition to the indirect costs above it is being assumed that the total costs (direct, supplemental, and indirect) will be subject to local gross receipts tax (State of New Mexico and San Juan County) of 6.5000% (see Table 5.2).

## SECTION 5

Table 5.2 Summary of Bond Total Costs

COST SUMMARY (\$ x 1000)		
<b>Direct Costs</b>		
Drill & Blast		\$0
Dozer Backfilling		\$13,259
Scraper Backfilling		\$0
Truck/loader Backfilling		\$10,878
Support Backfilling		\$0
Grading And Revegetation		\$4,368
Topdressing Removal		\$289
Topdressing Replacement		\$4,216
Facilities Removal		\$3,112
San Juan Deep Mine Facilities Removal		\$1,196
<b>Subtotal Direct Cost</b>		<b>\$37,318</b>
Supplemental Amount @ 1.30%		\$485
<b>Indirect Costs</b>		
Mobilization	2.0 % Direct	\$746
Contingency	3.0 % Direct	\$1,120
Engineering Redesign Fee	3.0 % Direct	\$1,127
Profit And Overhead	12.6 % Direct	\$4,702
Reclamation Management Fee	3.0 % Direct	\$1,120
<b>Subtotal Indirect Cost</b>		<b>\$8,814</b>
Gross Receipts Tax (NM & SJC @ 6.5000%)		\$3,030
<b>Total Estimated Cost</b>		<b>\$49,647</b>

## **SECTION 6**

### **6. REFERENCES**

Caterpillar Performance Handbook  
Caterpillar Inc.  
Edition 37, October 2007

Means Heavy Construction Cost Data 2019  
R.S. Means Company, Inc.

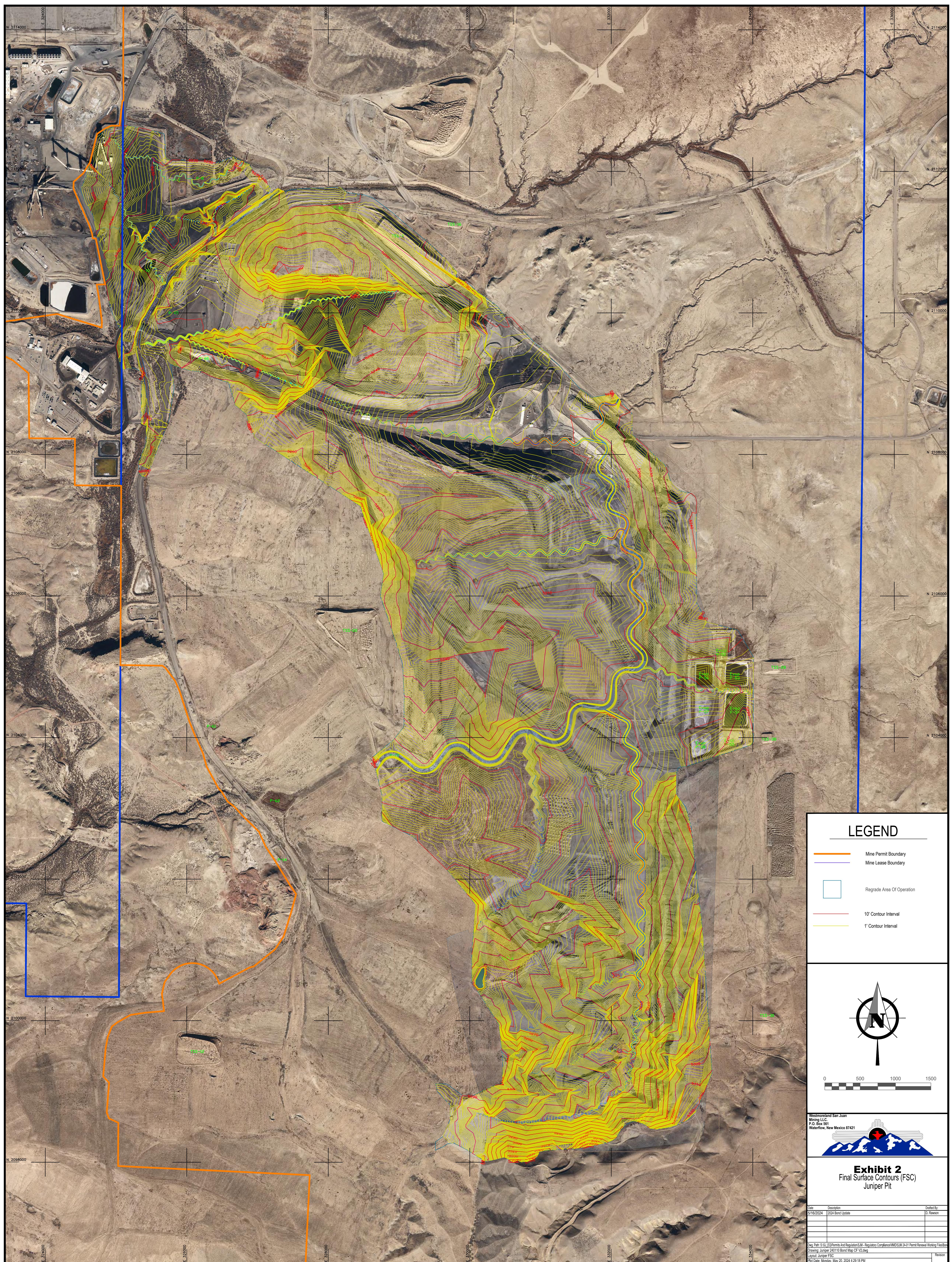
[www.bls.gov/cpi](http://www.bls.gov/cpi)

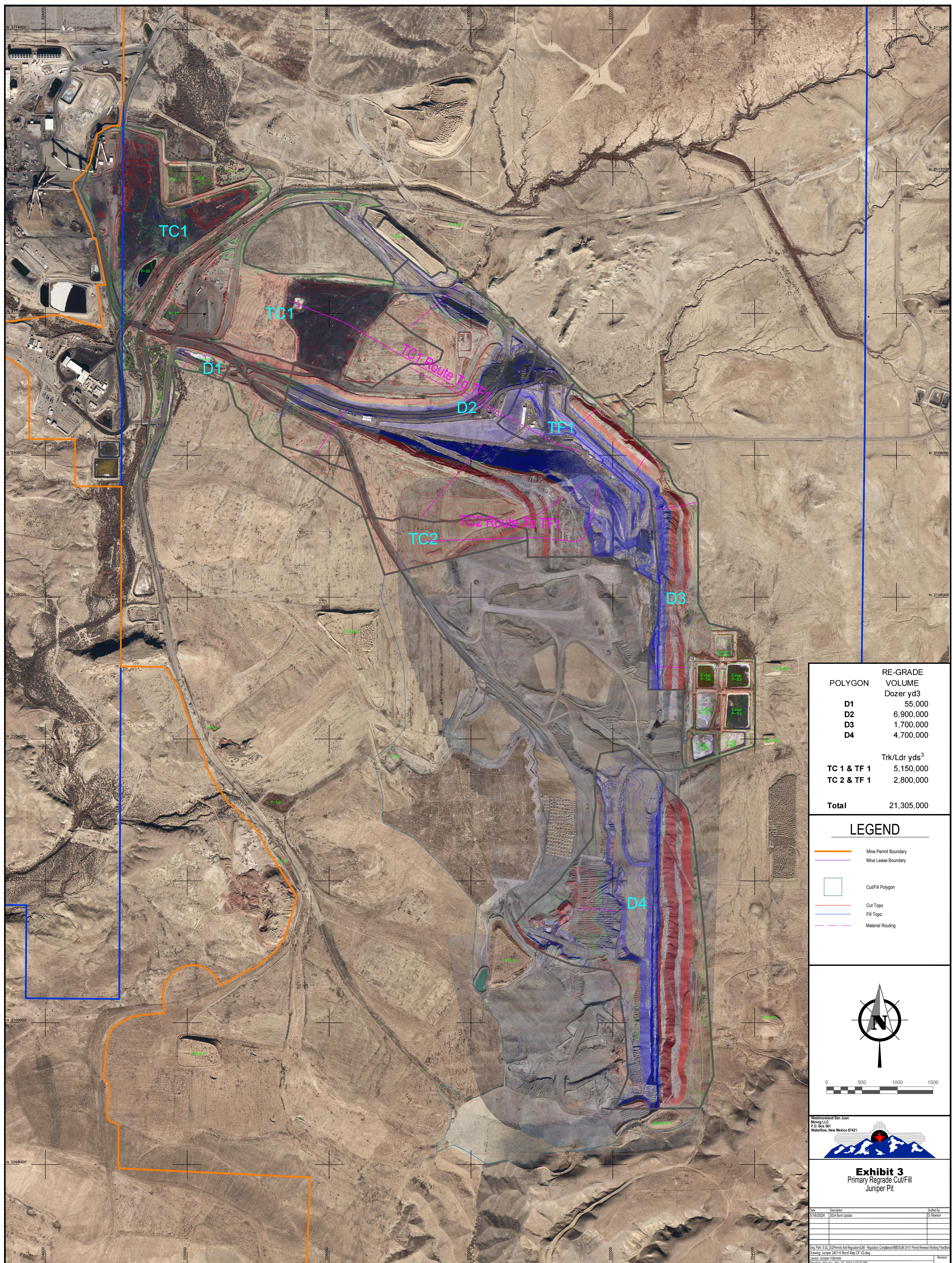
# **Appendix A**

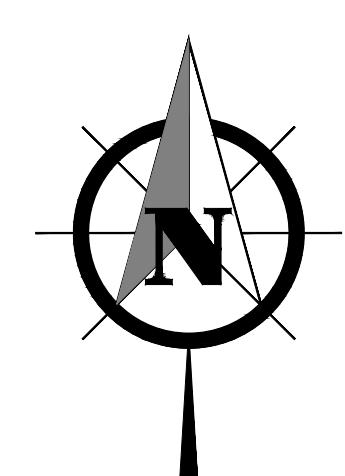
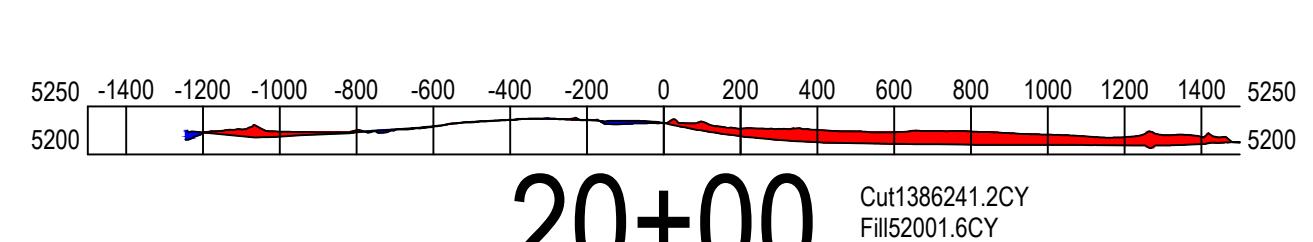
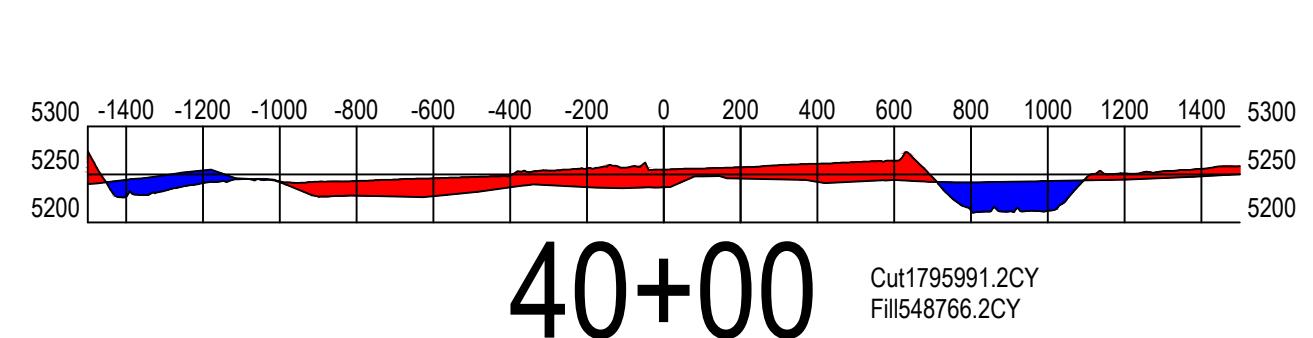
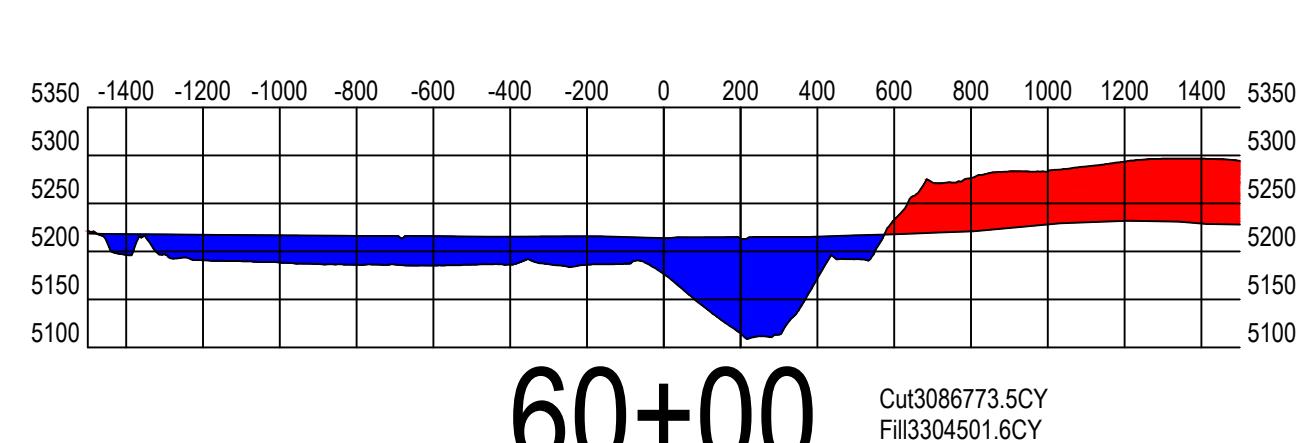
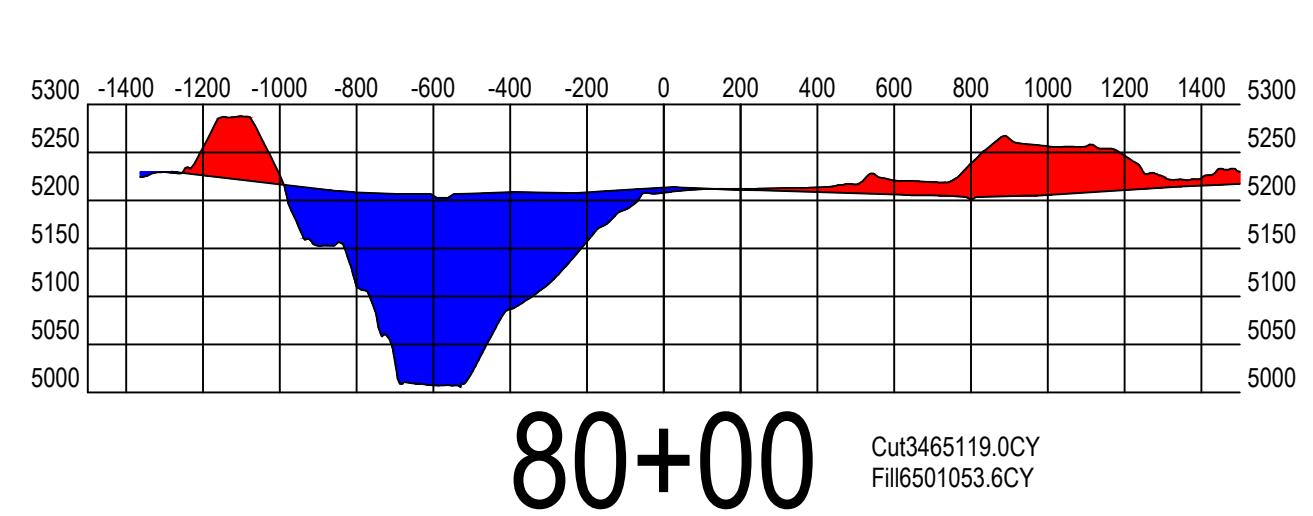
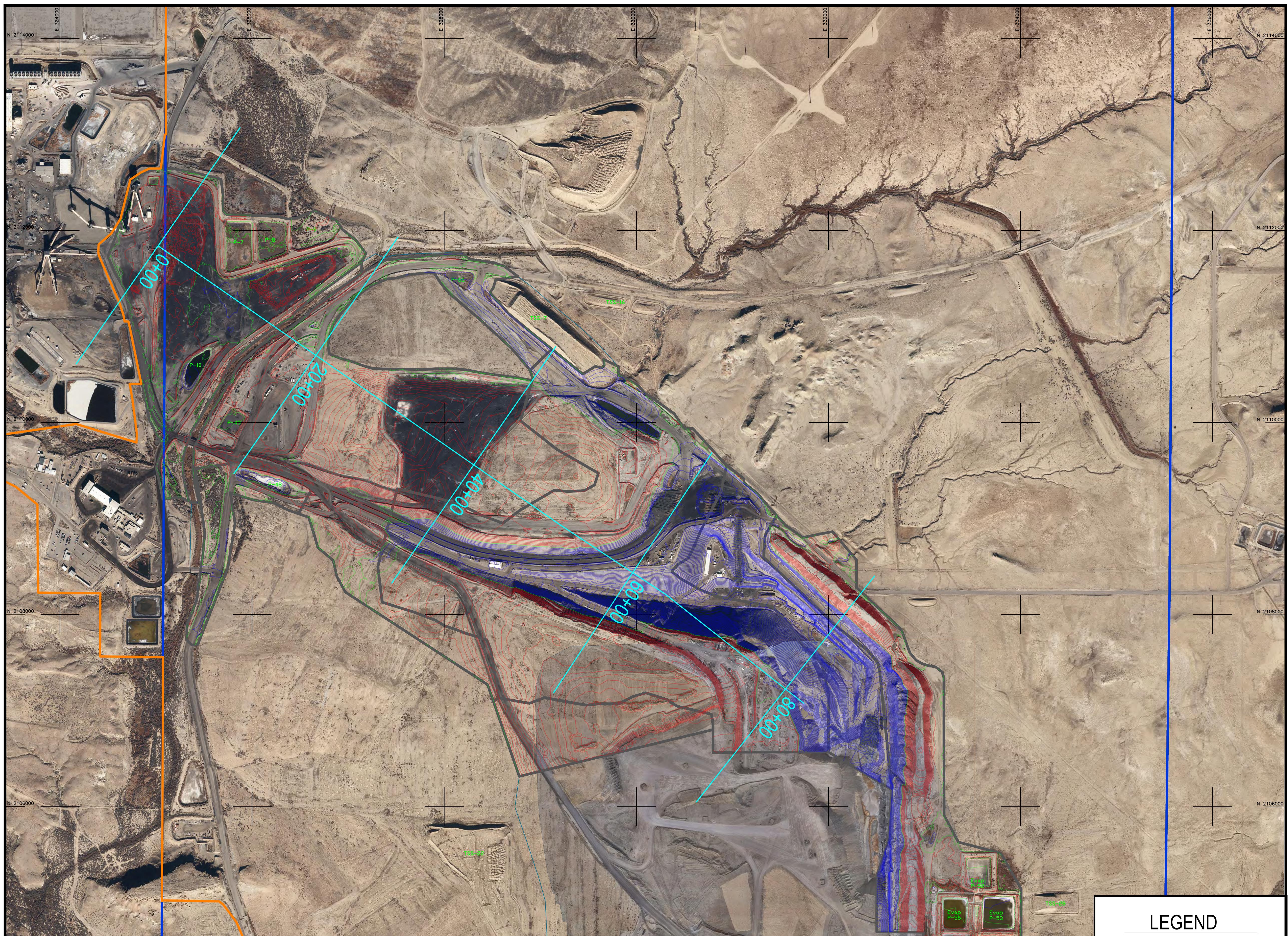
## **2024 Bond**

### **Exhibits**

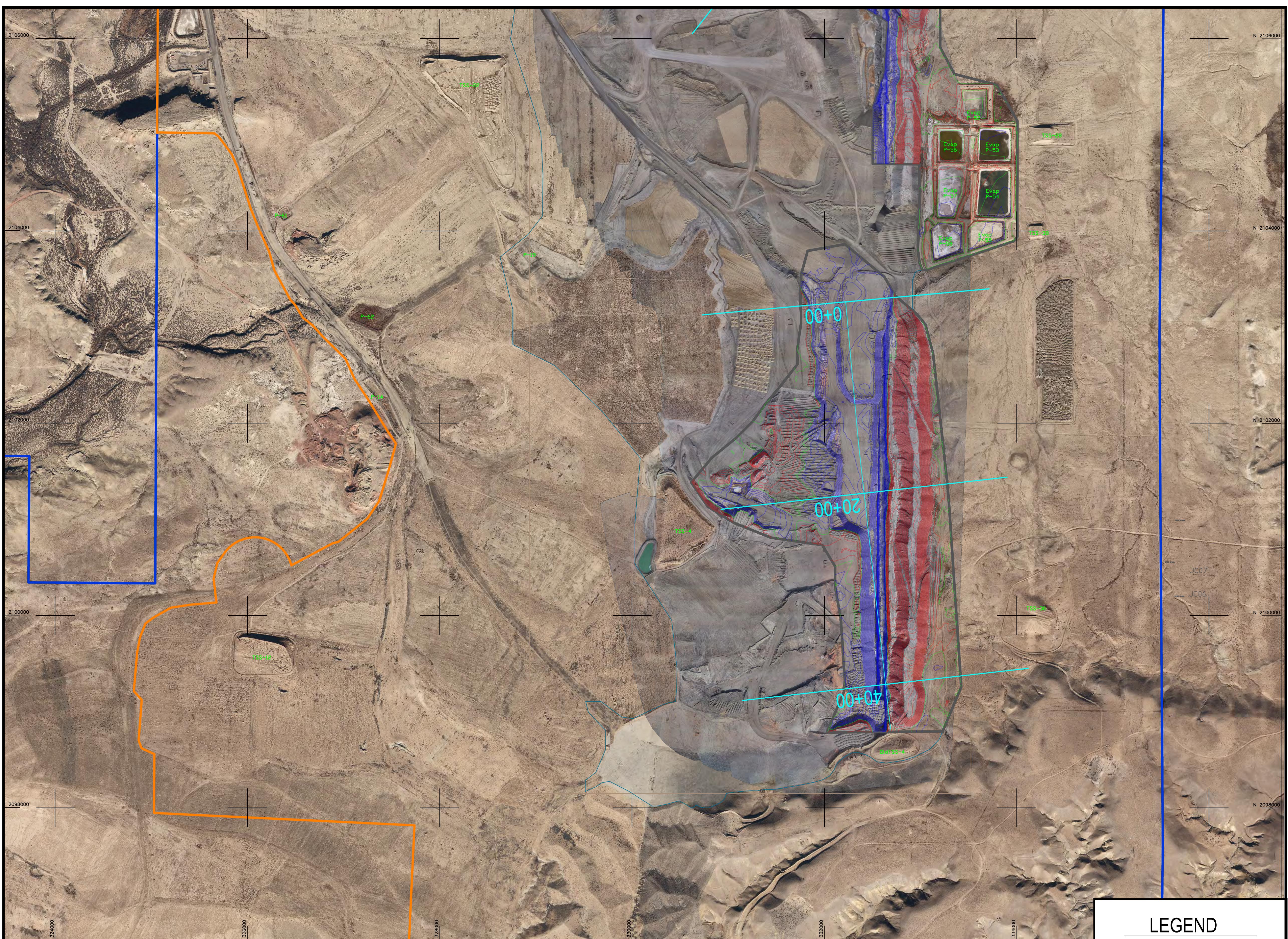








**Westmoreland San Juan  
Mining LLC,  
P.O. Box 561  
Waterflow, New Mexico 87421**



### LEGEND

<span style="background-color: red; width: 10px; height: 10px;"></span>	Section Area In Cut
<span style="background-color: blue; width: 10px; height: 10px;"></span>	Section Area In Fill
<span style="color: cyan;">—</span>	Section Line

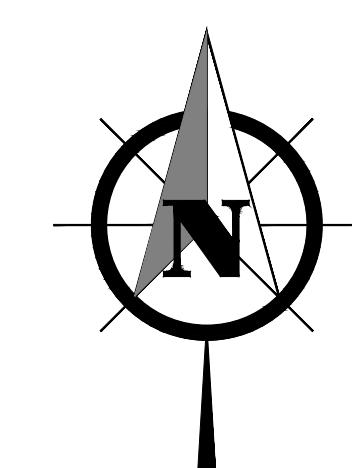
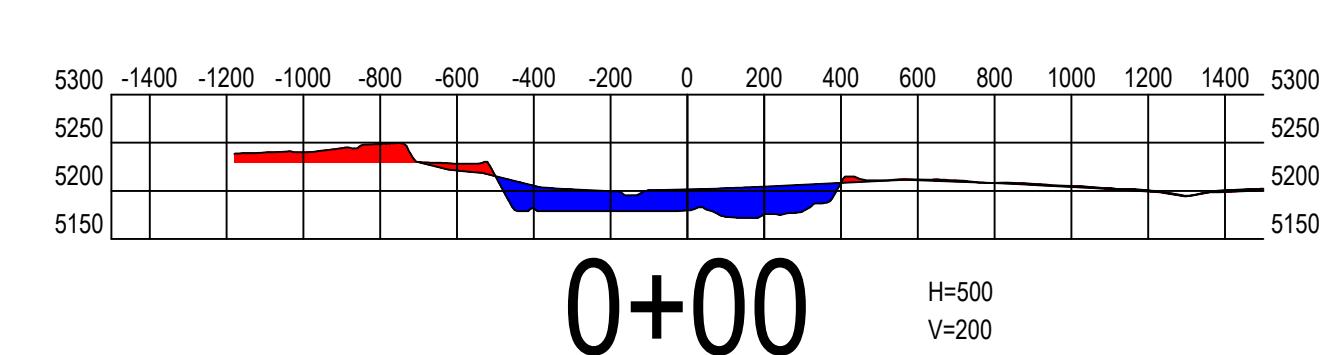
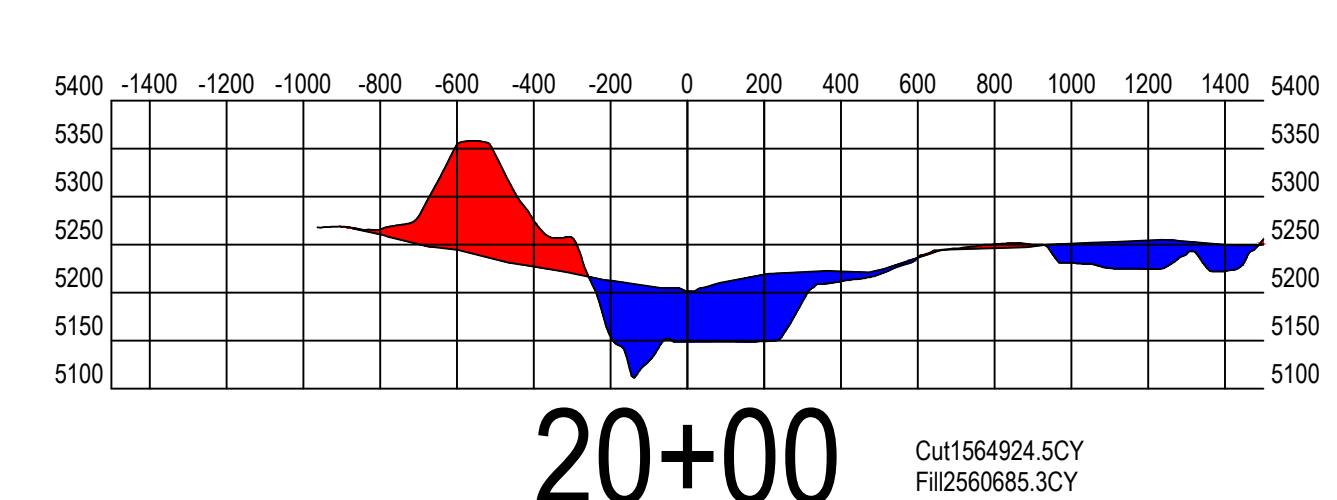
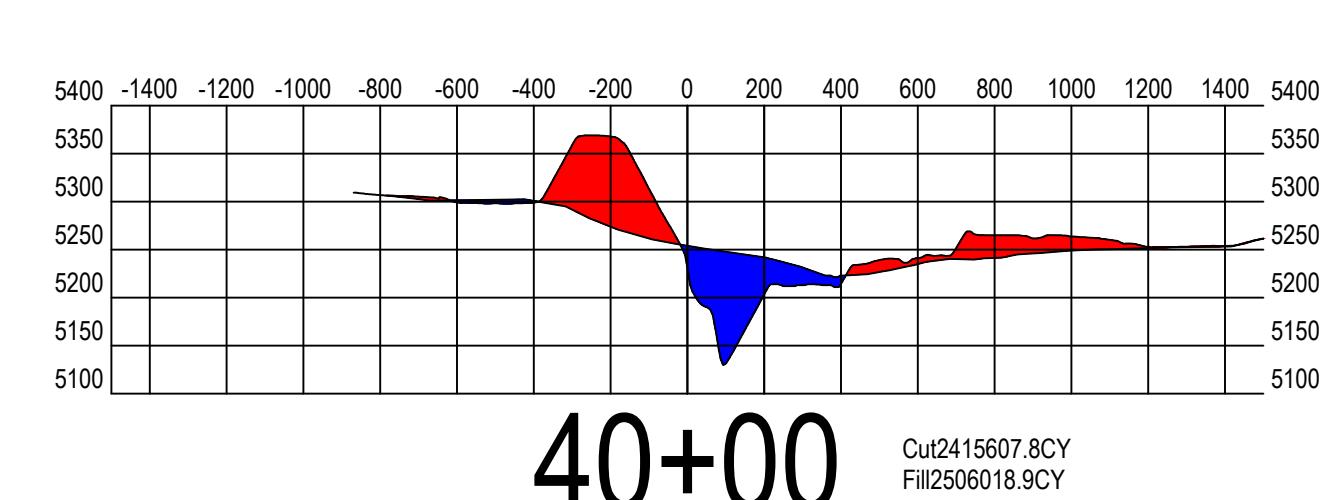
— Mine Permit Boundary

— Mine Lease Boundary

— Cut/Fill Polygon

— Cut Topo

— Fill Topo



0 500 1000 1500

Westminland San Juan  
Mining  
P.O. Box 361  
Waterflow, New Mexico 87421


**Exhibit 4B**  
Primary Regrade Section  
Juniper Pit South

Date: 0/16/2024 Description: 2024 Bond Update Drafted By: G. Rawson

Date: 0/16/2024 Description: Drawing Juniper 240110 Bond Map CF V2.dwg Revision: 1

Layout: Juniper Section South

Last Date: Monday, May 20, 2024 4:32:25 PM



Legend

- SJM 2024 Bond TS Areas
  - Juniper Dist - Redist 2024-2029
  - UG Disturbance Evap Ponds
  - UG Disturbance TS From Pile
  - Pinon Pit Disturbance
  - Facilities And Roads
  - Juniper Pit Disturbed
- SJM Ponds & Stockpiles
  - Active ESS
  - Active Pond
  - Active TSS
- San Juan Mine Boundaries
  - Lease Boundary, Active
  - Permit Boundary

REVISION DESCRIPTION: (None)

EXHIBIT 6  
WESTMORELAND SAN JUAN MINING LLC  
SAN JUAN MINE  
P.O.BOX 561 WATERFLOWS NEW MEXICO 82416PHONE 505-598-2000FAX 505-598-2026

San Juan Mine  
Areas For Topsoil  
CY2024 Bond Estimate

PREPARED BY: DJR DRAWN BY: DJR PAPER SIZE: ARCH E  
APPROVED BY: DJR DATE: 5/16/2024

# **Appendix B**

## **Talpac Runs**

### **2024 Bond**

<b>Haul System</b>	Haul system 01	<b>Haul Route</b>	TC1 JF1
<b>Material</b>	Clay with Gravel - Dry	<b>Effective Working Time</b>	4 days/week x 2 10 hour shift
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-07 14:15

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 90.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 97.50
Average Bucket Volume	lcy 15.68
Average Bucket Load	tn 20.42
Loader Operating Hours Per Year	h 3,213.00
Operating Shifts Per Year	357.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	lcy/h 949.21
Loader Production Per Shift	lcy 8,542.90
Loader Production Per Year	lcy 3,049,813.99
Loader Wait Time Per Operating Hour	min 2.87

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 90.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 78.38
Fleet Operating Hours Per Year	h 3,213.00
Hauler Average Payload	tn 102.08
Hauler Production Per Operating Hour	lcy/h 351.56
Hauler Production Per Year	lcy 1,016,604.66
Hauler Average Load Queue Time	min 1.96
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 6.01
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 12.63
Hauler Fleet Size	3.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	lcy 3,049,813.99
Excavation Target	lcy 5,400,000.00
Calendar Time to Move Excavation Target	days 646.27
Shifts to Move Excavation Target	shift 632.10
	s
Loader Hours to Move Target	h 5,688.94
Total Hauler Hours to Move Target	h 15,360.13
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/lcy 0.00
Fleet Fuel Per Operating Hour	US. 0.00
	gal/
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. 0.00
	gal/
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/lcy 0.00
Fleet Electricity Cost	\$/h 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	117.87	0.00	15.56	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	3.17	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	29.70	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
87	835.02	-1.20	0.00	2.00	None	0.00	36.07	0.00	4.76	28.26	28.26	Rimpull	TopSpeed	Rimpull	15.78	0.00	0.00	0.00	0.00	
88	2,386.46	-3.77	0.00	2.00	None	0.00	55.26	0.00	7.29	40.36	9.14	Retard	TopSpeed	Rimpull	29.45	0.00	0.00	0.00	22.59	
89	592.71	-11.03	0.00	2.00	None	0.00	44.19	0.00	5.83	9.15	9.14	Retard	TopSpeed	Rimpull	9.15	0.00	0.00	0.00	0.00	
90	480.34	-10.47	0.00	2.00	None	0.00	35.76	0.00	4.72	9.16	9.15	Rimpull	TopSpeed	Rimpull	9.16	0.00	0.00	0.00	0.00	
91	326.54	-7.68	0.00	2.00	None	0.00	24.07	0.00	3.18	15.79	0.00	FinalSpeed	TopSpeed	Rimpull	9.25	0.00	0.00	0.00	0.00	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	2.38	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	1.58	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
91	326.54	7.68	0.00	2.00	None	0.00	22.38	0.00	2.95	17.41	17.41	Rimpull	TopSpeed	Rimpull	9.95	0.00	0.00	0.00	69.25	
90	480.34	10.47	0.00	2.00	None	0.00	21.04	0.00	2.78	17.41	14.83	Retard	TopSpeed	Rimpull	15.56	0.00	0.00	0.00	100.00	
89	592.71	11.03	0.00	2.00	None	0.00	27.61	0.00	3.64	14.83	14.63	Rimpull	TopSpeed	Rimpull	14.64	0.00	0.00	0.00	100.00	
88	2,386.46	3.77	0.00	2.00	None	0.00	59.44	0.00	7.85	31.72	31.72	Rimpull	TopSpeed	Rimpull	27.37	0.00	0.00	0.00	99.09	
87	835.02	1.20	0.00	2.00	None	0.00	34.96	0.00	4.61	32.06	0.00	FinalSpeed	TopSpeed	Rimpull	16.29	0.00	0.00	0.00	1.61	

<b>Haul System</b>	Haul system 02	<b>Haul Route</b>	TC2 JF1B
<b>Material</b>	Clay with Gravel - Dry	<b>Effective Working Time</b>	4 days/week x 2 10 hour shift
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-07 14:15

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 90.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 97.50
Average Bucket Volume	lcy 15.68
Average Bucket Load	tn 20.42
Loader Operating Hours Per Year	h 3,213.00
Operating Shifts Per Year	357.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	lcy/h 870.84
Loader Production Per Shift	lcy 7,837.52
Loader Production Per Year	lcy 2,797,994.48
Loader Wait Time Per Operating Hour	min 7.05

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 90.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 78.38
Fleet Operating Hours Per Year	h 3,213.00
Hauler Average Payload	tn 102.08
Hauler Production Per Operating Hour	lcy/h 483.80
Hauler Production Per Year	lcy 1,398,997.24
Hauler Average Load Queue Time	min 0.11
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 4.39
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 9.15
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	lcy 2,797,994.48
Excavation Target	lcy 2,800,000.00
Calendar Time to Move Excavation Target	days 365.26
Shifts to Move Excavation Target	shift 357.26
	s
Loader Hours to Move Target	h 3,215.30
Total Hauler Hours to Move Target	h 5,787.55
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/lcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
	lb/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
	gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/lcy 0.00
Fleet Electricity Cost	\$/h 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	6.73	0.00	1.23	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.37	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	40.98	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
92	1,477.95	0.14	0.00	2.00	None	0.00	54.55	0.00	9.93	28.20	28.20	Rimpull	TopSpeed	Rimpull	18.47	0.00	0.00	0.00	0.00	
93	646.48	-1.24	0.00	2.00	None	0.00	20.32	0.00	3.70	29.22	12.40	Retard	TopSpeed	Rimpull	21.69	0.00	0.00	0.00	0.00	
94	117.05	-10.31	0.00	2.00	None	0.00	6.90	0.00	1.26	12.41	9.13	Retard	TopSpeed	Rimpull	11.57	0.00	0.00	0.00	0.00	
96	605.13	-11.65	0.00	2.00	None	0.00	45.18	0.00	8.23	9.13	9.13	Retard	TopSpeed	Rimpull	9.13	0.00	0.00	0.00	0.00	
95	199.73	-10.06	0.00	2.00	None	0.00	18.10	0.00	3.30	12.41	0.00	FinalSpeed	TopSpeed	Rimpull	7.52	0.00	0.00	0.00	0.00	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.28	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.19	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
95	199.73	10.06	0.00	2.00	None	0.00	17.32	0.00	3.15	14.29	14.29	Rimpull	TopSpeed	Rimpull	7.86	0.00	0.00	0.00	0.00	
96	605.13	11.65	0.00	2.00	None	0.00	29.10	0.00	5.30	14.29	14.16	Rimpull	TopSpeed	Rimpull	14.18	0.00	0.00	0.00	100.00	
94	117.05	10.31	0.00	2.00	None	0.00	5.45	0.00	0.99	14.85	14.85	Rimpull	TopSpeed	Rimpull	14.64	0.00	0.00	0.00	100.00	
93	646.48	1.24	0.00	2.00	None	0.00	18.81	0.00	3.43	31.04	31.04	Rimpull	TopSpeed	Rimpull	23.43	0.00	0.00	0.00	0.00	
92	1,477.95	-0.14	0.00	2.00	None	0.00	47.64	0.00	8.68	37.26	0.00	FinalSpeed	TopSpeed	Rimpull	21.15	0.00	0.00	0.00	16.07	

<b>Haul System</b>	Haul system 09	<b>Haul Route</b>	TSS 4 - D4C
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:01

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	bcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 764.61
Loader Production Per Shift	bcy 6,881.49
Loader Production Per Year	bcy 2,319,060.87
Loader Wait Time Per Operating Hour	min 6.21

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	bcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 449.77
Hauler Production Per Year	bcy 1,159,530.44
Hauler Average Load Queue Time	min 1.45
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 2.36
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 8.45
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,319,060.87
Excavation Target	bcy 66,000.00
Calendar Time to Move Excavation Target	days 10.39
Shifts to Move Excavation Target	shift 9.59
	s
Loader Hours to Move Target	h 86.32
Total Hauler Hours to Move Target	h 146.74
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	86.94	0.00	17.14	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.73	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	44.35	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
218	1,671.22	-3.71	0.00	2.00	None	0.00	69.93	0.00	13.79	32.59	0.00	FinalSpeed	TopSpeed	Rimpull	16.29	0.00	0.00	0.00	19.18	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.55	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.37	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
218	1,671.22	3.71	0.00	2.00	None	0.00	71.42	0.00	14.08	28.41	0.00	FinalSpeed	TopSpeed	Rimpull	15.95	0.00	0.00	0.00	44.55	

<b>Haul System</b>	Haul system 07	<b>Haul Route</b>	TSS 4O - D4A
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	5 days/week, x1 8hr shift/day
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:01

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 100.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	bcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 2,088.00
Operating Shifts Per Year	261.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 625.74
Loader Production Per Shift	bcy 5,005.93
Loader Production Per Year	bcy 1,306,547.95
Loader Wait Time Per Operating Hour	min 18.35

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 100.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	bcy 70.08
Fleet Operating Hours Per Year	h 2,088.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 625.74
Hauler Production Per Year	bcy 1,306,547.95
Hauler Average Load Queue Time	min 0.00
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 1.75
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 6.40
Hauler Fleet Size	1.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 1,306,547.95
Excavation Target	bcy 50,000.00
Calendar Time to Move Excavation Target	days 13.97
Shifts to Move Excavation Target	shift 9.99
	s
Loader Hours to Move Target	h 79.91
Total Hauler Hours to Move Target	h 79.91
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	0.21	0.00	0.06	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	6.25	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	58.55	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
216	941.66	-1.59	0.00	2.00	None	0.00	52.56	0.00	13.68	24.09	0.00	FinalSpeed	TopSpeed	Rimpull	12.21	0.00	0.00	0.00	32.48	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	4.68	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	3.12	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
216	941.66	1.59	0.00	2.00	None	0.00	52.49	0.00	13.66	24.46	0.00	FinalSpeed	TopSpeed	Rimpull	12.23	0.00	0.00	0.00	25.55	

<b>Haul System</b>	Haul system 02	<b>Haul Route</b>	TSS 7 - D1
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:00

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	lcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 688.22
Loader Production Per Shift	bcy 6,194.01
Loader Production Per Year	bcy 2,087,379.72
Loader Wait Time Per Operating Hour	min 10.93

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 404.84
Hauler Production Per Year	bcy 1,043,689.86
Hauler Average Load Queue Time	min 0.05
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 4.67
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 9.37
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,087,379.72
Excavation Target	bcy 29,000.00
Calendar Time to Move Excavation Target	days 5.07
Shifts to Move Excavation Target	shift 4.68
	s
Loader Hours to Move Target	h 42.14
Total Hauler Hours to Move Target	h 71.63
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	3.09	0.00	0.55	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.27	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	40.01	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
198	834.20	-0.90	0.00	2.00	None	0.00	36.19	0.00	6.43	27.54	26.59	Retard	TopSpeed	Rimpull	15.72	0.00	0.00	0.00	0.00	
199	161.42	1.55	0.00	2.00	None	0.00	4.49	0.00	0.80	26.59	22.40	FinalSpeed	TopSpeed	Rimpull	24.49	0.00	0.00	0.00	0.00	
194	352.07	-1.42	0.00	2.00	None	0.00	9.39	0.00	1.67	28.36	28.36	Rimpull	TopSpeed	Rimpull	25.55	0.00	0.00	0.00	100.00	
195	580.66	-0.86	0.00	2.00	None	0.00	13.29	0.00	2.36	31.59	27.18	FinalSpeed	TopSpeed	Rimpull	29.79	0.00	0.00	0.00	64.45	
196	225.97	0.00	0.00	2.00	None	0.00	5.54	0.00	0.98	28.43	28.43	Rimpull	TopSpeed	Rimpull	27.82	0.00	0.00	0.00	100.00	
197	378.71	1.32	0.00	2.00	None	0.00	9.19	0.00	1.63	28.43	27.78	Retard	TopSpeed	Rimpull	28.09	0.00	0.00	0.00	100.00	
200	1,933.96	-0.83	0.00	2.00	None	0.00	42.21	0.00	7.51	36.54	21.84	Retard	TopSpeed	Rimpull	31.24	0.00	0.00	0.00	62.63	
201	189.58	0.53	0.00	2.00	None	0.00	6.95	0.00	1.24	21.84	15.37	Retard	TopSpeed	Rimpull	18.61	0.00	0.00	0.00	0.00	
202	121.87	0.00	0.00	2.00	None	0.00	6.82	0.00	1.21	15.37	9.02	Retard	TopSpeed	Rimpull	12.19	0.00	0.00	0.00	0.00	
203	63.97	0.00	0.00	2.00	None	0.00	9.67	0.00	1.72	9.02	0.00	FinalSpeed	TopSpeed	Rimpull	4.51	0.00	0.00	0.00	0.00	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.20	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.13	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
203	63.97	0.00	0.00	2.00	None	0.00	9.67	0.00	1.72	9.02	9.02	MaximumAcc...	TopSpeed	Rimpull	4.51	0.00	0.00	0.00	16.79	
202	121.87	0.00	0.00	2.00	None	0.00	6.82	0.00	1.21	15.37	15.37	MaximumAcc...	TopSpeed	Rimpull	12.19	0.00	0.00	0.00	40.38	
201	189.58	-0.53	0.00	2.00	None	0.00	6.95	0.00	1.24	21.84	21.84	MaximumAcc...	TopSpeed	Rimpull	18.61	0.00	0.00	0.00	55.66	
200	1,933.96	0.83	0.00	2.00	None	0.00	38.89	0.00	6.92	39.69	33.43	FinalSpeed	TopSpeed	Rimpull	33.90	0.00	0.00	0.00	81.02	
197	378.71	-1.32	0.00	2.00	None	0.00	7.50	0.00	1.33	36.23	32.03	Retard	TopSpeed	Rimpull	34.41	0.00	0.00	0.00	35.61	
196	225.97	0.00	0.00	2.00	None	0.00	5.20	0.00	0.93	32.03	27.18	FinalSpeed	TopSpeed	Rimpull	29.61	0.00	0.00	0.00	0.00	
195	580.66	0.86	0.00	2.00	None	0.00	12.70	0.00	2.26	33.95	30.81	Retard	TopSpeed	Rimpull	31.18	0.00	0.00	0.00	73.45	
194	352.07	1.42	0.00	2.00	None	0.00	9.02	0.00	1.60	30.81	22.40	FinalSpeed	TopSpeed	Rimpull	26.60	0.00	0.00	0.00	0.00	
199	161.42	-1.55	0.00	2.00	None	0.00	4.49	0.00	0.80	26.59	26.59	MaximumAcc...	TopSpeed	Rimpull	24.49	0.00	0.00	0.00	58.40	
198	834.20	0.90	0.00	2.00	None	0.00	35.28	0.00	6.27	29.53	0.00	FinalSpeed	TopSpeed	Rimpull	16.12	0.00	0.00	0.00	10.14	

<b>Haul System</b>	Haul system 03	<b>Haul Route</b>	TSS 7 - D2
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:00

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	lcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 734.94
Loader Production Per Shift	bcy 6,614.50
Loader Production Per Year	bcy 2,229,087.61
Loader Wait Time Per Operating Hour	min 7.62

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 432.32
Hauler Production Per Year	bcy 1,114,543.80
Hauler Average Load Queue Time	min 0.57
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 3.51
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 8.73
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,229,087.61
Excavation Target	bcy 358,000.00
Calendar Time to Move Excavation Target	days 58.62
Shifts to Move Excavation Target	shift 54.12
	s
Loader Hours to Move Target	h 487.11
Total Hauler Hours to Move Target	h 828.09
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	34.23	0.00	6.53	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.58	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	42.94	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
206	987.75	0.00	0.00	2.00	None	0.00	42.03	0.00	8.02	25.37	20.62	FinalSpeed	TopSpeed	Rimpull	16.02	0.00	0.00	0.00	0.00	
207	320.65	3.43	0.00	2.00	None	0.00	11.27	0.00	2.15	20.62	18.46	Retard	TopSpeed	Rimpull	19.39	0.00	0.00	0.00	100.00	
204	1,108.00	-1.94	0.00	2.00	None	0.00	27.56	0.00	5.26	33.21	26.53	Retard	TopSpeed	Rimpull	27.41	0.00	0.00	0.00	73.60	
205	553.89	-1.72	0.00	2.00	None	0.00	28.47	0.00	5.43	26.53	0.00	FinalSpeed	TopSpeed	Rimpull	13.27	0.00	0.00	0.00	0.00	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.43	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.29	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
205	553.89	1.72	0.00	2.00	None	0.00	28.47	0.00	5.43	26.46	26.46	Rimpull	TopSpeed	Rimpull	13.27	0.00	0.00	0.00	55.64	
204	1,108.00	1.94	0.00	2.00	None	0.00	24.09	0.00	4.60	34.92	28.86	Retard	TopSpeed	Rimpull	31.36	0.00	0.00	0.00	73.01	
207	320.65	-3.43	0.00	2.00	None	0.00	8.84	0.00	1.69	28.86	20.62	FinalSpeed	TopSpeed	Rimpull	24.74	0.00	0.00	0.00	0.00	
206	987.75	0.00	0.00	2.00	None	0.00	40.08	0.00	7.65	28.99	0.00	FinalSpeed	TopSpeed	Rimpull	16.80	0.00	0.00	0.00	18.02	

<b>Haul System</b>	Haul system 11	<b>Haul Route</b>	TSS 8 PD 1
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-07 12:08

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	lcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 773.51
Loader Production Per Shift	bcy 6,961.58
Loader Production Per Year	bcy 2,346,052.85
Loader Wait Time Per Operating Hour	min 5.50

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 455.01
Hauler Production Per Year	bcy 1,173,026.43
Hauler Average Load Queue Time	min 1.75
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 1.94
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 8.34
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,346,052.85
Excavation Target	bcy 62,920.00
Calendar Time to Move Excavation Target	days 9.79
Shifts to Move Excavation Target	shift 9.04
	s
Loader Hours to Move Target	h 81.34
Total Hauler Hours to Move Target	h 138.28
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	105.20	0.00	21.02	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.80	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	44.97	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
223	1,126.68	0.00	0.00	2.00	None	0.00	58.75	0.00	11.74	23.97	0.00	FinalSpeed	TopSpeed	Rimpull	13.08	0.00	0.00	0.00	44.31	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.60	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.40	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
223	1,126.68	0.00	0.00	2.00	None	0.00	57.42	0.00	11.48	26.76	0.00	FinalSpeed	TopSpeed	Rimpull	13.38	0.00	0.00	0.00	22.06	

<b>Haul System</b>	Haul system 01	<b>Haul Route</b>	TSS 8 - TC1
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:00

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	bcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 733.81
Loader Production Per Shift	bcy 6,604.27
Loader Production Per Year	bcy 2,225,638.63
Loader Wait Time Per Operating Hour	min 7.47

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	bcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 288.14
Hauler Production Per Year	bcy 742,850.59
Hauler Average Load Queue Time	min 0.56
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 7.87
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 13.08
Hauler Fleet Size	3.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,225,638.63
Excavation Target	bcy 402,000.00
Calendar Time to Move Excavation Target	days 65.93
Shifts to Move Excavation Target	shift 60.87
	s
Loader Hours to Move Target	h 547.83
Total Hauler Hours to Move Target	h 1,395.13
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	33.73	0.00	4.30	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	3.06	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	28.67	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
172	527.93	-2.00	0.00	2.00	None	0.00	28.24	0.00	3.60	22.98	19.79	FinalSpeed	TopSpeed	Rimpull	12.75	0.00	0.00	0.00	50.20	
173	148.31	-0.99	0.00	2.00	None	0.00	4.72	0.00	0.60	22.96	22.96	Rimpull	TopSpeed	Rimpull	21.41	0.00	0.00	0.00	100.00	
174	376.89	1.33	0.00	2.00	None	0.00	10.92	0.00	1.39	24.04	24.04	Rimpull	TopSpeed	Rimpull	23.53	0.00	0.00	0.00	100.00	
175	230.38	-4.34	0.00	2.00	None	0.00	5.98	0.00	0.76	27.85	26.10	Retard	TopSpeed	Rimpull	26.27	0.00	0.00	0.00	31.71	
176	130.87	-2.29	0.00	2.00	None	0.00	3.66	0.00	0.47	26.10	22.69	Retard	TopSpeed	Rimpull	24.39	0.00	0.00	0.00	0.00	
177	157.93	6.34	0.00	2.00	None	0.00	5.33	0.00	0.68	22.69	17.72	Retard	TopSpeed	Rimpull	20.19	0.00	0.00	0.00	87.46	
178	116.74	5.15	0.00	2.00	None	0.00	5.20	0.00	0.66	17.72	12.87	FinalSpeed	TopSpeed	Rimpull	15.30	0.00	0.00	0.00	34.99	
179	232.63	-0.43	0.00	2.00	None	0.00	9.42	0.00	1.20	20.26	20.26	Rimpull	TopSpeed	Rimpull	16.84	0.00	0.00	0.00	98.24	
180	655.32	-0.76	0.00	2.00	None	0.00	17.77	0.00	2.26	29.15	29.15	Rimpull	TopSpeed	Rimpull	25.15	0.00	0.00	0.00	100.00	
181	352.07	-1.42	0.00	2.00	None	0.00	7.73	0.00	0.98	32.88	32.88	Rimpull	TopSpeed	Rimpull	31.05	0.00	0.00	0.00	100.00	
182	580.66	-0.86	0.00	2.00	None	0.00	12.42	0.00	1.58	34.39	27.18	FinalSpeed	TopSpeed	Rimpull	31.87	0.00	0.00	0.00	37.79	
183	225.97	0.00	0.00	2.00	None	0.00	5.54	0.00	0.71	28.43	28.43	Rimpull	TopSpeed	Rimpull	27.82	0.00	0.00	0.00	100.00	
184	378.71	1.32	0.00	2.00	None	0.00	9.19	0.00	1.17	28.43	27.78	Retard	TopSpeed	Rimpull	28.09	0.00	0.00	0.00	100.00	
185	1,339.35	-1.08	0.00	2.00	None	0.00	27.76	0.00	3.54	36.77	32.64	Retard	TopSpeed	Rimpull	32.90	0.00	0.00	0.00	84.02	
186	416.33	-0.12	0.00	2.00	None	0.00	10.18	0.00	1.30	32.64	23.15	Retard	TopSpeed	Rimpull	27.89	0.00	0.00	0.00	0.00	
187	155.45	-0.64	0.00	2.00	None	0.00	5.10	0.00	0.65	23.15	18.40	FinalSpeed	TopSpeed	Rimpull	20.77	0.00	0.00	0.00	0.00	
188	232.05	0.00	0.00	2.00	None	0.00	7.73	0.00	0.99	22.27	22.27	Rimpull	TopSpeed	Rimpull	20.46	0.00	0.00	0.00	100.00	
189	294.02	2.04	0.00	2.00	None	0.00	9.03	0.00	1.15	22.27	22.16	Retard	TopSpeed	Rimpull	22.21	0.00	0.00	0.00	100.00	
190	187.14	2.67	0.00	2.00	None	0.00	5.87	0.00	0.75	22.16	21.36	Retard	TopSpeed	Rimpull	21.75	0.00	0.00	0.00	100.00	
191	177.62	3.10	0.00	2.00	None	0.00	5.85	0.00	0.75	21.36	20.10	Retard	TopSpeed	Rimpull	20.71	0.00	0.00	0.00	100.00	
192	289.67	-0.17	0.00	2.00	None	0.00	8.88	0.00	1.13	24.23	24.23	Rimpull	TopSpeed	Rimpull	22.25	0.00	0.00	0.00	100.00	
193	935.98	-0.53	0.00	2.00	None	0.00	38.38	0.00	4.89	27.83	0.00	FinalSpeed	TopSpeed	Rimpull	16.63	0.00	0.00	0.00	22.18	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	2.29	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	1.53	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
193	935.98	0.53	0.00	2.00	None	0.00	37.44	0.00	4.77	31.05	27.58	FinalSpeed	TopSpeed	Rimpull	17.05	0.00	0.00	0.00	50.03	
192	289.67	0.17	0.00	2.00	None	0.00	7.49	0.00	0.95	28.84	23.11	Retard	TopSpeed	Rimpull	26.38	0.00	0.00	0.00	17.60	
191	177.62	-3.10	0.00	2.00	None	0.00	4.78	0.00	0.61	27.57	27.57	MaximumAc...	TopSpeed	Rimpull	25.34	0.00	0.00	0.00	35.09	
190	187.14	-2.67	0.00	2.00	None	0.00	4.31	0.00	0.55	31.59	31.59	MaximumAc...	TopSpeed	Rimpull	29.58	0.00	0.00	0.00	45.73	
189	294.02	-2.04	0.00	2.00	None	0.00	7.05	0.00	0.90	31.66	25.17	Retard	TopSpeed	Rimpull	28.45	0.00	0.00	0.00	0.79	
188	232.05	0.00	0.00	2.00	None	0.00	7.26	0.00	0.93	25.17	18.40	FinalSpeed	TopSpeed	Rimpull	21.78	0.00	0.00	0.00	0.00	
187	155.45	0.64	0.00	2.00	None	0.00	5.10	0.00	0.65	23.15	23.15	MaximumAc...	TopSpeed	Rimpull	20.77	0.00	0.00	0.00	74.35	
186	416.33	0.12	0.00	2.00	None	0.00	10.18	0.00	1.30	32.46	32.46	Rimpull	TopSpeed	Rimpull	27.88	0.00	0.00	0.00	91.43	
185	1,339.35	1.08	0.00	2.00	None	0.00	24.83	0.00	3.16	39.25	34.05	FinalSpeed	TopSpeed	Rimpull	36.78	0.00	0.00	0.00	77.54	
184	378.71	-1.32	0.00	2.00	None	0.00	7.46	0.00	0.95	36.51	32.03	Retard	TopSpeed	Rimpull	34.63	0.00	0.00	0.00	32.07	
183	225.97	0.00	0.00	2.00	None	0.00	5.20	0.00	0.66	32.03	27.18	FinalSpeed	TopSpeed	Rimpull	29.61	0.00	0.00	0.00	0.00	
182	580.66	0.86	0.00	2.00	None	0.00	12.46	0.00	1.59	35.78	35.78	Rimpull	TopSpeed	Rimpull	31.79	0.00	0.00	0.00	100.00	
181	352.07	1.42	0.00	2.00	None	0.00	6.54	0.00	0.83	37.50	35.98	Retard	TopSpeed	Rimpull	36.73	0.00	0.00	0.00	75.05	
180	655.32	0.76	0.00	2.00	None	0.00	15.55	0.00	1.98	35.98	21.48	Retard	TopSpeed	Rimpull	28.73	0.00	0.00	0.00	0.00	
179	232.63	0.43	0.00	2.00	None	0.00	9.24	0.00	1.18	21.48	12.87	Retard	TopSpeed	Rimpull	17.18	0.00	0.00	0.00	0.00	
178	116.74	-5.15	0.00	2.00	None	0.00	5.20	0.00	0.66	17.72	17.72	MaximumAc...	TopSpeed	Rimpull	15.30	0.00	0.00	0.00	6.60	
177	157.93	-6.34	0.00	2.00	None	0.00	5.33	0.00	0.68	22.69	22.69	MaximumAc...	TopSpeed	Rimpull	20.21	0.00	0.00	0.00	0.00	
176	130.87	2.29	0.00	2.00	None	0.00	3.68	0.00	0.47	25.75	25.75	Rimpull	TopSpeed	Rimpull	24.27	0.00	0.00	0.00	99.99	
175	230.38	4.34	0.00	2.00	None	0.00	5.92	0.00	0.75	27.16	27.16	Rimpull	TopSpeed	Rimpull	26.56	0.00	0.00	0.00	100.00	
174	376.89	-1.33	0.00	2.00	None	0.00	9.34	0.00	1.19	29.97	24.08	Retard	TopSpeed	Rimpull	27.53	0.00	0.00	0.00	24.46	
173	148.31	0.99	0.00	2.00	None	0.00	4.61	0.00	0.59	24.08	19.79	FinalSpeed	TopSpeed	Rimpull	21.94	0.00	0.00	0.00	0.00	
172	527.93	2.00	0.00	2.00	None	0.00	28.23	0.00	3.60	23.05	0.00	FinalSpeed	TopSpeed	Rimpull	12.75	0.00	0.00	0.00	11.43	

<b>Haul System</b>	Haul system 05	<b>Haul Route</b>	TSS 22 - D3B
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:00

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	bcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 700.83
Loader Production Per Shift	bcy 6,307.47
Loader Production Per Year	bcy 2,125,618.35
Loader Wait Time Per Operating Hour	min 9.74

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	bcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 412.25
Hauler Production Per Year	bcy 1,062,809.18
Hauler Average Load Queue Time	min 0.10
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 4.40
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 9.15
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,125,618.35
Excavation Target	bcy 50,000.00
Calendar Time to Move Excavation Target	days 8.59
Shifts to Move Excavation Target	shift 7.93
	s
Loader Hours to Move Target	h 71.34
Total Hauler Hours to Move Target	h 121.28
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	6.10	0.00	1.11	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.37	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	40.99	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
209	3,225.14	-1.43	0.00	2.00	None	0.00	79.59	0.00	14.50	40.36	40.33	Rimpull	TopSpeed	Rimpull	27.63	0.00	0.00	0.00	0.00	
210	1,884.24	0.69	0.00	2.00	None	0.00	53.93	0.00	9.82	40.33	0.00	FinalSpeed	TopSpeed	Rimpull	23.82	0.00	0.00	0.00	25.41	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.28	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.19	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
210	1,884.24	-0.69	0.00	2.00	None	0.00	53.58	0.00	9.76	40.36	40.33	Rimpull	TopSpeed	Rimpull	23.98	0.00	0.00	0.00	58.24	
209	3,225.14	1.43	0.00	2.00	None	0.00	76.76	0.00	13.98	40.33	0.00	FinalSpeed	TopSpeed	Rimpull	28.65	0.00	0.00	0.00	44.89	

<b>Haul System</b>	Haul system 10	<b>Haul Route</b>	TSS 22 - D4D
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:01

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	bcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 688.22
Loader Production Per Shift	bcy 6,194.01
Loader Production Per Year	bcy 2,087,379.72
Loader Wait Time Per Operating Hour	min 10.91

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	bcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 404.84
Hauler Production Per Year	bcy 1,043,689.86
Hauler Average Load Queue Time	min 0.05
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 4.67
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 9.37
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,087,379.72
Excavation Target	bcy 84,000.00
Calendar Time to Move Excavation Target	days 14.69
Shifts to Move Excavation Target	shift 13.56
	s
Loader Hours to Move Target	h 122.05
Total Hauler Hours to Move Target	h 207.49
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	3.17	0.00	0.56	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.27	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	40.03	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
219	536.43	-0.56	0.00	2.00	None	0.00	29.19	0.00	5.19	21.35	17.29	FinalSpeed	TopSpeed	Rimpull	12.53	0.00	0.00	0.00	58.49	
220	4,637.26	-0.86	0.00	2.00	None	0.00	113.54	0.00	20.20	40.10	0.00	FinalSpeed	TopSpeed	Rimpull	27.85	0.00	0.00	0.00	62.11	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.20	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.13	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
220	4,637.26	0.86	0.00	2.00	None	0.00	108.27	0.00	19.26	40.36	17.29	FinalSpeed	TopSpeed	Rimpull	29.20	0.00	0.00	0.00	63.89	
219	536.43	0.56	0.00	2.00	None	0.00	28.97	0.00	5.15	22.14	0.00	FinalSpeed	TopSpeed	Rimpull	12.63	0.00	0.00	0.00	12.53	

<b>Haul System</b>	Haul system 06	<b>Haul Route</b>	TSS 22 - TC2
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:01

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	lcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 741.62
Loader Production Per Shift	bcy 6,674.57
Loader Production Per Year	bcy 2,249,331.59
Loader Wait Time Per Operating Hour	min 7.26

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 436.25
Hauler Production Per Year	bcy 1,124,665.80
Hauler Average Load Queue Time	min 0.84
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 3.17
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 8.66
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,249,331.59
Excavation Target	bcy 44,000.00
Calendar Time to Move Excavation Target	days 7.14
Shifts to Move Excavation Target	shift 6.59
	s
Loader Hours to Move Target	h 59.33
Total Hauler Hours to Move Target	h 100.86
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	50.17	0.00	9.66	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.62	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	43.32	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
215	537.16	-0.56	0.00	2.00	None	0.00	28.61	0.00	5.51	23.42	23.42	Rimpull	TopSpeed	Rimpull	12.80	0.00	0.00	0.00	0.00	
214	664.85	-3.76	0.00	2.00	None	0.00	19.85	0.00	3.82	28.44	14.95	Retard	TopSpeed	Rimpull	22.84	0.00	0.00	0.00	0.00	
213	189.64	2.64	0.00	2.00	None	0.00	8.28	0.00	1.59	16.21	16.21	Rimpull	TopSpeed	Rimpull	15.61	0.00	0.00	0.00	100.00	
212	260.88	3.84	0.00	2.00	None	0.00	11.43	0.00	2.20	16.21	14.97	Retard	TopSpeed	Rimpull	15.56	0.00	0.00	0.00	100.00	
211	530.72	-2.83	0.00	2.00	None	0.00	29.42	0.00	5.66	21.20	0.00	FinalSpeed	TopSpeed	Rimpull	12.30	0.00	0.00	0.00	0.00	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.47	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.31	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
211	530.72	2.83	0.00	2.00	None	0.00	28.81	0.00	5.55	22.01	17.21	FinalSpeed	TopSpeed	Rimpull	12.56	0.00	0.00	0.00	0.00	
212	260.88	-3.84	0.00	2.00	None	0.00	8.56	0.00	1.65	23.37	21.55	Retard	TopSpeed	Rimpull	20.79	0.00	0.00	0.00	0.00	
213	189.64	-2.64	0.00	2.00	None	0.00	7.08	0.00	1.36	21.55	14.95	FinalSpeed	TopSpeed	Rimpull	18.25	0.00	0.00	0.00	0.00	
214	664.85	3.76	0.00	2.00	None	0.00	20.19	0.00	3.89	27.16	26.13	Retard	TopSpeed	Rimpull	22.45	0.00	0.00	0.00	0.00	
215	537.16	0.56	0.00	2.00	None	0.00	28.03	0.00	5.40	26.13	0.00	FinalSpeed	TopSpeed	Rimpull	13.06	0.00	0.00	0.00	0.00	

<b>Haul System</b>	Haul system 04	<b>Haul Route</b>	TSS 28 - D3A
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:00

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	lcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 771.28
Loader Production Per Shift	bcy 6,941.56
Loader Production Per Year	bcy 2,339,304.86
Loader Wait Time Per Operating Hour	min 5.72

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 453.70
Hauler Production Per Year	bcy 1,169,652.43
Hauler Average Load Queue Time	min 1.67
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 2.05
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 8.37
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,339,304.86
Excavation Target	bcy 27,000.00
Calendar Time to Move Excavation Target	days 4.21
Shifts to Move Excavation Target	shift 3.89
	s
Loader Hours to Move Target	h 35.01
Total Hauler Hours to Move Target	h 59.51
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	100.12	0.00	19.93	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.78	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	44.79	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
208	1,264.58	-0.18	0.00	2.00	None	0.00	62.35	0.00	12.41	25.32	0.00	FinalSpeed	TopSpeed	Rimpull	13.83	0.00	0.00	0.00	44.84	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.58	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.39	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
208	1,264.58	0.18	0.00	2.00	None	0.00	60.83	0.00	12.11	28.35	0.00	FinalSpeed	TopSpeed	Rimpull	14.17	0.00	0.00	0.00	24.08	

<b>Haul System</b>	Haul system 08	<b>Haul Route</b>	TSS 30 - D4B
<b>Material</b>	Sand - Dry	<b>Effective Working Time</b>	4days/week, x 2 10 hour
<b>Customer Name</b>		<b>Report Run Date</b>	2024-03-06 14:01

### Loader Summary

Loader Name	Caterpillar - 992 K
Loader Availability	% 85.00
Loading Methodology	Double Sided
Loader Bucket Fill Factor	% 100.15
Average Bucket Volume	lcy 14.02
Average Bucket Load	tn 18.69
Loader Operating Hours Per Year	h 3,033.00
Operating Shifts Per Year	337.00
Loader Average Cycle Time	min 0.88
Loader Production Per Operating Hour	bcy/h 754.97
Loader Production Per Shift	bcy 6,794.72
Loader Production Per Year	bcy 2,289,819.56
Loader Wait Time Per Operating Hour	min 6.35

### Hauler Summary

Hauler Name	Caterpillar - 777 E
Hauler Availability	% 85.00
Hauler Rated Payload	tn 102.08
Hauler Average Capacity	lcy 70.08
Fleet Operating Hours Per Year	h 3,033.00
Hauler Average Payload	tn 93.44
Hauler Production Per Operating Hour	bcy/h 444.10
Hauler Production Per Year	bcy 1,144,909.78
Hauler Average Load Queue Time	min 1.35
Hauler Average Spot Time At Loader	min 0.40
Hauler Average Loading Time	min 3.75
Hauler Average Travel Time	min 2.49
Hauler Average Spot Time At Dump	min 0.30
Hauler Average Dump Time	min 0.20
Hauler Average Cycle Time	min 8.49
Hauler Fleet Size	2.00
Hauler Average Bucket Passes	5.00

### Haul System Summary

Fleet Production Per Year	bcy 2,289,819.56
Excavation Target	bcy 82,000.00
Calendar Time to Move Excavation Target	days 13.07
Shifts to Move Excavation Target	shift 12.07
	s
Loader Hours to Move Target	h 108.61
Total Hauler Hours to Move Target	h 184.64
Total Cost to Move Target	\$ 0.00
Fleet Total Cost Of Unit Ownership	\$/bcy 0.00
Fleet Fuel Per Operating Hour	US. gal/h 0.00
Fleet CO2 Emitted Per Operating Hour	lb/h 0.00
Fleet DEF Used Per Operating Hour	US. gal/h 0.00
Fleet Electricity Per Operating Hour	bhp 0.00
Fleet Electricity Unit Cost	\$/bcy 0.00

Segment Title	Distance...	Grade (%)	Ground S...	Rolling R...	Trolley	Charging...	Segment...	Delay Ti...	Cycle Tim...	Max Spe...	Final Spe...	Performanc...	Velocity Li...	Actual Po...	Average...	Fuel Usag...	Electricity...	Electricity...	Electricity...	Duty Cycl...
Queue to Load	0.00	0.00	0.00	0.00	None	0.00	81.21	0.00	15.94	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Spot Time - Load	0.00	0.00	0.00	0.00	None	0.00	24.00	0.00	4.71	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Loading	0.00	0.00	0.00	0.00	None	0.00	225.00	0.00	44.17	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
217	1,793.59	-5.02	0.00	2.00	None	0.00	72.90	0.00	14.31	30.20	0.00	FinalSpeed	TopSpeed	Rimpull	16.78	0.00	0.00	0.00	7.29	
Spot Time - Dump	0.00	0.00	0.00	0.00	None	0.00	18.00	0.00	3.53	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
Dumping	0.00	0.00	0.00	0.00	None	0.00	12.00	0.00	2.36	0.00	0.00	NoLimit	TopSpeed	Rimpull	0.00	0.00	0.00	0.00	0.00	
217	1,793.59	5.02	0.00	2.00	None	0.00	76.27	0.00	14.97	26.58	0.00	FinalSpeed	TopSpeed	Rimpull	16.03	0.00	0.00	0.00	53.20	