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

August 15, 2024

Certified Mail # 70190140000026680310

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

Dear Mr. Myers:

Re: Freeport-McMoRan Chino Mines Company- Response to Agencies' Comments and Technically Approvable Determination

Freeport-McMoRan Chino Mines Company (Chino) submitted an application to renew the Continental Mine Closure/Closeout Plan (CCP), Permit GR002RE on July 31, 2023. On November 6, 2023, Mining and Minerals Division (MMD) determined the application to be administratively complete. On November 20, 2023, an interagency inspection of Continental and Hanover Mountain Mines was conducted. In a letter dated February 19, 2024 , Mining and Minerals Division (MMD) requested supplemental information and submitted a combined agency review comments and Request for Additional Information (RAI) from the following state agencies: New Mexico Mining and Minerals Division (MMD), the New Mexico Environment Department (NMED), the New Mexico Department of Game and Fish (NMDGF), and the New Mexico Department of Cultural Affairs - Historic Preservation Division (NMDCA/HPD), and the New Mexico State Forestry Division (NMSFD). On April 30, 2024, Chino submitted the response to agencies' comments and request for additional information. On June 25, 2024, MMD determined Chino's RTC and Updated CCP to be technically approvable and provided additional comments.

Below are the agencies' comments, followed by Chino's response.

Mining and Minerals Division Comments:

1. RTC #7, Appendix H. The CCP and the response do not show the location(s) of proposed cover material. Provide a supplemental figure that shows the haul distances used in the RCE and route to the Continental Mine's from the potential cover material sources along the Cobre Haul Road (CHR) and Upper South Stockpile (USS) at the Santa Rita Pit.

In the Closure/Closeout Plan, Section 6.2, "Cover Design and Materials," gives a description of where all cover material originates. Appendix H's Earthwork spreadsheet, sheet "3: Material" provides further information. In Sheet 3, the location(s) of the proposed cover material is listed in column G under "Source Location 1," and the haul distance used is listed in column I under "Total Haul/Push Distance." This haul distance assumes the most efficient route is taken when traveling from the centroid of the borrow site to the centroid of the cover site as shown in Appendix E, Sheet 23. Appendix E Sheets 14 – 22 provide a visual depiction of the cover material sourced from the CHR.

2. RTC #25. Chino's response to comment #25 and several other comments includes mention that the RCE will be updated after the approval of Chino's CCP. Provide an updated RCE for review.

Please see the attached updated RCE, which reflects all changes between original submittal and the determination of Technical Approval.

Department of Game and Fish Comments:

1. The Department appreciates Chino's response, which provided more detailed information on the current and predicted water quality of the Continental's pit lake. Telesto (2022) documented the current pH of the pit lake to be 7.52 and that the pit lake also currently meets wildlife habitat standards defined in 20.6.4.900.J(1) of the New Mexico Administrative Code (NMAC). Geochemical modeling for a 300-year projection period indicated that pH values would range between 6 and 7 and that water quality of the pit lake would continue to meet wildlife habitat standards. Thus, Chino believes that excluding wildlife from accessing the pit lake as recommended by the Department is not warranted. The Department still contends that modeled, future water quality conditions in the pit lake, especially model results projected far into the future, will always have inherent uncertainties and are no guarantee that the water quality will remain safe for wildlife. The Department recommends that, at minimum, Chino incorporates language into the CCP indicating that adaptive management practices will be implemented to exclude wildlife from the pit lake if it is determined in future that pit lake water quality has become hazardous to wildlife.

Chino appreciates the comment. After closure the reclamation will be in care and maintenance, during this timeline any significant changes in water quality will be monitored and reported, if warranted additional precautionary steps will be taken.

2. The Department continues to recommend that Chino provide nearby sources of clean drinking water to attract wildlife away from the pit lake. The wildlife drinker tanks should be designed with textured escape ramps to prevent unintentional entrapment and drowning of smaller animals. The Department is available for consultation regarding appropriate wildlife drinker tank designs.

Chino appreciates the recommendation and will consider wildlife drinker tank design and construction for ingress and egress at the time of reclamation.

If you have any questions or concerns, please contact me at (575) 912-5927 or Mariana Lafon at 575-912-5234.

Sincerely,

Sherry Burt-Kested, Manager
Environmental Services

SBK:ml
Enclosures
20240813-007

ec: David Ennis, MMD
David Mercer, NMED

Appendix A

Reclamation Cost Estimate

Earthwork Capital

Facility	Direct Cost	Indirect Cost	Total Estimated Cost
South Waste Rock Disposal Facility	$7,559,775	$2,267,932	$9,827,707
East Waste Rock Facility	$2,736,452	$820,936	$3,557,388
North OB Stockpile	$31,795	$9,538	$41,333
Low Grade Ore Waste Rock Facility	$616,243	$184,873	$801,116
Stockpile Subtotal	***$10,944,264***	***$3,283,279***	***$14,227,543***
Magnetite Tailings	$345,051	$103,515	$448,567
Main Tailings Impoundment	$1,943,766	$583,130	$2,526,896
Tailings Subtotal	***$2,288,818***	***$686,645***	***$2,975,463***
Hanover Mountain Pit	$1,057,769	$317,331	$1,375,099
Continental Pit	$2,613	$784	$3,397
Pits Subtotal	***$1,060,382***	***$318,114***	***$1,378,496***
Containments	$54,402	$16,321	$70,723
All Misc	$928,230	$278,469	$1,206,699
Cobre Haul Road	$835,102	$250,531	$1,085,633
Miscellaneous Subtotal	**$1,817,735**	**$545,320**	***$2,363,055***
Demo	$2,622,501	$786,750	$3,409,251
Closure Costs Total	**$18,733,699**	**$5,620,110**	**$24,353,808**
O&M		**17.5% of Direct**	
Full Site O&M Costs Total	**$2,777,841**	**$486,122**	**$3,263,963**
Total Cost (Closure + O&M)	**$21,511,539**	**$6,106,232**	**$27,617,771**

Water Management

Item	Direct Cost	Indirect Cost	Total Estimated Cost
Water Management Capital		**30%**	
Ponds	$396,971	$119,091	$516,063
Pumps	$36,300	$10,890	$47,190
Pipelines	$379,334	$113,800	$493,134
Electrical	$0	$0	$0
Subtotal	**$812,605**	**$243,781**	**$1,056,386**
Capital Removal [1]		**30%**	
Pumps	$0	$0	$0
Pipelines	$195,395	$58,619	$254,014
Electrical Infrastructure	$45,393	$13,618	$59,011
Subtotal	**$240,788**	**$72,236**	**$313,025**
Operations and Maintenance		**17.50%**	
Ponds and Tanks	$1,421,504	$248,763	$1,670,267
Pumps	$658,985	$115,322	$774,307
Pipelines	$449,869	$78,727	$528,596
Electrical Infrastructure	$109,598	$19,180	$128,778
Electricity and Fuel (Pumps)	$56,676	$9,918	$66,594
Environmental Sampling	$461,160	$80,703	$541,862
Subtotal	**$3,157,791**	**$552,613**	**$3,710,404**
Total Estimated Cost	**$4,211,185**	**$868,631**	**$5,079,816**
Total RCE			**$32,697,587**

Appendix B

Water Management Cost Estimate

Appendix B
Water Management Cost Estimate

Prepared for

Freeport-McMoRan Inc.
Chino Mines Company
99 Santa Rita Mine Road
Vanadium, New Mexico 88043

Prepared by

Telesto Solutions Inc.
3801 Automation Way, Suite 201
Fort Collins, Colorado 80525

July 2023
Updated July 2024

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Signature Page

Appendix B
Water Management Cost

July 2023
Updated July 2024

Report Authors and Contributors

Telesto Solutions, Inc.

Jonathan Cullor, P.E. – Primary Author

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Contributor:

Table of Contents

List of Tables

List of Appendices

1.0 INTRODUCTION

This water management reclamation cost estimate update includes operations and maintenance (O&M), replacement, and removal costs related to post-closure water management for the Continental Mine. Impacted stormwater and seeps are currently captured in ponds and tanks and piped to Chino for treatment and/or inclusion in Chino's process water stream. Following reclamation and establishment of revegetation, infiltration will be reduced, waste rock facility seeps are expected to decrease and eventually cease flowing (Condition 83; Golder, 2009), stormwater runoff from reclaimed surfaces will no longer be impacted and will be released, and the Main Tailings Impoundment (MTI) seeps are expected to decrease and eventually cease flowing. The reduction in the aforementioned sources will decrease the water requiring management. Facilities and post-closure uses, based on the EOY 2026 mine plan, are shown in Table B-1. Water quality monitoring is assumed to continue for a 100-year period.

2.0 TOTAL COST ESTIMATE FOR WATER MANAGEMENT

The total current dollar cost for water management is **$5,079,816**, which includes $1,369,411 in capital costs plus $3,710,405 in O&M costs (Appendix B.1). A summary of the estimate is provided in Table B-2. The costs presented in this estimate are current (2024) dollar costs.

Table B-1 Water Management Facilities Descriptions

Impoundment Designation	Surface Area (acres)	Mine Use	Liner	Reclamation Schedule
Decant Pond #4	0.62	Seep and Stormwater	HDPE	Removed Reclamation Year 12
Grape Gulch Pond #3	0.38	Stormwater	HDPE	Removed Reclamation Year 12
North Tailings Decant Pond	0.46	Stormwater	Concrete Dam Unlined	Removed Reclamation Year 12
Magnetite Seepage Pond	0.2	Seep and Stormwater	HDPE	Removed Reclamation Year 12
Reclaim Pond	16	Emergency Water Management, Seep and Stormwater	Concrete Dam Unlined	Reclaimed with MTI by Reclamation Year 5
Surge Tank	0.18	Emergency Water Management, Seep and Stormwater	Stainless Steel	Industrial Post Mining Land Use (PMLU)
SWRF Dam 1 (181-2003-Dam 1)	0.52	Stormwater	Concrete Dam Unlined	Removed Reclamation Year 12
SWRF Dam 2 (181-2003-Dam 2)	0.34	Stormwater	Concrete Dam Unlined	Removed Reclamation Year 12
SWRF Dam 3 (181-2003-Dam 3)	0.84	Stormwater	Concrete Dam Unlined	Removed Reclamation Year 12
Upper Creek Containment Pond 1	0.74	Seep and Stormwater	HDPE Lined	Removed Reclamation Year 12
Seeps Routed to Upper Creek Containment Pond 1				
Borehole Seep and Borehole Access Road (Vent Seep)	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Blackman's Seep	0.01	Seep	HDPE	Removed Reclamation Year 12
East Haul Road & Rock Dam Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Unnamed Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Cottonwood Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Seeps Routed to Decant Pond # 4				
Dam Toe Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Cement Pond (Replaced by East WRF Containment by EOY 2019)	NA	Seep and Stormwater	HDPE Lined	Seepage ceases flow by Reclamation Year 5, Continue use for Stormwater. Removed Reclamation Year 12
Estrada Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 5*
Magnetite Seepage Pond (Magnetite Interceptor Trench seepage reports to Magnetite Seepage Pond then to Decant Pond #4)	NA	Seep	Unlined	Seepage ceases flow and, reclaimed with Magnetite Tailings Impoundment by Reclamation Year 5*
Peach Tree Spring Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Poison Spring Cut-Off Wall	NA	Seep	Concrete Cut-Off Wall	Seepage ceases flow by Reclamation Year 58*
Union Hill Adit Seep	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*
Weber Pond	NA	Seep	Unlined	Seepage ceases flow by Reclamation Year 9*

*All associated seep infrastructure (ponds, pipelines, pumps, etc) will be removed at the time the seep ceases flow

Table B-2 Water Management Cost Summary

Item	Direct Cost	Indirect Cost	Total Estimated Cost
Water Management Capital		**30%**	
Ponds	$396,971	$119,091	$516,063
Pumps	$36,300	$10,890	$47,190
Pipelines	$379,334	$113,800	$493,134
Electrical	$0	$0	$0
Subtotal	**$812,605**	**$243,781**	**$1,056,386**
Capital Removal [1]		**30%**	
Pumps	$0	$0	$0
Pipelines	$195,395	$58,619	$254,014
Electrical Infrastructure	$45,393	$13,618	$59,011
Subtotal	**$240,788**	**$72,236**	**$313,025**
Operations and Maintenance		**17.5%**	
Ponds and Tanks	$1,421,504	$248,763	$1,670,267
Pumps	$658,985	$115,322	$774,307
Pipelines	$449,869	$78,727	$528,596
Electrical Infrastructure	$109,598	$19,180	$128,778
Electricity and Fuel (Pumps)	$56,676	$9,918	$66,594
Environmental Sampling	$461,160	$80,703	$541,863
Subtotal	**$3,157,791**	**$552,613**	**$3,710,404**
Total Estimated Cost	**$4,211,185**	**$868,631**	**$5,079,816**

[1] Removal costs for ponds and tanks are included in the earthwork portion of the cost estimate.

3.0 QUANTITY OF WATER TO BE MANAGED

The sources and quantities of water used in the cost estimate were determined by:

- Estimating post-reclamation seepage from MTI drain down (2023 CCP Update, Appendix G)
- Estimating average annual pre-reclamation stormwater runoff (Appendix B.2)
- Estimating average annual post-reclamation stormwater runoff (Appendix B.2)
- Estimating post-reclamation flows from seeps (Table B-3)

Yearly average seepage quantities are summarized in Table B-3. Managed water volumes as a function of time are summarized in Table B-4.

Table B-3 Estimated Stormwater Flow and Seepage Quantities

Seep		Stormwater Volume (acre-ft)	Seepage Volume (acre-ft)	Stormwater Flow Rate, Pre-Reclamation (gpm)	Average Seepage Flow Rate, Pre-Reclamation (gpm)
Main Tailing Impoundment Seeps[1]	Stormwater and Seeps Routed to Upper Creek Containment Pond #1 (excludes Cottonwood Seep)	46.63		28.91	
	Cottonwood Seep	-	3.15	-	1.95
	Upper Creek Containment Pond #1 Average Estimated Yearly Stormwater Runoff[2]	16.35	-	10.14	-
	Estimated Seepage Routed to Upper Creek Containment Pond #1	-	33.43	-	20.73
	Dam Toe Seep	-	116.8	-	72.42
	Peach Tree Spring Seep	-	19.57	-	12.13
	Weber Pond	-	0	-	0.00
	Total Main Tailing Impoundment Seepage	-	169.8	-	105.27
Estrada Seep[2]		-	2.34	-	1.45
Union Hill Adit Seep[2]		-	0.52	-	0.32
Cement Pond[2]		-	1.30	-	0.81
Magnetite Interceptor Trench[2]		-	0.45	-	0.28

4.0 WATER MANAGEMENT COST ESTIMATE

The water management cost estimate is divided into five components: (1) ponds and tanks, (2) pumps, (3) pipelines, (4) electrical infrastructure, and (5) water monitoring. Table B-5 provides a brief description of each worksheet (Sheet) used in the cost estimate (see Appendix B.1). Throughout this document, the items described are followed by a reference to the location of the corresponding calculation Sheet.

[1] Measured 2013 seepage volumes (Golder, 2014)

[2] The estimated yearly stormwater runoff for Upper Creek Containment #1 is based on EOY 2023 mine configuration and calculations (Telesto, 2018)

Table B-4 Water Management Volumes through Time

Reclamation Year	Average SWRDF Seeps (gpm)[3]	Average Main Tailings Impoundment (gpm)[4]	Average Storm Water Runoff (gpm)[5]	Average Magnetite Tailings Impoundment (gpm)[6]	Total Average to Chino via Bull Frog (gpm)
0	2.6	80.4	66.5	0.3	147.2
1	2.6	80.4	66.5	0.3	147.2
2	2.6	80.4	66.5	0.3	147.2
3	2.6	80.4	66.5	0.3	147.2
4	2.6	80.4	66.5	0.3	147.2
5	2.6	80.4	66.5	0.3	147.2
6	0.0	72.3	3.5	0.0	75.8
7	0.0	64.0	3.5	0.0	67.5
8	0.0	56.5	3.5	0.0	60.0
9	0.0	49.9	3.5	0.0	53.4
10	0.0	44.2	3.5	0.0	47.7
11	0.0	39.3	3.5	0.0	42.8
12	0.0	35.2	0.0	0.0	35.2
15	0.0	26.2	0.0	0.0	26.2
25	0.0	12.3	0.0	0.0	12.3
35	0.0	5.0	0.0	0.0	5.0
45	0.0	1.2	0.0	0.0	1.2
55	0.0	0.1	0.0	0.0	0.1
…100	0.0	0.0	0.0	0.0	0.0

Table B-5 Cost Estimate Sheet Descriptions

Worksheet	Description
20230723_ContMine_WaterMgmtRCE.xlsx (Water Management Sheets)	
1 Reclamation and O&M Costs	Ponds/Tanks, Pumps, Pipelines, and Electrical Infrastructure capital and O&M direct cost calculations.
2 Sampling Cost	Post-closure sampling cost development and sampling schedule.
3 WM Cash Flow	Cost over time
4 Summary	Cost summary including indirect cost percentages and direct costs calculated on Sheets 1 and 2

[3] Average seep flow rate at EOY 2026 based on average East WRF, Union Hill, and Estrada Seeps flow rates 2013 (Golder, 2014)
[4] Calculated drain down rates are from 2023 CCP Update, Appendix G
[5] Calculated stormwater runoff for reclaimed areas are from Appendix B.2
[6] Average seep flow rate at EOY 2026 based on average Magnetite Interceptor Trench Seeps flow rates 2013 (Golder, 2014)

Assumptions and methods common throughout the cost estimate include the following:

- Water management variables are provided in Table B-6 and used on Water Management Sheet 1.
- Miscellaneous unit costs are taken from several sources including R.S. Means Heavy Construction Cost Online Data (R.S. Means, 2024). All costs taken from R.S. Means are adjusted in the online data based on the Las Cruces location. Miscellaneous unit costs are summarized in Table B-7 and used on Water Management Sheet "Unit Cost Table". Supporting documentation is included in Appendix B.2.
- Reclamation begins in 2024.
- Infrastructure used for the capture and conveyance of water is removed on or by reclamation year 12 (Table B-1). The Reclaim Pond and all associated infrastructure is removed when the MTI is reclaimed, assumed no later than reclamation year 5. Removal costs for ponds, tanks, and dams are included in earthwork portion of the cost estimate (see 2024 CCP Update, Appendix H).

Table B-6 Water Management Variables

Description	Variable
Steel Tank Life Expectancy (yr)	50
Lined Pond Life Expectancy (yr)	30
Small Concrete Dam Life Expectancy (yr)	50
Pump Life Expectancy (yr)	20
HDPE Pipeline Life Expectancy (yr)	100
Pump / Motor Efficiency	0.70
Reclaim Pond Pump Fuel Consumption Rate (gal/hr)	1.0
Chezy Head Loss Coefficient	150
Power Pole Spacing (ft)	100
Annual Pond Maintenance to Capital Factor	1.5%
Annual Pump Maintenance to Capital Factor	1.5%
Annual Pipeline Maintenance to Capital Factor	1.0%
Annual Electrical Infrastructure Maintenance to Capital Factor	1.5%
Estimated average stormwater runoff non-revegetated (CN=85, gal/year/acre)	48,155
Estimated average stormwater runoff, after 12-year vegetation establishment period (Condition 87 CN=62, gal/year/acre)	2,530
Reclamation Start Year (2026)	0
Reclamation Finished Year	5
Vegetation Established Assume stormwater released	12

Table B-7 Miscellaneous Unit Costs

Activity	Unit	Unit Cost ($/unit)	R.S. Means Item Number	Description
Utility Pole Demo	ea	$210.55	024113800100	Selective demolition, utility poles & cross arms, utility poles, wood, 20'-30' high
Cross Arm Demo	ea	$88.09	024113800300	Selective demolition, utility poles & cross arms, cross arms, wood, 4'-6' long
Wood Electrical Utility Poles a.)	ea	$838.83	337116336020	Electrical utility pole, wood pole CCA/ACA-treated, 30', class 1, type C, excludes excavation, backfill and cast in place concrete
Utility Pole Installation b.)	ea	$1,311.69	337116236010	Electrical utility pole, digging holes in rock, average
Utility Pole Installation d.)	ea	$314.23	337116337600	Electrical utility pole, poles, wood, cross arms with hardware & insulators, 4' long, excludes excavation, backfill and cast in place concrete
Electrical Wiring Installation a.)	wire mile	$605.24	337139130110	Overhead line conductors & devices, conductors, primary circuits, material handling & spotting
Electrical Wiring Installation b.)	wire mile	$22,627.91	337139130150	Overhead line conductors & devices, conductors, primary circuits, per wire, 210 to 636 kcmil
Electrical Wiring Installation c.)	mile	$294.20	337139130810	Overhead line conductors & devices, disposal of surplus material, high voltage conductors
Potential Transformers	ea	$1,529.01	337126264100	Station capacitors, potential transformers, 13 to 26 kV
Pipeline Demolition (Flushing and Cover)	lf	$4.64	026510300320	Sludge/water removal at $0.13/ft assuming 18-inch pipe diameter 1/3 full, scaled based on RS Means unit cost to remove sludge/water from 9,000-12,000 (average 10,500) gallon tank at $338.44/each; placement of cover material over pipe at $3.62/ft after sludge/water removal
Excavation of Soil	cy	$8.82	G10301201600 (2)	3/4 C.Y. backhoe, three 8 C.Y. dump trucks, 1 mi round trip; unit rate not presented online, therefore use RS Means 2019 Handbook [hardcopy], 33rd edition with unit rate of $8.40/cy x 0.832 [Las Cruces adjustment] = $7.17/cy
Reservoir Liners HDPE	sf	$3.53	310519531200	Pond and reservoir liners, membrane lining systems HDPE, 100,000 S.F. or more, 60 mil thick, per S.F.
Small Concrete Dam	lf	$112,370	323213103100	Cast-in place retaining walls, reinforced concrete cantilever, 33-degree slope embankment, 10' high, includes excavation, backfill & reinforcing; 250 ft is the assumed length of retaining wall (dam) @ $366.56/lineal ft (RS Means online data)
Water Treatment Tank	ea	$797,120	331623131000	Steel water storage tanks, ground level, ht./diam. less than 1, 250,000 gallons, excl. foundation
Pump	ea	$12,100	-	Engineering Judgment 15 to 30 gpm - includes pump control, control panel, installation, and flow meter
Pump	ea	$18,150	-	Engineering Judgment 50 gpm - includes pump control, control panel, installation, and flow meter
Pump	ea	$30,250	-	Engineering Judgment 100 to 700 gpm - includes pump control, control panel, installation, and flow meter
Pump	ea	$36,300	-	Engineering Judgment 800 to 2000 gpm - includes pump control, control panel, installation, and flow meter
Water Supply Piping	lf	$6.88	331413350100	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 4" diameter, SDR 21
Water Supply Piping	lf	$8.74	331413350200	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 6" diameter, SDR 21
Water Supply Piping	lf	$11.91	331413350300	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 8" diameter, SDR 21
Water Supply Piping	lf	$17.44	331413350400	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 10" diameter, SDR 21
Water Supply Piping	lf	$20.34	331413350500	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 12" diameter, SDR 21
Water Supply Piping	lf	$25.86	331413350600	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 14" diameter, SDR 21
Water Supply Piping	lf	$33.51	331413350700	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 16" diameter, SDR 21
Facility Water Distribution Piping	lf	$386.77	221113481210, 221113481780	Steel Pipe Schedule 40, black 24" diameter (RS Means 221113481210) $445.00 (material) + $108.35 (labor); unit cost without coupling and hanger (RS Means 221113481780) is reduced 35% for material and 10% for labor
Electric Rate	kWh	$0.0587	-	Industrial rate data 7/23/2023 (http://www.electricitylocal.com/states/new-mexico/silver-city/)
Electric Panel Cost	ea	$12,100	-	Engineering Judgment
Diesel Fuel Cost ($/gal)	gal	$3.06	-	Diesel fuel cost is estimated by correlating historical local quotes with public data
Environmental Sampler	hr	$73	-	Engineering Judgment
Environmental Sampling Reviewer	hr	$85	-	Engineering Judgment
Environmental Sampling	sample	$349	-	23 Constituents. Energy Laboratories, Inc., Quote March 2018-2019 (www.energylab.com) * 1.21 for 2019-2023 inflation(3)
Shipping Environmental Sampling	cooler	$499	-	Overnight UPS $400 for a 10 lb. package 30”x18”x18” Silver City, NM to Casper, WY Energy Labs

1) RS Means Online unit cost includes CCI adjustment for Las Cruces New Mexico - 2024 R.S. Means Online, www.remeansonline.com
2) RS Means Online, 2024 (base rate, CCI adj. 0.832 for Las Cruces)
3) https://data.bls.gov/cgi-bin/cpicalc.pl?cost1=1&year1=201901&year2=202306

- Pond volumes, pipeline lengths and diameters, and flow rates were obtained from 1) *DP-1403 Condition 36 – 2013 Annual Water Management Model Update* letter (Telesto, 2014a) and 2) *Water Management System Analysis and Upgrade Recommendations Report* (Telesto, 2012).
- Capital indirect costs of 30% are applied to the capital direct costs based on discussions involving the FA Work Group as agreed in January 2019. The FA Work Group involved representatives of Freeport-McMoRan New Mexico Operations (FNMO), MMD, NMED, and Gila Resources Information Project (GRIP). The indirect costs include but are not limited to Mobilization and Demobilization, Contingencies, Engineering Redesign Fee, Contractor Profit and Overhead, Project Management Fee, and State Procurement Cost.
- Operations and maintenance indirect costs of 17.5% are applied for long-term O&M direct costs, also as agreed by the FA Work Group for FNMO's RCEs. The indirect costs include but are not limited to Mobilization and Demobilization, Contingencies, Engineering Redesign Fee, Contractor Profit and Overhead, Project Management Fee, and State Procurement Cost.

4.1 Ponds and Tanks

Water management information and costs for ponds and tanks are presented in Appendix B.1 Water Management Sheet 1. Assumptions and methods for this portion of the cost estimate include the following:

- Replacement costs are based on replacement ages from Table C-6 and age at reclamation. The SWRF Dams 1-3 are currently 20 years old, all membrane lined ponds are 30 years old (with the exception of the Upper Creek Containment Pond #1). The Surge Tank will be maintained during the O&M period and not replaced, based on a recent evaluation of the 250,000-gallon steel tank which concluded that the tank is suitable for its current use–only repairs and maintenance are needed as its use continues.
- New and replacement costs for lined ponds assume excavating 1/3 the capacity of the pond and replacing with a double liner.
- The Reclaim Pond and North Tailings Decant Pond require no maintenance beyond what is already included in the Earthwork cost estimate for the site as a whole.

4.2 Pumps

Water management information and costs for pumps are presented in Appendix B.1, Water Management Sheet 1. Assumptions and methods for this portion of the cost estimate include the following:

- All pumps will be rebuilt over time during the first 12 years of O&M, instead of purchasing new pumps. The annual cost for the ongoing rebuilding of each pump is assumed to equal the new pump cost if spread over 12 years of O&M. Upon termination of pumping, each pump will be buried as part of pipeline demolition (flushing and cover operations).
- Pipe head loss calculations use average combined pumping rate when multiple pumps are present.
- Pump operating time was calculated by dividing average annual water volume by the average pump capacity.

4.3 Pipelines

Water management information and costs for pipelines are presented in Appendix B.1 Water Management Sheet 1. Replacement costs are based on replacement ages from Table B-6 and age at reclamation. Pipelines will be demolished by removing the sludge/water and placement of a 6-ft cover over the pipe.

4.4 Electrical Infrastructure

Water management information and costs for electrical infrastructure are presented in Appendix B.1, Water Management Sheet 1. Assumptions and methods for this portion of the cost estimate include the following:

- Electric power lines currently follow major pipeline corridors.
- All power lines are high voltage and require a transformer and electrical panel.

4.5 Water Monitoring

Closure and post-closure monitoring of surface water and groundwater is required in the New Mexico Energy and Natural Resources Department, Mining and Minerals Division (MMD) Permits and DP-1403. Sampling and analysis are quarterly for years 0 through 5, decreasing to semi-annually for years 6 through 12, and then annually thereafter. Sampling information and costs are presented in Appendix B.1, Water Management Sheet 2. Unit rate information is shown in Table B-7.

5.0 REFERENCES

Energy Laboratories, Inc. 2018. Quote for analytical work (www.energylab.com).

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Telesto Solutions, Inc. (Telesto). 2018. Continental Mine Closure/Closeout Plan Update. Prepared for Cobre Mining Company, Hurley, New Mexico by Telesto Solutions, Inc., Fort Collins, Colorado. May 2018.

APPENDIX B.1
COST CALCULATIONS

Water Management Cost Estimate

Continental Mine
Water Management Worksheet #1
7/18/24

Variables

Description	Variable
Steel Tank Life Expectancy (yr)	50
Lined Pond Life Expectancy (yr)	30
Small Concrete Dam Life Expectancy (yr)	50
Pump Life Expectancy (yr)	20
HDPE Pipeline Life Expectancy (yr)	100
Pump / Motor Efficiency	0.70
Reclaim Pond Pump Fuel Consumption Rate (gal/hr)	1.0
Chezy Head Loss Coefficient	150
Power Pole Spacing (ft)	100
Annual Pond Maintenance to Capital Factor	1.5%
Annual Pump Maintenance to Capital Factor	1.5%
Annual Pipeline Maintenance to Capital Factor	1.0%
Annual Electrical Infrastructure Maintenance to Capital Factor	1.5%
Estimated average stormwater runoff non-revegetated (CN=85, gal/year/acre)	48,155
Estimated average stormwater runoff, after 12-year vegetation establishment period (Condition 87 CN=62, gal/year/acre)	2,530
Original CCP Year (2014)	-12
Original Reclamation Start Year (2026) ["0" refers to the beginning of the first year]	0
Reclamation Finished	5
Vegetation Established Assume Stormwater Released Year	12

PONDS AND TANKS

Location	Construction Type	Capacity (gallons)	Capacity (cy)	Pond Area (acres)	Age in 2014 (yr)	Age at Reclamation (yr)	Removal Year** (yr)	First Replacement Year (yr)	Number of Replacements	**Direct Cost New and Replacement ($/ea)**	**Capital Cost New and Replacement ($)**	**Direct Cost O&M Ponds ($/yr)**	**Direct Cost O&M Ponds ($)**
SWRF Dam 1 (181-2003-Dam 1)	concrete dam, unlined	1,116,800	5,530	-	19	31	12	-	0	$112,370	$0	$1,686	$21,912
SWRF Dam 2 (181-2003-Dam 2)	concrete dam, unlined	827,700	4,098	-	19	31	12	-	0	$112,370	$0	$1,686	$21,912
SWRF Dam 3 (181-2003-Dam 3)	concrete dam, unlined	2,925,300	14,485	-	19	31	12	-	0	$112,370	$0	$1,686	$21,912
Decant Pond #4	HDPE lined	972,500	4,815	0.62	19	31	12	0	1	$204,828	$204,828	$3,072	$39,941
Upper Creek Containment Pond #1	HDPE lined	1,879,200	9,305	1.29	0	12	12	-	0	$424,074	$0	$6,361	$82,695
Grape Gulch Pond #3	HDPE lined	911,600	4,514	0.38	29	41	12	0	1	$130,133	$130,133	$1,952	$25,376
Blackman's Seep	unlined	25,000	124	-	29	41	9	0	1	$364	$364	$5	$55
Surge Tank***	steel	352,500	1,745	-	49	61	-	0	1	$0	$0	$11,957	$1,195,680
Magnetite Seepage Pond	HDPE lined	9,600	48	0.20	29	41	12	0	1	$61,646	$61,646	$925	$12,021
									Direct Annual Costs ($/yr):	-	-	$29,329	-
									Direct Cost Subtotals:	-	$396,971	-	$1,421,504

*Reclaim Pond and North Tailings Decant require no maintenance beyond what is already included in the Earthwork cost estimate for the site as a whole.
**Removal costs are included in earthwork portion of the cost estimate.
***Surge Tank is Industrial PMLU and, therefore, is not removed. Surge tank will not need replacement as its condition is suitable for its current use case, with repairs and maintenance continuing as part of O&M.

Water Management Cost Estimate

Continental Mine
Water Management Worksheet #1

$$H_f = \frac{10.44\,Q^{1.85}}{C^{1.85}\,D_i^{4.865}}$$

PUMPS

From	To	Number	Age in 2014 (yr)	Age at Reclamation (yr)	Removal Year (yr)	First Replacement Year (yr) [-1 means full replacement not taking place, but rebuilding of pump takes place throughout its operation under O&M]	Number of Replacements	Average Combined Operational Pumping Rate (gpm)	Starting Elevation (ft)	Maximum Elevation (ft)	Head Loss (ft)	Head on Pump (ft)	Power (HP)	Operational Kilowatts (kW)	Stormwater Capture Area, Pumped Water only (acres)	Average Seepage through Reclamation year 5 (gal/year)	Direct Pump Cost New and Replacement ($/replacement)
SWRF Dam 1 (181-2003-Dam 1)	SWRF Dam 3 (181-2003-Dam 3)	2	11	23	12	-1	1	1760	6650	6719	61	130	82	61	120.9	0	$72,600
SWRF Dam 2 (181-2003-Dam 2)	SWRF Dam 3 (181-2003-Dam 3)	2	11	23	12	-1	1	1940	6613	6715	54	156	109	81	48.7	0	$72,600
SWRF Dam 3 (181-2003-Dam 3)	Bullfrog Pipeline	2	11	23	12	-1	1	940	6556	6745	11	200	68	51	96.9	0	$60,500
Decant Pond #4	Booster Pump 2	2	20	32	12	-1	1	3000	6688	6700	1	13	14	10	0	18,001,800	$60,500
Booster Pump 2	Surge Tank	2	20	32	12	-1	1	3000	6700	6925	10	235	254	189	0	0	$60,500
Decant Pond #4	Reclaim Pond	2	20	32	5	-1	1	1760	6688	7000	31	343	218	162	0	0	$72,600
Magnetite Interceptor Trench	Magnetite Tailings Seepage Pond	1	20	32	5	-1	1	100	6670	6695	0	25	1	1	0	146643	$18,150
Magnetite Seepage Pond	Decant Pond #4	2	20	32	12	-1	1	100	6695	6750	7	62	2	2	13.1	0	$36,300
Estrada Seep	Decant Pond #4	2	5	17	5	-1	1	45	6575	6688	19	132	2	2	0	762541	$24,200
Union Hill Adit Seep	Decant Pond #4	2	5	17	5	-1	1	30	6575	6688	96	209	2	2	0	169454	$24,200
Poison Spring Cut-Off Wall	Decant Pond #4	1	-9	3	58	17	3	20	6570	6688	36	154	1	1	0	10,512,000	$12,100
Upper Creek Containment Pond #1	Surge Tank	2	-4	8	12	-1	1	1980	6810	6925	358	473	338	252	53.7	0	$72,600
Grape Gulch Pond #3	Surge Tank	2	20	32	12	-1	1	1100	6775	6925	14	164	65	49	6.5	0	$72,600
Blackman's Seep	Upper Creek Containment Pond 1	1	20	32	9	-1	1	125	6775	6810	0	35	2	1	0	0	$18,150
Surge Tank	Reclaim Pond	2	6	18	9	-1	1	3497	6925	7000	26	101	128	95	0	0	$72,600
Reclaim Pond	Surge Tank	1	6	18	5	-1	1	1240	7000	7010	46	56	25	19	316.1	0	$36,300
tailings pipeline flushing																	
Mill No 1	Tailings Impoundment Top	1						4318	6825	7000	13	188	293	219			
Mill No 2	Tailings Impoundment Top	1						4318	6950	7000	13	63	98	73			

*Surge tank to bullfrog pipeline is gravity fed and thus pumping costs are not included.

PUMPS(continued)

From	To	Post Closure Pre Completed Reclamation (Through Reclamation Year 5)					Post Closure Post Completed Reclamation (Reclamation Year 6 to 58)					**Direct Pump Cost New and Replacement (O&M) ($)**	**Direct Cost Maintenance Over Yrs 0-12 ($/yr)**	**Direct Cost O&M ($)**	**Direct Cost Removal, Included in Pipeline Demo ($)**	**Direct Cost O&M Electricity and Fuel ($)**
		Average Pumping Rate (gal/yr)	Operating Time (hr/yr)	Annual Electrical Usage (kWh/yr)	Direct Annual Operational Cost ($/yr)	Direct Operational Cost ($)	Average Pumping Rate (gal/yr)	Operating Time (hr/yr)	Annual Electrical Usage (kWh/yr)	Direct Annual Operational Cost ($/yr)	Direct Operational Cost ($)					
SWRF Dam 1 (181-2003-Dam 1)	SWRF Dam 3 (181-2003-Dam 3)	5,821,940	55.1	3,381	$198	$1,191	305,877	3	178	$10	$73	$72,600	$5,585	$72,600	$0	$1,264
SWRF Dam 2 (181-2003-Dam 2)	SWRF Dam 3 (181-2003-Dam 3)	2,345,149	20.1	1,636	$96	$576	123,211	1	86	$5	$35	$72,600	$5,585	$72,600	$0	$611
SWRF Dam 3 (181-2003-Dam 3)	Bullfrog Pipeline	12,833,308	227.5	11,520	$676	$4,057	8,412,245	149	7,552	$443	$3,103	$60,500	$4,654	$60,500	$0	$7,160
Decant Pond #4	Booster Pump 2	19,711,268	109.5	1,105	$65	$389	1,709,468	9	96	$6	$39	$60,500	$4,654	$60,500	$0	$429
Booster Pump 2	Surge Tank	19,711,268	109.5	20,750	$1,218	$7,308	19,711,268	110	20,750	$1,218	$8,526	$60,500	$4,654	$60,500	$0	$15,834
Decant Pond #4	Reclaim Pond	0	0.0	0	$0	$0	0	0	0	$0	$0	$72,600	$5,585	$33,508	$0	$0
Magnetite Interceptor Trench	Magnetite Tailings Seepage Pond	146,643	24.4	17	$1	$6	146,643	24	17	$1	$0	$18,150	$1,396	$8,377	$0	$6
Magnetite Seepage Pond	Decant Pond #4	777,473	129.6	216	$13	$76	179,786	30	50	$3	$21	$36,300	$2,792	$36,300	$0	$96
Estrada Seep	Decant Pond #4	762,541	282.4	450	$26	$159	0	0	0	$0	$0	$24,200	$1,862	$11,169	$0	$159
Union Hill Adit Seep	Decant Pond #4	169,454	94.1	159	$9	$56	0	0	0	$0	$0	$24,200	$1,862	$11,169	$0	$56
Poison Spring Cut-Off Wall	Decant Pond #4	10,512,000	8,760.0	7,267	$427	$2,559	10,512,000	8,760	7,267	$427	$22,609	$36,300	$0	$0	$0	$25,168
Upper Creek Containment Pond #1	Surge Tank	2,585,924	21.8	5,485	$322	$1,932	135,861	1.1	288	$17	$118	$72,600	$5,585	$72,600	$0	$2,050
Grape Gulch Pond #3	Surge Tank	313,008	4.7	231	$14	$81	16,445	0	12	$1	$5	$72,600	$5,585	$72,600	$0	$86
Blackman's Seep	Upper Creek Containment Pond 1	0	0.0	0	$0	$0	0	0	0	$0	$0	$18,150	$1,396	$13,962	$0	$0
Surge Tank	Reclaim Pond	0	0.0	0	$0	$0	0	0	0	$0	$0	$72,600	$5,585	$55,846	$0	$0
Reclaim Pond	Surge Tank	15,221,796	204.6	-	$626	$3,756	799,733	11	33	$2	$0	$36,300	$2,792	$16,754	$0	$3,756
tailings pipeline flushing																
Mill No 1	Tailings Impoundment Top	5,764,479	22.2	4,865												
Mill No 2	Tailings Impoundment Top	6,800,790	26.2	1,928												
Direct Annual Costs ($/yr):		-	-	-	$3,691	-	-	-	-	$2,132	-	-	$59,569	-	-	-
Direct Cost Subtotals:		-	-	-	-	$22,147	-	-	-	-	$34,529	$0	-	$658,985	$0	$56,676

PIPELINES

From	To	Material	Length (ft)	Inside Diameter (in)	Age in 2014 (yr)	Age at Reclamation (yr)	Removal Year (After Closure) (yr)	Reclamation Replacement Year (yr)	Number of Replacements	Direct Cost New and Replacement ($/ft)	Direct Cost Removal (Demo) ($/ft)	Direct Cost New and Replacement ($/ea)	**Direct Cost New and Replacement ($)**	**Direct Cost O&M ($/yr)**	**Direct Cost O&M ($)**	**Capital Cost Removal (Demo) ($)**
SWRF Dam 1 (181-2003-Dam 1)	SWRF Dam 3 (181-2003-Dam 3)	HDPE	4,466	10	11	23	12	-	0	$17.44	$4.64	$77,887	$0	$779	$10,125	$20,722
SWRF Dam 2 (181-2003-Dam 2)	SWRF Dam 3 (181-2003-Dam 3)	HDPE	3,300	10	11	23	12	-	0	$17.44	$4.64	$57,552	$0	$576	$7,482	$15,312
SWRF Dam 3 (181-2003-Dam 3)	Bullfrog Pipeline	HDPE	220	6	11	23	12	-	0	$8.74	$4.64	$1,923	$0	$19	$250	$1,021
Decant Pond #4	Booster Pump 2	HDPE	100	15	20	32	12	-	0	$33.51	$4.64	$3,351	$0	$34	$436	$464
Booster Pump 2	Surge Tank	HDPE	1,936	15	20	32	12	-	0	$33.51	$4.64	$64,875	$0	$649	$8,434	$8,983
Decant Pond #4	Reclaim Pond	HDPE	5,502	12	20	32	5	-	0	$20.34	$4.64	$111,911	$0	$1,119	$6,715	$25,529
Magnetite Interceptor Trench	Magnetite Tailings Seepage Pond	HDPE	200	5	20	32	5	-	0	$8.74	$4.64	$1,748	$0	$17	$105	$928
Magnetite Seepage Pond	Decant Pond #4	HDPE	1,188	4	20	32	12	-	0	$6.88	$4.64	$8,173	$0	$82	$1,063	$5,512
Estrada Seep	Decant Pond #4	HDPE	3,470	3	20	32	5	-	0	$6.88	$4.64	$23,874	$0	$239	$1,432	$16,101
Union Hill Adit Seep	Decant Pond #4	HDPE	5,250	2	20	32	5	-	0	$6.88	$4.64	$36,120	$0	$361	$2,167	$24,360
Poison Spring Cut-Off Wall	Decant Pond #4	HDPE	4,200	2	-9	3	58	-	0	$6.88	$4.64	$28,896	$0	$289	$17,049	$19,488
Upper Creek Containment Pond #1	Surge Tank	HDPE	1,770	6	20	32	12	-	0	$8.74	$4.64	$15,470	$0	$155	$2,011	$8,213
Upper Creek Containment Pond #1	Surge Tank	HDPE	1,770	8	20	32	12	-	0	$11.91	$4.64	$21,081	$0	$211	$2,740	$8,213
Grape Gulch Pond #3	Surge Tank	HDPE	861	8	20	32	12	-	0	$11.91	$4.64	$10,255	$0	$103	$1,333	$3,995
Blackman's Seep	Upper Creek Containment Pond 1	HDPE	100	5	20	32	9	-	0	$8.74	$4.64	$874	$0	$9	$87	$464
Surge Tank	Chino via Bullfrog Pipeline *	HDPE	31,850	8	3	15	-	85	1	$11.91	-	$379,334	$379,334	$3,793	$375,540	$0
Surge Tank	Reclaim Pond	HDPE	3,923	15	20	32	9	-	0	$25.86	$4.64	$101,449	$0	$1,014	$10,145	$18,203
Reclaim Pond	Surge Tank	HDPE	3,855	9	20	32	5	-	0	$11.91	$4.64	$45,913	$0		$2,755	$17,887
tailings pipeline flushing														$459		
Mill No 1	Tailings Impoundment Top	HDPE	6,850	21												
Mill No 2	Tailings Impoundment Top	HDPE	6,850	21												
												Direct Annual Costs ($/yr):	-	$9,907	-	-
												Direct Cost Subtotals:	$379,334	-	$449,869	$195,395

*Bullfrog pipeline has an Industrial PMLU

ELECTRICAL INFRASTRUCTURE

From	To	Line (ft)	Number of Poles	Removal Year	Direct Cost Pole and Crossarm ($)	Direct Cost Wiring Installation ($)	Number Transformer Stations	Direct Cost Transformer ($)	Direct Cost Electrical Panel ($)	**Direct Cost New ($)**	**Direct Cost Maintenance ($/yr)**	**Direct Cost O&M ($)**	**Capital Cost Removal ($)**
SWRF Dam 1 (181-2003-Dam 1)	SWRF Dam 2 (181-2003-Dam 2)	1,166	13	12	$32,042	$5,196	2	$3,058	$24,200	$64,495	$967	$12,577	$3,882
SWRF Dam 2 (181-2003-Dam 2)	SWRF Dam 3 (181-2003-Dam 3)	3,300	34	12	$83,802	$14,705	2	$3,058	$24,200	$125,764	$1,886	$24,524	$10,154
SWRF Dam 3 (181-2003-Dam 3)	Road	220	4	12	$9,859	$980	2	$3,058	$24,200	$38,097	$571	$7,429	$1,195
Decant Pond #4	Surge Tank	2,036	22	12	$54,225	$9,072	2	$3,058	$24,200	$90,555	$1,358	$17,658	$6,570
Upper Creek Containment Pond #1, Grape Gulch Pond #3, and Blackman's Seep	Office Area	582	7	12	$17,253	$2,593	1	$1,529	$12,100	$33,476	$502	$6,528	$2,090
Surge Tank	Upper Creek Containment Pond 1	1,770	19	12	$46,830	$7,887	1	$1,529	$12,100	$68,346	$1,025	$13,328	$5,674
Magnetite Tailings Seepage Pond	Decant Pond #4	1,188	13	5	$32,042	$5,294	1	$1,529	$12,100	$50,964	$764	$4,587	$3,882
Estrada Seep	Road	500	6	5	$14,789	$2,228	1	$1,529	$12,100	$30,645	$460	$2,758	$1,792
Union Hill Adit Seep	Road	727	9	5	$22,183	$3,239	1	$1,529	$12,100	$39,051	$586	$3,515	$2,688
Office Area	Road	2,327	25	12	$61,619	$10,369	1	$1,529	$12,100	$85,617	$1,284	$16,695	$7,466
									Direct Annual Costs ($/yr):	-	$9,405	-	-
									Direct Cost Subtotals:	-	-	$109,598	$45,393

ENVIRONMENTAL SAMPLING, ANALYSIS AND REPORTING [(1)]

Shipping and Analysis					Reporting						
Shipping (coolers per sample)	Shipping Cost ($/cooler)	Shipping Cost ($/sample)	Analysis ($/sample)	Analysis and Shipping Cost ($/sample)	Labor (hours/sample)	Reporting (hour/sample)	Rate ($/hour)	Review Work per Sample (hours)	Review Work Rate ($/hour)	Reporting Cost ($/sample)	Total Sample Cost ($/sample)
0.14	$ 499	$ 71	$ 349	$ 420	1.0	0.5	$ 73	0.1	$ 85	$ 120	$ 540

[(1)] Sampling vehicles and equipment are assumed to be included in the routine duty for site personnel.

SAMPLING SCHEDULE AND COST

	Tailings			Stockpiles			Intercept Wells				Sampling		Yearly
Year 0	Quarterly	Semi-Annual	Annual	Quarterly	Semi-Annual	Annual	Quarterly	Semi-Annual	Annual	Total Well Locations	Events Per Year	Cost ($/sample)	Cost ($)
0-5	1			4			2			7	4	$ 540	$ 15,120
5 - 12		1			4			2		7	2	$ 540	$ 7,560
12-99			1			4			2	7	1	$ 540	$ 3,780
												Total Cost Years 0-99	**$ 461,160**

Energy Labs Unit Rates:

23 Constituents. Energy Laboratories, Inc., Quote March 2018-2019 (www.energylab.com) * 1.21 for 2019-2023 inflation(3) *1.03 for 2023-2024 inflation(4)

Alkalinity Total as CaCO3	$ 12	$ 12.46
Anions by Ion Chromatography	$ 36	$ 37.39
Chloride		
Fluoride		
Sulfate		
Total Dissolved Solids	$ 24	$ 24.93
Nitrogen - Nitrate+Nitrite as N	$ 54	$ 56.08
Metals by ICP/ICPMS, total	$ 194	$ 199.41
Aluminum		
Arsenic		
Cadmium		
Calcium		
Chromium		
Cobalt		
Copper		
Iron		
Lead		
Magnesium		
Manganese		
Nickel		
Potassium		
Selenium		
Sodium		
Zinc		
Sample Prep	$ 18.15	$ 18.69
	$ 339	$348.96

Water Management Cash Flow

Continental Mine
Water Management Worksheet #3
7/18/2024

Component	Current Cost
Water Management Capital	$1,056,386
Capital Removal	$313,025
O&M	$3,711,625
Total	**$5,081,000**

	Water Management			
Cash Flow Year	Water Management Capital Current Cost	Capital Removal Current Cost	O&M Current Cost	Total Water Management Current Cost
1	$516,063	$0	$148,711	$664,774
2	$0	$0	$148,711	$148,711
3	$0	$0	$148,711	$148,711
4	$0	$0	$148,711	$148,711
5	$0	$0	$148,711	$148,711
6	$0	$121,117	$139,828	$260,945
7	$0	$0	$117,968	$117,968
8	$0	$0	$117,968	$117,968
9	$0	$0	$117,968	$117,968
10	$0	$24,267	$117,968	$142,235
11	$0	$0	$108,557	$108,557
12	$0	$0	$108,557	$108,557
13	$0	$142,306	$104,115	$246,422
14	$0	$0	$23,789	$23,789
15	$0	$0	$23,789	$23,789
16	$0	$0	$23,789	$23,789
17	$0	$0	$23,789	$23,789
18	$15,730	$0	$23,789	$39,519
19	$0	$0	$23,789	$23,789
20	$0	$0	$23,789	$23,789
21	$0	$0	$23,789	$23,789
22	$0	$0	$23,789	$23,789
23	$0	$0	$23,789	$23,789
24	$0	$0	$23,789	$23,789
25	$0	$0	$23,789	$23,789
26	$0	$0	$23,789	$23,789
27	$0	$0	$23,789	$23,789
28	$0	$0	$23,789	$23,789
29	$0	$0	$23,789	$23,789
30	$0	$0	$23,789	$23,789
31	$0	$0	$23,789	$23,789
32	$0	$0	$23,789	$23,789
33	$0	$0	$23,789	$23,789
34	$0	$0	$23,789	$23,789
35	$0	$0	$23,789	$23,789
36	$0	$0	$23,789	$23,789
37	$0	$0	$23,789	$23,789
38	$15,730	$0	$23,789	$39,519
39	$0	$0	$23,789	$23,789
40	$0	$0	$23,789	$23,789
41	$0	$0	$23,789	$23,789
42	$0	$0	$23,789	$23,789
43	$0	$0	$23,789	$23,789
44	$0	$0	$23,789	$23,789
45	$0	$0	$23,789	$23,789
46	$0	$0	$23,789	$23,789
47	$0	$0	$23,789	$23,789
48	$0	$0	$23,789	$23,789
49	$0	$0	$23,789	$23,789
50	$0	$0	$23,789	$23,789
51	$0	$0	$23,789	$23,789
52	$0	$0	$23,789	$23,789
53	$0	$0	$23,789	$23,789
54	$0	$0	$23,789	$23,789
55	$0	$0	$23,789	$23,789
56	$0	$0	$23,789	$23,789
57	$0	$0	$23,789	$23,789
58	$15,730	$0	$23,789	$39,519
59	$0	$25,334	$23,789	$49,123

Water Management Cash Flow

Continental Mine
Water Management Worksheet #3
7/18/2024

Component	Current Cost
Water Management Capital	$1,056,386
Capital Removal	$313,025
O&M	$3,711,625
Total	**$5,081,000**

	Water Management			
Cash Flow Year	Water Management Capital Current Cost	Capital Removal Current Cost	O&M Current Cost	Total Water Management Current Cost
60	$0	$0	$22,948	$22,948
61	$0	$0	$22,948	$22,948
62	$0	$0	$22,948	$22,948
63	$0	$0	$22,948	$22,948
64	$0	$0	$22,948	$22,948
65	$0	$0	$22,948	$22,948
66	$0	$0	$22,948	$22,948
67	$0	$0	$22,948	$22,948
68	$0	$0	$22,948	$22,948
69	$0	$0	$22,948	$22,948
70	$0	$0	$22,948	$22,948
71	$0	$0	$22,948	$22,948
72	$0	$0	$22,948	$22,948
73	$0	$0	$22,948	$22,948
74	$0	$0	$22,948	$22,948
75	$0	$0	$22,948	$22,948
76	$0	$0	$22,948	$22,948
77	$0	$0	$22,948	$22,948
78	$0	$0	$22,948	$22,948
79	$0	$0	$22,948	$22,948
80	$0	$0	$22,948	$22,948
81	$0	$0	$22,948	$22,948
82	$0	$0	$22,948	$22,948
83	$0	$0	$22,948	$22,948
84	$0	$0	$22,948	$22,948
85	$0	$0	$22,948	$22,948
86	$493,134	$0	$22,948	$516,081
87	$0	$0	$22,948	$22,948
88	$0	$0	$22,948	$22,948
89	$0	$0	$22,948	$22,948
90	$0	$0	$22,948	$22,948
91	$0	$0	$22,948	$22,948
92	$0	$0	$22,948	$22,948
93	$0	$0	$22,948	$22,948
94	$0	$0	$22,948	$22,948
95	$0	$0	$22,948	$22,948
96	$0	$0	$22,948	$22,948
97	$0	$0	$22,948	$22,948
98	$0	$0	$22,948	$22,948
99	$0	$0	$22,948	$22,948
100	$0	$0	$22,948	$22,948
Total	$1,056,386	$313,025	$3,711,625	$5,081,037

Water Management and Operations and Maintenance Cost Summary

Capital			**Current Value**
DIRECT COSTS	Water Management Capital (Ponds)		$812,605
DIRECT COSTS	Capital Removal (Pipelines and Electrical Infrastructure)		$240,788
INDIRECT COSTS		Indirect Percentage 30.0%	$316,018
		Total Capital	**$1,369,411**

Operations and Maintenance			
DIRECT COSTS	Ponds and Tanks, Pumps, Pipelines, Electrical Infrastructure		$2,639,955
DIRECT COSTS	Electricity and Fuel (Pump Operation), Environmental Sampling		$517,836
INDIRECT COSTS		Indirect Percentage 17.5%	$552,613
		Total O&M	**$3,710,405**

TOTAL COST	**$5,080,000**

Note: Indirect costs are based on 2019 agreement between FMI and the agencies (see Appendix D), and include but are not limited to mobilization and demobilization, engineering redesign fee, contingencies, contractor profit and overhead, project management fee, and state procurement cost.

Water Treatment Unit Costs

Activity	Unit	Unit Cost ($/unit)	RS Means Item Number [1]	Description
Utility Pole Demo	ea	$210.55	024113800100	Selective demolition, utility poles & cross arms, utility poles, wood, 20'-30' high
Cross Arm Demo	ea	$88.09	024113800300	Selective demolition, utility poles & cross arms, cross arms, wood, 4'-6' long
Wood Electrical Utility Poles a.)	ea	$838.83	337116336020	Electrical utility pole, wood pole CCA/ACA-treated, 30', class 1, type C, excludes excavation, backfill and cast in place concrete
Utility Pole Installation b.)	ea	$1,311.69	337116236010	Electrical utility pole, digging holes in rock, average
Utility Pole Installation d.)	ea	$314.23	337116337600	Electrical utility pole, poles, wood, cross arms with hardware & insulators, 4' long, excludes excavation, backfill and cast in place concrete
Electrical Wiring Installation a.)	wire mile	$605.24	337139130110	Overhead line conductors & devices, conductors, primary circuits, material handling & spotting
Electrical Wiring Installation b.)	wire mile	$22,627.91	337139130150	Overhead line conductors & devices, conductors, primary circuits, per wire, 210 to 636 kcmil
Electrical Wiring Installation c.)	mile	$294.20	337139130810	Overhead line conductors & devices, disposal of surplus material, high voltage conductors
Potential Transformers	ea	$1,529.01	337126264100	Station capacitors, potential transformers, 13 to 26 kV
Pipeline Demolition (Flushing and Cover)	lf	$4.64	026510300320	Sludge/water removal at $0.14/ft assuming 18-inch pipe diameter 1/3 full, scaled based on RS Means unit cost to remove sludge/water from 9,000-12,000 (average 10,500) gallon tank at $354.11/each; placement of cover material over pipe at $4.50/ft after sludge/water removal
Excavation of Soil	cy	$8.82	G10301201600 [2]	3/4 C.Y. backhoe, three 8 C.Y. dump trucks, 1 mi round trip; unit rate not presented online, therefore use RS Means 2019 Handbook [hardcopy], 33rd edition with unit rate of $8.40/cy x 0.854 [Las Cruces adjustment] = $7.17/cy *1.23 for 2019-2024 inflation[5]
Reservoir Liners HDPE	sf	$3.53	310519531200	Pond and reservoir liners, membrane lining systems HDPE, 100,000 S.F. or more, 60 mil thick, per S.F.
Small Concrete Dam	lf	$112,370	323213103100	Cast-in place retaining walls, reinforced concrete cantilever, 33 degree slope embankment, 10' high, includes excavation, backfill & reinforcing; 250 ft is the assumed length of retaining wall (dam) @ $449.47/lineal ft (RS Means online data)
Water Treatment Tank	ea	$797,120	331623131000	Steel water storage tanks, ground level, ht./diam. less than 1,250,000 gallons, excl. foundation
Pump	ea	$12,100	-	Engineering Judgment 15 to 30 gpm - includes pump control, control panel, installation, and flow meter
Pump	ea	$18,150	-	Engineering Judgment 50 gpm - includes pump control, control panel, installation, and flow meter
Pump	ea	$30,250	-	Engineering Judgment 100 to 700 gpm - includes pump control, control panel, installation, and flow meter
Pump	ea	$36,300	-	Engineering Judgment 800 to 2000 gpm - includes pump control, control panel, installation, and flow meter
Water Supply Piping	lf	$6.88	331413350100	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 4" diameter, SDR 21
Water Supply Piping	lf	$8.74	331413350200	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 6" diameter, SDR 21
Water Supply Piping	lf	$11.91	331413350300	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 8" diameter, SDR 21
Water Supply Piping	lf	$17.44	331413350400	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 10" diameter, SDR 21
Water Supply Piping	lf	$20.34	331413350500	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 12" diameter, SDR 21
Water Supply Piping	lf	$25.86	331413350600	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 14" diameter, SDR 21
Water Supply Piping	lf	$33.51	331413350700	Water supply distribution piping, piping HDPE, butt fusion joints, 40' lengths, 16" diameter, SDR 21
Facility Water Distribution Piping	lf	$386.77	221113481210 and 221113481780	Steel Pipe Schedule 40, black 24" diameter (RS Means 221113481210) $445 (material) + $108.35 (labor); unit cost without coupling and hanger (RS Means 221113481780) is reduced 35% for material and 10% for labor
Electric Rate	kWh	$0.0587	-	Industrial rate data 7/17/2024 (http://www.electricitylocal.com/states/new-mexico/silver-city/)
Electric Panel Cost	ea	$12,100	-	Engineering Judgment
Diesel Fuel Cost ($/gal)	gal	$3.06	-	Diesel fuel cost is estimated by correlating historical local quotes with public data: R:\Cobre\CCP-RCE\2023\Products\Reports\RCE\App D Supporting Data for Cost Estimation\D6 Fuel Cost\20210902 Fuel Cost\230601_Q12023FuelQuote.xlsx
Environmental Sampler	hr	$73	-	Engineering Judgment
Environmental Sampling Reviewer	hr	$85	-	Engineering Judgment
Environmental Sampling	sample	$349	-	23 Constituents. Energy Laboratories, Inc., Quote March 2018-2019 (www.energylab.com) * 1.21 for 2019-2023 inflation[3] *1.03 for 2023-2024 inflation[4]
Shipping Environmental Sampling	cooler	$499	-	Overnight UPS $400 (2019 rate) for a 10 lb. package 30”x18”x18” Silver City, NM to Casper, WY Energy Labs

(1) RS Means Online unit cost includes CCI adjustment for Las Cruces New Mexico - 2024 R.S. Means Online (www.rsmeansonline.com)

(2) RS Means Online., 2023 (base rate, CCI adj. 0.832 for Las Cruces)

APPENDIX B.2
Stormwater Runoff Calculations

TELESTO
SOLUTIONS • INCORPORATED

2950 E. Harmony Rd., Suite 200
Fort Collins, Colorado 80528
970-484-7704 / 970-484-7789 (FAX)

TECHNICAL MEMORANDUM

DATE: **September 30, 2014** **Telesto #** **200189**

TO: **Cobre Mining Company**

FROM: **April Tischer and Jon Cullor**

SUBJECT: **Sample Runoff Calculation: SCS Curve Number Method**

Problem Statement

As part of the 2014 Closure/Closeout Plan Update, Cobre Mining Company must complete a water management cost estimate. As part of the cost estimate, the amount of surface water runoff to be pumped must be estimated so that related costs can be assigned.

Objectives

1. Estimate average annual stormwater runoff pumping rates for disturbed areas and reclaimed areas.

Approach

1. Estimate daily runoff depth using SCS Curve Number Method (USDA, 1986).

2. Use Surface Impoundment Study (Telesto, 2008) curve number for disturbed areas (CN=85) and covered and revegetated areas (CN=62).

3. A stochastic weather generator CLIGEN (USDA, 2004) was used to create a synthetic 100-year daily precipitation record for Ft. Bayard, New Mexico and then the data was scaled for the Continental Mine, such that the mean annual precipitation for the data set is equal to the 18.29 inches (Multiply by 18.26 in/yr / 15.10 in/yr).

4. Use the two CN's with the stochastic precipitation data for years 1-100 to estimate the average yearly runoff for disturbed and reclaimed areas. Divide total depth by 100 yrs to get average annual runoff depth.

5. Developed stormwater basins based on EOY 2026 areas contributing stormwater runoff to surface impoundments used for closure.

6. Use the average annual runoff depth and basin areas to estimate average annual

runoff volume in the water management cost estimate.

Data and Assumptions

1. Disturbed areas have minimal vegetation to limit runoff. Consequently, an average curve number (CN) of 85 was selected for disturbed areas based on recent stormwater modeling efforts. This represents a soil type with high runoff potential and high percentage of impervious area.

2. During post-closure, cover material has been placed and vegetation established. A curve number of 62 has been selected for this condition and represents a soil type in good hydrologic condition with moderate infiltration rates an cover including grass, weeds, and low growing brush (USDA, 1986; Table 2-2d cover type “herbaceous”, hydrologic soil group “B”), (Telesto, 2008).

3. CLIGEN command line:

   cligen522564.exe -b1 -y100 -iNm293265.par -oFtBa100y

   Runs a 100-year simulation (-y100) beginning in Year 1 (-b1) for Ft Bayard, New Mexico, Indiana, using "Nm293265.par" as the station parameter file, and puts the output into "FtBa100y".

   Notes:

   1. FtBa100y.txt renamed to FtBayard100y.txt
   2. FtBayard100y.txt reformatted to FtBayard100y_LineFormat.txt
   3. FtBayard100y_LineFormat.txt > FtBayarad100yr.xls

4. Ft. Bayard average annual rainfall = 15.10 in/yr.

5. Cobre average annual rainfall = 18.29 in/yr (SMI, 1999).

6. CobreAdjusted100yr.xls adjusted daily data [Ft. Bayard * (18.29/15.100)].

Calculations and Results

Disturbed Areas (CN = 85), the average yearly runoff is 48,155 gal/year/acre

Reclaimed Areas (CN = 62), the average yearly runoff is 2,530 gal/year/acre

See spreadsheet excerpt below.

$$S(in) = \frac{1000}{CN} - 10 \qquad I_a(in) = 0.2\,S$$

$$Q(in/day) = \frac{(P - I_a)^2}{(P - I_a) + S} \quad P > I_a \qquad Q(in/day) = 0 \quad P \le I_a$$

$$Q(gpm) = Q\left(\frac{in}{day}\right) * \frac{1}{12}\left(\frac{ft}{in}\right) * \frac{1}{1440}\left(\frac{day}{\min}\right) * 43560\left(\frac{ft^2}{ac}\right) * 1(ac) * 7.48\left(\frac{gal}{ft^3}\right)$$

Yr	t time (day)	P precipitation (in)	CN curve number	S storativity (in)	Ia initial abstraction (in)	Q runoff depth (in/day)	Q runoff volume (gallons/day)	Q runoff volume (gpm/ac)	Annual Precip
1	44	0.00	85	1.76	0.35	0.000	0	0.0	
1	45	0.00	85	1.76	0.35	0.000	0	0.0	
1	46	0.07	85	1.76	0.35	0.000	0	0.0	
1	47	0.00	85	1.76	0.35	0.000	0	0.0	
1	48	0.00	85	1.76	0.35	0.000	0	0.0	
1	49	0.00	85	1.76	0.35	0.000	0	0.0	
1	50	0.64	85	1.76	0.35	0.041	1,106	0.8	
1	51	0.13	85	1.76	0.35	0.000	0	0.0	
1	52	0.00	85	1.76	0.35	0.000	0	0.0	
1	53	0.00	85	1.76	0.35	0.000	0	0.0	
1	54	0.08	85	1.76	0.35	0.000	0	0.0	
1	55	0.56	85	1.76	0.35	0.021	576	0.4	
1	56	0.00	85	1.76	0.35	0.000	0	0.0	
1	57	0.00	85	1.76	0.35	0.000	0	0.0	
1	58	0.00	85	1.76	0.35	0.000	0	0.0	

References:

Shepherd Miller, Inc. (SMI). 1999. Baseline Characterization of the Hydrology, Geology, and Geochemistry of the Proposed Continental Mine Expansion Project, Cobre Mining Company, Inc. Prepared for Cobre Mining Company, Inc. (Hurley, NM) by Shepherd Miller, Inc. (Fort Collins, CO).

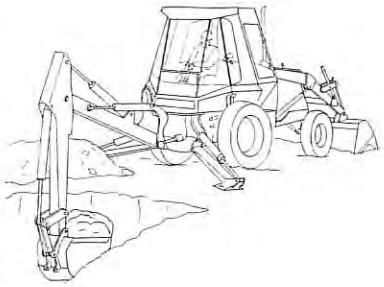
Telesto Solutions, Inc. (Telesto). 2008. Condition 87 Continental Mine Surface Impoundment Study, Revision II, June 2008.

USDA. 1986. Urban Hydrology for Small Watersheds TR-55. Natural Resources Conservation Service, Conservation Engineering Division. Second Edition, June 1986.

USDA. 2004. Cligen Weather Generator v522564, October, 26, 2004.

APPENDIX B.3
Supporting Documents

G1030 Site Earthwork



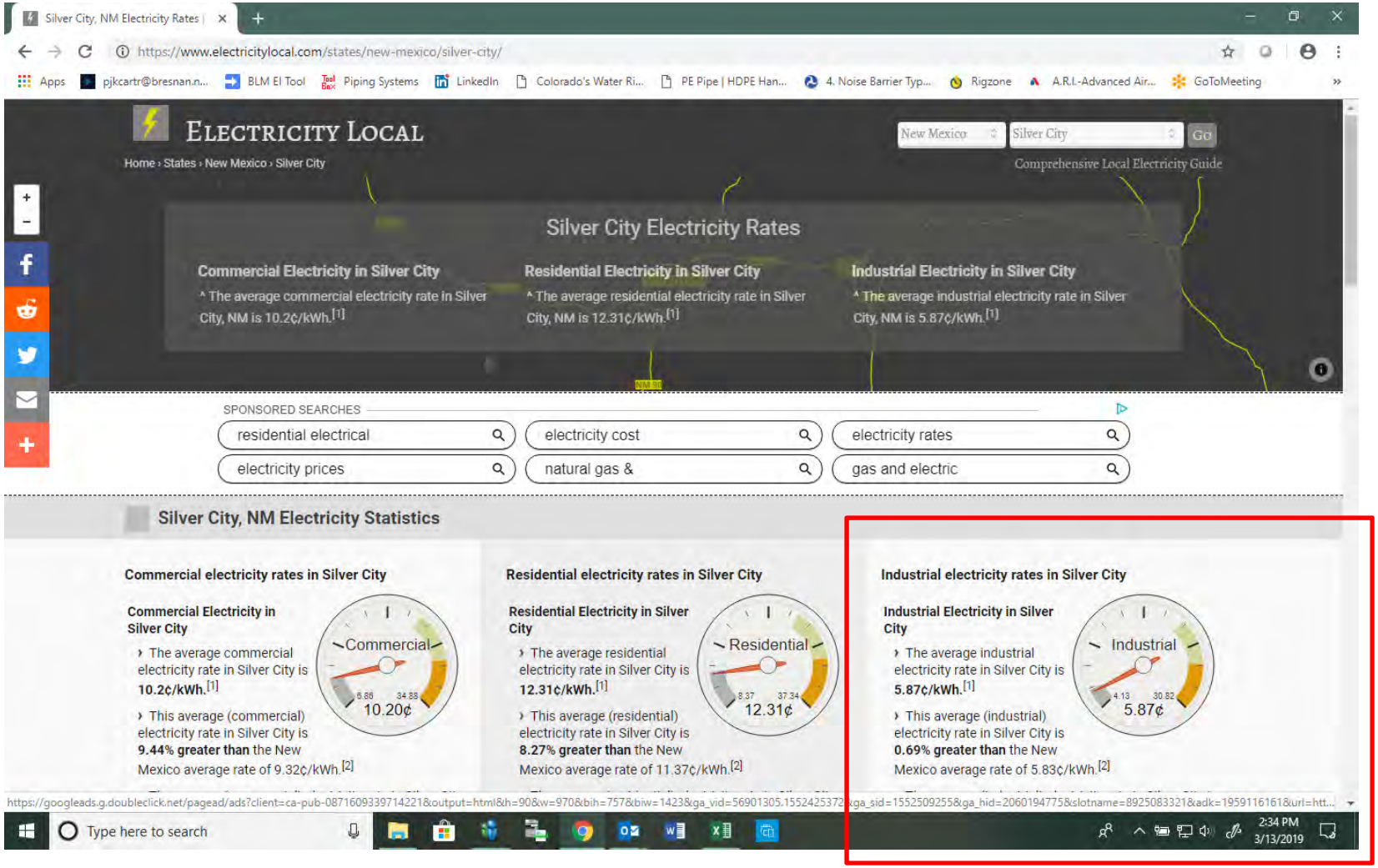
The Excavation of Common Earth System balances the productivity of the excavating equipment to the hauling equipment. It is assumed that the hauling equipment will encounter light traffic and will move up no considerable grades on the haul route. No mobilization cost is included. All costs given in these systems include a swell factor of 25% for hauling.

The Expanded System Listing shows Excavation systems using backhoes ranging from 1/2 Cubic Yard capacity to 3-1/2 Cubic Yards. Power shovels indicated range from 1/2 Cubic Yard to 3 Cubic Yards. Dragline bucket rigs range from 1/2 Cubic Yard to 3 Cubic Yards. Truck capacities range from 8 Cubic Yards to 20 Cubic Yards. Each system lists the number of trucks involved and the distance (round trip) that each must travel.

System Components	QUANTITY	UNIT	COST PER C.Y. EQUIP.	LABOR	TOTAL
SYSTEM G1030 120 1000					
EXCAVATE COMMON EARTH, 1/2 CY BACKHOE, TWO 8 CY DUMP TRUCKS, 1 MRT					
Excavating, bulk hyd. backhoe, wheel mtd., 1/2 C.Y.	1.000	B.C.Y.	.97	2.34	3.31
Hauling, 8 CY truck, cycle 0.5 mile, 20 MPH, 15 min. wait/Ld./Uld.	1.280	L.C.Y.	2.06	3.12	5.18
Spotter at earth fill dump or in cut	.020	Hr.		.99	.99
TOTAL			3.03	6.45	9.48

G1030 120	Excavate and Haul Common Earth	COST PER C.Y. EQUIP.	LABOR	TOTAL
1000	Excavate common earth, 1/2 C.Y. backhoe, two 8 C.Y. dump trucks, 1 MRT	3.03	6.45	9.48
1200	Three 8 C.Y. dump trucks, 3 mile round trip	6	11.05	17.05
1400	Two 12 C.Y. dump trucks, 4 mile round trip	6.55	8.45	15
1600	3/4 C.Y. backhoe, three 8 C.Y. dump trucks, 1 mile round trip	3.05	5.35	8.40
1700	Five 8 C.Y. dump trucks, 3 mile round trip	5.90	10.25	16.15
1800	Two 12 C.Y. dump trucks, 2 mile round trip	5.55	6.50	12.05
1900	Two 16 C.Y. dump trailers, 3 mile round trip	5.25	5.55	10.80
2000	Two 20 C.Y. dump trailers, 4 mile round trip	5.05	5.45	10.50
2200	1-1/2 C.Y. backhoe, eight 8 C.Y. dump trucks, 3 mile round trip	5.70	9.15	14.85
2300	Four 12 C.Y. dump trucks, 2 mile round trip	5.15	5.60	10.75
2400	Six 12 C.Y. dump trucks, 4 mile round trip	6.20	6.50	12.70
2500	Three 16 C.Y. dump trailers, 2 mile round trip	4.25	4.15	8.40
2600	Two 20 C.Y. dump trailers, 1 mile round trip	3.39	3.38	6.77
2700	Three 20 C.Y. dump trailers, 3 mile round trip	4.48	4.27	8.75
2800	2-1/2 C.Y. excavator, six 12 C.Y. dump trucks, 1 mile round trip	3.72	3.80	7.52
2900	Eight 12 C.Y. dump trucks, 3 mile round trip	5.35	5.35	10.70
3000	Four 16 C.Y. dump trailers, 1 mile round trip	3.73	3.44	7.17
3100	Six 16 C.Y. dump trailers, 3 mile round trip	5	4.69	9.69
3200	Six 20 C.Y. dump trailers, 4 mile round trip	4.66	4.31	8.97
3400	3-1/2 C.Y. backhoe, six 16 C.Y. dump trailers, 1 mile round trip	3.98	3.29	7.27
3600	Ten 16 C.Y. dump trailers, 4 mile round trip	5.65	4.69	10.34
3800	Eight 20 C.Y. dump trailers, 3 mile round trip	4.56	3.72	8.28
4000	1/2 C.Y. pwr. shovel, four 8 C.Y. dump trucks, 2 mile round trip	5.40	8.30	13.70
4100	Two 12 C.Y. dump trucks, 1 mile round trip	4.52	5.05	9.57
4200	Four 12 C.Y. dump trucks, 4 mile round trip	6.70	6.85	13.55
4300	Two 16 C.Y. dump trailers, 2 mile round trip	4.80	4.95	9.75
4400	Two 20 C.Y. dump trailers, 4 mile round trip	5.55	5.70	11.25
4800	3/4 C.Y. pwr. shovel, six 8 C.Y. dump trucks, 2 mile round trip	5.25	8	13.25
4900	Three 12 C.Y. dump trucks, 1 mile round trip	4.42	4.38	8.80
5000	Five 12 C.Y. dump trucks, 4 mile round trip	6.80	6.60	13.40
5100	Three 16 C.Y. dump trailers, 3 mile round trip	5.80	5.30	11.10
5200	Three 20 C.Y. dump trailers, 4 mile round trip	5.40	4.94	10.34
5400	1-1/2 C.Y. pwr. shovel, six 12 C.Y. dump trucks, 1 mile round trip	3.90	3.79	7.69
5500	Ten 12 C.Y. dump trucks, 4 mile round trip	6.30	6	12.30

2019


Silver City, NM Electricity Rates |
https://www.electricitylocal.com/states/new-mexico/silver-city/
Apps
pjkcartr@bresnan.n...
BLM EI Tool
Piping Systems
LinkedIn
Colorado's Water Ri...
PE Pipe | HDPE Han...
4. Noise Barrier Typ...
Rigzone
A.R.I.-Advanced Air...
GoToMeeting
ELECTRICITY LOCAL
Home › States › New Mexico › Silver City
New Mexico
Silver City
Go
Comprehensive Local Electricity Guide
Silver City Electricity Rates
Commercial Electricity in Silver City
The average commercial electricity rate in Silver City, NM is 10.2¢/kWh.[1]
Residential Electricity in Silver City
The average residential electricity rate in Silver City, NM is 12.31¢/kWh.[1]
Industrial Electricity in Silver City
The average industrial electricity rate in Silver City, NM is 5.87¢/kWh.[1]
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residential electrical
electricity cost
electricity rates
electricity prices
natural gas &
gas and electric
Silver City, NM Electricity Statistics
Commercial electricity rates in Silver City
Commercial Electricity in Silver City
› The average commercial electricity rate in Silver City is 10.2¢/kWh.[1]
› This average (commercial) electricity rate in Silver City is 9.44% greater than the New Mexico average rate of 9.32¢/kWh.[2]
Commercial
6.86
34.88
10.20¢
Residential electricity rates in Silver City
Residential Electricity in Silver City
› The average residential electricity rate in Silver City is 12.31¢/kWh.[1]
› This average (residential) electricity rate in Silver City is 8.27% greater than the New Mexico average rate of 11.37¢/kWh.[2]
Residential
8.37
37.34
12.31¢
Industrial electricity rates in Silver City
Industrial Electricity in Silver City
› The average industrial electricity rate in Silver City is 5.87¢/kWh.[1]
› This average (industrial) electricity rate in Silver City is 0.69% greater than the New Mexico average rate of 5.83¢/kWh.[2]
Industrial
4.13
30.82
5.87¢
Type here to search
2:34 PM
3/13/2019

Quote #: C5258
Project Manager: Tessa Parke
Expires: 3/23/2019

Analytical Quote

Jean Humphrey
Telesto Solutions Inc
1303 No Pope
Silver City, NM 88061

TAT: 7 days
QC Level: STD

Project Name: Quarterly Samples

Schedule: Water Samples
Matrix: Aqueous
Comments:

Analyses	Method	Reporting Limit	Analyte Price
Major Ions			
Alkalinity			$10.00
Alkalinity, Total as CaCO3	A2320 B	5 mg/L	**
** Included in Alkalinity Price			
Anions by Ion Chromatography			$30.00
Chloride	E300.0	1 mg/L	**
Fluoride	E300.0	0.1 mg/L	**
Sulfate	E300.0	1 mg/L	**
** Included in Anions by Ion Chromatography Price			
Metals by ICP/ICPMS, Total			$160.00
Calcium	E200.7_8	1 mg/L	**
Magnesium	E200.7_8	1 mg/L	**
Potassium	E200.7_8	1 mg/L	**
Sodium	E200.7_8	1 mg/L	**
** Included in Metals by ICP/ICPMS, Total Price			
Physical Properties			
Solids, Total Dissolved			$20.00
Solids, Total Dissolved TDS @ 180 C	A2540 C	10 mg/L	**
** Included in Solids, Total Dissolved Price			
Nutrients			
Nitrogen, Nitrate + Nitrite			$25.00
Nitrogen, Nitrate+Nitrite as N	E353.2	0.01 mg/L	**
** Included in Nitrogen, Nitrate + Nitrite Price			
Nitrogen, Nitrate as N	E353.2	0.01 mg/L	$0.00

Nitrogen, Nitrite			$20.00
Nitrogen, Nitrite as N	A4500-NO2 B	0.01 mg/L	**

** Included in Nitrogen, Nitrite Price

Metals, Total

Metals by ICP/ICPMS, Total			~~
Aluminum	E200.7_8	0.03 mg/L	**
Arsenic	E200.7_8	0.001 mg/L	**
Cadmium	E200.7_8	0.001 mg/L	**
Chromium	E200.7_8	0.005 mg/L	**
Cobalt	E200.7_8	0.005 mg/L	**
Copper	E200.7_8	0.005 mg/L	**
Iron	E200.7_8	0.03 mg/L	**
Lead	E200.7_8	0.001 mg/L	**
Manganese	E200.7_8	0.001 mg/L	**
Nickel	E200.7_8	0.005 mg/L	**
Selenium	E200.7_8	0.001 mg/L	**
Zinc	E200.7_8	0.01 mg/L	**

** Included in Metals by ICP/ICPMS, Total Price

~~ Included in Major Ions Metals by ICP/ICPMS, Total Price

Preps For Water Samples

Metals Preparation by EPA 200.2	E200.2	$15.00

Schedule Price/Sample: $280.00

Schedule Name	Schedule Total
Water Samples	$280.00

Quote Sub Total:	$280.00
Discount:	0.00%
Misc Charges:	$0.00
Quote Total:	$280.00

Comments: As of January 1st, 2012 ELI will begin charging a $2.00 per sample surcharge for sample management. This fee will be applied to all solid and aqueous samples.

Quoted prices are based on net 30 days payment of invoices. Discounts will not apply if terms are not met.

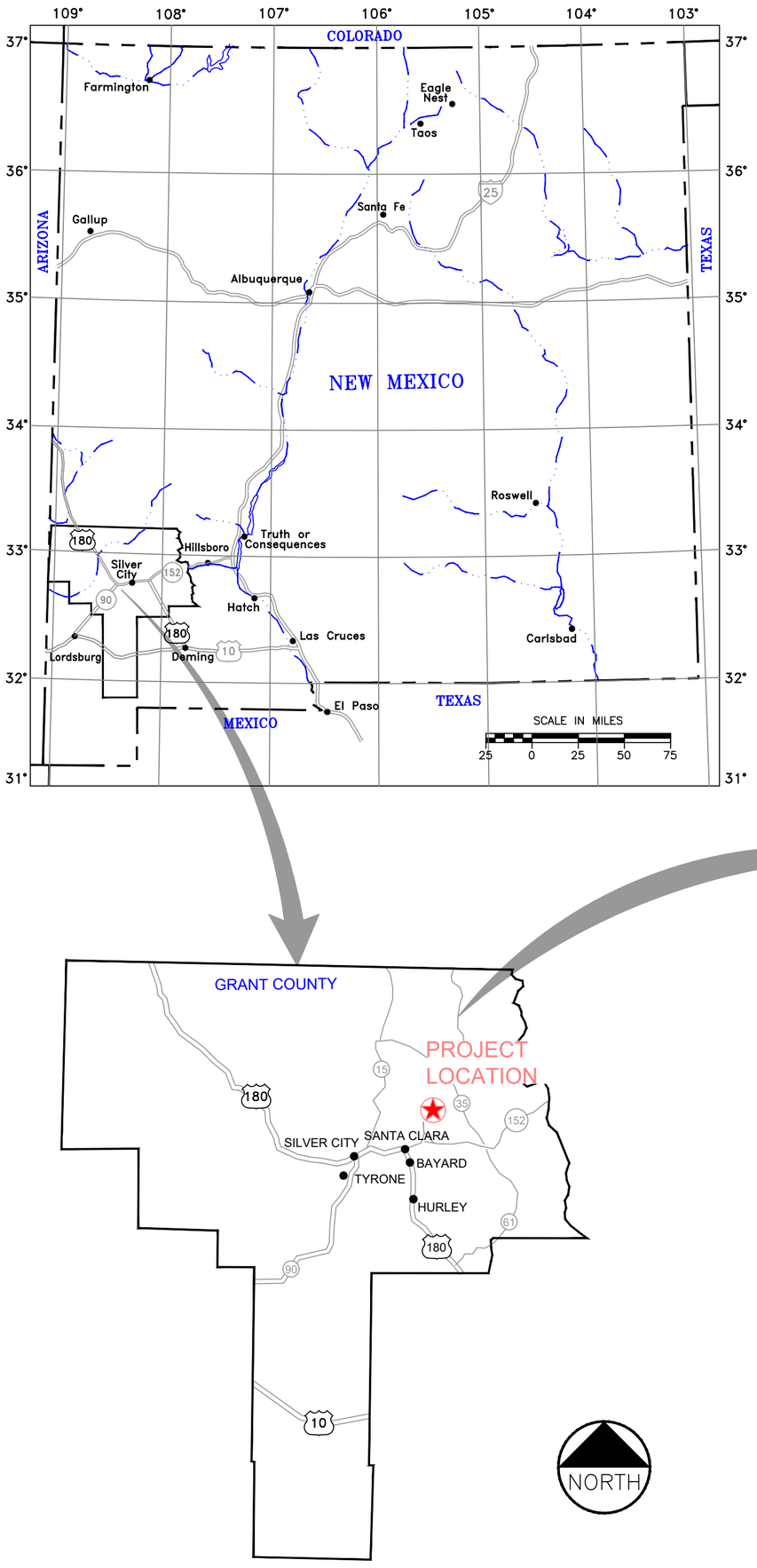
Quoted prices reflect standard turn around time of ~7 working days. Additional charges may apply for accelerated TAT. Please advise ELI as to your project specific requirements.

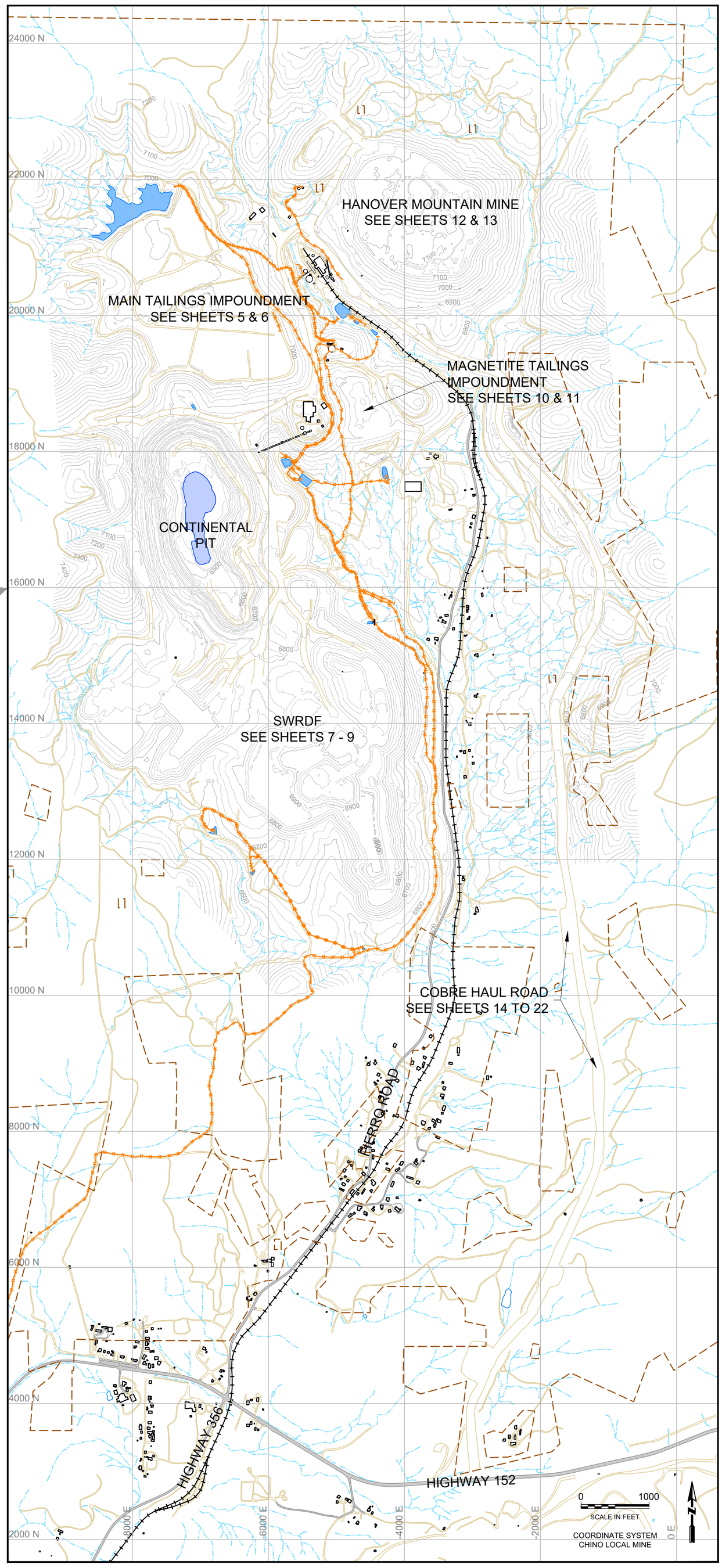
To assure that the quoted analysis and pricing specifications are provided, please include the Quote ID number referenced above on the Chain of Custody or sample submittal documents.

Appendix E

Reclamation Plan Drawings

CONTINENTAL MINE
END OF YEAR 2026
CONCEPTUAL RECLAMATION PLAN
DRAWINGS





SHEET LIST

2023 CONTINENTAL MINE CCP

COVER SHEET

SHEET NUMBER: 1

REVISION NUMBER: 1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-McMoRan

DATE	7/26/2023
PROJECT	200189h
TASK NUMBER	001-03
DRAWN BY	JC
PROJECT ENGINEER	JC
CHECKED BY	WN

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

LEGEND / NOTES

- OPSDA
- CONTINENTAL MINE PERMIT BOUNDARY
- SURFACE WATER DRAINAGE
- DIRT ROAD
- PRE-REC. MAJ. CONTOUR (100 FT)
- PRE-REC. MIN. CONTOUR (25 FT)
- PIPELINE
- PIT LAKE

NOTES:

1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

0 700
SCALE IN FEET

N

COORDINATE SYSTEM
CHINO LOCAL MINE

RECLAIM POND

HANOVER MOUNTAIN MINE

NO. 1 MILL

MAIN TAILINGS IMPOUNDMENT

SURGE TANK

MAGNETITE TAILINGS IMPOUNDMENT

NO. 2 MILL

CONTINENTAL PIT

SWRDF

SWRDF DAM 1

SWRDF DAM 2

SWRDF DAM 3

COBRE HAUL ROAD

BULLFROG PIPELINE

FIERRO ROAD

HIGHWAY 152

24000 N
22000 N
20000 N
18000 N
16000 N
14000 N
12000 N
10000 N
8000 N
6000 N
4000 N

10000 E
8000 E
6000 E
4000 E
2000 E
0 E
2000 E

2023 CONTINENTAL MINE CCP

EOY 2026 CONFIGURATION

SHEET NUMBER:	REVISION NUMBER:
2	1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

DATE	7/26/2023
PROJECT	200189h
TASK NUMBER	001-03
DRAWN BY	JC
PROJECT ENGINEER	JC
CHECKED BY	WN

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

LEGEND / NOTES

- OPSDA
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR (100 FT)
- PRE-REC. MIN. CONTOUR (25 FT)
- DIRT ROAD
- PIPELINE
- RAILROAD
- SURFACE WATER DRAINAGE
- PIT LAKE

NOTES:

1. TOPOGRAPHY 2026 EOY MINE PLAN
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

Date: 7/11/2023 6:00:26 PM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\ClosurePlan\Figures\20230523_EOY2026.dwg Plotted By: Jon Cullor

0 700
SCALE IN FEET

N

COORDINATE SYSTEM
CHINO LOCAL MINE

HANOVER MOUNTAIN MINE
SEE SHEETS 12 & 13

MAIN TAILINGS IMPOUNDMENT
SEE SHEETS 5 & 6

SURGE
TANK

MAGNETITE TAILINGS
IMPOUNDMENT
SEE SHEETS 10 & 11

CONTINENTAL PIT
SEE SHEET 4

SWRDF
SEE SHEETS 7 - 9

COBRE HAUL ROAD
SEE SHEETS 14 - 22

BULLFROG PIPELINE

FIERRO ROAD

HIGHWAY 152

24000 N
22000 N
20000 N
18000 N
16000 N
14000 N
12000 N
10000 N
8000 N
6000 N
4000 N

10000 E
8000 E
6000 E
4000 E
2000 E
0 E
2000 E

2023 CONTINENTAL MINE CCP

EOY 2026 CONFIGURATION RECLAIMED

SHEET NUMBER:	REVISION NUMBER:
3	1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

DATE	7/28/2023
PROJECT	200189h
TASK NUMBER	001-03
DRAWN BY	JC
PROJECT ENGINEER	JC
CHECKED BY	WN

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

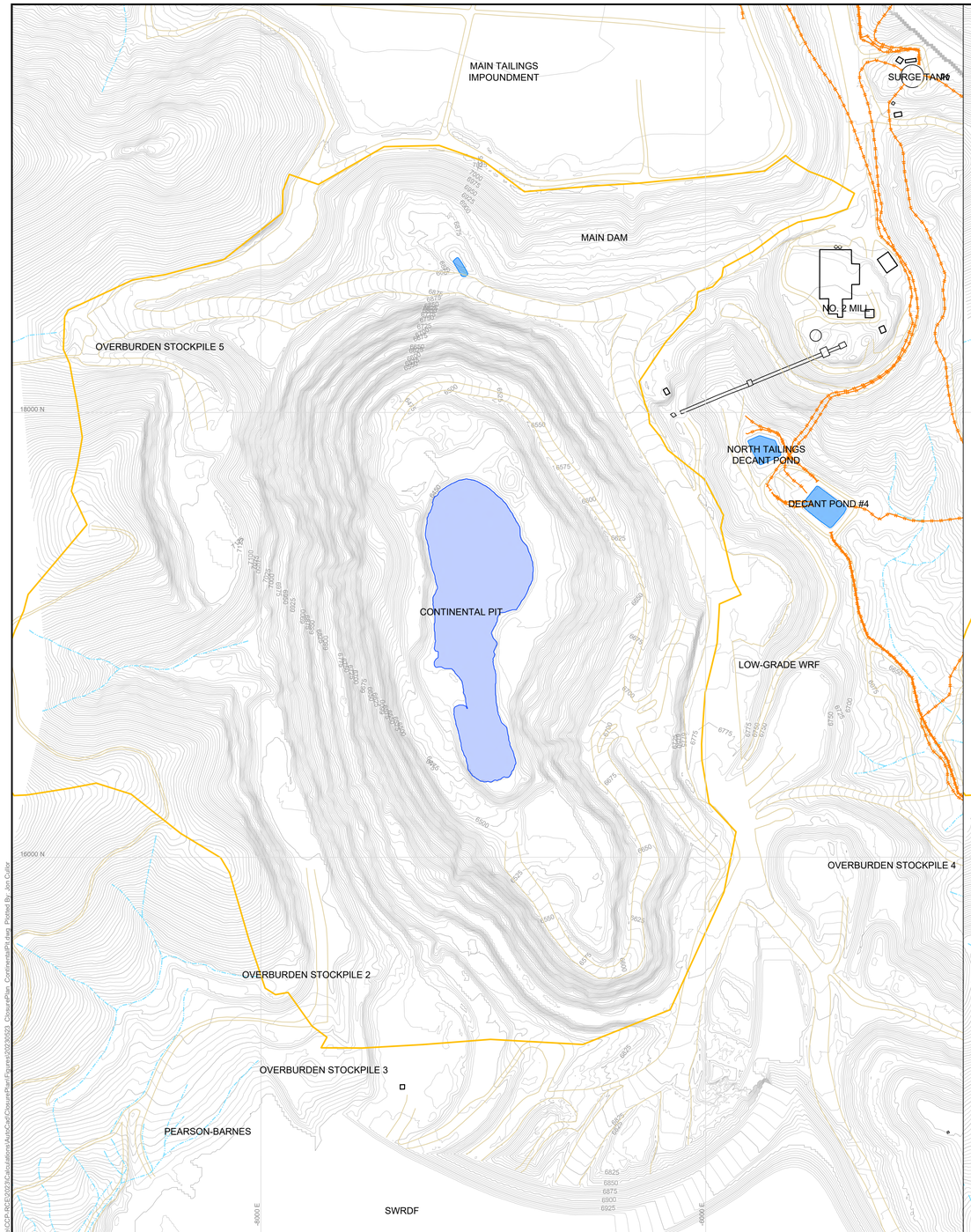
LEGEND / NOTES

- OPSDA
- CONTINENTAL MINE PERMIT BOUNDARY
- FACILITY RECLAMATION GRADING BOUNDARY
- SURFACE WATER DRAINAGE
- DIRT ROAD
- PIT LAKE
- PRE-REC. MAJ. CONTOUR (100 FT)
- PRE-REC. MIN. CONTOUR (25 FT)
- POST-REC. MAJ. CONTOUR (100 FT)
- POST-REC. MIN. CONTOUR (25 FT)
- PIPELINE
- RAILROAD
- PERIMETER FENCE
- PERIMETER BERM
- RECLAIMED STOCKPILE
- UNRECLAIMED STOCKPILE

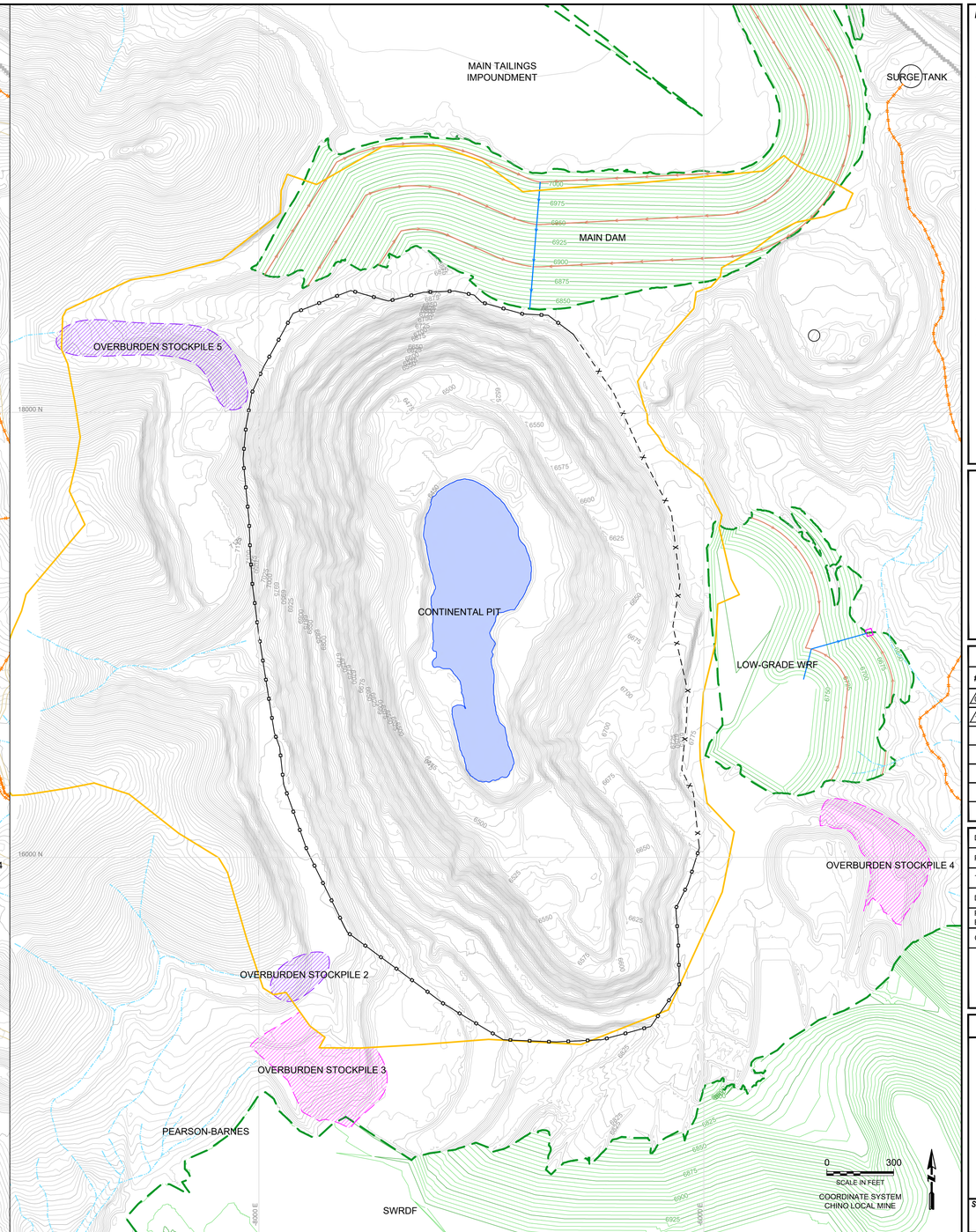
NOTES:

1. TOPOGRAPHY 2026 EOY MINE PLAN
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

Date: 7/17/2023 11:19:21 AM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\ClosurePlan\Figures\20230523_EOY2026_RECLAIMED.dwg Plotted By: Jon Cullor



PLAN VIEW - PRE-RECLAMATION



PLAN VIEW - POST-RECLAMATION

LEGEND / NOTES

- OPSDA
- FACILITY RECLAMATION GRADING BOUNDARY
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR
- PRE-REC. MIN. CONTOUR
- POST-REC. MAJ. CONTOUR
- POST-REC. MIN. CONTOUR
- SW DRAINAGE
- DIRT ROAD
- PIPELINE
- RAILROAD
- STRUCTURE
- SW CONTAINMENT
- PIT LAKE
- BENCH CHANNEL
- DOWNDRAIN
- ENERGY DISSIPATER
- PERIMETER FENCE
- PERIMETER BERM
- RECLAIMED STOCKPILE
- UNRECLAIMED STOCKPILE

NOTES:

1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
2	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/28/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

2023 CONTINENTAL MINE CCP

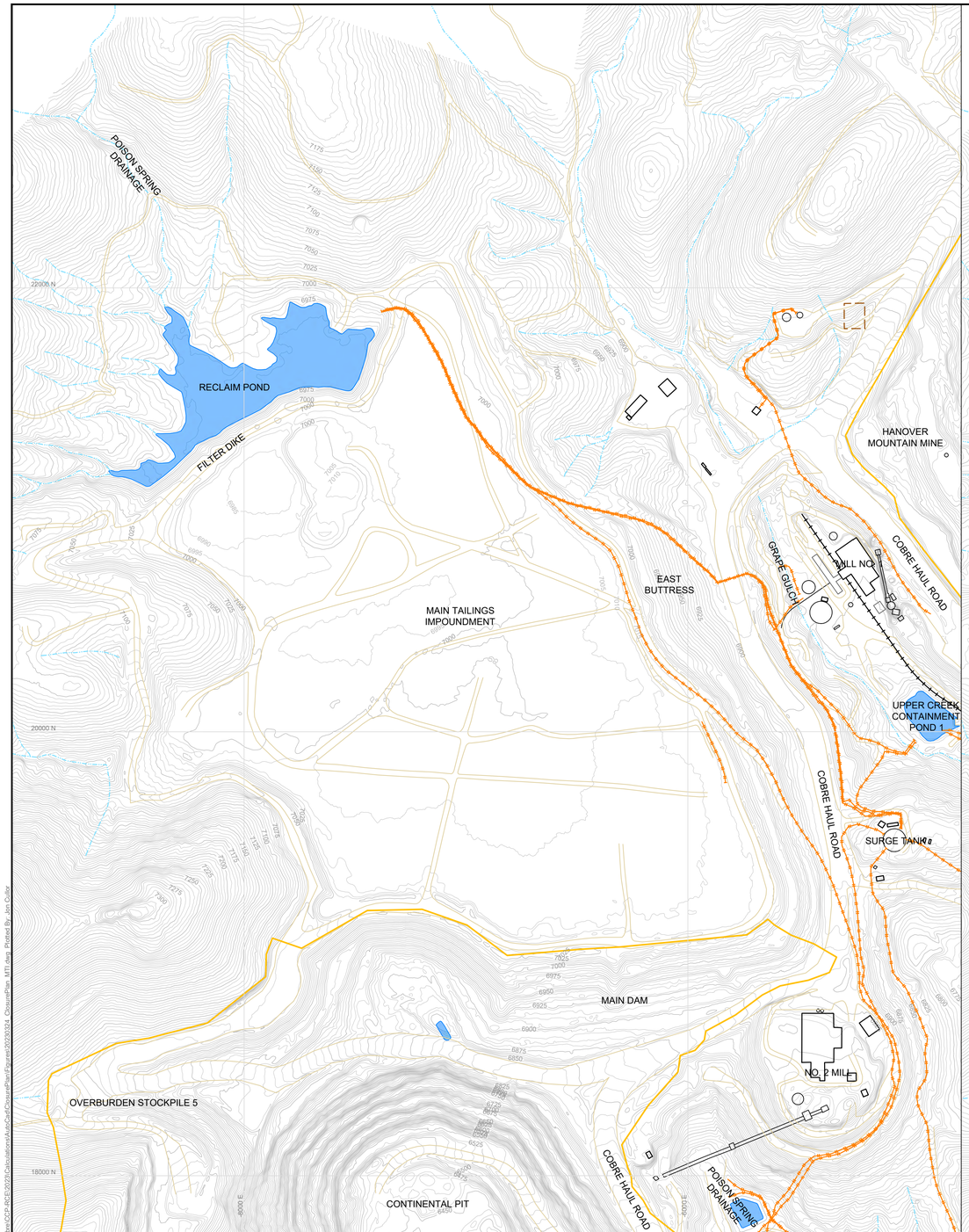
CLOSURE PLAN - CONTINENTAL PIT

SHEET NUMBER:	REVISION NUMBER:
4	1

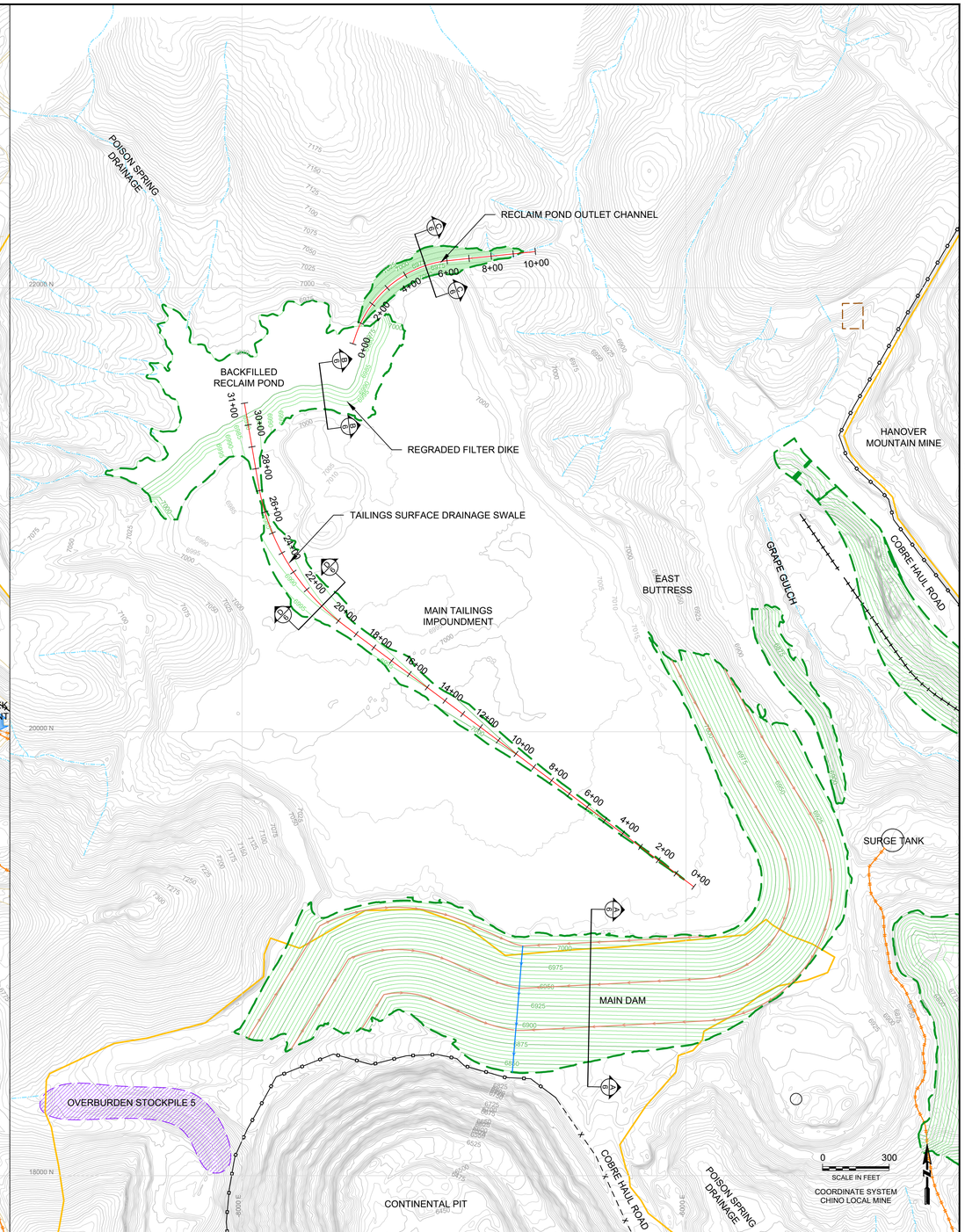
PREPARED BY: TELESTO SOLUTIONS, INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

Date: 7/28/2023, 8:50:48 PM, R:\Projects\CCP-RCE\2023\Calculations\AutoCad\ClosurePlan\Figures\20230623_ClosurePlan_ContinentalPit.dwg, Plotted By: Jim Clarke



PLAN VIEW - PRE-RECLAMATION



PLAN VIEW - POST-RECLAMATION

LEGEND / NOTES

- OPSDA
- FACILITY RECLAMATION GRADING BOUNDARY
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR
- PRE-REC. MIN. CONTOUR
- POST-REC. MAJ. CONTOUR
- POST-REC. MIN. CONTOUR
- SW DRAINAGE
- DIRT ROAD
- PIPELINE
- RAILROAD
- STRUCTURE
- SW CONTAINMENT
- PIT LAKE
- BENCH CHANNEL
- DOWNDRAIN
- ENERGY DISSIPATER
- PERIMETER FENCE
- PERIMETER BERM
- RECLAIMED STOCKPILE
- UNRECLAIMED STOCKPILE

NOTES:
1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
1	FOR REVIEW	6/29/23	JC	WN
2	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/26/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

2023 CONTINENTAL MINE CCP

CLOSURE PLAN - MAIN TAILINGS IMPOUNDMENT - PLAN

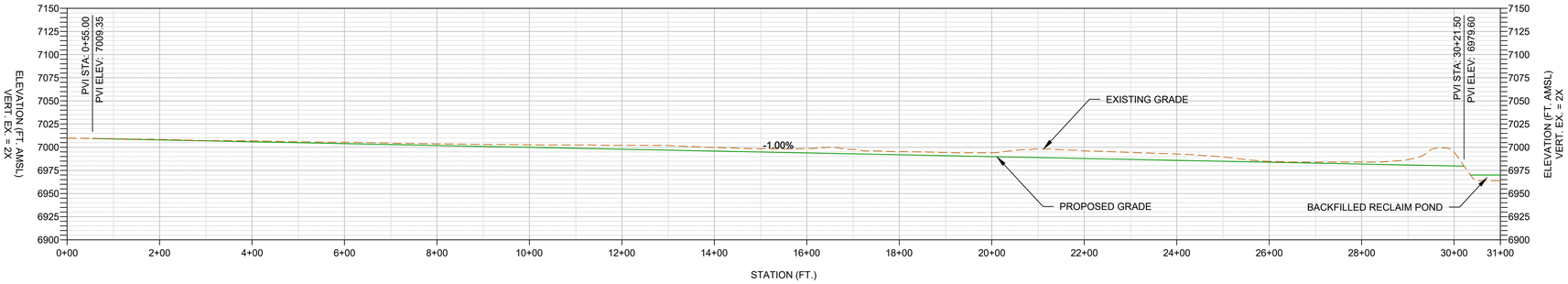
SHEET NUMBER: 5

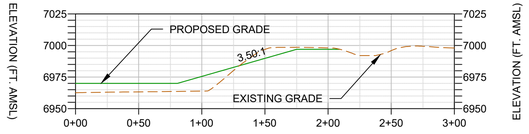
REVISION NUMBER: 1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

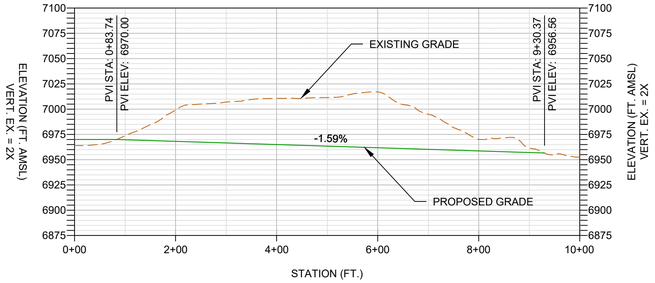
TAILINGS SURFACE DRAINAGE SWALE - CENTERLINE PROFILE

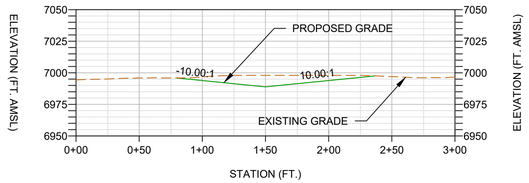




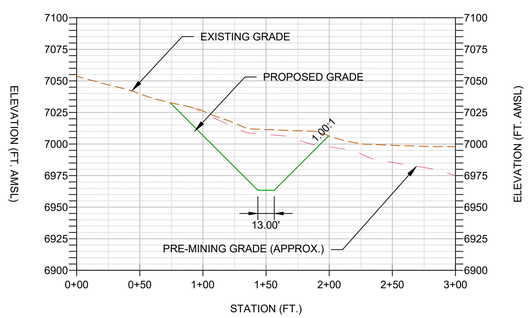
B/5 RECLAIM POND FILTER DIKE
SECTION — SCALE = 1":60'

RECLAIM POND OUTLET - CENTERLINE PROFILE

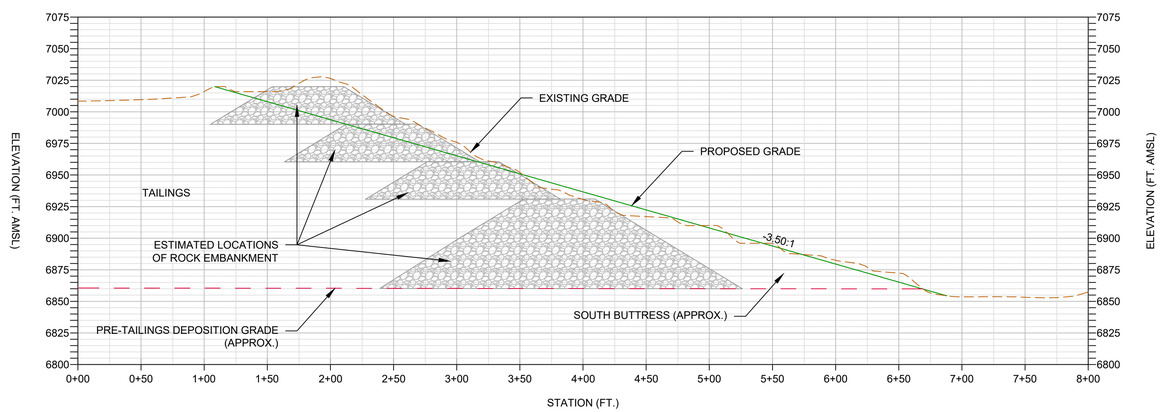




D/5 TAILINGS SURFACE DRAINAGE SWALE
SECTION — SCALE = 1":60'



C/5 RECLAIM POND OUTLET CHANNEL
SECTION — SCALE = 1":60'



A/5 TAILINGS DAM
SECTION — SCALE = 1":60'

LEGEND / NOTES

COORDINATE SYSTEM
CHINO LOCAL MINE

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
1	FOR REVIEW	6/29/23	JC	WN
2	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/26/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

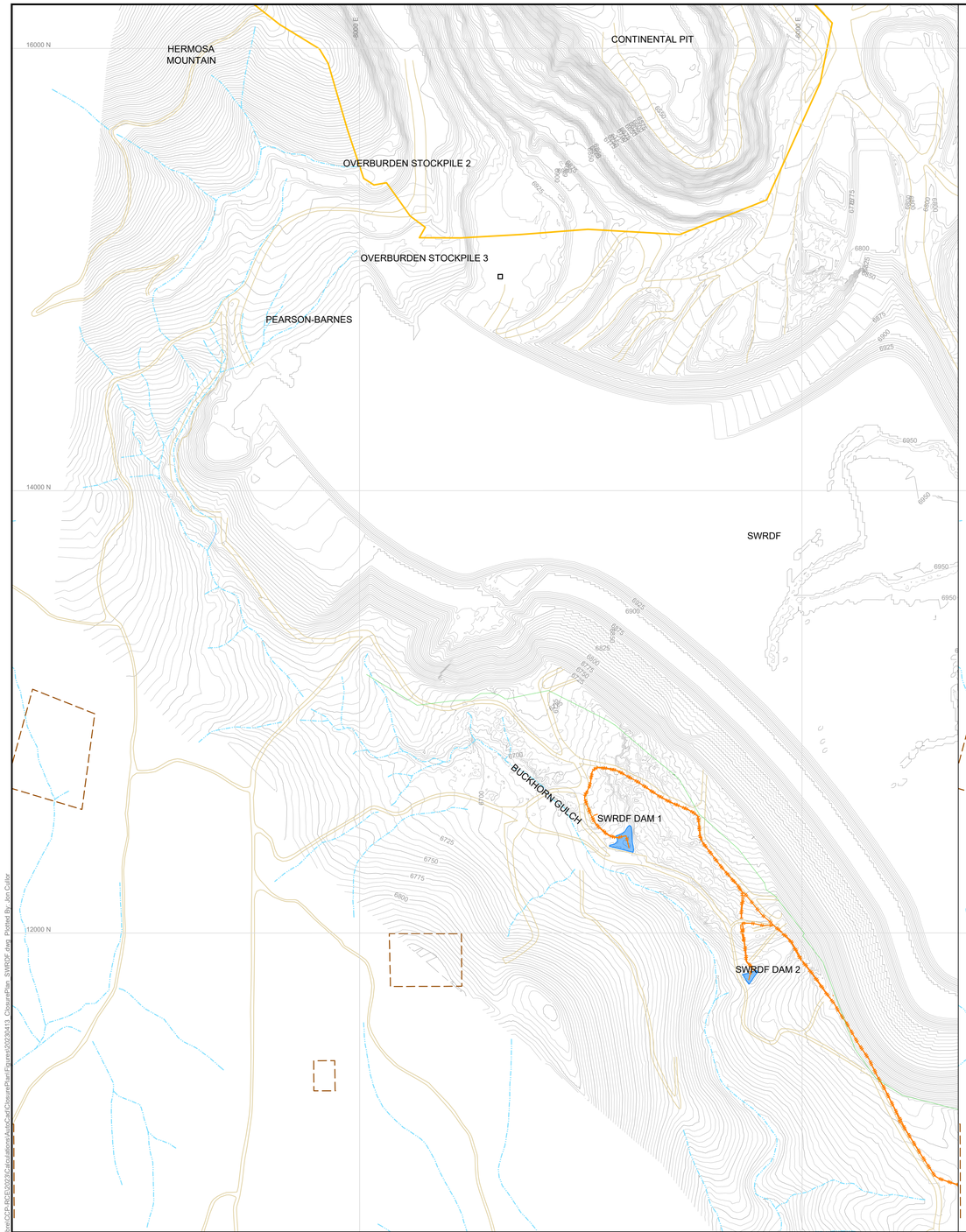
2023 CONTINENTAL MINE CCP

CLOSURE PLAN - MAIN TAILINGS IMPOUNDMENT - PROFILES & SECTIONS

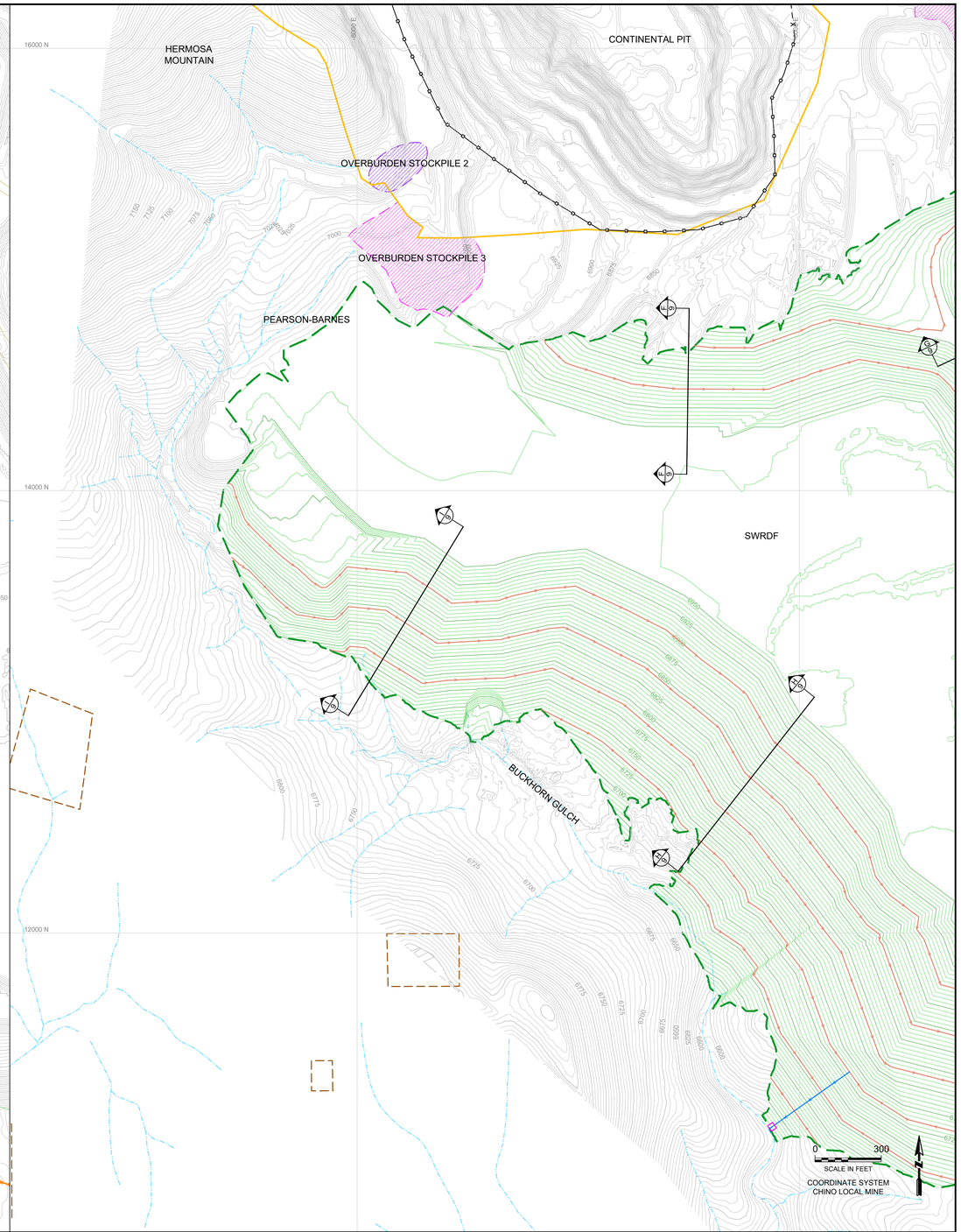
SHEET NUMBER: 6
REVISION NUMBER: 1

PREPARED BY: TELESTO SOLUTIONS IN CORPORATED

PREPARED FOR: FREEPORT-McMoRan



PLAN VIEW - PRE-RECLAMATION



PLAN VIEW - POST-RECLAMATION

LEGEND / NOTES

- OPSDA
- FACILITY RECLAMATION GRADING BOUNDARY
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR
- PRE-REC. MIN. CONTOUR
- POST-REC. MAJ. CONTOUR
- POST-REC. MIN. CONTOUR
- SW DRAINAGE
- DIRT ROAD
- PIPELINE
- RAILROAD
- STRUCTURE
- SW CONTAINMENT
- PIT LAKE
- BENCH CHANNEL
- DOWNDRAIN
- ENERGY DISSIPATER
- PERIMETER FENCE
- PERIMETER BERM
- RECLAIMED STOCKPILE
- UNRECLAIMED STOCKPILE

NOTES:
1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/28/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

2023 CONTINENTAL MINE CCP

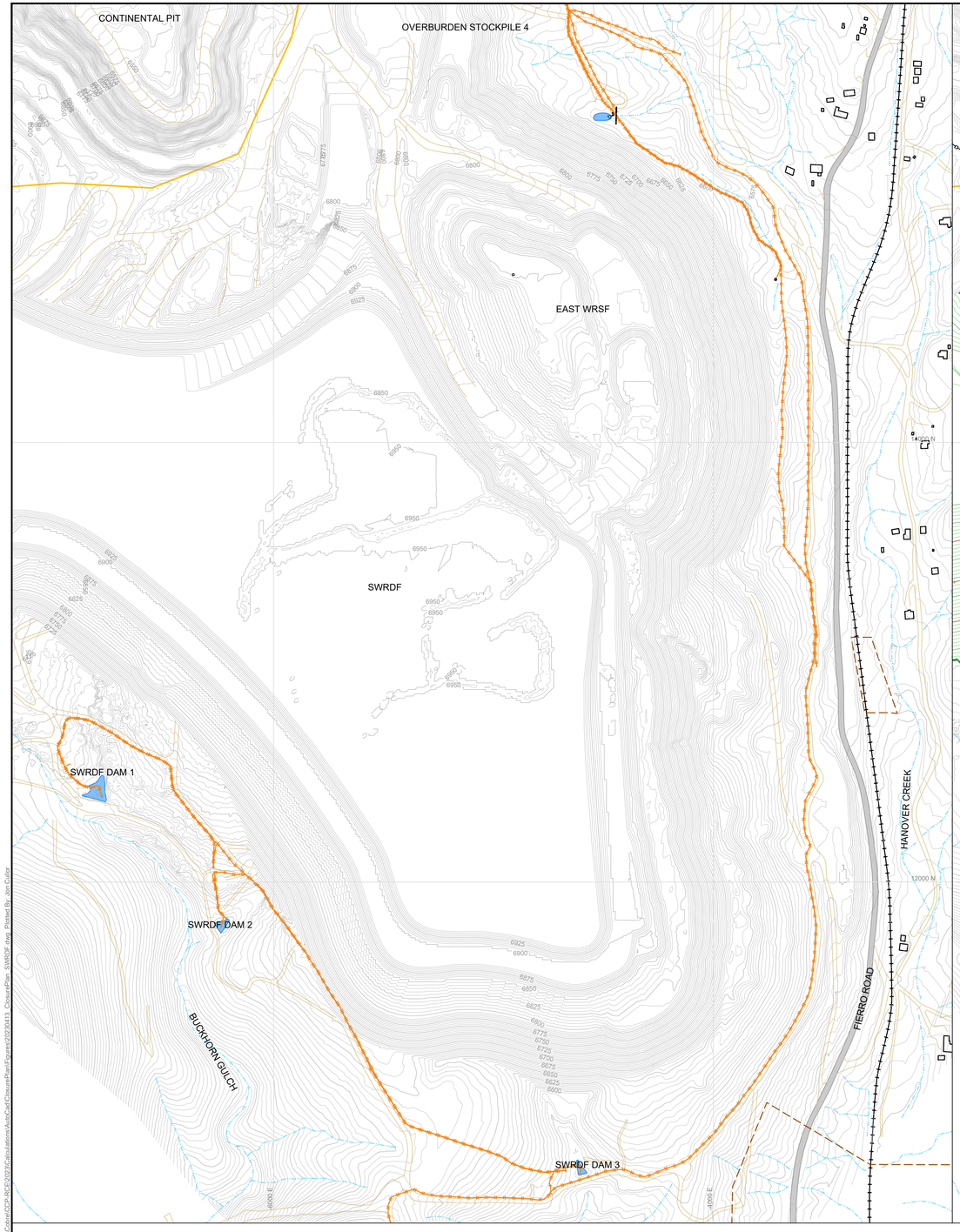
CLOSURE PLAN - SWRDF WEST - PLAN

SHEET NUMBER:	REVISION NUMBER:
7	1

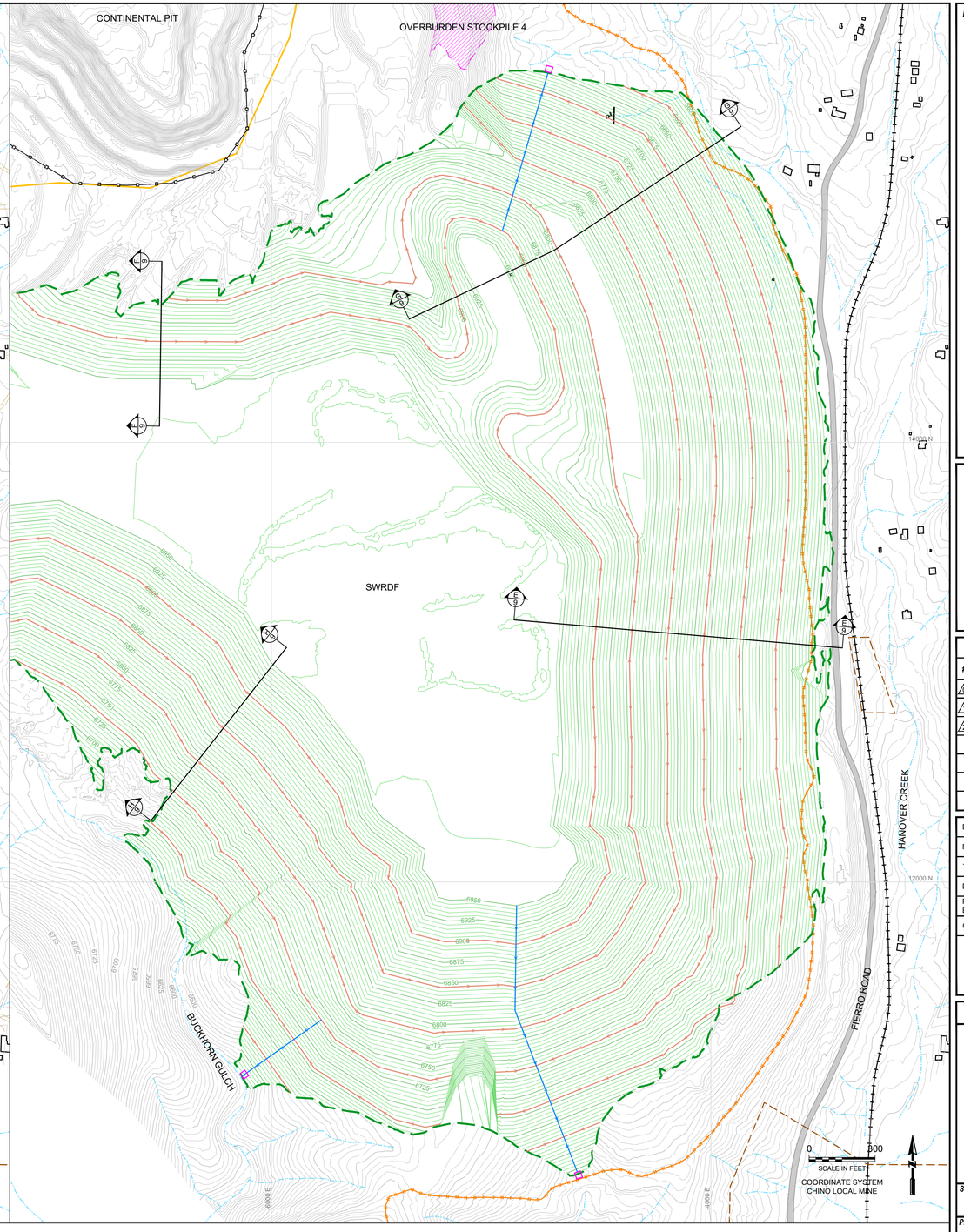
PREPARED BY: TELESTO SOLUTIONS, INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

Date: 7/28/2023 3:47:53 PM | C:\Civil\CCP\RC\2023\Calculations\AutoCad\ClosurePlan\Figures\20230413_ClosurePlan_SWRDF.dwg Plotted By: Jon Cotter



PLAN VIEW - PRE-RECLAMATION



PLAN VIEW - POST-RECLAMATION

LEGEND / NOTES

- OPSDA
- FACILITY RECLAMATION GRADING BOUNDARY
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR
- PRE-REC. MIN. CONTOUR
- POST-REC. MAJ. CONTOUR
- POST-REC. MIN. CONTOUR
- SW DRAINAGE
- DIRT ROAD
- PIPELINE
- RAILROAD
- STRUCTURE
- SW CONTAINMENT
- PIT LAKE
- BENCH CHANNEL
- DOWNDRAIN
- ENERGY DISSIPATER
- PERIMETER FENCE
- PERIMETER BERM
- RECLAIMED STOCKPILE
- UNRECLAIMED STOCKPILE

NOTES:

1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
1	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN
2	2ND SUBMITTAL	4/15/24	JC	WN

DATE	*4/15/2024*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

2023 CONTINENTAL MINE CCP

CLOSURE PLAN - SWRDF EAST - PLAN

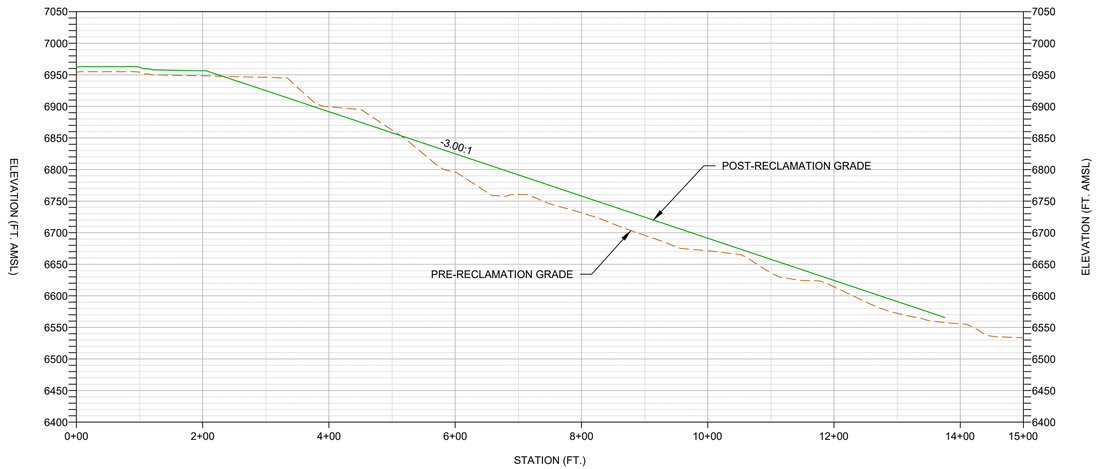
SHEET NUMBER: 8

REVISION NUMBER: 2

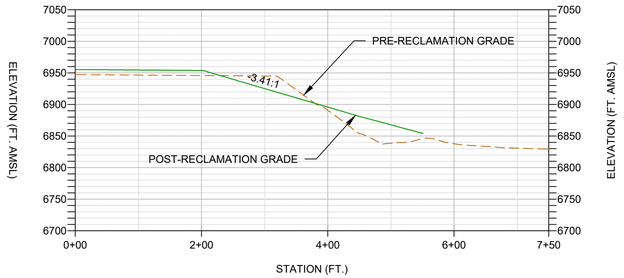
PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

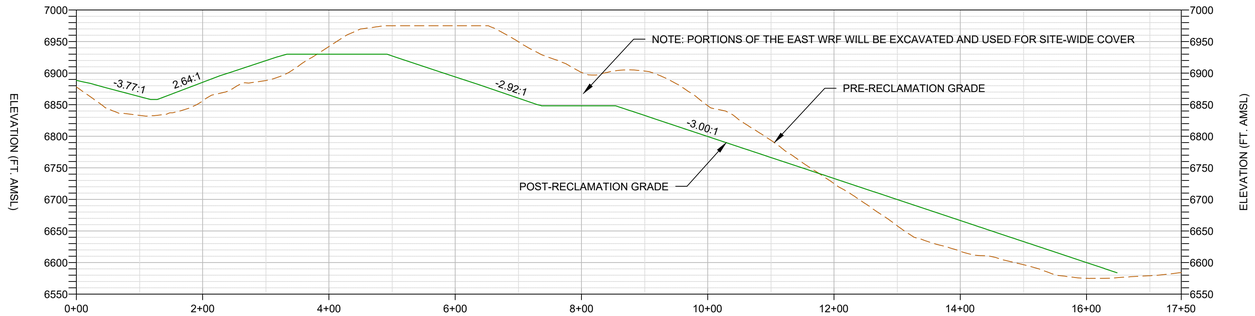
Date: 4/15/2024 4:51:35 PM | C:\Civil\CCP\RC\DWG\Calculations\AutoCad\ClosurePlan\Figures\20230413 ClosurePlan_SWRDF.dwg Plotted By: Joe Carter



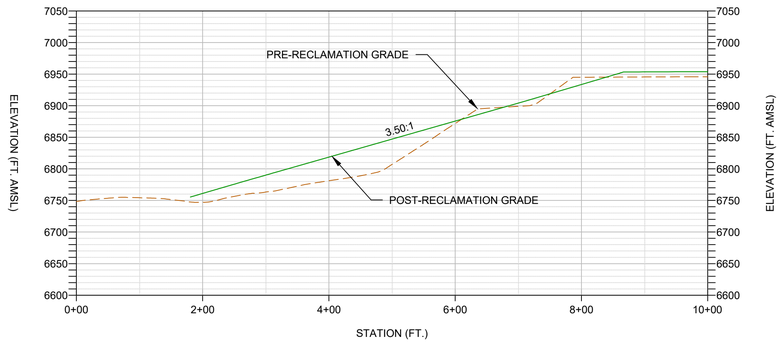
E 8 SWRDF EAST
SECTION SCALE = 1":120'



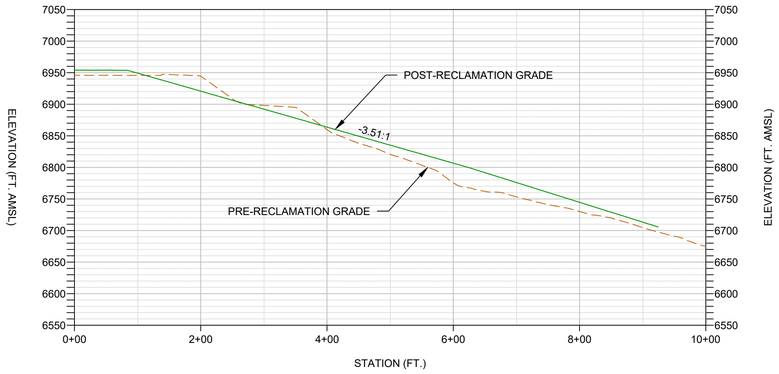
F 7 SWRDF NORTH
SECTION SCALE = 1":120'



G 8 SWRDF NORTHEAST
SECTION SCALE = 1":120'



I 7 SWRDF SOUTHWEST 2
SECTION SCALE = 1":120'



H 7 SWRDF SOUTHWEST 1
SECTION SCALE = 1":120'

LEGEND / NOTES

COORDINATE SYSTEM
CHINO LOCAL MINE

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
3	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN
2	2ND SUBMITTAL	4/15/24	JC	WN

DATE	*4/15/2024*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

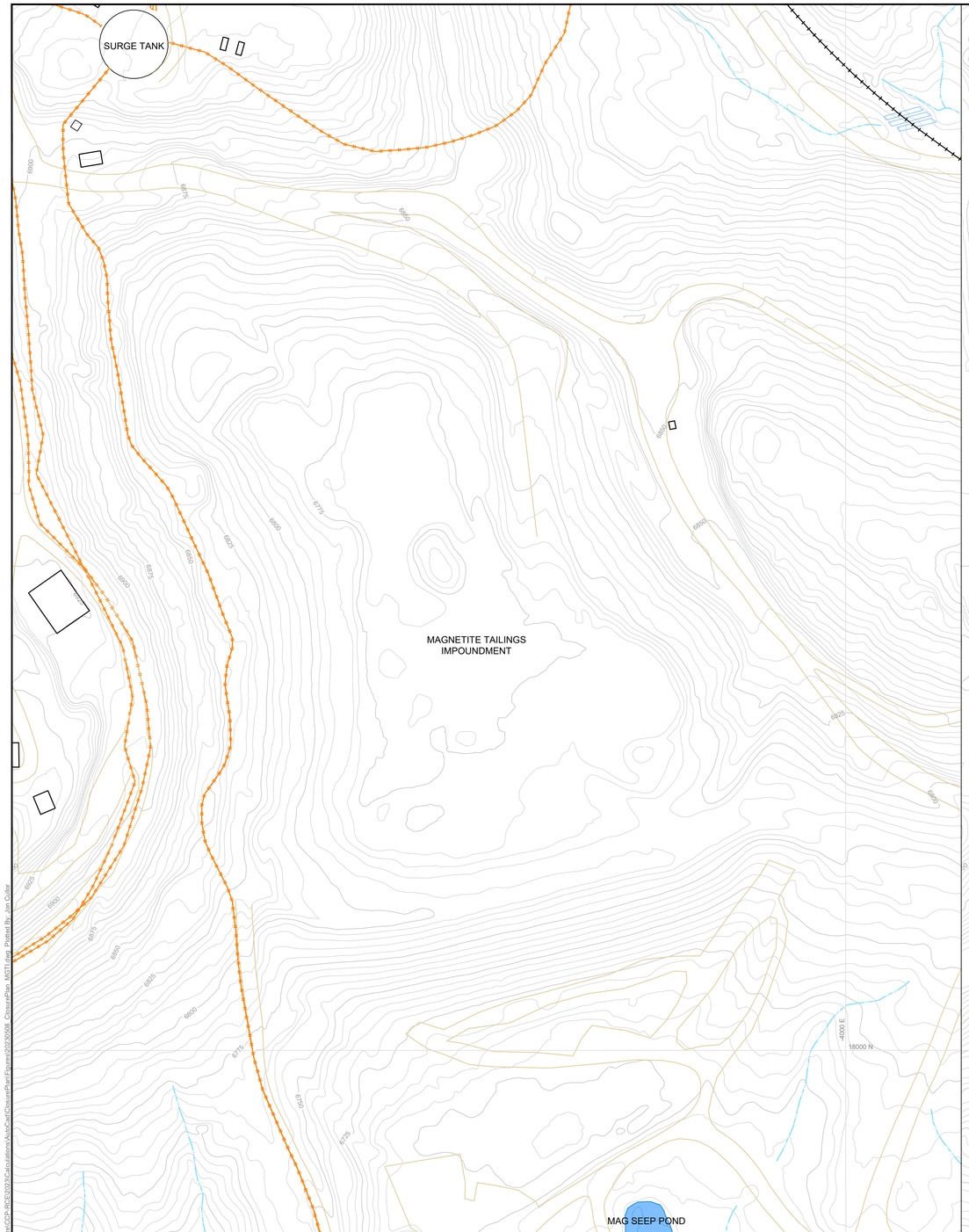
2023 CONTINENTAL MINE CCP

CLOSURE PLAN - SWRDF - PROFILES

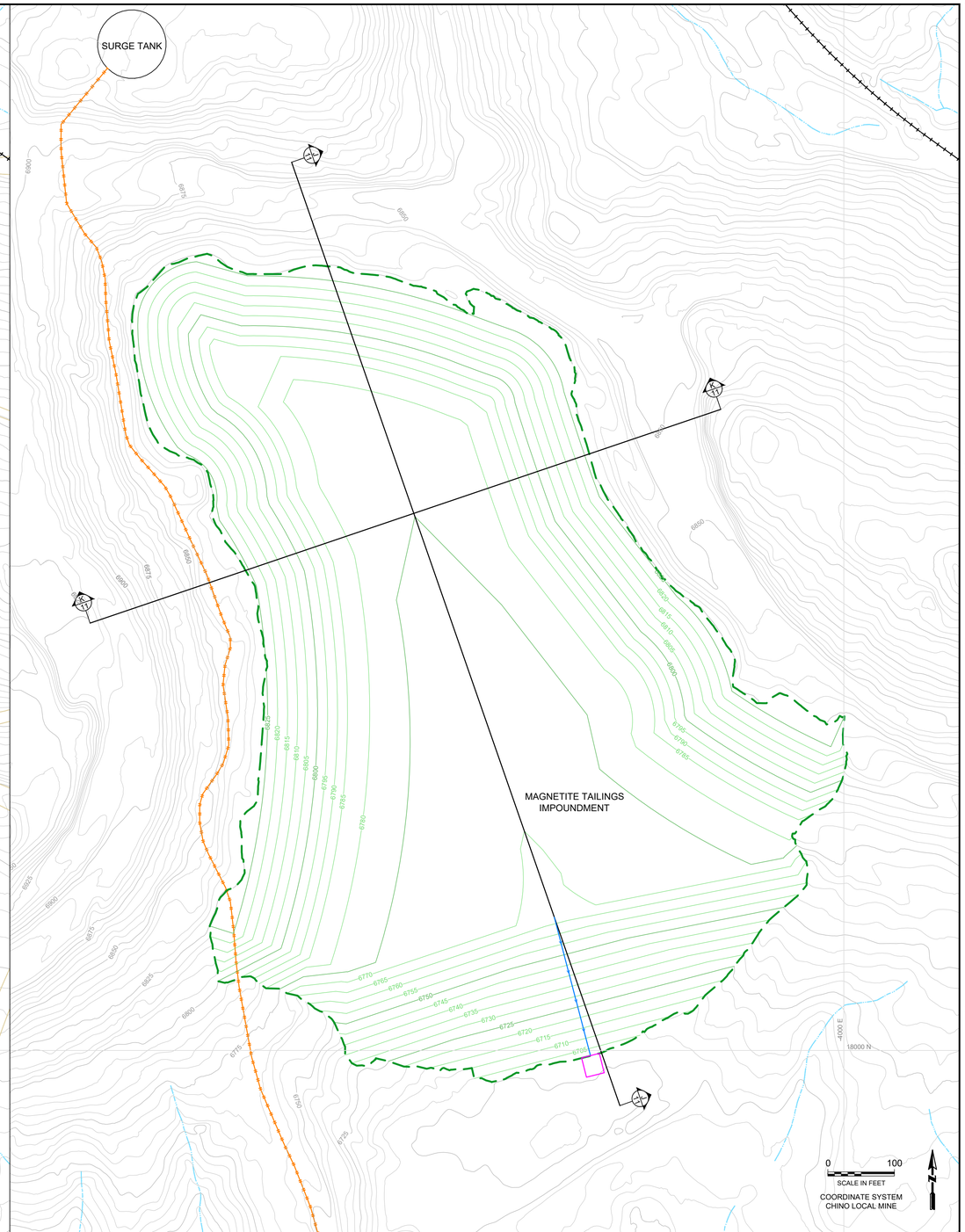
SHEET NUMBER:	REVISION NUMBER:
9	2

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN



PLAN VIEW - PRE-RECLAMATION



PLAN VIEW - POST-RECLAMATION

LEGEND / NOTES

- OPSDA
- FACILITY RECLAMATION GRADING BOUNDARY
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR
- PRE-REC. MIN. CONTOUR
- POST-REC. MAJ. CONTOUR
- POST-REC. MIN. CONTOUR
- SW DRAINAGE
- DIRT ROAD
- PIPELINE
- RAILROAD
- STRUCTURE
- SW CONTAINMENT
- PIT LAKE
- BENCH CHANNEL
- DOWNDRAIN
- ENERGY DISSIPATER
- PERIMETER FENCE
- PERIMETER BERM

NOTES:
1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
1	FOR REVIEW	6/29/23	JC	WN
2	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/26/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

2023 CONTINENTAL MINE CCP

CLOSURE PLAN - MAGNETITE TAILINGS IMPOUNDMENT - PLAN

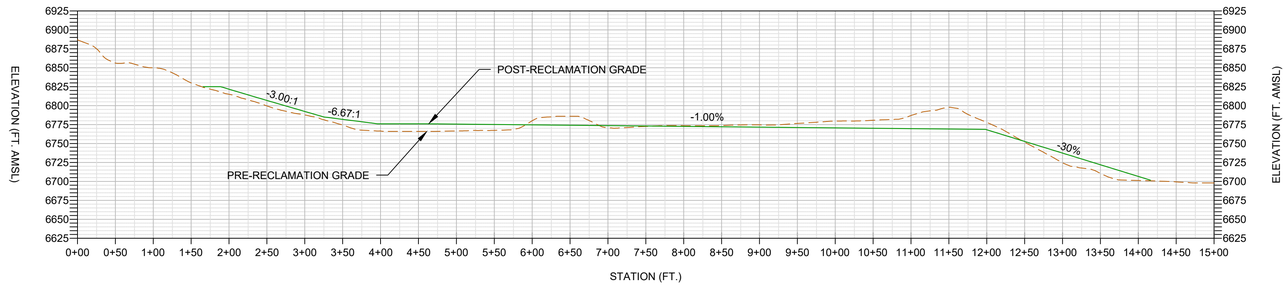
SHEET NUMBER: 10

REVISION NUMBER: 1

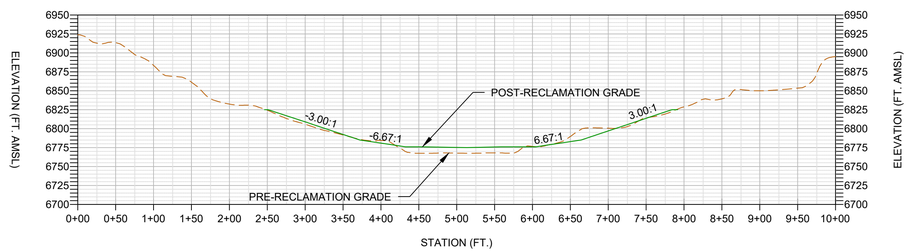
PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

Date: 6/26/2023 7:00:09 PM IN:\Cadtec\CCP-RCE\2023\Calculations\AutoCad\ClosurePlan\Plates\20230926 ClosurePlan_MGTI.dwg, Plotted By: Jon Cutler



J 10 **MGTI - NORTH TO SOUTH**
SECTION SCALE = 1":100'



K 10 **MGTI - WEST TO EAST**
SECTION SCALE = 1":100'

LEGEND / NOTES

COORDINATE SYSTEM
CHINO LOCAL MINE

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/26/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

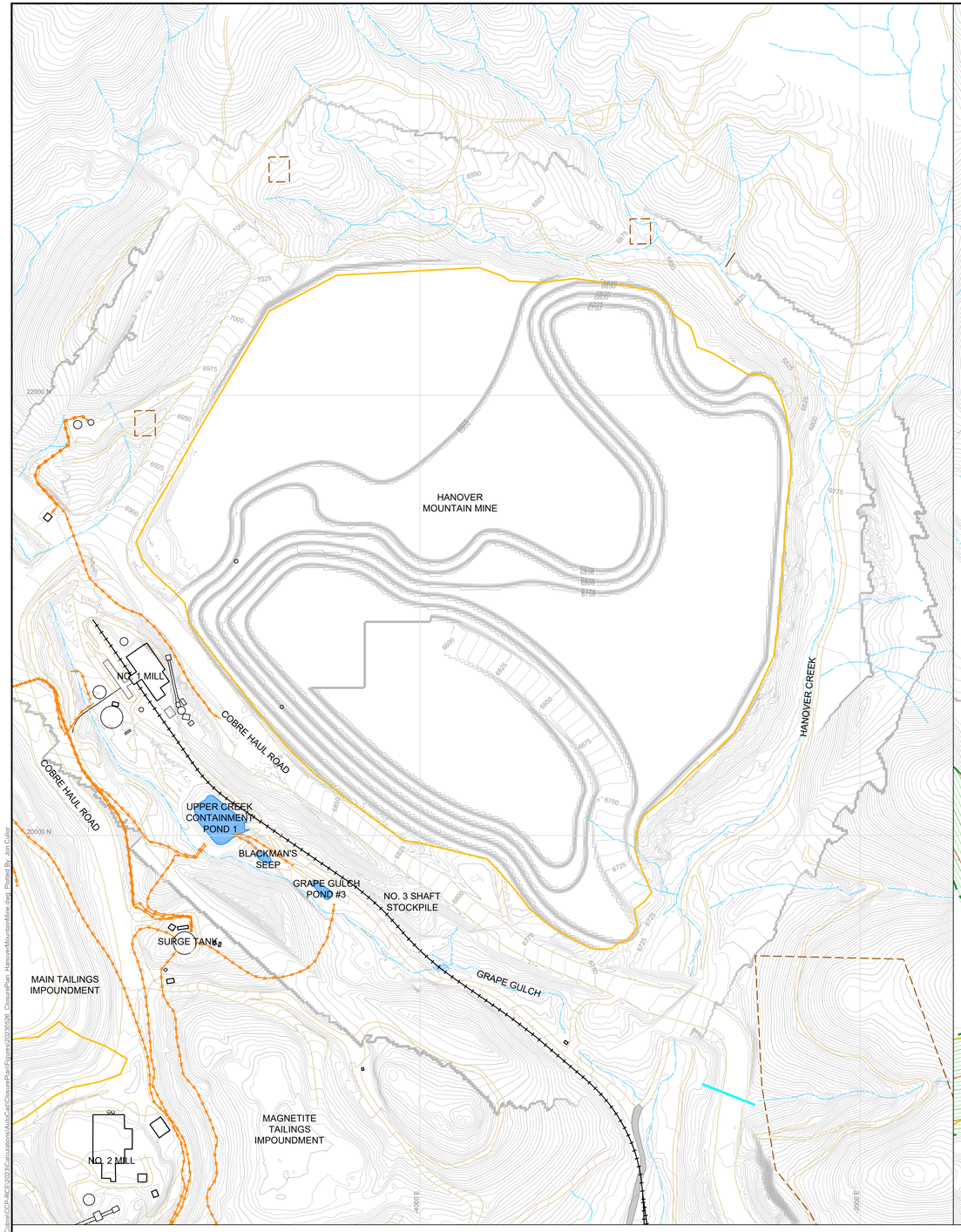
2023 CONTINENTAL MINE CCP

CLOSURE PLAN - MAGNETITE TAILINGS IMPOUNDMENT - PROFILE

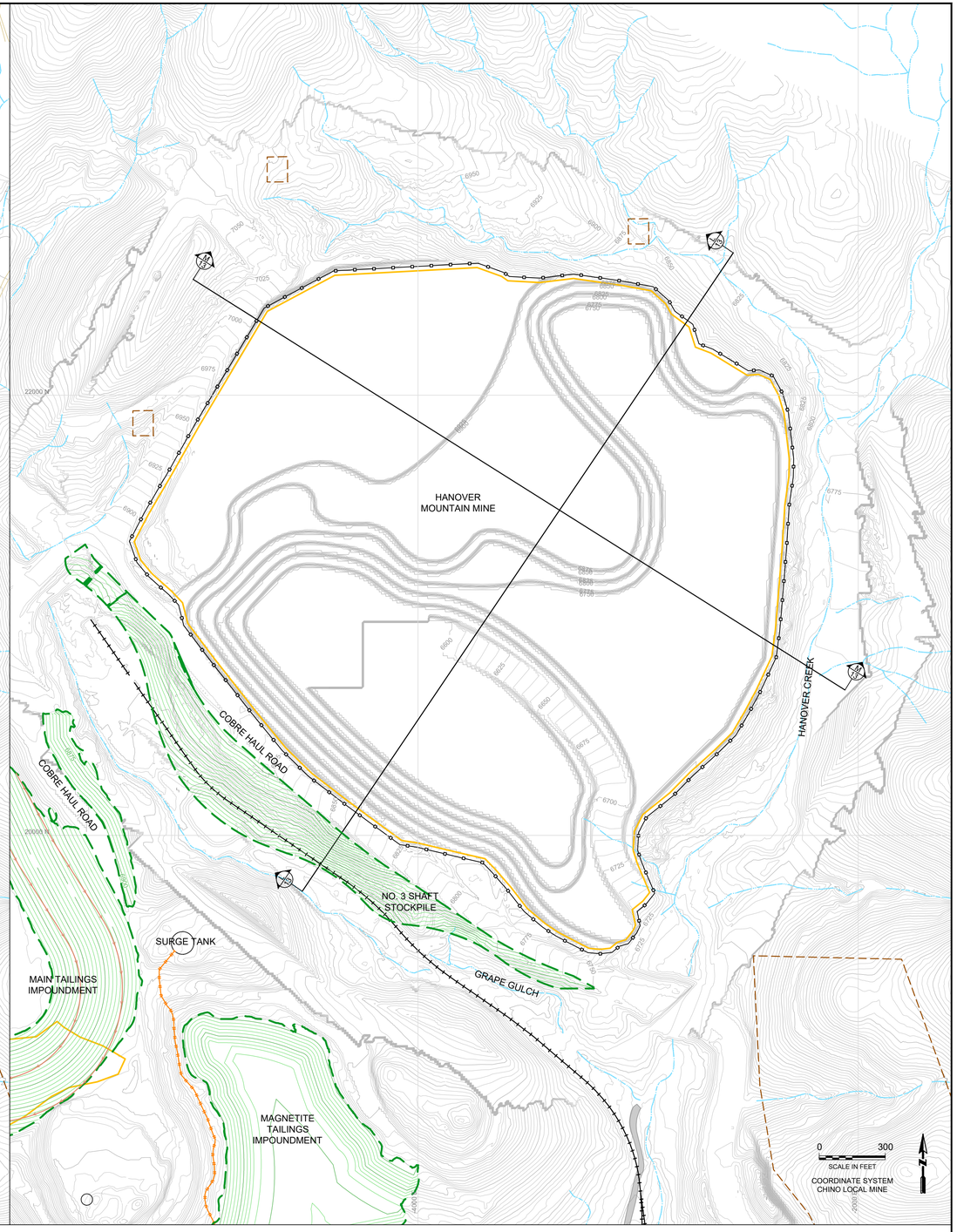
SHEET NUMBER: 11
REVISION NUMBER: 1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN



PLAN VIEW - PRE-RECLAMATION



PLAN VIEW - POST-RECLAMATION

LEGEND / NOTES

- OPSDA
- FACILITY RECLAMATION GRADING BOUNDARY
- CONTINENTAL MINE PERMIT BOUNDARY
- PRE-REC. MAJ. CONTOUR
- PRE-REC. MIN. CONTOUR
- POST-REC. MAJ. CONTOUR
- POST-REC. MIN. CONTOUR
- SW DRAINAGE
- DIRT ROAD
- PIPELINE
- RAILROAD
- STRUCTURE
- SW CONTAINMENT
- PIT LAKE
- BENCH CHANNEL
- DOWNDRAIN
- ENERGY DISSIPATER
- PERIMETER FENCE
- PERIMETER BERM
- RECLAIMED STOCKPILE
- UNRECLAIMED STOCKPILE

NOTES:
1. EXISTING TOPOGRAPHY FREEPORT-MCMORAN CHINO MINES. 6/13/2020
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
2	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/26/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

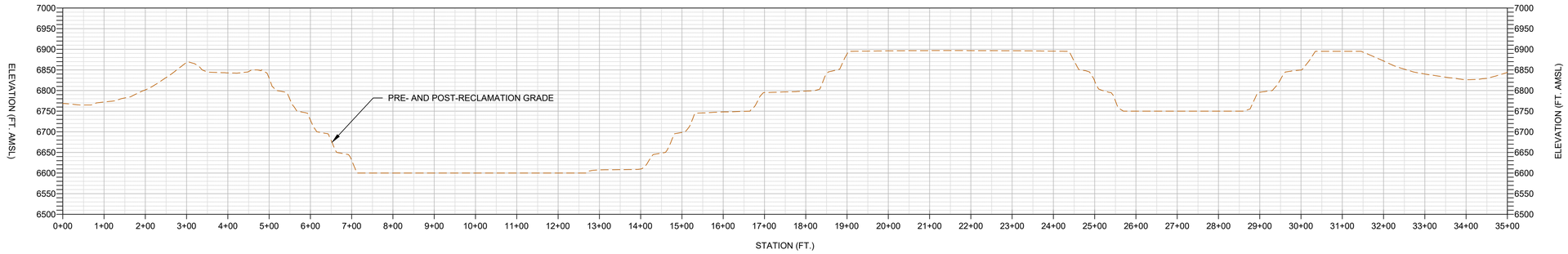
2023 CONTINENTAL MINE CCP

CLOSURE PLAN - HANOVER MOUNTAIN MINE - PLAN

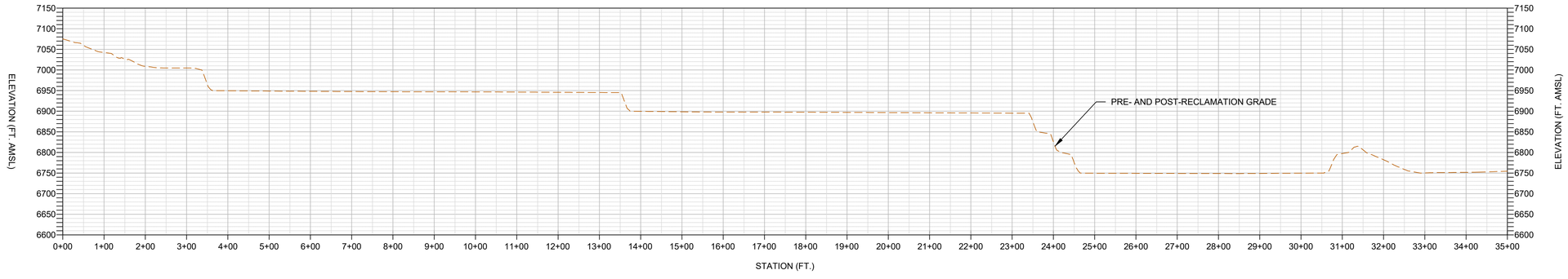
SHEET NUMBER:	REVISION NUMBER:
12	1

PREPARED BY: TELESTO SOLUTIONS, INC.

PREPARED FOR: FREEPORT-McMoRan



L / 12 **HANOVER MOUNTAIN MINE - SW TO NE**
SECTION SCALE = 1":150'



M / 12 **HANOVER MOUNTAIN MINE - NW TO SE**
SECTION SCALE = 1":150'

LEGEND / NOTES

COORDINATE SYSTEM
CHINO LOCAL MINE

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVED
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

DATE	*7/26/2023*
PROJECT	*200189h*
TASK NUMBER	*001-03*
DRAWN BY	*JC*
PROJECT ENGINEER	*JC*
CHECKED BY	*WN*

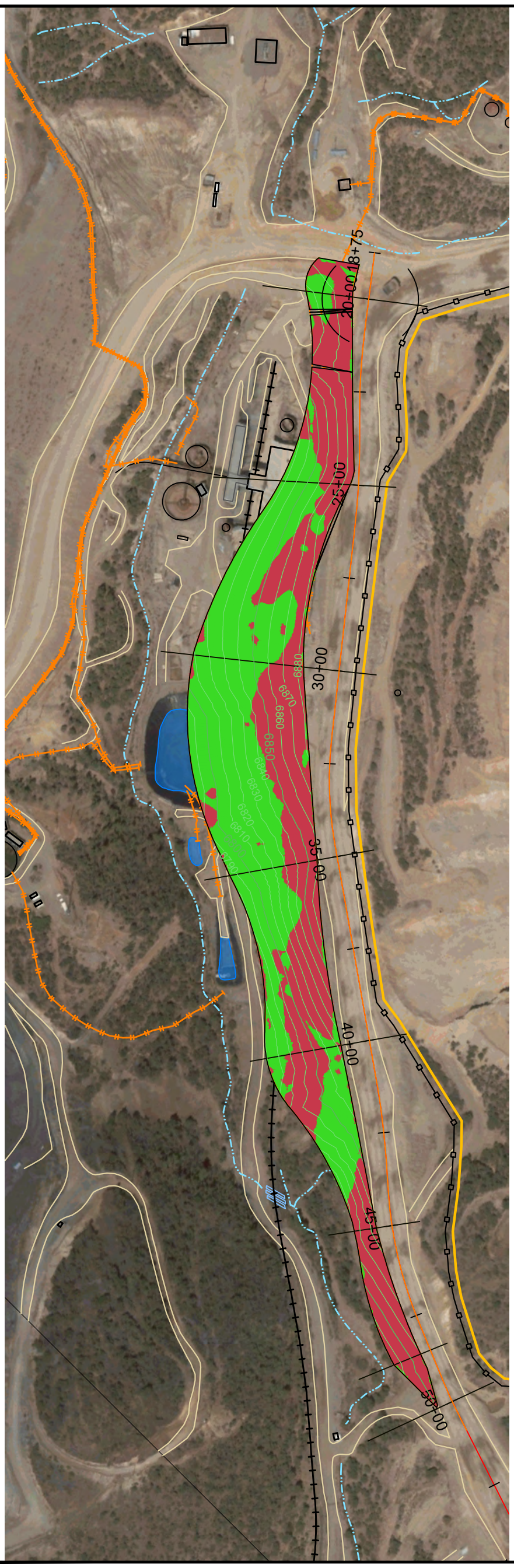
2023 CONTINENTAL MINE CCP

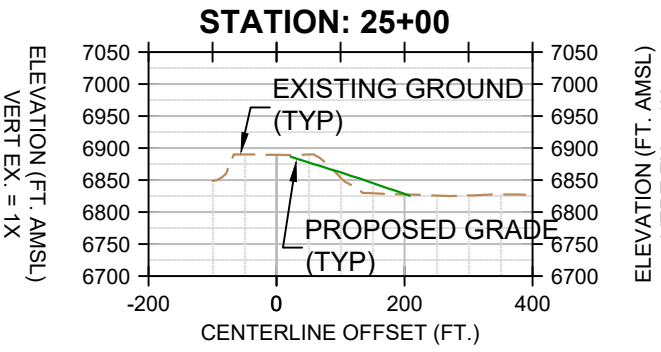
CLOSURE PLAN - HANOVER MOUNTAIN MINE - SECTIONS

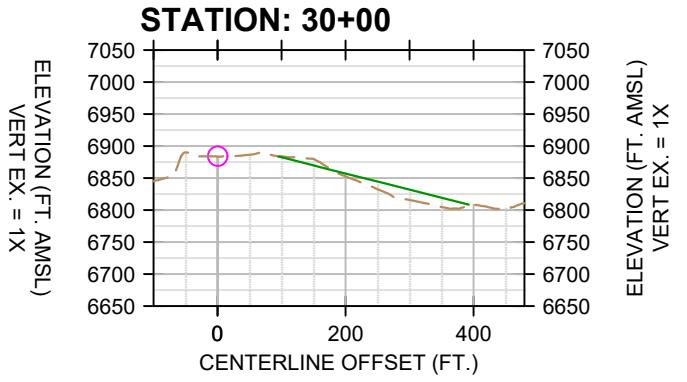
SHEET NUMBER:	REVISION NUMBER:
13	1

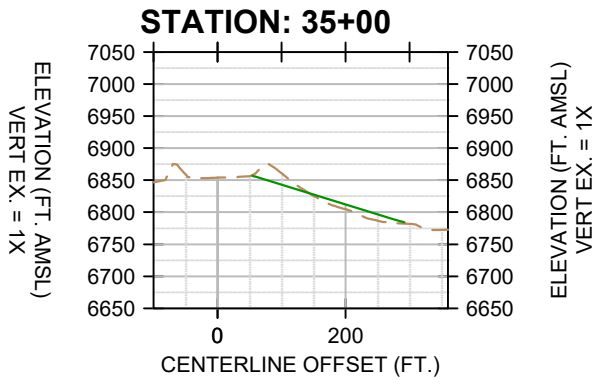
PREPARED BY: TELESTO SOLUTIONS, INC. CORPORATED

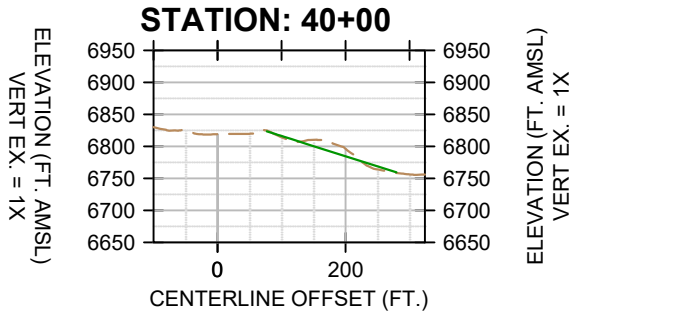
PREPARED FOR: FREEPORT-McMoRan

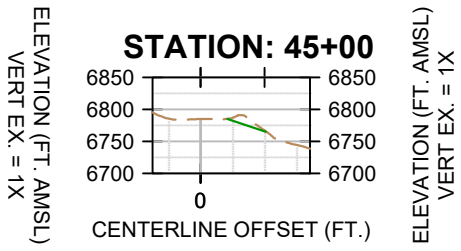












LEGEND

- COBRE HAUL ROAD FILL AREA DISTURBANCE
- COBRE HAUL ROAD CUT AREA DISTURBANCE
- COBRE HAUL ROAD OUTLINE
- RAILROAD
- UNPAVED ROADS
- PAVED ROADS
- DRAINAGES
- CULVERT
- EXISTING TOPOGRAPHIC CONTOURS (25' INT. AMSL)
- PROPOSED HAUL ROAD CONTOURS (5' INT. AMSL)

NOTES:
1. ALL AREA INSIDE THE DISTURBANCE BOUNDARY SHALL GRADE TO DRAIN, RIP AND SEED.
2. FILL SLOPE PUSH DOWN AND PULLBACK PER TYPICAL SECTIONS.
3. AREA AROUND HANOVER CREEK AND ADJACENT FOREST SERVICE ACCESS ROAD TO REMAIN.

REFERENCES:
1. AERIAL PHOTOGRAPH, TOPOGRAPHY AND DRAINAGES BY COOPER AERIAL SURVEYS CO., TUCSON ARIZONA, DATE: DECEMBER 15, 2013.

0 300
SCALE IN FEET

COORDINATE SYSTEM
CHINO LOCAL MINE

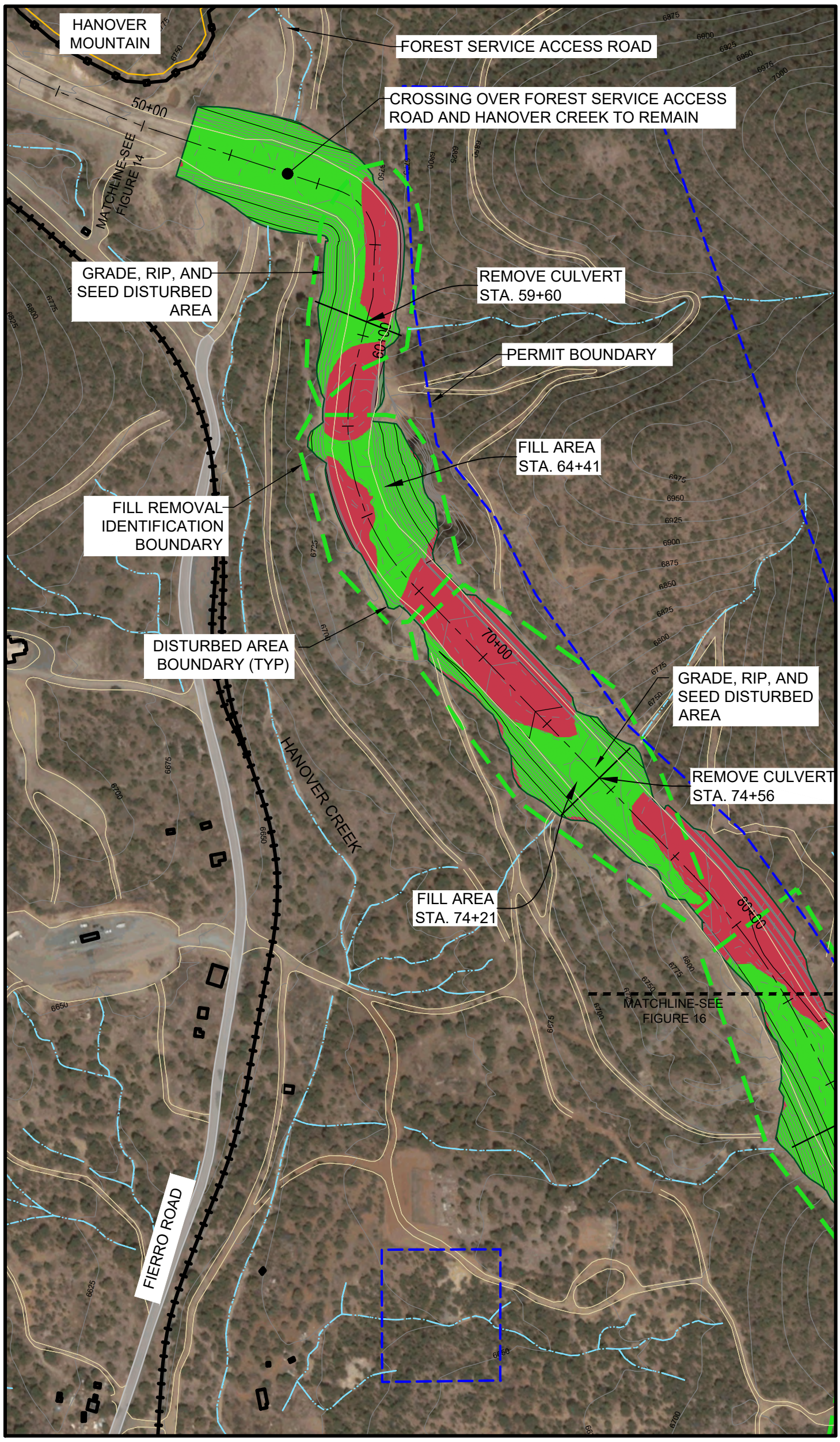
N

PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS • INCORPORATED

FIGURE 14
CLOSURE PLAN - COBRE HAUL ROAD - STA 0+00 TO 50+00 - PLAN

PREPARED FOR: FREEPORT-McMoRan



LEGEND

- COBRE HAUL ROAD FILL AREA DISTURBANCE
- COBRE HAUL ROAD CUT AREA DISTURBANCE
- COBRE HAUL ROAD OUTLINE
- RAILROAD
- UNPAVED ROADS
- PAVED ROADS
- DRAINAGES
- CULVERT
- PERMIT BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (25' INT. AMSL)
- PROPOSED HAUL ROAD CONTOURS (5' INT. AMSL)

NOTES:

1. ALL AREA INSIDE THE DISTURBANCE BOUNDARY SHALL GRADE TO DRAIN, RIP AND SEED.
2. FILL SLOPE PUSH DOWN AND PULLBACK PER TYPICAL SECTIONS.
3. AREA AROUND HANOVER CREEK AND ADJACENT FOREST SERVICE ACCESS ROAD TO REMAIN.

SCALE IN FEET
0 300

N

REFERENCES:
1. AERIAL PHOTOGRAPH, TOPOGRAPHY AND DRAINAGES BY COOPER AERIAL SURVEYS CO., TUCSON ARIZONA, DATE: JUNE 6, 2022.

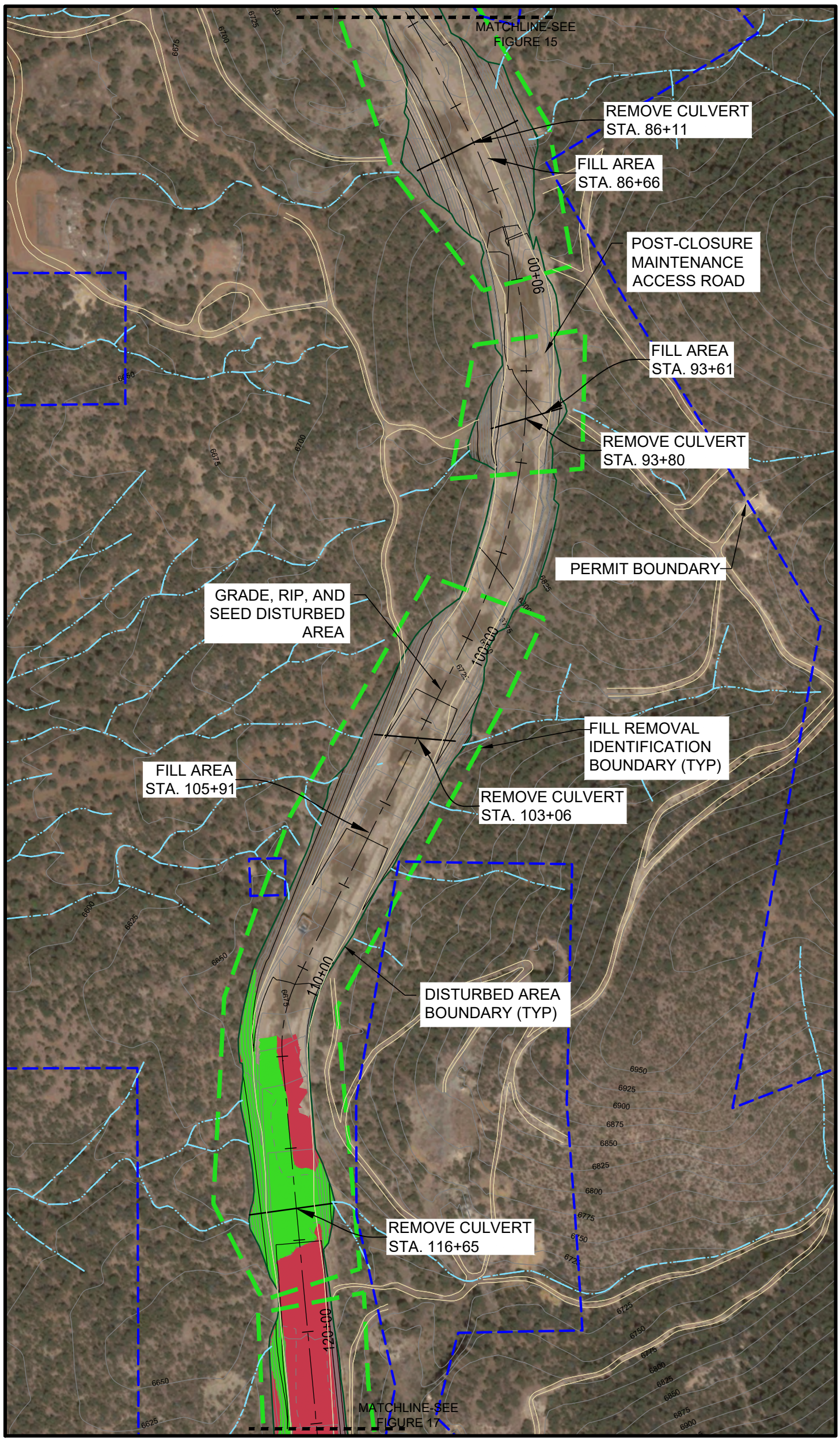
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

FIGURE 15
CLOSURE PLAN - COBRE HAUL ROAD - STA 50+00 TO 80+50 - PLAN

PREPARED FOR: FREEPORT-MCMORAN

Date: 7/27/2023 9:53:23 AM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\CCPReport\20230612-Sta 50+00 to 218+00 Reclaimed.Haul.Road.dwg Plotted By: Jon Cullor



LEGEND

- COBRE HAUL ROAD FILL AREA DISTURBANCE
- COBRE HAUL ROAD CUT AREA DISTURBANCE
- COBRE HAUL ROAD OUTLINE
- RAILROAD
- UNPAVED ROADS
- PAVED ROADS
- DRAINAGES
- CULVERT
- PERMIT BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (25' INT. AMSL)
- PROPOSED HAUL ROAD CONTOURS (5' INT. AMSL)

NOTES:

1. ALL AREA INSIDE THE DISTURBANCE BOUNDARY SHALL GRADE TO DRAIN, RIP AND SEED.
2. FILL SLOPE PUSH DOWN AND PULLBACK PER TYPICAL SECTIONS.
3. AREA AROUND HANOVER CREEK AND ADJACENT FOREST SERVICE ACCESS ROAD TO REMAIN.

SCALE IN FEET
0 300

REFERENCES:
1. AERIAL PHOTOGRAPH, TOPOGRAPHY AND DRAINAGES BY COOPER AERIAL SURVEYS CO., TUCSON ARIZONA, DATE: JUNE 6, 2022.

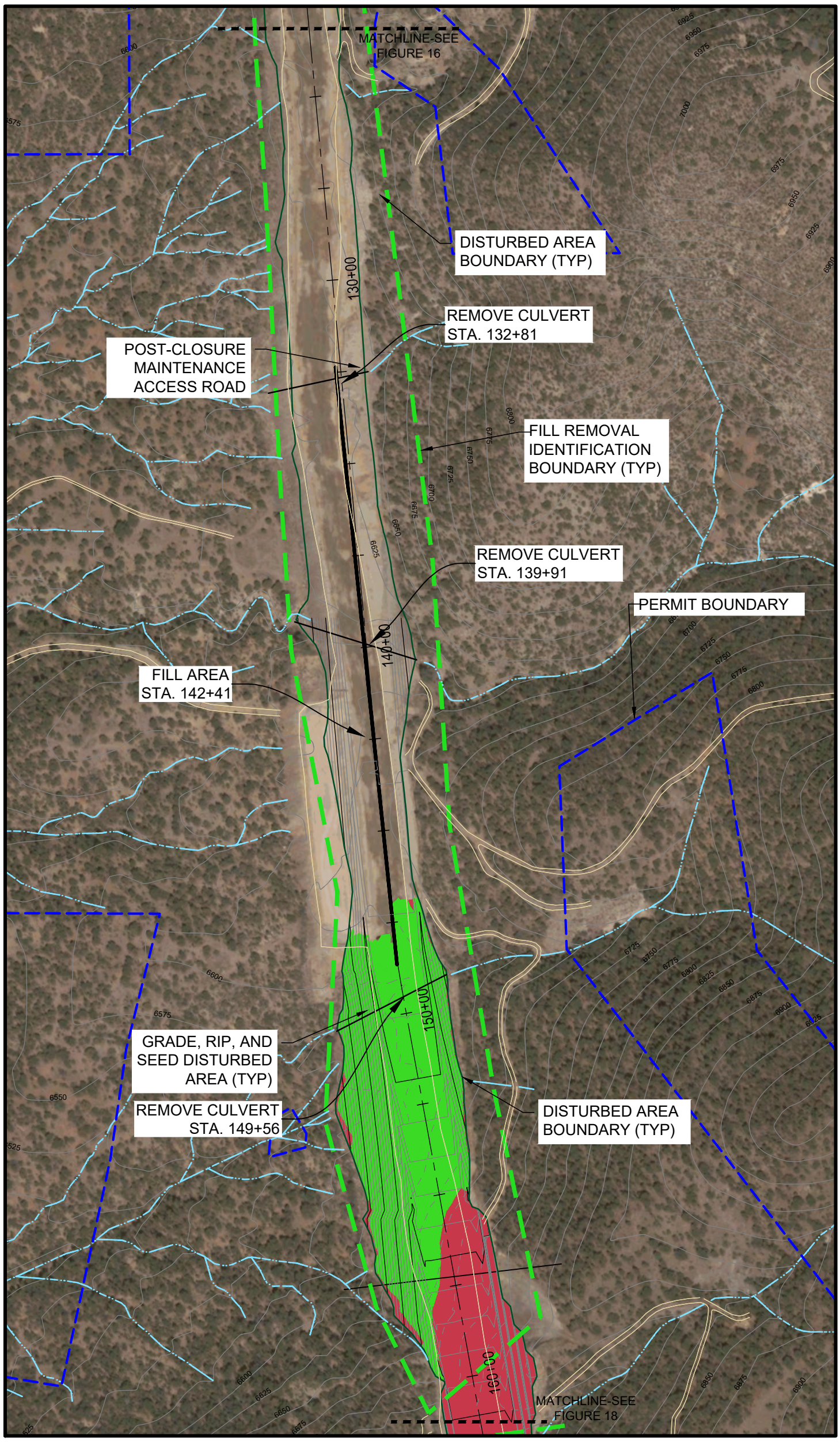
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

FIGURE 16
CLOSURE PLAN - COBRE HAUL ROAD - STA 80+50 TO 120+50 - PLAN

PREPARED FOR: FREEPORT-McMoRan

Date: 7/27/2023 9:53:23 AM R:\Cobre\CCP-RCEV2023\Calculations\AutoCad\CCPReport\20230612-Sta 50+00 to 218+00.Reclaimed.Haul.Road.dwg Plotted By: Jon Cullor



LEGEND

- COBRE HAUL ROAD FILL AREA DISTURBANCE
- COBRE HAUL ROAD CUT AREA DISTURBANCE
- COBRE HAUL ROAD OUTLINE
- RAILROAD
- UNPAVED ROADS
- PAVED ROADS
- DRAINAGES
- CULVERT
- PERMIT BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (25' INT. AMSL)
- PROPOSED HAUL ROAD CONTOURS (5' INT. AMSL)

NOTES:
1. ALL AREA INSIDE THE DISTURBANCE BOUNDARY SHALL GRADE TO DRAIN, RIP AND SEED.
2. FILL SLOPE PUSH DOWN AND PULLBACK PER TYPICAL SECTIONS.
3. AREA AROUND HANOVER CREEK AND ADJACENT FOREST SERVICE ACCESS ROAD TO REMAIN.

SCALE IN FEET
0 300

N

REFERENCES:
1. AERIAL PHOTOGRAPH, TOPOGRAPHY AND DRAINAGES BY COOPER AERIAL SURVEYS CO., TUCSON ARIZONA, DATE: JUNE 6, 2022.

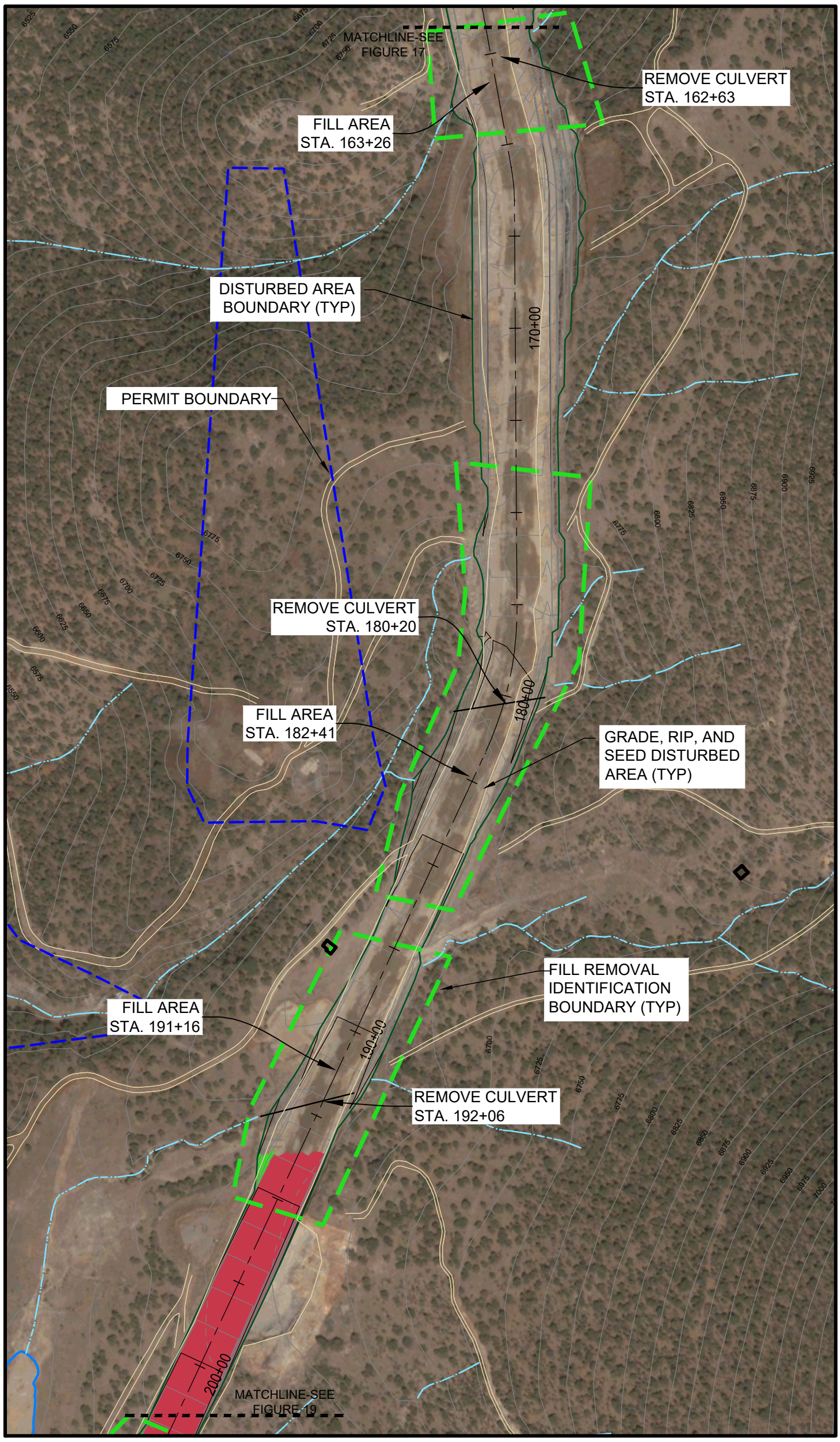
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

FIGURE 17
CLOSURE PLAN - COBRE HAUL ROAD - STA 120+50 TO 160+00 - PLAN

PREPARED FOR: FREEPORT-MCMORAN

Date: 7/27/2023 9:53:23 AM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\CCPReport\20230612-Sta 50+00 to 218+00 Reclaimed.Haul.Road.dwg Plotted By: Jon Cullor



LEGEND

- COBRE HAUL ROAD FILL AREA DISTURBANCE
- COBRE HAUL ROAD CUT AREA DISTURBANCE
- COBRE HAUL ROAD OUTLINE
- RAILROAD
- UNPAVED ROADS
- PAVED ROADS
- DRAINAGES
- CULVERT
- PERMIT BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (25' INT. AMSL)
- PROPOSED HAUL ROAD CONTOURS (5' INT. AMSL)

NOTES:

1. ALL AREA INSIDE THE DISTURBANCE BOUNDARY SHALL GRADE TO DRAIN, RIP AND SEED.
2. FILL SLOPE PUSH DOWN AND PULLBACK PER TYPICAL SECTIONS.
3. AREA AROUND HANOVER CREEK AND ADJACENT FOREST SERVICE ACCESS ROAD TO REMAIN.

SCALE IN FEET
0 300

N

REFERENCES:
1. AERIAL PHOTOGRAPH, TOPOGRAPHY AND DRAINAGES BY COOPER AERIAL SURVEYS CO., TUCSON ARIZONA, DATE: JUNE 6, 2022.

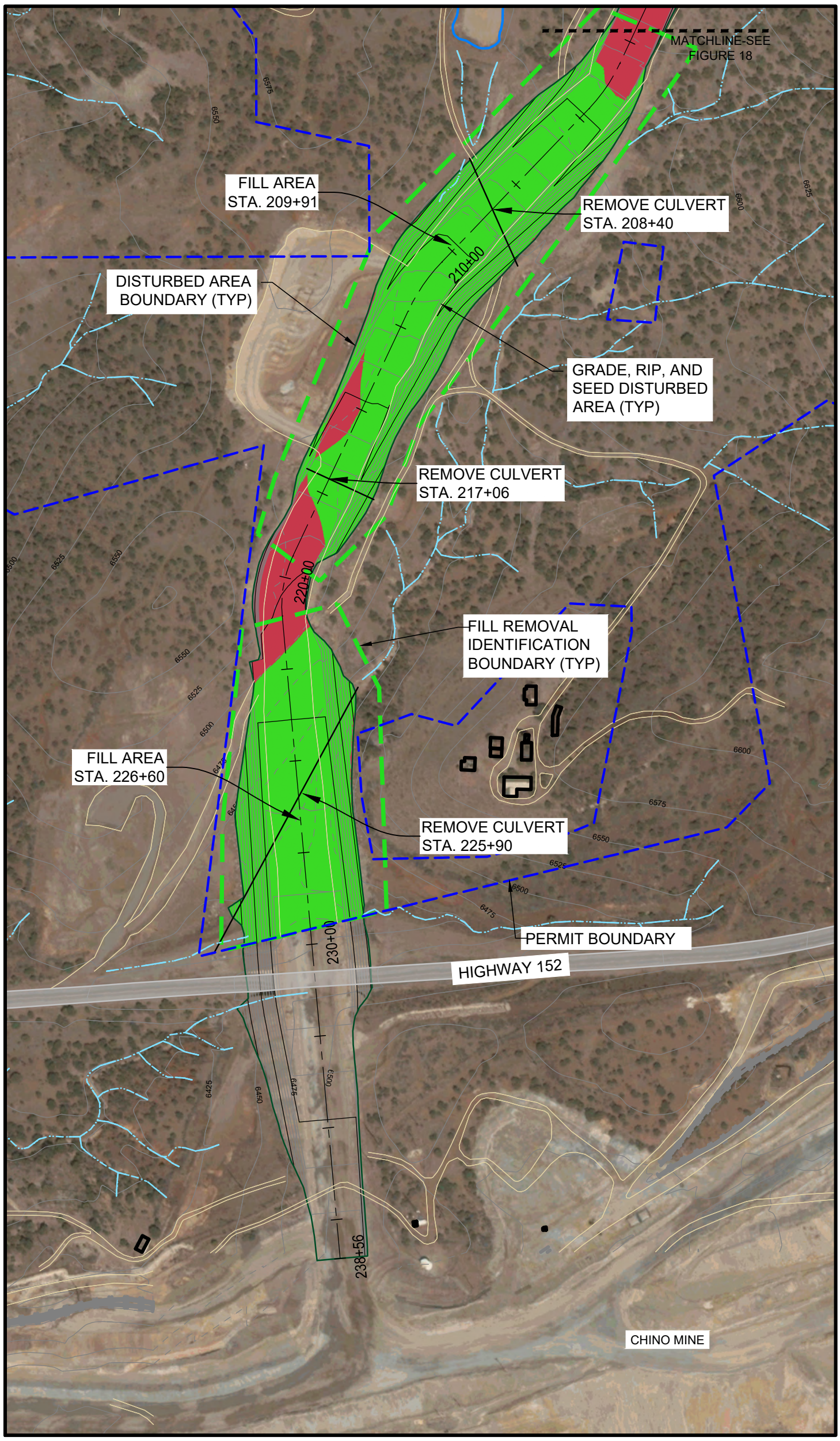
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

FIGURE 18
CLOSURE PLAN - COBRE HAUL ROAD - STA 160+00 TO 200+00 - PLAN

PREPARED FOR: FREEPORT-McMoRan

Date: 7/27/2023 9:53:23 AM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\CCPReport\20230612-Sta 50+00 to 218+00.Reclaimed.Haul.Road.dwg Plotted By: Jon Cullor



LEGEND

- COBRE HAUL ROAD FILL AREA DISTURBANCE
- COBRE HAUL ROAD CUT AREA DISTURBANCE
- COBRE HAUL ROAD OUTLINE
- RAILROAD
- UNPAVED ROADS
- PAVED ROADS
- DRAINAGES
- CULVERT
- PERMIT BOUNDARY
- REMOVE CULVERT (FILL IS ALSO REMOVED AND HAULED TO CHINO AS COVER)
- EXISTING TOPOGRAPHIC CONTOURS (25' INT. AMSL)
- PROPOSED HAUL ROAD CONTOURS (5' INT. AMSL)

NOTES:
1. ALL AREA INSIDE THE DISTURBANCE BOUNDARY SHALL GRADE TO DRAIN, RIP AND SEED.
2. FILL SLOPE PUSH DOWN AND PULLBACK PER TYPICAL SECTIONS.
3. AREA AROUND HANOVER CREEK AND ADJACENT FOREST SERVICE ACCESS ROAD TO REMAIN.

SCALE IN FEET
0 300

N

REFERENCES:
1. AERIAL PHOTOGRAPH, TOPOGRAPHY AND DRAINAGES BY COOPER AERIAL SURVEYS CO., TUCSON ARIZONA, DATE: JUNE 6, 2022.

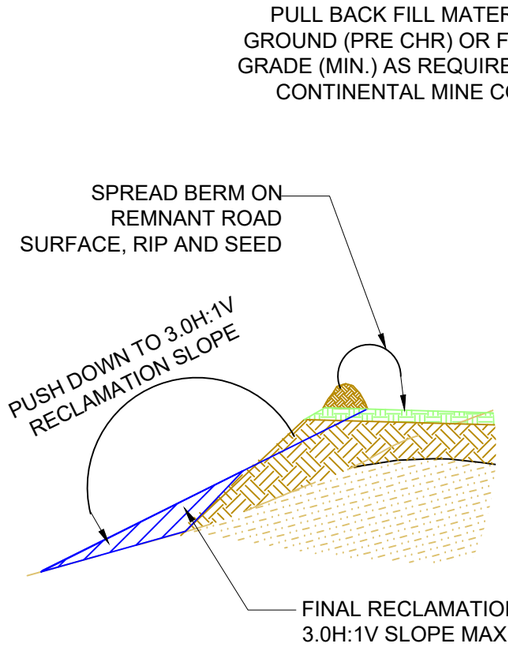
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

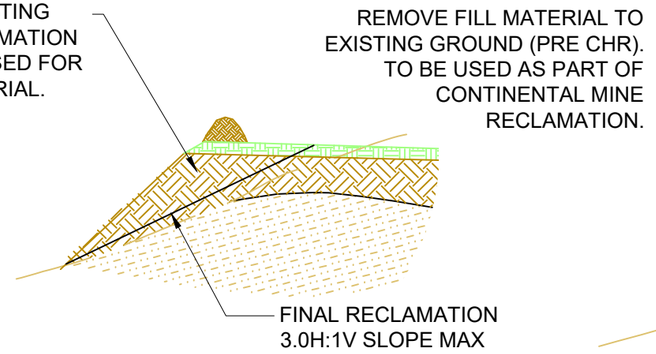
FIGURE 19
CLOSURE PLAN - COBRE HAUL ROAD - STA 200+00 TO 230+00 - PLAN

PREPARED FOR: FREEPORT-McMoRan

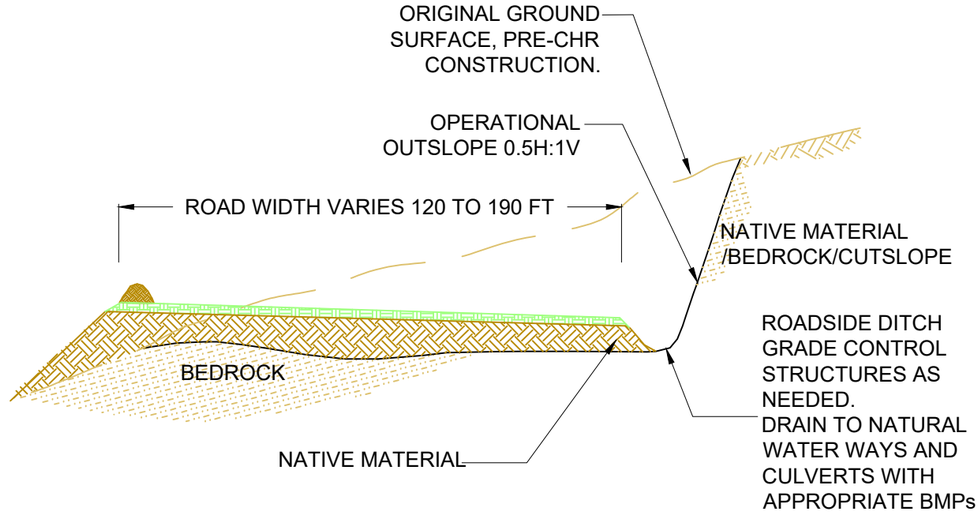
Date: 7/27/2023 9:53:23 AM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\CCPReport\20230612-Sta 50+00 to 218+00,Reclaimed.Haul.Road.dwg Plotted By: Jon Cullor



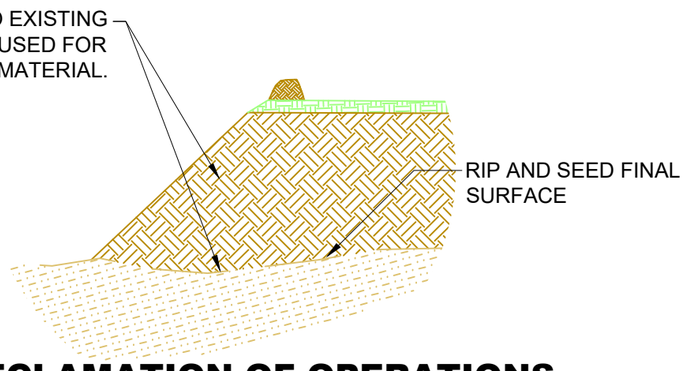
FILL SLOPE PUSH DOWN (RECLAMATION OF OPERATIONS CUT CONDITION)



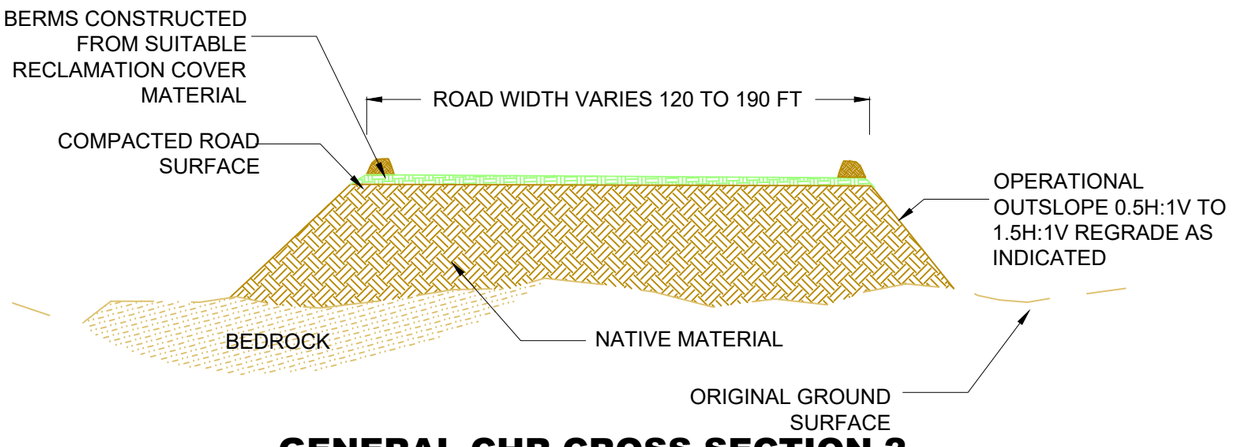
FILL SLOPE PULL BACK (RECLAMATION OF OPERATIONS CUT CONDITION)



GENERAL CHR CROSS SECTION 1 (RECLAMATION OF OPERATIONS CUT CONDITION)



RECLAMATION OF OPERATIONS FILL CONDITION



GENERAL CHR CROSS SECTION 2 (RECLAMATION OF OPERATIONS FILL CONDITION)

NOTES:

- GENERALIZED CROSS SECTIONS OF THE PROPOSED COBRE HAUL ROAD. THE THREE GENERALIZED RECLAMATION DESCRIPTIONS CORRESPOND TO THE THREE TYPES OF RECLAMATION ACTIVITIES ASSOCIATED WITH THE HAUL ROAD SURFACE AND OUTSLOPES. THE GENERAL RECLAMATION ACTIVITIES CORRESPOND TO LOCATIONS SHOWN IN FIGURES A7R THROUGH A11R.
- CUTSLOPES LEFT IN PLACE

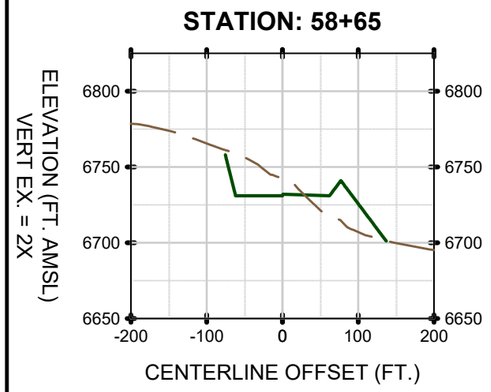
NOT TO SCALE

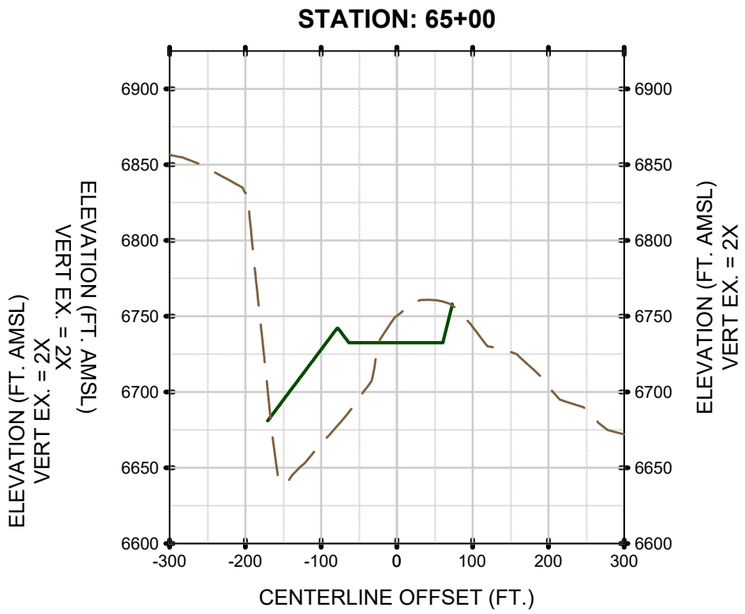
FIGURE 20
CLOSURE PLAN - COBRE HAUL ROAD - TYPICAL SECTIONS

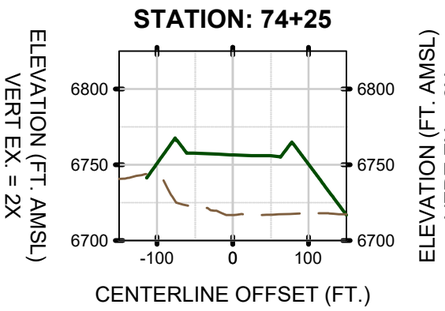
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

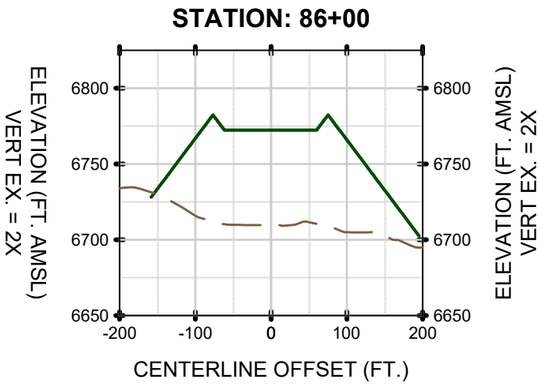
PREPARED BY: TELESTO SOLUTIONS INCORPORATED

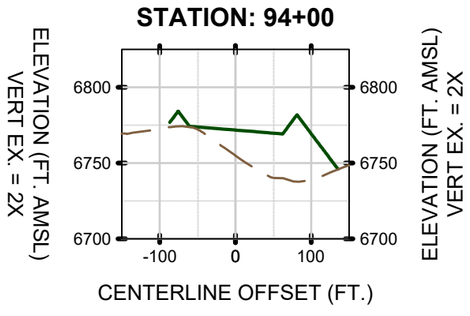
PREPARED FOR: FREEPORT-McMoRan

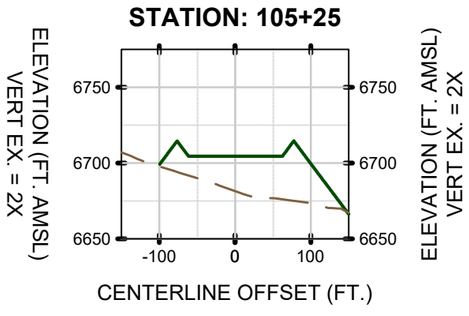


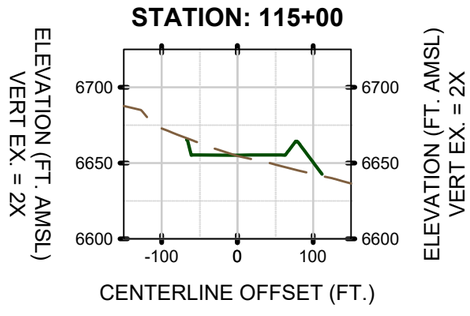


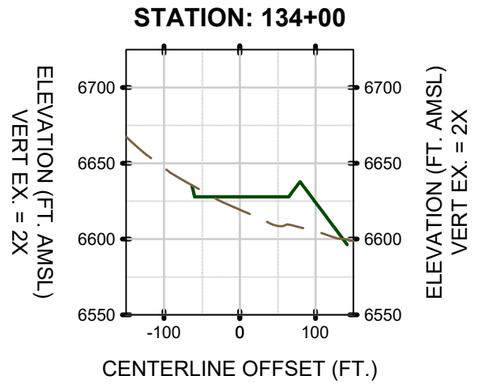












LEGEND

0 200

SCALE IN FEET

COORDINATE SYSTEM
CHINO LOCAL MINE

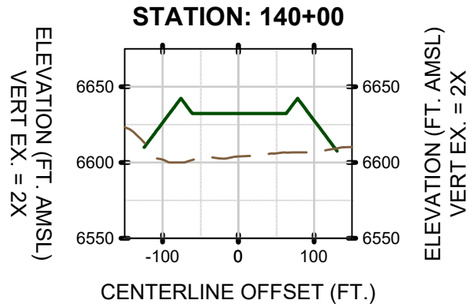
N

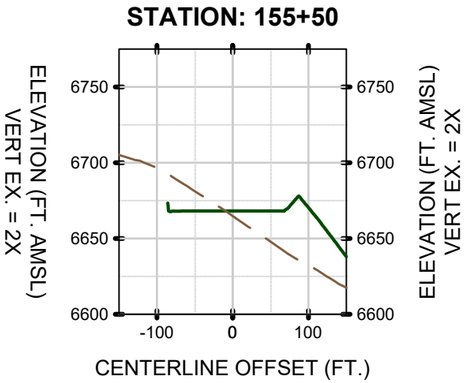
FIGURE 21
CLOSURE PLAN - COBRE HAUL ROAD - STA 58+65 TO 134+00 - SECTIONS

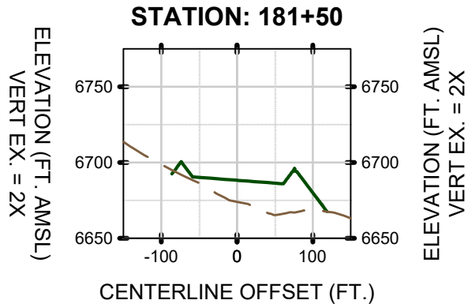
PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

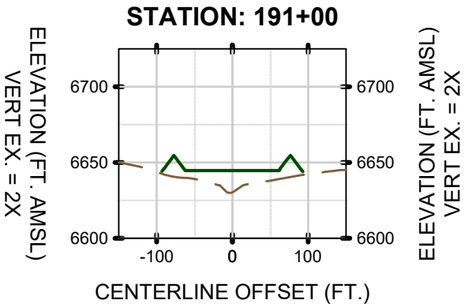
PREPARED BY: TELESTO SOLUTIONS, INCORPORATED

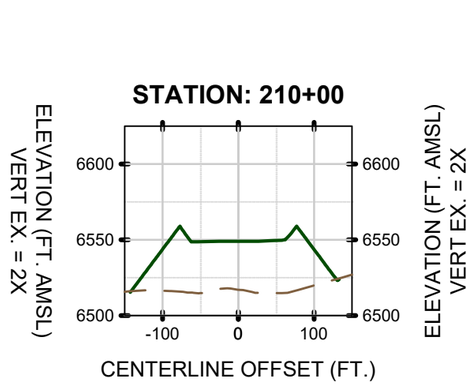
PREPARED FOR: FREEPORT-McMoRan

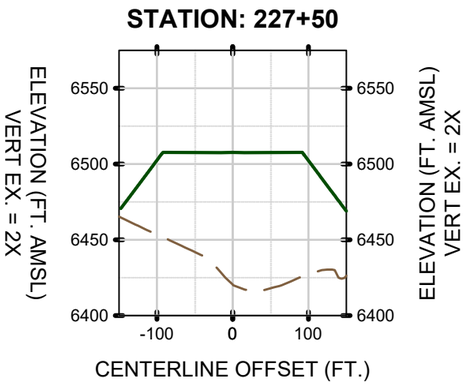












LEGEND

0 200

SCALE IN FEET

COORDINATE SYSTEM
CHINO LOCAL MINE

N

FIGURE 22
CLOSURE PLAN - COBRE HAUL ROAD - STA 140+00 TO 227+50 - SECTIONS

PROJECT:	TASK:	DATE:	DRWN BY:
200189H	001-03	7/26/2023	STN

PREPARED BY: TELESTO SOLUTIONS, INCORPORATED

PREPARED FOR: FREEPORT-McMoRan

0 700
SCALE IN FEET

N

COORDINATE SYSTEM
CHINO LOCAL MINE

HANOVER MOUNTAIN MINE

MAIN TAILINGS IMPOUNDMENT

MAGNETITE
TAILINGS
IMPOUNDMENT

CONTINENTAL PIT

SWRDF

COBRE HAUL ROAD

24000 N
22000 N
20000 N
18000 N
16000 N
14000 N
12000 N
10000 N
8000 N
6000 N
4000 N

10000 E
8000 E
6000 E
4000 E
2000 E
0 E

Date: 7/11/2023 3:50:39 PM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\ClosurePlan\Figures\20230526_CoverHaulRoutes.dwg Plotted By: Jon Cutler

2023 CONTINENTAL MINE CCP

COVER HAUL ROUTES

SHEET NUMBER:	REVISION NUMBER:
23	1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-McMoRan

DATE	7/26/2023
PROJECT	200189h
TASK NUMBER	001-03
DRAWN BY	JC
PROJECT ENGINEER	JC
CHECKED BY	WN

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

LEGEND / NOTES

- CONTINENTAL MINE PERMIT BOUNDARY
- DIRT ROAD
- PIT LAKE
- PRE-REC. MAJ. CONTOUR (100 FT)
- PRE-REC. MIN. CONTOUR (25 FT)
- SURFACE WATER DRAINAGE
- CHINO/HAUL ROAD TO COBRE HAUL ROUTES
- EAST WRSF TO COBRE HAUL ROUTES

NOTES:

1. TOPOGRAPHY 2026 EOY MINE PLAN
2. PIT LAKE EXTENT SHOWN AS OF 7/2022

0 700
SCALE IN FEET
N
COORDINATE SYSTEM
CHINO LOCAL MINE

RECLAIM POND
HANOVER MOUNTAIN MINE
NO. 1 MILL
MAIN TAILINGS IMPOUNDMENT
SURGE TANK
NO. 2 MILL
MAGNETITE TAILINGS IMPOUNDMENT
CONTINENTAL PIT
LG WRF
SWRDF
COBRE HAUL ROAD
FIERRO ROAD
HIGHWAY 152

24000 N
22000 N
20000 N
18000 N
16000 N
14000 N
12000 N
10000 N
8000 N
6000 N
4000 N
10000 E
8000 E
6000 E
4000 E
2000 E
0 E
2000 E

Date: 4/22/2024 3:05:12 PM R:\Cobre\CCP-RCE\2023\Calculations\AutoCad\ClosurePlan\Figures\20230526_RevegetationPlan.dwg Plotted By: Jon Cullor

2023 CONTINENTAL MINE CCP

REVEGETATION PLAN

SHEET NUMBER:	REVISION NUMBER:
24	2

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-MCMORAN

DATE	4/22/2024
PROJECT	200189h
TASK NUMBER	001-03
DRAWN BY	JC
PROJECT ENGINEER	JC
CHECKED BY	WN

REVISIONS

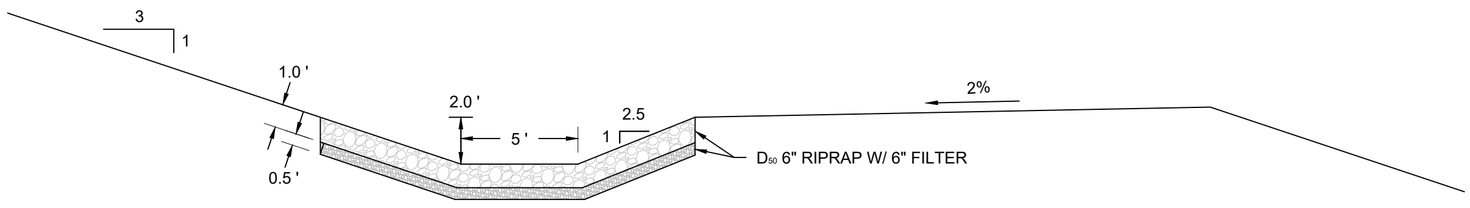
#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN
2	2ND SUBMITTAL	4/15/24	JC	WN

LEGEND / NOTES

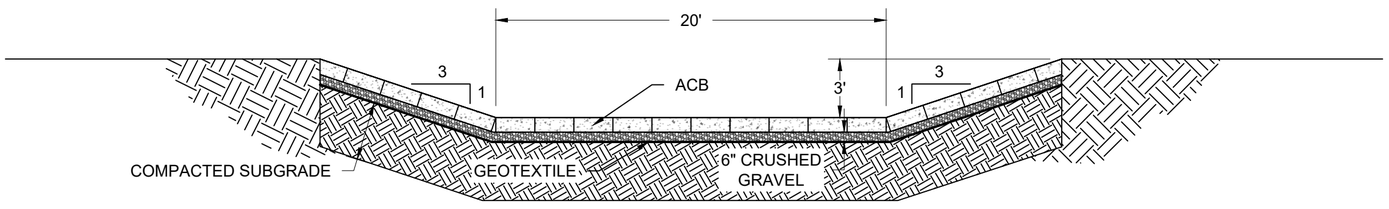
- OPSDA
- CONTINENTAL MINE PERMIT BOUNDARY
- SURFACE WATER DRAINAGE
- PIT LAKE
- REVEGETATED AREA
- PRE-REC. MAJ. CONTOUR (25 FT)
- PRE-REC. MIN. CONTOUR (5 FT)
- DIRT ROAD
- RAILROAD
- PERIMETER FENCE
- PERIMETER BERM

NOTES:

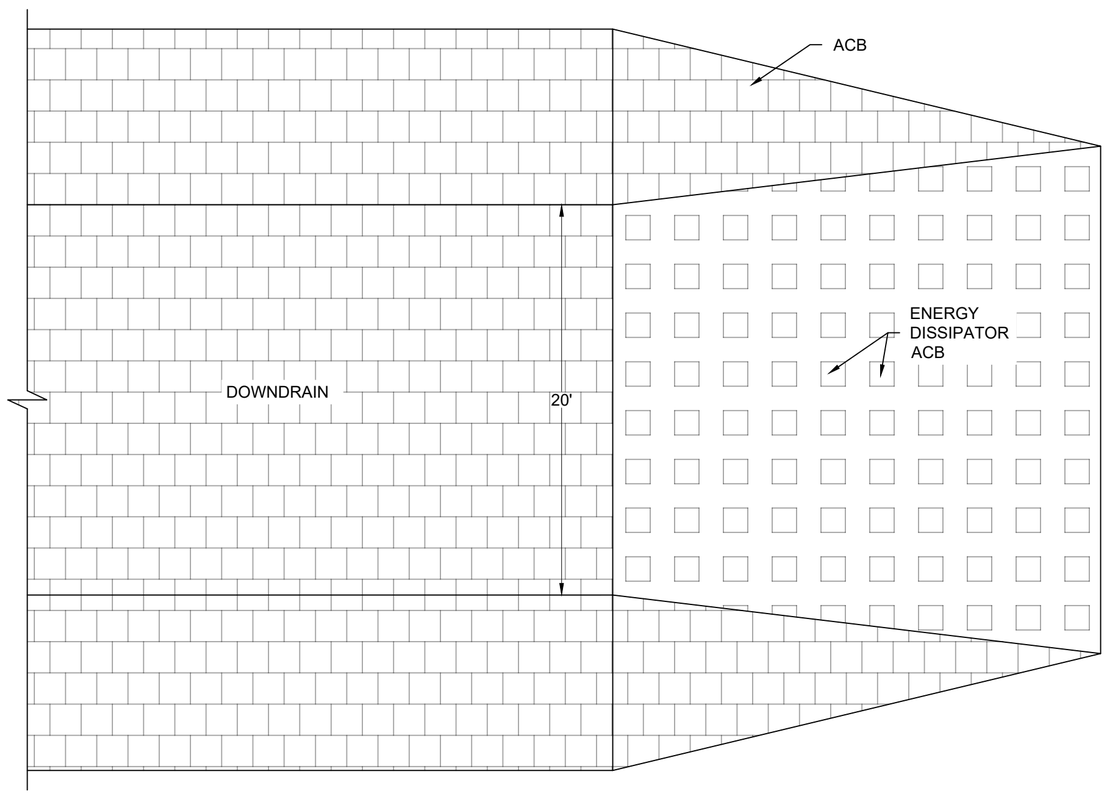
1. TOPOGRAPHY 2026 EOY MINE PLAN
2. PIT LAKE EXTENT SHOWN AS OF 7/2022



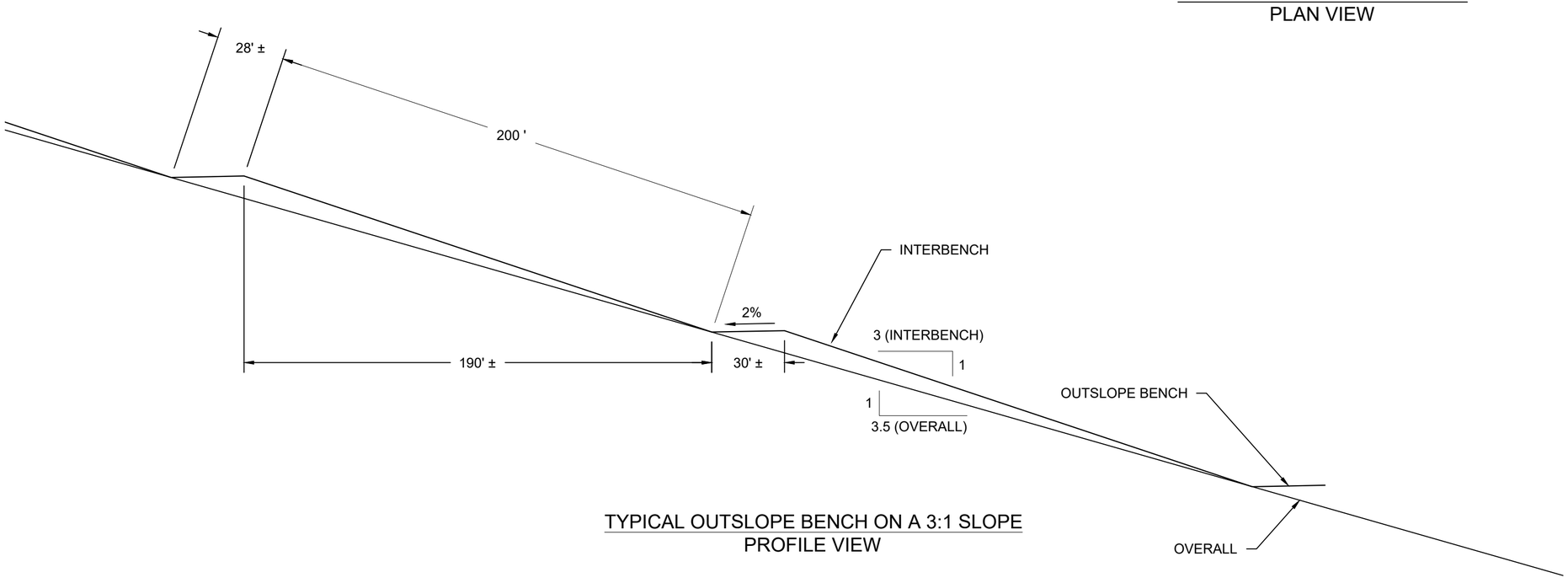
TYPICAL BENCH CHANNEL CROSS SECTION
SECTION VIEW



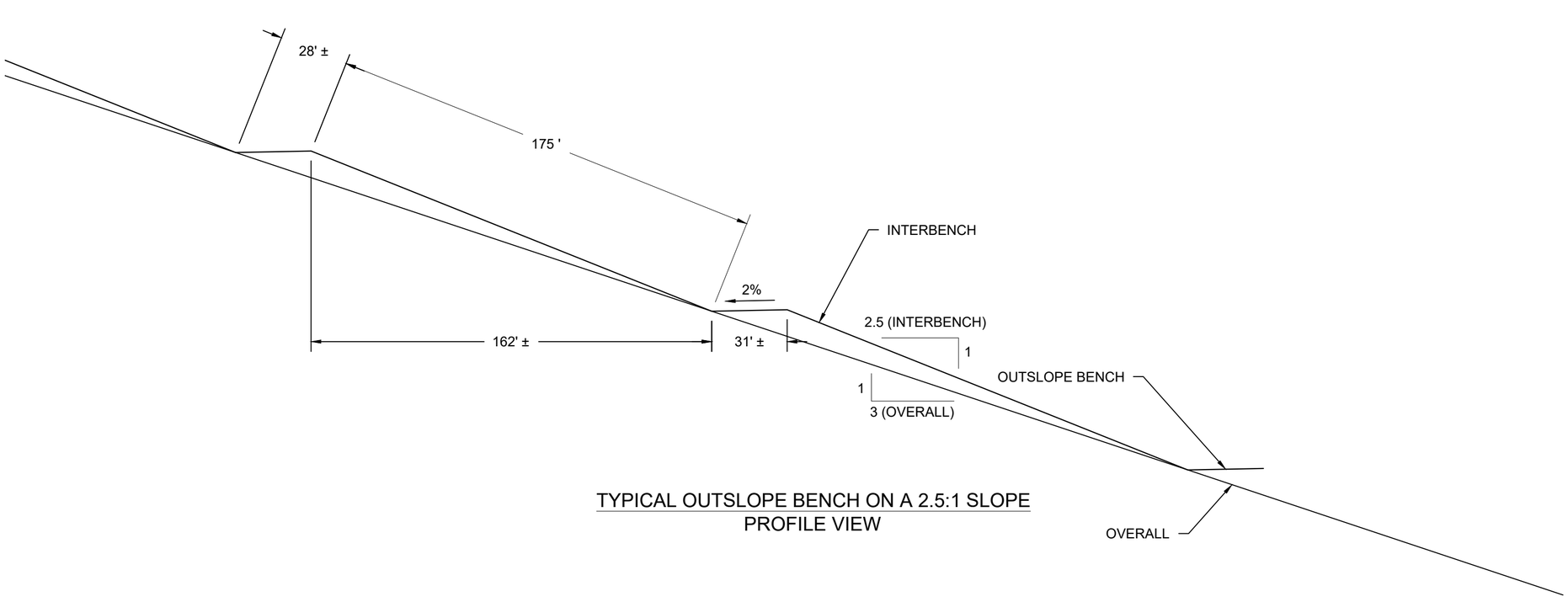
TYPICAL DOWNDRAIN
SECTION VIEW



TYPICAL ENERGY DISSIPATOR
PLAN VIEW



TYPICAL OUTSLOPE BENCH ON A 3:1 SLOPE
PROFILE VIEW



TYPICAL OUTSLOPE BENCH ON A 2.5:1 SLOPE
PROFILE VIEW

2023 CONTINENTAL MINE CCP

STORMWATER MANAGEMENT DETAILS

SHEET NUMBER:	REVISION NUMBER:
25	1

PREPARED BY: TELESTO SOLUTIONS INCORPORATED

PREPARED FOR: FREEPORT-McMoRan

DATE	7/28/2023
PROJECT	200189h
TASK NUMBER	001-03
DRAWN BY	JC
PROJECT ENGINEER	JC
CHECKED BY	WN

REVISIONS

#	DESCRIPTION	DATE	BY	APPROVAL
0	FOR REVIEW	6/29/23	JC	WN
1	FOR SUBMITTAL	7/26/23	JC	WN

LEGEND / NOTES

Appendix H

Earthwork Cost Estimate

Earthwork Cost Estimate
Process Summary Report

Continental Mine
Closure/Closeout Plan

Prepared for

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

Prepared by

Telesto Solutions, Inc.
750 14th Street SW
Loveland, CO 80537

July 2023
Updated July 2024

TELESTO
SOLUTIONS • INCORPORATED

Signature Page

Earthwork Cost Estimate Process Summary Report

Continental Mine Closure/Closeout Plan

July 2023

Report Authors and Contributors

Telesto Solutions, Inc.

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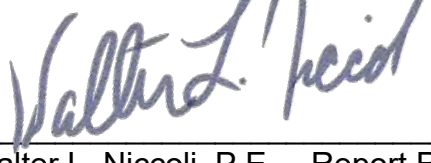
Taryn Tigges, P.E. – Primary Author



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Walter L. Niccoli, P.E. – Report Review

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

The New Mexico Environmental Department, Groundwater Bureau (NMED) and the New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division (MMD) regulations require that financial assurance (FA) be posted for facilities that must be reclaimed at closure (New Mexico Administrative Code NMAC 20.6.7.29 and NMAC 19.10.12, respectively). This report details the scope of earthwork associated with closure/closeout activities and includes appendices that describe the base assumptions and approach used to determine the FA and associated earthwork reclamation cost estimate (RCE) for the Continental Mine.

Telesto Solutions Inc. (Telesto) presents the earthwork RCE for Freeport-McMoRan Chino Mines Company (Chino) for the Continental Mine. The reclamation drawings that provide the basis for the cost estimate can be found in Appendix A of the CCP. The reclamation designs and earthwork quantity takeoffs were prepared by Telesto.

1.1 Reclamation Overview

The earthwork RCE is based on the configuration of facilities as described in the end-of-year (EOY) 2026 mine plan (Year 4 of mining). The plan assumes design for reclamation would take place during the first year with reclamation starting the following year. A recent evaluation of the five-year mining sequence, 2023 to 2027, determined that 2026 is the appropriate mine configuration to be utilized for calculating reclamation designs and cost for financial assurance purposes. It was shown that year 2026, used as the basis of this estimate, will yield a higher cost than other years.

1.2 Report Organization

This report consists of the following sections:

- **Section 1.0** provides an introduction and overview of the RCE prepared for Chino
- **Section 2.0** presents the data and assumptions used for estimating earthwork, equipment, operation and maintenance (O&M) costs, quotes and unit costs
- **Section 3.0** summarizes the information used to complete the earthwork RCE
- **Section 4.0** presents the results, including direct and indirect capital costs for each facility and site-wide direct and indirect O&M costs
- **Section 5.0** lists the references cited in this report

The following appendices provide supporting information and calculations:

- **Appendix A** presents the engineering take-offs used in the calculations
- **Appendix B** presents the key equations and documentation of the calculations used in the reclamation cost spreadsheet
- **Appendix C** provides the letter and table documenting the FA Work Group agreement for indirect costs used in the RCE
- **Appendix D** presents supporting data for the cost estimation, including labor rates, equipment data, direct quotes, and information for fuel costs
- **Appendix E** presents the RCE spreadsheet

Table 1 Reclamation Overview

Feature	Notes
Tailings	
Main Tailings Impoundment	Grading outslopes, hauling and placing cover, constructing stormwater channels, diverting Poison Spring Gulch to Grape Gulch, and revegetating
Magnetite Tailings Impoundment	Grading outslopes, hauling and placing cover, constructing stormwater channels, and revegetating
Stockpiles	
South Waste Rock Disposal Facility	Excavating and hauling a portion of the outslope on from the Union Hill Waste Rock Facility to a fill are on the outslopes, grading eastern outslopes to 2.5:1 interbench, grading southern outslopes to 3.0:1 interbench, placing stormwater channels, hauling and placing cover. Rock habitat piles left on top
East Waste Rock Facility	Removing the Rita Stockpile to access cover material, excavating cover material, hauling waste from cover material processing, grading remaining slopes and covering with 2-feet of cover material
Low Grade Ore/Waste Rock Facility	Grading outslopes, hauling and placing cover, constructing stormwater channels, and revegetating
North Overburden Stockpile and Haul Road	Ripping, covering and revegetating disturbed area
Overburden Stockpiles	Grading and revegetating
Pits	
Continental Pit	Diverting stormwater runon, fencing and berming
Hanover Mountain Mine	Diverting stormwater runon, ripping and revegetating flat benches, hauling and placing cover material, and revegetating
Other	
Cobre Haul Road	Excavating and hauling fill areas as cover material, ripping and revegetating. Grading outslopes on site
Haul Road and Exploration Roads	Ripping, and revegetating
Internal Haul Roads	Ripping, hauling and placing cover, and revegetating
Allowance for Other Disturbed Areas	Reclaim by minor regrading, ripping, hauling and placing cover, and revegetating.

2.0 DATA AND ASSUMPTIONS

The reclamation design used as the basis for the earthwork RCE is presented in CCP Appendix B. The cost estimate is included in a standalone calculation sheet in Appendix E of this report.

Data and key assumptions used throughout the cost estimate calculations for earthwork processes and equipment, indirect and O&M costs, and direct quotes are listed in this section. Appendix D provides more detailed information. The sub-appendices in Appendix D are organized as follows:

- **Appendix D.1** tabulates the 2024 labor rates from the New Mexico Department of Labor (NMDOL)
- **Appendix D.2** contains copies of the EquipmentWatch (Penton Media, 2024) sheets from which equipment unit rates were obtained
- **Appendix D.3** provides the curve fits used in the production sheets for dozers and haul trucks
- **Appendix D.4** provides copies of the pertinent information from R.S. Means (R.S. Means, 2023) and pages from several editions of the Caterpillar Performance Handbook (CPH)
- **Appendix D.5** provides direct quotes used in the cost estimates
- **Appendix D.6** provides data and calculations used to prepare the fuel cost

2.1 Earthwork Processes and Equipment

Data and assumptions used in the RCE for earthwork processes and equipment include the following:

- **Dozer Push Distances:** Dozer push distances represent the distance from the centroid of the cut block to the centroid of the fill block
- **Cover Placement**: Trucks, loaders, shovels, and graders cover loading and distribution with optimal truck-to-equipment ratios for each haul route
- **Haul Distances**: Haul distances are calculated using a preferred route and up to three segments; they originate and terminate at the approximate centroids of the source and reclamation area
- **Borrow Areas:** 2/3 of reclamation cover will come from Upper South Stockpile (USS) and Cobre Haul Road, while 1/3 will come from East Waste Rock Facility (EWRF). The RCE includes hauling from source centroid of the source to the centroid of the individual Continental Mine reclamation areas
- **Truck and Shovel Operations**: All truck and shovel operations will be completed using a Hitachi EX3600-5 hydraulic shovel and Komatsu 730E dump truck, or similar models
- **Dust Suppression and Road Maintenance:** A water truck and motor grader are part of the fleet for reclamation (Table 2), with equal task time as a loader or hydraulic shovel

- **Labor Rates:** All labor rates are developed based on the NMDOL Type H (Heavy Engineering) rates. These rates include the base, fringe benefit, and apprenticeship contribution rates
- **Equipment Rates:** The equipment unit operating costs will be taken from EquipmentWatch Custom Cost Evaluator
- **Hourly Adjustment:** The cost information provided in EquipmentWatch is based on 50 minutes of work per hour, as the RCE calculation is also based on this time frame. However, when applying this data to a 60-minute work hour, an hourly adjustment is made
- **Revegetation and Scarification:** The revegetation unit cost is based on R.S. Means, EquipmentWatch, and direct quotes. Scarifying the final surface takes place at the same time as revegetation
- **Equipment Production Factors:** Table 2 summarizes equipment production factors from the Caterpillar Handbook (CPH), and EquipmentWatch. Productivity curves are also developed from the Caterpillar references
- **Fuel Costs:** The fuel cost is based on discussions with the FA Work Group in the fall of 2018, as agreed in January 2019; historical local quotes are correlated with public data to estimate the fuel cost
- **Miscellaneous Unit Costs:** Other miscellaneous unit costs shown in Table 4 were taken from several sources. Supporting documentation from direct quotes is included in Appendix D.5

2.2 Indirect and Operation and Maintenance Costs

The following sections describe how the RCE handles indirect and O&M costs.

2.2.1 Capital Indirect Costs and Operation Maintenance

Total indirect costs of 30% are applied to the capital direct costs based on discussions involving the FA Work Group completed in December 2018. The indirect costs include but are not limited to mobilization and demobilization, contingencies, engineering redesign fee, contractor profit and overhead, project management fee, and state procurement cost. Appendix C presents the letter and table documenting the FA Work Group agreement for FNMO's RCEs to use 30% to calculate indirect costs.

Long-term O&M costs incur a total indirect cost of 17.5%, as agreed by the FA Work Group. See Appendix C for more details.

2.2.2 Reclamation Timeframe

For purposes of updating the Continental Mine's total Net Present Value, this earthwork cost estimate assumes that earthwork occurs relatively evenly (in terms of dollars spent) over a 15-year period (including 1 year of pre-construction work and 1 year of post-construction work). Revegetation monitoring is assumed to be completed at the end of 12 years in each area after the initial revegetation. Other earthwork reclamation and facility monitoring, and O&M are assumed to be fully completed at the end of 100 years (i.e., year 99 or 2126).

2.3 Direct Quotes

Direct quotes are used in the RCE as a source of information to prepare unit costs which will be presented in the RCE cost spreadsheet. Direct quotes include the following:

- **Articulated Concrete Blocks (ACBs):** ACB material and installation unit costs
- **Revegetation Materials:** Costs for seed and hay mulch used for reclamation

Table 2 Earthwork Equipment Production Factors

Parameter	Value	Comment/Reference
Swell Factor[1]	0% for native rock and compacted fill 8% for cover load & haul sites	Regraded material and compacted fill has no swell factor. Cover material volumes are calculated based on the reclaimed area and the cover depth. A swell factor is included in the cost estimate while calculating the bank cover volume.
Coarse Regrading Tops and Outslopes (D11T CD)		
Operator Factor [1]	1.0	Due to large job size assume operator with excellent skills (CPH 48: 19-55, excellent)
Material Factor	1.2 1.0	(CPH 48: 19-55) 1.2 for fine grading cover, other surfaces, and channel, 1.0 for coarse regrading stockpiles and tailing
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Grade Factor - Outslopes[1]	1.6	(CPH 48: 19-55) 3H:1V Slopes
Material Weight (lb/cy)	3,600	Stockpiles & Cover Materials
Production Method/Blade Factor	1.2	(CPH 48: 19-55) Slot dozing
Visibility Factor	1.0	(CPH 48: 19-55) Clear, dust controlled by water trucks
Elevation Factor	1.0	(CPH 48: 30-7) Horsepower reduction table
Direct Drive Transmission	1.0	-
Fine Grading Cover, Other Surfaces, and Channels (D11T CD, D9T, D6T, 16M, 14M)		
Material Factor	1.2	(CPH 48: 19-55) fine grading cover
Grade Factor	1.0	(CPH 48: 19-55) 1-5% slopes
Grade Factor – Outslopes[1]	1.6	(CPH 48: 19-55) 3H:1V Slopes
Material Weight (lb/cy)	3,600	Fine grading cover material
Production Method/Blade	1.2 1.0	(CPH 48: 19-55, slot dozing) No correction applied channels, down drains, and benches
Effective Blade Width (feet [ft])	22.0 ft D11T CD 14.08 ft D9T Semi Universal Blade 16 ft 16M, 14 ft 14M 10.67’ D6T SU	(CPH 48: 19-17, 19-49) (CPH 48: 19-47) (CPH 48: 11-17) (CPH 48: 19-10, 19-43)
Speed (miles/hr)	2.5 mph D11T CD, 16M, and 14M 1.0 mph D9T and D6T	(CPH 48: 11-19, 19-24, 19-25) maximum equipment speeds based on information provided in the Cat Handbook and Safe mining practices
Operator Factor[1]	0.75	(CPH 48: 19-55) Average operator skill
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Visibility Factor	1.0	(CPH 48: 19-55) Clear, dust controlled by water trucks
Elevation	1.0	(CPH 48: 30-7)

Parameter	Value	Comment/Reference
Direct Drive Transmission	1.0	-
Ripper (D11T CD Multi-shank [w/MSR-359H])		
Ripping Length (ft)	1,000	-
Penetration (in)	18	-
Pocket Spacing (in)	59	(CPH 48: 19-72)
Number of Pockets	3	(CPH 48: 19-72)
Turn Time (min/pass)	0.25	(CPH 48: 19-72 to 19-75)
Speed (mph)	1	(CPH 48: 19-72 to 19-75)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Distance between passes (in)	59	Maintain pocket spacing value between passes
Loader (992K)		
Heaped Capacity (cy)	16.0	(CPH 48: 23-223, 23-365)
Loader Cycle Time (load, dump, and maneuver; min)	0.65	(CPH 48: 23-287)
Bucket Fill Factor	0.875	(CPH 48: 23-287) ≥ 1" Loose Material
Speed (mph)	7.6 12.8	(CPH 48: 23-18) 7.6 mph loaded, forward 2nd gear; 12.8 mph empty, forward 3rd gear
Work Hour (min/hr)	50	(CPH 48: 19-55)
Loaders (988H, 980H)		
Heaped Capacity (cy)	8.3 (988H) 7.5 (980H)	(CPH 41: 19-75) (CPH 48: 23-213, 23-214)
Loader Cycle Time (load, dump, and maneuver; min)	0.575 (988H) 0.525 (980H)	(CPH 44: 23-223) (CPH 48: 23-287)
Bucket Fill Factor	0.875	(CPH 48: 23-287) ≥ 1" Loose Material
Speed (mph)	7.3 12.9	(CPH 41: 12-7 [988H], 48:23-17 [980H]) 7.3 mph loaded, forward 2nd gear; 12.9 mph empty, forward 3rd gear
Work Hour (min/hr)	50	(CPH 48: 19-55)
Loader (966H)		
Heaped Capacity (cy)	5.5	(CPH 48: 23-209, 23-210)
Loader Cycle Time (load, dump, and maneuver; min)	0.525	(CPH 48: 23-287)
Bucket Fill Factor	0.875	(CPH 48: 23-287) ≥ 1" Loose Material
Speed (mph)	7.8 13.7	(CPH 48: 23-16) 7.8 mph loaded, forward 2nd gear; 13.7 mph empty, forward 3rd gear
Work Hour (min/hr)	50	(CPH 48: 19-55)
Shovel (Hitachi EX3600-5/CAT 5230B FS) (2)		
Heaped Bucket Capacity (cy)	27.4	EquipmentWatch Spec for Hitachi EX3600-5
Loader Cycle Time (min)	0.45	(CPH 35: 4-236)
Bucket Fill Factor	1.025	(CPH 48: 30-2) assuming rock dirt mixture factor range from 1.00 to 1.05
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Trucks (CAT 789D/Komatsu 730E) (3)		
Struck Capacity (cy)	101	EquipmentWatch Spec for Komatsu 730E
Heaped Capacity (cy)	145	EquipmentWatch Spec for Komatsu 730E
Rolling Resistance	2.5%	(CPH 48: 30-2) Radial tires, dirt road maintained fairly regularly, watered, flexing

Parameter	Value	Comment/Reference
		slightly
Truck Exchange Time (min)	0.7	(CPH 48: 10-20) Avg. 0.6-0.8
Dump/Maneuver Time (min)	1.1	(CPH 48: 10-20) Avg. 1.0-1.2
Speed (mph)	35.5	(CPH 48: 10-14) top speed (loaded)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Trucks (CAT 769D)		
Struck Capacity (cy)	22.2	(CPH 29: 9-2) Capacity assumed for bench channel materials
Heaped Capacity (cy)	31.7	(CPH 29: 9-2) Capacity assumed for bench channel materials
Rolling Resistance	2.5%	(CPH 48: 30-2) Radial tires, dirt road maintained regularly, watered, flexing slightly
Truck Exchange Time (min)	0.7	(CPH 48: 10-20) Avg. 0.6-0.8
Dump/Maneuver Time (min)	1.1	(CPH 48: 10-20) Avg. 1.0-1.2
Speed (mph)	47	(CPH 29: 9-2) top speed (loaded)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Trucks (CAT 725)		
Struck Capacity (cy)	14.5	EquipmentWatch spec
Heaped Capacity (cy)	19.0	EquipmentWatch spec
Rolling Resistance	2.5%	(CPH 48: 30-2) Radial tires, dirt road maintained fairly regularly, watered, flexing slightly
Truck Exchange Time (min)	0.7	(CPH 48: 10-20) Avg. 0.6-0.8
Dump/Maneuver Time (min)	1.1	(CPH 48: 10-20) Avg. 1.0-1.2
Speed (mph)	34	(CPH 48: 1-2) top speed (loaded)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Scraper (657G) Push-Pull		
Heaped Capacity (cy)	44	(CPH 48: 24-4)
Struck Capacity (cy)	32	(CPH 48: 24-4)
Rated Load (lb)	104,000	(CPH 48: 24-4)
Rolling Resistance	2.5%	(CPH 48: 30-2) Radial tires, dirt road maintained fairly regularly, watered, flexing slightly
Load Time (min)	0.85	(CPH 48: 24-17) 0.6 to 1.1
Maneuver & Spread Time (min)	0.65	(CPH 48: 24-17) 0.6 to 0.7
Push Cycle Time (min)	0.10 Boost Time 1.19 return time (140% of scraper load time) 0.15 maneuver time	(CPH 48: 28-10)
Speed (mph)	33	(CPH 48: 24-4)
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Excavator (319D L)		

Parameter	Value	Comment/Reference
Work Hour (min/hr)	50	(CPH 48: 19-55) Job efficiency
Heaped Capacity (cy)	1	EquipmentWatch spec
Sheepsfoot Roller Length (ft)	3	Estimated
Maximum Reach at Ground Level (in)	380	EquipmentWatch spec
Swing Time (Loaded) (min)	0.09	(CPH 48: 7-247)
Swing Time (Empty) (min)	0.07	(CPH 48: 7-247)
Deere 7430 (and Finn B260 Mulcher, MSR-189H Ripper)		
Operating Width (ft)	12	Assigned based on typical width of revegetation equipment/implements
Speed (mph)	3	Assigned as average speed of tractor pulling revegetation equipment/implements
Work Hour (min/hr)	50	Assigned for consistency with other earthwork operations

CPH = Caterpillar Performance Handbook (Multiple Editions)

(1) The swell and operator factors used are consistent with factors presented to MMD and NMED in meetings with Tyrone on June 11, 2012, November 2, 2012, and a letter to MMD and NMED from Tyrone dated September 5, 2012 (Freeport-McMoRan Copper & Gold, 2012). Furthermore, these were agreed to in discussions on Chino expansion projects.

(2) Performance information for the CAT 5230B FS is used for parameters unavailable for the Hitachi EX3600-5.

(3) Performance information for the CAT 789D is used for parameters unavailable for the Komatsu 730E.

3.0 CALCULATIONS

This section describes the elements included in estimating the earthwork reclamation costs for the Continental Mine, utilizing the data and assumptions discussed in Section 2.0. Key equations and calculations used for the cost estimate are presented in Appendix B. Design parameters, assumptions, and other information are also provided within the spreadsheet to support the cost estimation. The steps to complete the earthwork RCE are as follows:

1. Project the effort required to perform each of the various reclamation activities (i.e., material quantities, distances, slopes, equipment choices, work type)
2. Based on construction industry information and labor and fuel costs, estimate the unit cost of each reclamation activity (Tables 3 and 4)
3. Multiply the corresponding quantities by the unit costs to calculate the sub-total cost for each reclamation activity and sum for a total
4. Multiply the indirect percentage rate to the total to complete the cost estimate.

Overall, the cost estimating process follows the typical, standard approach used in the engineering and construction industries. The earthwork cost estimate is an iterative process based on the required loading and hauling operations and haul distance. Telesto utilizes the unit costs associated with equipment in the fleet to calculate the total reclamation cost using the spreadsheets. Figure 1 summarizes the costing steps for one piece of equipment in developing the fleet.

The main reclamation activities for the earthwork RCE are discussed in this section for stockpiles, open pits, and other miscellaneous costs. Table 5 summarizes key reclamation activities for each facility.

Table 3 Labor and Equipment Unit Costs

Equipment Description	Fuel Consumption (gal/hr)	Fuel Cost ($/hr)	Lube Cost ($/hr)	Field Parts & Ground Engaging Component Cost ($/hr)	Tire Cost ($/hr)	Monthly Rental Rate ($/month)
Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	$19.54	$59.79	$13.32	$7.35	$16.05	$23,707.47
Cat D11T, U Blade	$26.54	$81.21	$27.75	$45.04	$-	$39,892.04
Cat D11T CD	$26.54	$81.21	$18.99	$23.16	$-	$39,892.04
Cat D9T, SU Blade	$13.03	$39.87	$13.95	$19.24	$-	$30,702.84
Cat D6T, SU Blade	$6.55	$20.04	$5.31	$6.81	$-	$8,847.61
Cat D6T XL, SU Blade	$6.44	$19.71	$5.28	$6.86	$-	$12,700.83
Cat 319D L	$2.38	$7.28	$2.55	$4.44	$-	$7,757.75
Cat 992K	$19.49	$59.64	$20.29	$12.81	$70.05	$34,714.58
Cat 988H	$9.13	$27.94	$9.40	$5.90	$19.19	$13,290.79
Cat 980H	$5.35	$16.37	$4.89	$2.95	$12.15	$10,772.91
Cat 966H	$3.86	$11.81	$3.90	$2.35	$7.14	$9,920.72
Cat 993K	$23.11	$70.72	$24.25	$15.37	$84.06	$34,714.58
Cat 16M	$9.50	$29.07	$9.23	$7.46	$14.94	$13,187.74
Cat 16M - Rough Grading	$9.50	$29.07	$9.23	$11.73	$14.94	$13,187.74
Cat 14M	$8.29	$25.37	$6.74	$4.81	$9.63	$13,187.74
Cat 14M - Rough Grading	$8.29	$25.37	$6.74	$7.56	$9.63	$13,187.74
Finn B260	$4.13	$12.64	$1.76	$0.24	$0.60	$2,085.17
Cat D11T CD Multi-shank (w/ MSR-359H)	$26.54	$81.21	$18.99	$31.44	$-	$39,892.04
MSR-189H	$26.54	$81.21	$19.14	$0.93	$-	$863.38
Cat 637G	$39.81	$121.82	$26.54	$20.30	$12.80	$23,658.00
Cat 657G	$48.35	$147.95	$37.46	$21.86	$13.78	$23,381.79
Hitachi EX3600-5	$82.72	$253.12	$62.36	$63.31	$-	$68,215.84
Deere 7430	$5.98	$18.30	$3.00	$1.18	$1.22	$4,058.42
Komatsu HD-1500 5	$26.86	$82.19	$20.53	$2.38	$34.26	$25,180.86
Cat 769D	$8.31	$25.43	$8.62	$2.51	$18.66	$10,486.66
Cat 725	$6.02	$18.42	$5.76	$2.30	$12.55	$10,307.09
Komatsu 730E	$28.60	$87.52	$20.01	$1.62	$21.21	$27,957.40
Cat 777F	$13.94	$42.66	$19.25	$4.84	$39.17	$37,500.00
Cat 740	$8.07	$24.69	$7.87	$1.90	$15.53	$16,570.84
Off-Hwy Water Tanker Truck,6,000-gal.	$11.25	$34.43	$6.58	$2.54	$6.42	$10,519.73
Off-Hwy Water Tanker Truck,10,000-gal.	$15.35	$46.97	$9.63	$3.98	$10.47	$13,342.38
2 Deck Screening Plant (5X16, 48X60)	$4.85	$14.84	$2.43	$1.72	$0.33	$12,553.61
3 Deck Screening Plant (5X16, 48X60)	$4.85	$14.84	$2.49	$1.04	$0.33	$17,785.56
1 Deck Screening Plant (5X16, 48X60)	$4.85	$14.84	$2.43	$1.09	$0.33	$11,581.15
3 Deck Screening Plant (5X16, 42X60)	$4.85	$14.84	$2.44	$0.96	$0.31	$17,785.56

Labor

NMDOL Type A Operator Group	2024 Rate ($/hr)
Equipment Operator IV	$32.88
Equipment Operator V	$32.99
Equipment Operator VI	$33.23
Equipment Operator VII	$33.25
Equipment Operator VIII	$35.95
Laborer I	$26.79
Laborer II	$26.85
Truck Driver III	$29.50
Truck Driver VI	$29.50
Truck Driver VII	$29.50
Truck Driver VIII	$29.50

Table 4 Miscellaneous Unit Costs

Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
Fuel	$3.06	$-	gal	-	Diesel fuel cost is estimated by correlating historical local quotes with public data, as agreed upon in November 2018 discussions with the agencies. Fuel cost includes direct and indirect costs as agreed upon in a letter to MMD dated January, 18 2022.
Revegetation	$1,158.15	$5.03	ac	Revegetation Unit Cost Sheet	See unit rates calculations - Cost is based on a calculated unit rate that includes tractor rental and maintenance, fuel, scarifying, discing, drill seeding, mulching, crimping, seed, and mulch.
Seed	$245.70	$-	ac	Quote	Rocky Mountain Reclamation, 4/2018, est. cost for seed at 8.9 PLS/ac, $210/ac. Escalated 2% 2018-2021, then 5% 2021-2023
Mulch	$286.65	$-	ton	Quote	Rocky Mountain Reclamation, 4/2018, est. cost for hay mulch (nox. weed free, native), $245/ton). Escalated 2% 2018-2021, then 5% 2021-2023
Manual Seeding	$302.40	$-	day	Means Line Item 329343.10 0560	Planting, trees, shrubs, and ground cover, medium soil, bare root seedlings, 3" to 5", includes planting only
Bench Grading Stockpile	$1.88	$0.48	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
Bench Grading Tailings Pond	$1.88	$0.48	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
Down drain Construction	$389.79	$-	ft	Downdrain Unit Cost Sheet	See unit rates calculations
Down drain Dissipater	$16,045.45	$-	ea	Downdrain Unit Cost Sheet	See unit rates calculations
Channel Construction w/ Riprap	$7.85	$1.58	ft	Channel Unit Cost Sheet	See unit rates calculations
Channel Construction w/o Riprap	$0.57	$0.15	ft	Channel Unit Cost Sheet	See unit rates calculations
Erosion Control	$3,372.59	$389.23	day	Modified Crew B-13A	Erosion control for O&M - includes 1 foreman, 2 laborers, 1 equipment operator, 2 truck drivers, 1 loader (4 cy), 2 dump trucks (8 cy)
Structure Demolition	$0.38	$-	cf	Means Line Item 024116.13 0100	Building demolition, large urban projects, mixture of types, excludes foundation demolition, dump fees
Concrete Slab Demolition	$0.82	$-	sf	Means Line Item 024116.17 0400	Building footings and foundations demolition, floors, concrete slab on grade, plain concrete, 6" thick, excludes disposal costs and dump fees
Storage Tank Demolition	$1,934.69	$-	ea	Means Line Item 130505.75 0530	Selective Demolition - Storage Tanks, steel tank, single wall, above ground, not including foundations, pumps or piping, 5,000 thru 10,000 gallon
Storage Tank Demolition	$3,034.80	$-	ea	Means Line Item 130505.75 0540	Steel tank, single wall, above ground, 15,000 thru 30,000 gallon, selective demolition, excluding foundation, pumps or piping
Power Line Demolition	$0.94	$-	ft	Means Line Item 260505.10 0390	Electrical Demolition - Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead powerlines.
Power Line Demolition	$4,715.08	$-	day	Means Crew B-12N Means Crew B-17 Means Crew B-68C	Bare Costs: 2-laborers (B17), 1-equipment operator (light) (B17), 1-truck driver (heavy) (B17), 1-48 HP backhoe loader (B17:), 1-8 cy 220 HP dump truck (B17), 1-electrician (B68C), 1-25-ton hydraulic crane (B12N), 1-crane operator (B12N)

Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
Power Pole Demolition	$252.03	$-	ea	Means Line Item 024113.80 0200	Selective Demolition - wood utility poles 35-45 ft high
Pipeline (small HDPE pipe)	$2.45	$-	ft	Means Line Item 024113.38 1700	Selective demolition water, process water HDPE piping; (6 to 8-inch diameter); excludes excavation
Pipeline (large HDPE pipe)	$4.09	$-	ft	Means Line Item 024113.38 1800	Selective demolition water, process water HDPE piping (10 to 18-inch diameter); excludes excavation
Well Plug & Abandon	$20.84	$-	ft	Quote	Unit cost of $18.17/ft is based on a July 2019 direct quote from Layne, A Granite Company (formerly Layne Christensen Company) for a total of 172,631 ft of well and exploration borehole abandonment over 300 days (575 ft/day); the unit cost includes 1 mobilization ($15,000) and 1 demobilization ($15,000) spread over 300 days at 575 ft/day. Escalated 2% 2019-2021 then 5% for 2021-2023
Well Replacement	$77.72	$-	ft	Quote	Wilcox Professional Services, 8/2011, est. cost for 5 ½ in bore, $173,500 for 3000 ft total ($57.83/ft). Escalated 2% 2011-2021 then 5% for 2021-2023
Seepage Collection Replacement	$179,222.56	$-	ea		Est. cost from 2019 Tyrone RCE. Escalated 2% 2019-2021 then 5% for 2021-2023
Reinforced Concrete Wall Demolition	$208.47	$-	hr	Means Crew B-12C	Standard Union Crew: 1 equipment operator (crane), 1 laborer, 1 hydraulic excavator, 2 cy, approximately 40 hrs to demo 200 ft reinforced concrete dam.
Disc harrow attachment, for tractor	$3,051.61	$-	month	Means Line Item 015433.20 1500	Equipment rental costs
Cast-In-Place Concrete	$329.62	$-	cy	Means Line Item 033053.40 6200	Structural concrete, in place, gravity retaining wall (3000 psi), includes forms and reinforcement
Cleanup & Disposal of Wastes Requiring Special Handling	$392.50	$-	ton	Means Line Item 028120.10 1120/1130	Solid pickup; average of minimum and maximum
Transportation of Wastes Requiring Special Handling	$5.60	$-	mile	Means Line Item 028120.10 1260/1270	Transportation to disposal site (Truckload = 80 drums or 25 cy or 18 tons); average of minimum and maximum
Road Maintenance	$5,714.20	$1,570.80	month	?	Road maintenance for O&M - includes one 14M motor grader and one 6,000-gal water truck
Berming	$0.39	$-	ft	See Berm Unit Cost Sheet	See unit rates calculations
Livestock Fencing	$184.99	$-	ft	Means Line Item 323126.20 0020	Wire fencing & gates, wire fencing general, barbed wire, galvanized, domestic steel, standard, 12-3/4 ga.
Chain Link Fencing	$29.89	$-	ft	Means Line Item 323113.20 0800	Fence, chain link industrial, galvanized steel, 6 ga. wire, 2" posts @ 10' OC, 6' high, includes excavation, & concrete, excludes barbed wire
Vehicle Gates, Pit Perimeters	$1,421.83	$-	ea	Means Line Item 323113.20 5070	Fence, chain link industrial, double swing gates, 6' high, 20' opening, includes excavation, posts & hardware in concrete
Signs every 500 ft., pit perimeters	$68.80	$-	ea	Means Line Item 101453.20 0600	Signs, guide and directional signs, reflectorized, 12" x 18", excludes posts
Fire Hydrant Demolition	$483.63	$-	ea	Means Line Item 024113.23 0900	Utility removal, hydrants, fire, remove only, excludes hauling

Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
Culvert Removal	$21.31	$-	ft	Means Line Item 024113.40 0190	Selective demolition, metal drainage piping, CMP, steel, 48"-60", diameter, excludes excavation
Grade Control Wall	$224.37	$-	cy	Means Line Item 033053.40 3945	Structural concrete, in place, continuous strip footing (3000 psi), 36" wide x 12" deep, unreinforced, includes forms(4 uses), concrete (Portland cement Type I), placing and finishing, excludes reinforcing
Sludge Removal	$354.11	$-	ea	Means Line Item 026510.30 0320	Removal of underground storage tanks, petroleum storage tanks, non-leaking, remove sludge, water and remaining product from tank bottom of tank with vacuum truck, 9,000 - 12,000 gallon tank
Earth Fill Removal (dozer excavate, haul, spread)	$5.04	$-	cy	Means Line Item 312316.46 6070	Excavating, bulk, dozer, open site, bank measure, common earth, 700 HP dozer, 300' haul
Concrete Foundation and Metal Arch (excavate and load)	$1.50	$-	cy	Means Line Item 312316.46 6010	Excavating, bulk, dozer, open site, bank measure, common earth, 700 HP dozer, 50' haul
Concrete Foundation and Metal Arch (haul and dump)	$4.48	$-	cy	Means Line Item 312323.20 5040	Cycle hauling(wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 22 C.Y. truck, cycle 1 mile, 5 MPH, excludes loading equipment
Substation Demo	$14,036.92	$-	ea	Substation Unit Cost Sheet	See unit rates calculations
Clay Fill	$16.78	$-	cy	Means Line Item 312323.15 6075	Clay fill (material cost only)
Transformer	$1,112.37		ea	Means Line Item 260505.10 1570	Transformer, dry type, primary, 3 phase, to 600 V, 750 kVA, electrical demolition, remove, including removal of supports, wire & conduit terminations
Steam Cleaner	$240.55	$-	week	Means Line Item 015433.40 6300	Rent steam cleaner 100 gph, Incl. Hourly Oper. Cost.

Means data are obtained from RS Means online (2024) with location adjustment for Las Cruces.

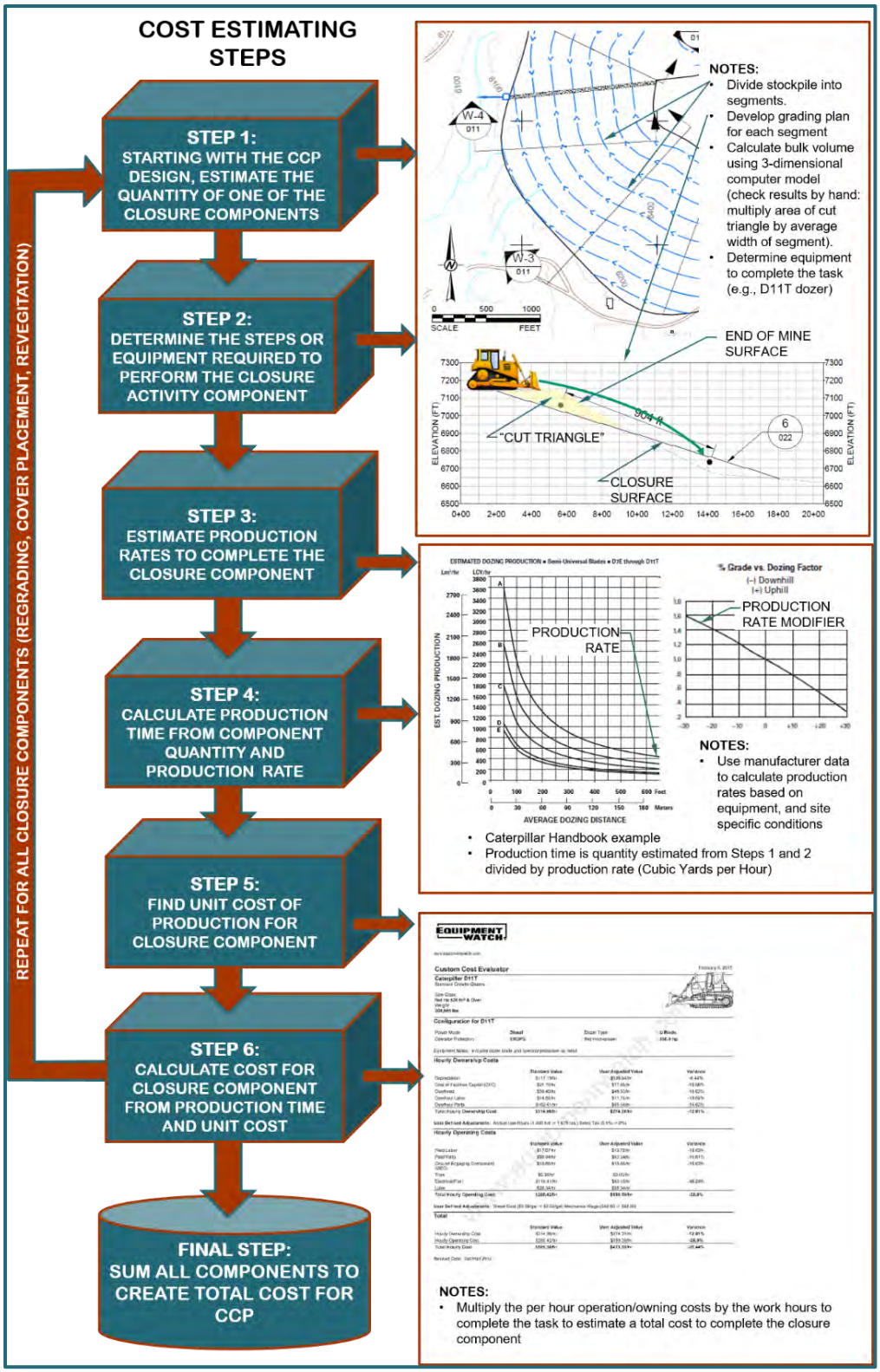

Figure 1 Earthwork Cost Estimating Process

Table 5 Reclamation Activity by Facility

	Rough Grading	Dozer Assist Cover Load	Load Cover	Haul Cover	Rip Rough Grade	Place Cover & Grade[1]	Revegetate	Excavate for Down drains	Excavate Bench Channels	Rip Liner	Load & Haul Riprap	Place Riprap Bench Channels	Place ACB Down drains	Fence, Berms	O&M
Tailings Ponds															
Main Tailings Impoundment	X	X	X	X	X	X	X	X	X		X	X	X		X
Magnetite Tailings Impoundment	X	X	X	X	X	X	X	X					X		X
Stockpiles															
South Waste Rock Disposal Facility	X	X	X	X	X	X	X	X	X		X	X	X		X
East Waste Rock Facility	X	X	X	X	X	X	X	X	X						X
Low Grade Waste Rock Facility	X	X	X	X	X	X	X								X
No. 3 Shaft Stockpile	X	X	X	X	X	X	X								X
Mines															
Continental Pit														X	X
Hanover Mountain Mine[2]		X	X	X		X	X							X	X
Surface Impoundments															
Grape Gulch Pond #3 (HDPE lined; reclaimed year 12)		X	X	X		X	X			X					X
Blackman's Seep (HDPE Lined; reclaimed year 5)	The Pond is closed as part of tailings reclamation														
Upper Creek Containment Pond 1 (HDPE Lined; Reclaimed year 12)		X	X	X		X	X			X					X
Magnetite Seepage Pond (HDPE Lined) (Reclaimed year 12)		X	X	X		X	X			X					X
SWRF Dam 1 (Reclaimed year 12)		X	X	X		X	X								X
SWRF Dam 2 (Reclaimed year 12)		X	X	X		X	X								X
SWRF Dam 3 (Reclaimed year 12)		X	X	X		X	X								X
Decant Pond #4 (HDPE lined; reclaimed year 12)		X	X	X		X	X			X					X
North Tailings Decant Pond (Reclaimed year 12)		X	X	X		X	X			X					X
East WRF Containment (Proposed; Reclaimed Year 12)		X	X	X		X	X			X					X
Historic Sites															
Disturbed Area Adjacent and North of the SWRDF		X	X	X	X	X	X								X
Other															
Unplanned Future Disturbance Areas	X	X	X	X		X	X								X
Exploration Roads, Remaining Internal Hal Roads	X	X	X	X		X	X								X
North Overburden Stockpile Borrow Area							X								X
Demolition		X	X	X	X	X	X								X
Cobre Haul Road	X						X								X

[1] Cover placement at 3 feet where applicable

[2] Accessible pit flat areas are defined as pit haul road driving surfaces and flat areas 50-feet or greater from a highwall. However, areas with PAG material in benches above accessible pit flat areas are not reclaimed.

Following are the primary design elements for the cost estimate for areas to be closed.

3.1.1 Regrading and Grading

Slopes are regraded to an overall outslope gradient of 3.5:1 (horizontal:vertical) with inter-bench slope lengths of 200 ft and 3:1 interbench slopes, where possible. Grading is done in a manner to ensure positive drainage. Material placed on the east side of the SWRDF is placed at a 3:1 overall slope (2.5:1 interbench slope) to preserve the road located at the toe of the stockpile. The top surfaces of all tailing impoundments are constructed to a minimum final grade of 0.5%. The top surfaces of all waste rock and leach stockpiles are constructed to a minimum final grade of 1%.

3.1.2 Top Surface Channels and Channel Construction

The top surface channels will have a maximum longitudinal slope of 5%, and there will be 2.5 feet of riprap on top of 6 inches of gravel bedding, which is underlain by 3 feet of cover material. Bench and other channels will have a base width of 5 feet and inner and outer side slopes of 3:1 and 2.5:1, respectively. The maximum cross-bench slope and longitudinal bench slope will be 2%. Cover material will be 1 foot thick, and filter material and riprap will be used for erosion control.

3.1.3 Down drain, Cover, Scraper Operations, Truck and Shovel

To protect against erosion, down drains utilize ACBs and dissipators as necessary. The cost estimate covers the transportation and placement of 36 inches of fine-grained cover. Backfilling or repositioning operations are performed by trucks and loaders with dozer assistance. The loading and distribution of all covers are carried out by trucks and loaders or hydraulic shovels with dozer assistance. The most cost-effective number of trucks per loader or hydraulic shovel will be used for each haul route.

3.1.4 Revegetation, Scarification, and Haul Road Reclamation

The revegetation unit cost is based on R.S. Means, EquipmentWatch, and direct quotes. Scarifying of the final surface is performed at the same time as the revegetation and is included in the revegetation cost. Haul road areas will be reclaimed through rip and revegetation.

3.1.5 Fencing and Berm Installation

To ensure public safety, a fence made of 6-foot chain link and a 2:1 slope, 5-feet high, and 10-feet top width berms will be built around 40 feet away from the highwalls of Continental Pit and Hanover Mountain Mine. The fence construction will cause a disturbance area of approximately 25 feet wide, which will be revegetated. Similarly, the construction of the berms will result in a disturbance area of around 100 feet wide, which will also be revegetated.

In the MMD permit GR002RE 01-1 the Continental Pit was granted a conditional waiver from achieving a self-sustaining ecosystem. Reclamation of the open pit consists of a combination of fencing and berms to prevent access and minimize runoff into the open pit.

3.2 Hanover Mountain Mine

Mining commenced at the Hanover Mountain Mine in mid-2018. The main activities involved in closing the Hanover Mountain Mine include:

- Hauling and grading cover material
- Ripping and revegetating covered areas
- Installing safety fencing and berms to prevent run-on

3.3 Stockpiles

Stockpile surfaces targeted for reclamation under this plan include all surfaces of waste stockpiles that are located outside the Continental Mine OPSDA.

3.3.1 South Waste Rock Disposal Facility

The existing Waste Rock Facilities (WRF) include five contiguous waste rock piles: the South, East, West, Buckhorn, and Union Hill. By EOY 2026 the five facilities are combined into the South Waste Rock Disposal Facility (SWRDF). The main activities involved in closing the SWRDF include:

- Regrading top surfaces and outslope benches
- Completing surface water channels to route stormwater
- Hauling and grading cover material
- Ripping and revegetating covered areas

The SWRDF outslopes are regraded to a 3.5:1 overall slope (3:1 interbench slope). Material placed on the east side is regraded at a 3:1 overall slope (2.5:1 interbench slope) to preserve the road located at the toe of the stockpile.

3.3.2 East Waste Rock Facility

Material from the existing EWRF is approved for use of 1 foot of the cover material on site. Thus, the first phase of reclamation is to excavate and haul cover material. Recent testing shows that approximately 23% of the material excavated for cover is too large and becomes waste. Materials from Hanover Mountain placed on top of the EWRF, referred to as the Rita Stockpile, is removed by haulage to access cover (it cannot simply be pushed to the outslope as it will toe into Poison Spring Drainage and cover Fierro Road). After removal of cover, cover waste and the Rita Stockpile, the remaining closure activities include:

- Regrading top surfaces and outslope benches

- Completing surface water channels to route stormwater
- Hauling and grading cover material (only 2 feet)
- Ripping and revegetating covered areas

The SWRDF outslopes are regraded to a 3.0:1 overall slope (2.5:1 interbench slope) to preserve the Poison Spring Gulch, and the road located at the toe of the stockpile.

3.3.3 Other Stockpiles

The cost estimate includes reclamation of the Low-Grade Waste Rock Stockpile, located east of the Continental Pit, and remnants of the High-Grade Ore Stockpile.

The main activities involved in closing the stockpiles include:

- Regrading top surfaces and outslope benches, where applicable
- Completing surface water channels to route stormwater
- Hauling and grading cover material
- Ripping and revegetating covered areas

The High-Grade Ore Stockpile is located northeast of the Continental Pit and west of the No. 2 Mill. The High-Grade Ore Stockpile was partially graded over with the widening of the CHR in 2018. At closure, the remnants of the High-Grade Ore Stockpile will either be trucked to the Chino Mine, or regraded and covered in place following CCP and Copper Rule requirements.

OB Stockpiles 1, 4 and Topsoil Stockpile are incorporated into the SWRDF by the EOY 2026. OB Stockpile 2 will be regraded, covered and revegetated by EOY 2026. OB Stockpile 3 will be partially under the SWRDF and the rest will be regraded, covered and revegetated by EOY 2026. OB Stockpile 5 will be within the OPSDA by EOY 2026 and will not be reclaimed.

3.4 Main Tailings Impoundment

The main activities involved in closing the Main Tailings Impoundment (MTI) include:

- Regrading top surface and southeast rock embankment
- Completing surface water channels to route stormwater
- Hauling and grading cover material
- Ripping and revegetating covered areas

Rock buttresses, constructed along the east and south portions of the embankments, are preserved at 3:1 overall slope. The existing test plots are preserved.

Top surface channels are constructed to convey runoff from the impoundment top surface and surrounding tributary area to the embankment toe. Down drains are constructed to drain the top surface and discharge on the west side of the embankment.

Condition C113.C. of DP-1403 (NMED, 2019) allows for placement of 24-inches of cover material on the MTI. The upper 12 inches of tailings are included as part of the cover system for a total of 36-inches.

The tailings pipelines will be sealed and buried with a cover that is 36 inches thick, along a strip that is 35 feet wide. This width is determined based on the placement of two pipelines, each with a diameter of 24 inches, which are spaced 5 feet apart and covered with a 3:1 sideslope. It is assumed that the pipelines situation on top of the impoundment will also be covered. The costs associated with flushing the pipelines have been included separately in the water management section of the RCE.

3.5 Magnetite Tailings Impoundment

The main activities involved in closing the Magnetite Tailings Impoundment (MGTI) include:

- Regrading top surface and outslope (remove embankment)
- Completing a down drain channel
- Hauling and grading cover material
- Ripping and revegetating covered areas

A down drain is constructed on the embankment slope to capture runoff from the top surface.

3.6 Infrastructure and Other Miscellaneous Facilities

This category includes miscellaneous estimated closure costs such as demolition, wells, surface impoundments, roads, and unplanned disturbed areas. Post-closure capital and O&M costs associated with utilities such as tanks, ponds, pumps, pipelines, and electrical infrastructure are in a separate water management cost estimate.

3.6.1 Demolition

Several facilities are used for Industrial Post Mining Land Use (PMLU). Those facilities not designated for Industrial PMLU will be demolished, removed, and/or buried or otherwise closed in accordance with an approved plan.

Appendix B.3 provides the building information for the demolition cost estimate.

The main activities and assumptions for this reclamation cost estimate include:

- Regrading surfaces
- All equipment and above-grade structures are demolished and removed from the area or buried
- Debris is placed either into the stockpiles or other designated area
- Demolition debris is covered with 36-inches of cover material
- Demolition areas are covered with 36-inches of cover material, scarified and revegetated
- Salvage value for all structures and equipment is zero

- Any new buildings constructed prior to reclamation have an Industrial PMLU

3.6.2 Well Abandonment

The expenses related to abandoning monitoring wells follow the NMED's regulatory guidelines for well abandonment (i.e., cement grouting the well in place and removing surface casing). The well abandonment cost estimate includes the post-closure monitoring wells. It is estimated that a total of seven monitoring wells will be utilized for post-closure monitoring and will be abandoned by the end of the reclamation year 99.

3.6.3 Surface Impoundments

Surface impoundments are stormwater and seepage retention structures. Existing and planned impoundments and their PMLU are listed in Appendix B.3. The operation and maintenance (O&M) costs for surface impoundments are included in a separate water management cost estimate.

Costs are included to close non-Industrial PMLU surface impoundments used during reclamation years 0 to 12. A table describing water management surface impoundments is included in Table C.1 in Appendix C of the 2023 CCP Update. The main activities involved in closing surface impoundments include:

- Ripping liners and burying in place
- Grading to drain
- Hauling and grading cover material
- Ripping and revegetating

3.6.4 Haul Roads

Cobre Haul Road

The Cobre Haul Road is approximately 3.5 miles long and includes spanning arch road crossings over Hanover Creek and the Forest Service access road that extends off Fierro

Road. For this CCP, the Cobre Haul Road fill materials are utilized as cover at the Continental Mine.

A smaller road (approximately 12 to 14 feet in width) equaling roughly 5 acres will remain on the footprint of the original CHR for post-closure maintenance vehicles and activities.

Travel surfaces will be ripped to a depth of 18 to 24 inches. Grading will consist of incorporating berm material into the road and regrading outslopes. The road outslopes will change from angle of repose (approximately 1.5:1) to 2.5:1 upon reclamation in most locations.

The road crossing over the forest access road and Hanover Creek will be removed and demolished along with two culverts. Culverts in ephemeral drainages will remain in place except for the southernmost culvert along the CHR. This southernmost culvert, approximately 883 feet in length, will be removed.

Reclamation will provide for the establishment of a self-sustaining ecosystem and include:

- Demolishing crossing structures at forest access road and Hanover Creek
- Removing southernmost culvert
- Grading to drain
- Regrading CHR outslopes to achieve long term stability
- Modifying fencing to incorporate wildlife friendly features
- Ripping and revegetating

Other Roads

The main activities involved in closing other roads not needed post-closure include:

- Grading to drain
- Hauling and grading cover material
- Ripping and revegetating

Assumptions for this reclamation cost estimate include:

- **Exploration Roads**: Approximately 15 miles of average 20-feet wide roads located in the area to the west of the MTI, and areas on Hermosa Mountain west of the Continental Pit
- **Haul Roads**: Roads located outside facility footprints are included as a separate line item in the reclamation cost estimate. Roads located within a facility footprint are reclaimed along with that facility
- **Cover**: 36-inch cover thickness

3.6.5 Allowance for Other Disturbed Areas

Chino will include costs in the CCP earthwork cost estimate to account for the dynamic nature of mining. This approach is intended to allow for greater flexibility in meeting the mine planning schedule and reduce the number of FA amendments. Unplanned disturbed areas may include but are not limited to small staging areas, utility corridors, small access roads, pull-offs, or other miscellaneous infrastructure locations such as pit slope monitoring equipment.

3.7 Operations and Maintenance

O&M costs related to periodic erosion control, water quality monitoring, road maintenance, and vegetation maintenance are included in the spreadsheet calculations (Appendix E). Operations and maintenance costs are assumed to diminish with time. O&M for this cost estimate includes the following:

Erosion Control and Monitoring: Continental Mine annual erosion control and monitoring cost estimates are based on an erosion control crew engaged for:

- Reclamation Years 0–12: 12 days/year
- Reclamation Years 13–39: 4 days/year
- Reclamation Years 40–99: 1 day/year

Water Quality Monitoring and Reporting: Monitoring of site groundwater quality will be accomplished through sampling and analysis of potentially impacted water at specific site locations:

- Reclamation Years 0–19: 4 days/year
- Reclamation Years 20–39: 2 days/year
- Reclamation Years 40–99: 1 day/year

Road Maintenance: Road maintenance will be monthly during monsoon season (4 months/yr) and is assumed to consist of a motor grater engaged for 24 hours a month:

- Reclamation Years 0–19: 4 months/year at 24 hours/month
- Reclamation Years 20–39: 2 months/year at 24 hours/month
- Reclamation Years 40–99: 1 month/year at 24 hours/month

Vegetation Maintenance: Vegetation maintenance of reclaimed areas assumes a 2% failure every year for a total of 12 years per facility, starting the year reclamation is completed.

4.0 RESULTS

The total current dollar cost for earthwork reclamation is estimated to be $24,353,808 plus $3,263,963 O&M for a total of $27,617,771. A summary of the cost estimate is provided in Table 6. The costs presented in this RCE are current (2024) dollar costs.

Table 6 Earthwork Cost Estimate Summary

Item	Direct Cost	Indirect Cost	Total Estimated Cost
Facility		**30% of Direct**	
South Waste Rock Disposal Facility	$7,559,775	$2,267,932	$9,827,707
East Waste Rock Facility	$2,736,452	$820,936	$3,557,388
North OB Stockpile	$31,795	$9,538	$41,333
Low Grade Ore Waste Rock Facility	$616,243	$184,873	$801,116
Stockpile Subtotal	***$10,944,264***	***$3,283,279***	***$14,227,543***
Magnetite Tailings	$345,051	$103,515	$448,567
Main Tailings Impoundment	$1,943,766	$583,130	$2,526,896
Tailings Subtotal	***$2,288,818***	***$686,645***	***$2,975,463***
Hanover Mountain Pit	$1,057,769	$317,331	$1,375,099
Continental Pit	$2,613	$784	$3,397
Pits Subtotal	***$1,060,382***	***$318,114***	***$1,378,496***
Containments	$54,402	$16,321	$70,723
All Misc	$928,230	$278,469	$1,206,699
Cobre Haul Road	$835,102	$250,531	$1,085,633
Miscellaneous Subtotal	**$1,817,735**	**$545,320**	***$2,363,055***
Demo	$2,622,501	$786,750	$3,409,251
Closure Costs Total	**$18,733,699**	**$5,620,110**	**$24,353,808**
O&M		**17.5% of Direct**	
Full Site O&M Costs Total	**$2,777,841**	**$486,122**	**$3,263,963**
Total Cost (Closure + O&M)	**$21,511,539**	**$6,106,232**	**$27,617,771**

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Appendix A

Engineering Take-Offs/ Quantities

				0	1	1	2	2	3	
				Segment 1		Segment 2		Segment 3		
1	2	3	4	15	16	17	18	19	20	21
Item	Facility	Sub Area or Destination for Cover Material	Description	Distance (ft)	Average Grade (%)	Distance (ft)	Average Grade (%)	Distance (ft)	Average Grade (%)	Cover Depth (In)
5000	EWRF	1000	SWRDF-0	421.04	-0.153	1227.68	0.143	2125.58	0.000	
5001	EWRF	1100	MGTI-0	2453.76	-0.033	2813.84	0.062	2299.24	-0.072	
5002	EWRF	1200	NOB-0	3208.23	-0.022	3744.16	0.031	3632.32	0.049	
5003	EWRF	1300	MTI-0	3233.64	-0.022	1962.54	0.083	3218.72	0.018	
5004	EWRF	1502	HM-2	3179.26	-0.022	6204.68	0.029	4972.53	-0.071	
5005	EWRF	1700	LGWRF-0	427.95	-0.142	793.64	0.073	1600.04	-0.060	
5006	EWRF	2001	Blackman's Seep (Pond #2)	2371.20	-0.034	3164.16	0.050	4237.23	-0.034	
5007	EWRF	2002	Decant Pond #4	1230.34	0.008	1916.58	-0.095	793.69	0.035	
5008	EWRF	2003	East WRF Containment	394.16	-0.085	715.55	0.053	2444.27	-0.087	
5009	EWRF	2004	Grape Gulch Pond #3	2371.20	-0.03	3164.16	0.05	4237.23	-0.03	
5010	EWRF	2005	Magnetite Seepage Pond	1173.95	0.006	1562.96	-0.132	1909.52	0.016	
5011	EWRF	2006	North Tailings Decant Pond	1230.34	0.01	1916.58	-0.09	793.69	0.04	
5012	EWRF	2007	SWRF Dam 1	1147.72	0.097	1709.92	-0.002	1215.14	-0.234	
5013	EWRF	2008	SWRF Dam 2	1110.94	0.100	1318.36	0.000	1248.56	-0.228	
5014	EWRF	2009	SWRF Dam 3	1135.00	0.098	1586.66	-0.003	1468.28	-0.249	
5015	EWRF	2010	Upper Creek Containment Pond 1	2371.20	-0.03	3164.16	0.05	4237.23	-0.03	
5016	EWRF	3002	Taillings Pipeline Corridor	2222.56	-0.036	2885.16	0.053	1538.68	-0.037	
5017	EWRF	3003	Internal Haul Roads	1185.68	0.006	949.98	-0.088	1329.45	0.023	
5018	EWRF	3004	High Grade Ore Remaining Area	1071.85	0.002	1305.54	-0.060	2045.49	0.034	
5019	EWRF	3006	Unplanned Disturbance Area	395.77	-0.090	679.13	0.056	1104.71	-0.072	
5100	CHR	1000	SWRDF-0	6206.08	0.031	1298.00	-0.106	5303.27	0.030	
5101	CHR	1100	MGTI-0	2811.71	0.055	2244.26	0.005	1897.98	-0.070	
5102	CHR	1200	NOB-0	1209.21	-0.049	3325.05	0.114	498.50	-0.019	
5103	CHR	1300	MTI-0	2830.99	0.055	3217.10	0.015	1730.28	0.029	
5104	CHR	1502	HM-2	681.21	0.016	918.90	0.000	769.26	0.196	
5105	CHR	1700	LGWRF-0	2760.79	0.055	3372.58	0.011	2679.90	-0.067	
5106	CHR	2001	Cntmnt-1	552.17	-0.016	1314.48	0.047	308.16	-0.017	
5107	CHR	2002	Cntmnt-2	2050.56	0.070	3630.57	0.011	5555.89	-0.040	
5108	CHR	2003	Cntmnt-3	1998.49	0.070	3870.81	0.012	5099.57	-0.056	
5109	CHR	2004	Cntmnt-4	552.17	-0.02	1314.48	0.05	308.16	-0.02	
5110	CHR	2005	Cntmnt-5	2178.88	0.068	3737.67	0.011	5982.80	-0.041	
5111	CHR	2006	Cntmnt-6	2050.56	0.07	3630.57	0.01	5555.89	-0.04	
5112	CHR	2007	Cntmnt-7	6637.24	0.022	5855.93	0.013	2786.28	-0.102	
5113	CHR	2008	Cntmnt-8	6926.62	0.018	5274.73	0.012	2736.45	-0.091	
5114	CHR	2009	Cntmnt-9	6692.79	0.021	5614.83	0.011	3154.44	-0.107	
5115	CHR	2010	Cntmnt-10	552.17	-0.02	1314.48	0.05	308.16	-0.02	
5116	CHR	3002	Misc-2	1797.35	0.070	1115.58	0.028	1892.90	-0.011	
5117	CHR	3003	Misc-3	1273.26	0.006	949.98	-0.088	1329.45	0.023	
5118	CHR	3004	Misc-4	1566.94	0.070	3506.72	0.019	2309.76	-0.032	
5119	CHR	3006	Misc-6	1356.03	-0.026	679.13	0.056	1104.71	-0.072	
5200	USS	1000	SWRDF-0	6206.08	0.03	1298.00	-0.11	5303.27	0.03	
5201	USS	1100	MGTI-0	2811.71	0.06	2244.26	0.00	1897.98	-0.07	
5202	USS	1200	NOB-0	1209.21	-0.05	3325.05	0.11	498.50	-0.02	
5203	USS	1300	MTI-0	2830.99	0.06	3217.10	0.02	1730.28	0.03	
5204	USS	1502	HM-2	681.21	0.02	918.90	0.00	769.26	0.20	
5205	USS	1700	LGWRF-0	2760.79	0.05	3372.58	0.01	2679.90	-0.07	
5206	USS	2001	Cntmnt-1	552.17	-0.02	1314.48	0.05	308.16	-0.02	
5207	USS	2002	Cntmnt-2	2050.56	0.07	3630.57	0.01	5555.89	-0.04	
5208	USS	2003	Cntmnt-3	1998.49	0.07	3870.81	0.01	5099.57	-0.06	
5209	USS	2004	Cntmnt-4	552.17	-0.02	1314.48	0.05	308.16	-0.02	
5210	USS	2005	Cntmnt-5	2178.88	0.07	3737.67	0.01	5982.80	-0.04	
5211	USS	2006	Cntmnt-6	2050.56	0.07	3630.57	0.01	5555.89	-0.04	
5212	USS	2007	Cntmnt-7	6637.24	0.02	5855.93	0.01	2786.28	-0.10	
5213	USS	2008	Cntmnt-8	6926.62	0.02	5274.73	0.01	2736.45	-0.09	
5214	USS	2009	Cntmnt-9	6692.79	0.02	5614.83	0.01	3154.44	-0.11	
5215	USS	2010	Cntmnt-10	552.17	-0.02	1314.48	0.05	308.16	-0.02	
5216	USS	3002	Misc-2	1797.35	0.07	1115.58	0.03	1892.90	-0.01	
5217	USS	3003	Misc-3	1273.26	0.01	949.98	-0.09	1329.45	0.02	
5218	USS	3004	Misc-4	1566.94	0.07	3506.72	0.02	2309.76	-0.03	
5219	USS	3006	Misc-6	1356.03	-0.03	679.13	0.06	1104.71	-0.07	
5300	CHRMain		Mine Gate	4575.84	0.00	1458.02	0.06	4266.04	-0.01	
5301	USSMain		Mine Gate	11855.33	-0.05	12786.12	0.04	13562.54	0.01	

Facility	Sub Area or Destination for Cover Material	Description	Area (sf)	Volume (cy)
South Waste Rock Disposal Facility	SWRDF-0	Entire Stockpile	12,251,575	4,534,000
South Waste Rock Disposal Facility	SWRDF-1	Top	4,674,858	-
South Waste Rock Disposal Facility	SWRDF-2	SE-UH Excess Cut	628,078	1,026,535
South Waste Rock Disposal Facility	SWRDF-3	3:1 Interbench Outslopes-South	4,309,657	2,175,386
South Waste Rock Disposal Facility	SWRDF-4	3:1 Interbench Outslopes-Pit	693,439	350,027
South Waste Rock Disposal Facility	SWRDF-5	2.5:1 Interbench Outslope - UH	1,945,543	982,052
East Waste Rock Facility	EWRF-0	Entire Stockpile	3,321,267	2,374,724
East Waste Rock Facility	EWRF-1	Top	1,627,421	
East Waste Rock Facility	EWRF-2	3:1Interbench Outslope	1,693,846	1,546,000
East Waste Rock Facility	EWRF-3	Move Rita Stockpile	-	529,788
East Waste Rock Facility	EWRF-4	Move Cover Source Waste	-	298,936
Magnetite Tailings	MGTI-0	Entire Impoundment	848,966	105,133
Magnetite Tailings	MGTI-1	Top	697,813	86,415
Magnetite Tailings	MGTI-2	Dam Outslope	151,153	18,718
North OB Stockpile	NOB-0	Entire Stockpile	114,551	-
North OB Stockpie Top	NOB-1	Top	34,365	2,000
North OB Stockpile	NOB-2	Minor Outslopes	80,186	5,000
Main Tailings Impoundment	MTI-0	Entire Stockpile	7,521,534	703,245
Main Tailings Impoundment	MTI-1	Top, including swale	4,955,378	28,270
Main Tailings Impoundment	MTI-2	Filter Dike	199,642	27,027
Main Tailings Impoundment	MTI-3	Main Dam	1,838,020	515,089
Main Tailings Impoundment	MTI-4	East	94,023	7,977
Main Tailings Impoundment	MTI-5	Reclaim Pond	326,102	56,346
Main Tailings Impoundment	MTI-6	Reclaim Pond Outlet Channel	108,369	68,536
Cobre Haul Road	CHR-0	Entire Road	4,356,000	4,644
Cobre Haul Road	CHR-1	Top	3,761,862	
Cobre Haul Road	CHR-2	Outslope-pushdown	-	4,644
Cobre Haul Road	CHR-3	West HC Outslope-pushdown	547,474	89,176
Hanover Mountain Pit	HM-0	Entire Pit	4,283,556	
Hanover Mountain Pit	HM-1	Hanover Mountain Perimeter	511,775	-
Hanover Mountain Pit	HM-2	Accessible Flat Areas	3,771,781	-
Continental Pit	CP-0	Open Pit	724,825	-
Continental Pit	CP-1	Perimeter	724,825	-
Low Grade Ore Waste Rock Facility	LGWRF-0	Entire Stockpile	864,364	178,257
Low Grade Ore Waste Rock Facility	LGWRF-1	Top	275,039	56,721
Low Grade Ore Waste Rock Facility	LGWRF-2	Outslopes	589,326	121,536
Containments	Cntmnt-0	All Containments	235,224	1,948
Containments	Cntmnt-1	Blackman's Seep (Pond #2)	436	296
Containments	Cntmnt-2	Decant Pond #4	27,007	296
Containments	Cntmnt-3	East WRF Containment	21,780	40
Containments	Cntmnt-4	Grape Gulch Pond #3	16,553	296
Containments	Cntmnt-5	Magnetite Seepage Pond	8,712	296
Containments	Cntmnt-6	North Tailings Decant Pond	20,038	296
Containments	Cntmnt-7	SWRF Dam 1	22,651	54
Containments	Cntmnt-8	SWRF Dam 2	14,810	31
Containments	Cntmnt-9	SWRF Dam 3	36,590	47
Containments	Cntmnt-10	Upper Creek Containment Pond 1	66,647	296
Miscellaneous	Misc-0	All Misc	5,447,527	
Miscellaneous	Misc-1	Pipeline Corridors	62,988	
Miscellaneous	Misc-2	Taillings Pipeline Corridor	62,988	
Miscellaneous	Misc-3	Exploration Roads	2,217,600	
Miscellaneous	Misc-4	Internal Haul Roads	805,729	
Miscellaneous	Misc-5	High Grade Ore Remaining Area	120,201	
Miscellaneous	Misc-6	P&A Wells	22	
Miscellaneous	Misc-7	Unplanned Disturbance Area	2,178,000	

Appendix B

Key Equations and Calculations

Earthwork RCE Calculation Summary

Calculation Documentation

Problem Statement:

Freeport-McMoRan (FMI) utilizes a spreadsheet developed by the New Mexico Mining and Minerals Division (MMD) to estimate the earthwork's closure costs associated with the Emma Closure/Closeout Plan (CCP). The spreadsheet calculations are intricate and complex and require careful study to master their structure. Each worksheet groups similar activities, and each line on each worksheet documents one construction step required to complete reclamation. All lines totaled equal the entire earthworks for the CCP. The sheer amount of information in the spreadsheet makes review of the cost estimate difficult for a complex site.

Objective:

1. Provide a guide to the earthwork spreadsheets.
2. Note that this calculation set presents the approach, data and assumptions, and calculations and results for developing the unit cost. It is intended to serve as a guide/example even if the actual quantities and/or cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine. The example screenshots shown are from the Tyrone Mine CCP.

Approach:

1. Identify worksheets within the spreadsheet.
2. Provide a general equation or explanation of the calculation performed in each worksheet.
3. Use a graphic of each worksheet to illustrate the equations and augment the explanations pertaining to the specific worksheet.

Results:

The following worksheets are included within the earthwork RCE spreadsheet and covered in this calculation documentation:

Databases:

1. Quantities
2. Activity-Material Codes
3. Unit Rates
4. Equipment

Earthwork Calculations:

1. General
2. Demo
3. Material
4. Earthwork
5. Dozer
6. Road Maint
7. Ripper
8. Excavator
9. Trucks
10. Loader Shovel
11. Scrapers
12. M'grader
13. Earth Sum
14. Revegetation
15. Other
16. Summary
17. Facility Characteristics

Results:

The following worksheets are included within the earthwork RCE spreadsheet and covered in separate calculation documentations or are self-explanatory:

Equipment Optimization:
1. Truck Optimization

O&M:
1. Full Site Vegetation Maintenance
2. Full Site O&M
3. Full Site O&M Summary

Unit Costs:
1. Bench Grading
2. Bench Channel (and Riprap/Gravel)
3. Downdrain
4. Revegetation

Results Cont'd

Sheet 1 – General: A summary of the overall costs (before escalation and discounting for the time-value of money) are included on this sheet along with the applicant's information.

	A	B	C
1			Tyrone Mine
2			Stockpile Spreadsheet Worksheet #1
3	***General Information***		4/29/2019
4			
5	Applicant	Tyrone Mine Company	
6		Tyrone, New Mexico 88065	
7			
8			
9			
10			
11	Disturbed Surface Area (acres)	3,031	
12	*(does not include previously reclaimed areas)*		
13			
14	Type of Operation	Existing/Surface/Copper	
15			
16			
17			
18	*Current value of earthwork and O&M before escalation and discounting*	**$101,470,627**	
19			
20			
21			
22			
23			**Stockpiles, Tailing, Reservoirs, Haul Roads and Disturbed Areas**
24			
25			

Quantities Sheet: This sheet assigns an item code to a facility and corresponding sub-area code with a description of the facility and sub-area. This sheet provides raw data and factors (such as area, volume, distances, grades, etc.) to be used in calculations within all the other worksheets. Each facility is broken down into sub-areas to account for differing reclamation quantities to more accurately determine the amount of work required for each facility. The Quantities sheet includes 36 columns of hard-wired (hand entered) data associated with each facility. Columns A through H for 1A and 1B Leach, 1C, 2A Leach and 2B Waste, and 3A/3B Stockpiles are shown as an example:

	A	B	C	D	E	F	G	H
1								
2	1		2	3	4	5	6	7	8
3	**Item**	**Facility**	**Sub Area or Destination for Cover Material**	**Description**	**Area (sf)**	**Volume (cy)**	**Push Distance (ft) Berm Length (ft) or Fence Length(ft)**	**Coarse Regrading and Fine Grading (%)**
4	1000	1A and 1B Leach	1A1B-0	Entire Stockpile	11,891,880	1,548,670	-	-
5	1001	1A and 1B Leach	1A1B-1	Top	740,520	79,000	430	1.0%
6	1002	1A and 1B Leach	1A1B-2	Outslopes - Regrade benches from pullback	-	1,329,670	90	-29.0%
7	1003	1A and 1B Leach	1A1B-3	Outslopes - Area outside of pullback	11,151,360	140,000	250	-29.0%
8	1100	1C	1C-0	Top (Haul Road)	740,700	-	-	
9	1200	2A Leach and 2B Waste	2A2B-0	Entire Stockpile	21,213,358	8,203,000	-	-
10	1201	2A Leach and 2B Waste	2A2B-1	Top	1,568,160	143,000	370	1.0%
11	1202	2A Leach and 2B Waste	2A2B-2	Outslopes	19,645,198	8,060,000	470	-29.0%
12	1300	3A / 3B	3A3B-0	Entire Stockpile	19,819,800	5,289,064	-	-
13	1301	3A / 3B	3A3B-1	Top	1,437,480	199,000	560	1.0%
14	1302	3A / 3B	3A3B-2	Outslopes Pullback	-	17,500,000	-	-29.0%
15	1303	3A / 3B	3A3B-3	Outslopes - Regrade benches from pullback	-	1,530,064	90	-29.0%
16	1304	3A / 3B	3A3B-4	Outslopes (total area, volume outside of pullback)	18,382,320	3,500,000	560	-29.0%

For example use only. Values may not match the current spreadsheet.

Results Cont'd

Activity-Material Codes Sheet: This sheet assigns an activity code (column A) to each activity (column B)

	A	B	C
1	**Item**	**Activity**	**Description**
2	-	-	Place holder for item
3	A	Grade	Rough grading original material or fine grading cover material
4	B	Dozer Assist	Dozer is used to assist loader or shovel at cover stockpile or assist scrapers during rough grading
5	C	Load	Cover material is loaded at borrow areas onto haul trucks
6	D	Haul	Haul trucks transport cover material from borrow areas to destination stockpiles
7	E	Rip	Tops of stockpiles are ripped before placing cover to compensate for compaction of soil during rough grading. Stockpiles are also ripped before rough grading with a scraper. Borrow stockpile ripped
8	F	Grade Benches	Benches are graded at stockpiles and tailings after fine grading
9	G	Construct Downdrains	Downdrains are constructed after fine grading and consist of articulated concrete blocks (ACB's)
10	Gb	Construct Downdrain Dissipators	Energy dissipators are specified as part of the downdrains
11	H	Construct Bench Channels w/ Riprap	Bench channels are constructed along benches after bench grading. Construction includes excavation and wasting, riprap production, riprap and filter placement, and final grading.
12	Hb	Construct Bench Channels w/o Riprap	Bench channels are constructed along benches after bench grading. Construction includes excavation and wasting and final grading.
13	I	Construct Top/Outslope Channels	Top and outslope channels are not part of this RCE
14	J	Revegetate	Occurs after final grading and channel construction and includes tractor rental and maintenance, fuel, scarifying, discing, drill seeding, mulching, crimping, seed, and mulch
15	K	Perforate Liner	Reservoir liners are perforated prior to reclamation
16	L	Replace Infrastructure	Replacing infrastructure is not part of this RCE
17	M	Post-Closure O&M	Includes vegetation maintenance for 12 years after reclamation and erosion control, road maintenance, and groundwater monitoring for 100 years after reclamation
18	N	Plug and Abandon Well	Well borehole is backfilled with cement grout
19	O	Replace Well	Includes borehole drilling, casing, and cementing
20	P	Road Maintenance	Dust suppression and road maintenance with water truck and motor grader
21	Q	Construct Haul Road	For shorter hauls etc.
22	R	Construct Berms	Berming for stormwater runoff control
23	S	Fencing	Fencing for pits
24	T	Build Grade Control Walls	Grade control in each drainage of Tailing Launder Line removal
25	U	Vehicle Gates	Limited access at 1-mile intervals around open pits
26	V	Signs Every 500 ft	Warning signs posted every 500 feet around open pits

The same is done by assigning a material code (column A) to differentiate the materials used in the spreadsheet.

	A	B	C
28			
29	**Item**	**Material**	**Description**
30	-	-	Placeholder
31	a	Existing Ground	Existing ground before rough grading
32	b	Cover	Cover material from cover stockpiles, before being placed at destination location
33	c	Rough Graded Material	Exisiting ground after rough grading
34	d	Placed Cover	Cover material after being placed at destination location
35	e	Final Grade	Facility material and cover material after rough grading and fine grading
36	f	Backfill/Stockpile Material	Material used to backfill pit/ponds or stockpile material used in pullback
37			

These codes are used to assign an ID to each task, on the Materials sheet. The codes dictate which earthwork calculation is used for each row of work.

For example use only. Values may not match the current spreadsheet.

Results Cont'd

Unit Rates Sheet: This sheet applies the same concept as the Quantities and Activity-Material Codes sheets whereby unit rates for particular activities utilized in the development of costs within the spreadsheet are identified and assigned a unit rate code. The unit rates are used throughout the RCE spreadsheet and are referenced from this sheet.

	A	B	C	D	E	F	G
10	Code	Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
11	U1	Fuel	$ 2.34	$ -	gal	-	Diesel fuel cost is estimated by correlating historical local quotes with public data, as agreed upon in November 2018 discussions with the agencies. Fuel cost
12	U2	Revegetation	$ 820.12	$ 3.85	ac	Revegetation Unit Cost Sheet	See unit rates calculations - Cost is based on a calculated unit rate that includes tractor rental and maintenance, fuel, scarifying, discing, drill seeding, mulching,
13	U3	Bench Grading Stockpile	$ 1.35	$ 0.33	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
14	U4	Bench Grading Tailings Pond	$ 1.35	$ 0.33	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
15	U5	Downdrain Construction	$ 374.38	$ -	ft	Downdrain Unit Cost Sheet	See unit rates calculations
16	U6	Downdrain Dissipater	$ 14,556.48	$ -	ea	Downdrain Unit Cost Sheet	See unit rates calculations
17	U7a	Bench Channel Construction w/	$ 6.60	$ 1.39	ft	N/A	See unit rates calculations
18	U7b	Bench Channel Construction w/o	$ 0.41	$ 0.10	ft	N/A	See unit rates calculations
19	U8	Erosion Control	$ 2,323.36	$ 382.26	day	Modified Crew B-13A	Erosion control for O&M - includes 1 foreman, 2 laborers, 1 equipment operator, 2 truck drivers, 1 loader (4 cy), 2 dump trucks (8 cy)
20	U9	Structure Demolition	$ 0.25	$ -	cf	Means Line Item 024116.13 0100	Building demolition, large urban projects, mixture of types, excludes foundation demolition, dump fees
21	U10	Concrete Slab Demolition	$ 0.62	$ -	sf	Means Line Item 024116.17 0400	Building footings and foundations demolition, floors, concrete slab on grade, plain concrete, 6" thick, excludes disposal costs and dump fees
22	U11	Storage Tank Demolition	$ 1,005.97	$ -	ea	Means Line Item 130505.75 0530	Selective Demolition - Storage Tanks, steel tank, single wall, above ground, not including foundations, pumps or piping, 5,000 thru 10,000 gallon
23	U12	Storage Tank Demolition	$ 2,168.93	$ -	ea	Means Line Item 130505.75-0540	Steel tank, single wall, above ground, 15,000 thru 30,000 gallon, selective demolition, excluding foundation, pumps or piping
24	U13	Storage Tank Demolition	$ 3,934.80	$ -	ea	Scaled Means Items	Storage Tanks, steel tank, single wall, above ground, not incl fdn, pumps or piping; scaled for a 45,500 gal tank
25	U14	Power Line Demolition	$ 0.63	$ -	lf	Means Line Item 260505.10 0370	in cost to overhead powerlines.
26	U15	Power Pole Demolition	$ 216.24	$ -	ea	Means Line Item 024113.80 0200	Selective Demolition - wood utility poles 35-45 ft high
27	U16	Pipeline (small HDPE pipe)	$ 2.29	$ -	ft	Means Line Item 024113.38 1700	excludes excavation
28	U17	Pipeline (medium HDPE pipe)	$ 3.82	$ -	ft	Means Line Item 024113.38 1800	excludes excavation
29	U18	Pipeline (large HDPE pipe)	$ 5.72	$ -	ft	Means Line Item 024113.38 1900	excludes excavation
30	U19	Well Plug & Abandon	$ 10.55	$ -	ft	N/A	Layne Christensen Company, 7/31/18 Tyrone estimate is $10,000 mobilization and demobilization plus $5,704.94 (escalated at 2% to $5819.04) for one 1500 ft well
31	U20	Well Replacement	$ 67.76	$ -	ft	N/A	Wilcox Professional Services, 8/2011, est. cost for 5 ½ in bore, $173,500 for 3000 ft total ($57.83/ft). Escalated 2% 2011-2019= $67.76/ft
32	U21	Reinforced Concrete Wall Demolition	$ 139.20	$ -	hr	Means Crew B-12C	Standard Union Crew: 1 equipment operator (crane), 1 laborer, 1 hydraulic excavator, 2 cy, approximately 40 hrs to demo 200 ft reinforced concrete dam.
33	U22	Disc harrow attachment, for tractor	$ 616.33	$ -	month	Means Line Item 015433.20 1500	Equipment rental costs
34	U23	Cast-In-Place Concrete	$ 254.97	$ -	cy	Means Line Item 033053.40 6200	reinforcement
35	U24	Cleanup & Disposal of Wastes Requiring Special Handling	$ 335.20	$ -	ton	Means Line Item 028120.10 1120/1130	Solid pickup; average of minimum and maximum
36	U25	Tranportation of Wastes Requiring Special Handling	$ 4.78	$ -	mile	Means Line Item 028120.10 1260/1270	Transporation to disposal site (Truckload = 80 drums or 25 cy or 18 tons); average of minimum and maximum
37	U26	Road Maintenance	$ 4,945.96	$ 1,240.32	month		water truck
38	U27	Tailing Cover Maintenance	$ 2,144.29	$ 269.57	day	Modified Crew B-13A	1 dump truck (12 ton)
39	U28	Berming	$ 0.06	$ -	ft		per ft. to 0.13 cy/ft; Finish grade volume is 1/3 X "Excavation Volume" or 0.04 ft/lf; The berm will be made from cover material; only applicable to the types of berms at the reclaimed borrow areas - These berms are only used to move water along an
40	U29	Fencing	$ 23.05	$ -	ft	Means Line Item 323113.20 0800	
41	U30	Vehicle Gates, Pit Perimeters	$ 1,002.88	$ -	ea	Means Line Item 323113.20 5070	Fence, chain link industrial, double swing gates, 6' high, 20' opening, includes excavation, posts & hardware in concrete
42	U31	Signs every 500 ft., pit perimeters	$ 65.19	$ -	ea	Means Line Item 101453.20 0600	Signs, guide and directional signs, reflectorized, 12" x 18", excludes posts
43	U32	Fire Hydrant Demolition	$ 396.73	$ -	ea	Means Line Item 024113.33 0900	Utility removal, hydrants, fire, remove only, excludes hauling
44	U33	Seepage Collection Replacement	$ 133,355.94	$ -	ea	Seepage Collection Unit Cost Sheet	See unit rates calculations
45	U34	Culvert Removal	$ 12.69	$ -	ft	Means Line Item 024113.40 0180	excludes excavation
46	U35	Grade Control Wall	$ 165.59	$ -	cy	Means Line Item 033053.40 3945	deep, unreinforced, includes forms(4 uses), concrete (Portland cement Type I), placing and finishing, excludes reinforcing
47	U36	Steel Trestle Demolition	$ 30,689.10	$ -	ea	Means Line Item 024116.33 0200	Bridge demolition, pedestrian, steel, 50' to 160' long, 8' to 10' wide
48	U37	Sludge Removal	$ 306.69	-	ea	Means Line Item 026510.30 0320	remove sludge, water and remaining product from tank bottom of tank with vacuum truck, 9,000 - 12,000 gallon tank
49	U38	Substation Demo	$ 12,470.55	$ -	ea	Substation Demo Unit Cost	See unit rates calculations

Unit rates are either derived from separate calculations, RSMeans pages, or direct quotes. The unit costs are broken into base per unit cost (column C) and fuel per unit cost (column D) when applicable. If a unit cost is obtained from RSMeans, the Las Cruces, New Mexico, area cost is utilized.

For example use only. Values may not match the current spreadsheet.

Results Cont'd

Equipment Sheet: This sheet assigns a code to the various types of heavy equipment (bulldozers, wheeled loaders, excavators, etc.) used for mine closure activities. It also delineates a multitude of equipment costs and factors as well as labor costs based on the 2019 New Mexico Department of Labor hourly labor rates associated with each piece of equipment.

Equipment Code

Rental & Operating Equipment Costs

See Dozer sheet (Sheet 5) for development of the Productivity Equation

$$Productivity_{normal} = C * (Distance_{Pu}{}^{b})$$

C = Multiplier Constant and b = Exponent Constant

EARTHWORK AND O&M EQUIPMENT

Code	Equipment Description	Equipment Type	Fuel Consumption (gal/hr)	Fuel Cost ($/hr)	Lube Cost ($/hr)	Field Parts ($/hr)	Tire Cost ($/hr)	Ground Engaging Component Cost ($/hr)	Monthly Rental Rate ($/month)	Field Labor Time Cost ($/hr)	Rental Cost (w/o fuel, lube, tires, or field parts) ($/hr)[6]	Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) ($/hr)	Dozing Production (lcy/hr)[1] Production = C(Avg. dozing distance in ft)[b] C	b
Combo1	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal	Combo 1	19.54	$ 45.72	$ 12.72	$ 3.75	$ 13.46	$ 1.16	$ 20,078.37	$ 9.23	$ 114.08	$ 154.40	-	-
Dz1	Cat D11T, U Blade	Dozer	29.75	$ 69.62	$ 26.23	$ 13.89	$ -	$ 12.22	$ 34,408.41	$ 6.60	$ 195.50	$ 254.44	155,881.59	-0.999952
Dz2	Cat D11T CD, U Blade	Dozer[7]	29.75	$ 69.62	$ 26.23	$ 13.89	$ -	$ 12.22	$ 34,408.41	$ 6.60	$ 195.50	$ 254.44	162,758.78	-0.866891
Dz3	Cat D9T, SU Blade	Dozer	14.35	$ 33.58	$ 11.22	$ 5.49	$ -	$ 3.98	$ 30,109.48	$ 6.60	$ 171.08	$ 52,161.03	198.37	-0.845532
Dz4	Cat D6T, SU Blade	Dozer	7.22	$ 16.89	$ 4.83	$ 2.10	$ -	$ 2.10	$ 8,939.42	$ 3.83	$ 50.79	$ 63.65	13,582.45	-0.74851
Dz5	Cat D6T XL, SU Blade	Dozer	7.80	$ 18.25	$ 5.28	$ 2.32	$ -	$ 2.36	$ 9,104.55	$ 3.83	$ 51.73	$ 65.52	13,582.45	-0.74851
Ex1	Cat 319D L	Excavator	5.25	$ 12.29	$ 3.47	$ 1.19	$ -	$ 0.84	$ 7,450.15	$ 4.55	$ 42.33	$ 52.38	-	-
Ld1	Cat 992K	Loader	25.53	$ 59.97	$ 22.35	$ 4.43	$ 35.39	$ 4.99	$ 25,527.98	$ 4.02	$ 145.05	$ 216.23	-	-
Ld2	Cat 988H	Loader	15.20	$ 35.57	$ 11.40	$ 2.11	$ 16.85	$ 1.93	$ 15,272.06	$ 4.02	$ 92.45	$ 128.76	-	-
Ld3	Cat 980H	Loader	10.80	$ 25.27	$ 8.70	$ 1.13	$ 7.69	$ 1.03	$ 10,030.76	$ 4.02	$ 56.99	$ 77.56	-	-
Ld4	Cat 966H	Loader	8.30	$ 19.61	$ 5.33	$ 0.64	$ 5.71	$ 0.75	$ 9,937.50	$ 4.02	$ 56.45	$ 73.11	-	-
Ld5	Cat 993K	Loader	30.40	$ 71.14	$ 26.70	$ 5.32	$ 42.47	$ 4.73	$ 25,527.98	$ 4.02	$ 145.05	$ 228.29	-	-
Mg1	Cat 16M	Motor Grader	9.50	$ 22.23	$ 8.69	$ 3.26	$ 10.13	$ 1.76	$ 11,906.70	$ 2.02	$ 67.65	$ 93.51	-	-
Mg2	Cat 14M	Motor Grader	8.29	$ 19.40	$ 6.57	$ 2.27	$ 7.04	$ 1.16	$ 11,906.70	$ 2.02	$ 67.65	$ 86.71	-	-
Rp1	Cat D11T CD Multi-shank (w/ MSR-359H)	Ripper	29.75	$ 69.62	$ 26.60	$ 14.20	$ -	$ 1.56	$ 36,753.56	$ 8.16	$ 208.83	$ 259.35	-	-
Sc1	Cat 637G	Scraper	38.00	$ 88.92	$ 17.07	$ 6.27	$ 7.57	$ 1.28	$ 25,070.00	$ 12.80	$ 142.44	$ 187.43	-	-
Sc2	Cat 657G	Scraper	42.86	$ 100.29	$ 20.41	$ 7.73	$ 9.34	$ 2.31	$ 25,070.00	$ 12.80	$ 142.44	$ 195.03	-	-
Sh1	Hitachi EX3600-5	Shovel[5]	82.72	$ 193.56	$ 59.15	$ 24.25	$ -	$ 16.56	$ 69,269.00	$ 14.45	$ 393.57	$ 507.98	-	-
Tc1	Deere 7430	Tractor	5.98	$ 13.99	$ 2.84	$ 0.61	$ 2.42	$ -	$ 5,210.05	$ 2.53	$ 29.60	$ 38.00	-	-
Tk1	Komatsu HD-1500 5	Truck[3]	28.12	$ 65.80	$ 19.90	$ 1.79	$ 25.19	$ -	$ 25,211.93	$ 7.47	$ 143.25	$ 197.60	-	-
Tk2	Cat 769D	Truck	9.74	$ 22.79	$ 8.77	$ 1.48	$ 13.72	$ -	$ 14,042.50	$ 4.25	$ 79.79	$ 108.01	-	-
Tk3	Cat 725	Truck	6.02	$ 14.09	$ 5.74	$ 0.94	$ 7.11	$ -	$ 9,849.60	$ 3.36	$ 55.96	$ 73.11	-	-
Tk4	Komatsu 730E	Truck[4]	33.48	$ 78.34	$ 20.49	$ 1.80	$ 21.21	$ -	$ 29,356.98	$ 11.49	$ 166.80	$ 221.79	-	-
Tk5	Cat 777F	Truck	18.76	$ 43.90	$ 19.31	$ 3.03	$ 26.81	$ -	$ 56,160.00	$ 6.38	$ 319.09	$ 374.62	-	-
Tw1	Off-Hwy Water Tanker Truck,6,000-gal.	WaterTruck	11.25	$ 26.33	$ 6.15	$ 1.48	$ 6.42	$ -	$ 8,171.67	$ 7.21	$ 46.43	$ 67.69	-	-
Tw2	Off-Hwy Water Tanker Truck,10,000-gal.	WaterTruck	15.43	$ 36.11	$ 9.04	$ 2.43	$ 10.47	$ -	$ 12,949.87	$ 10.30	$ 73.58	$ 105.82	-	-
X1	2 Deck Screening Plant (5X16, 48X60)	ScreenPlant	4.85	$ 11.35	$ 2.39	$ 1.15	$ 0.40	$ -	$ 5,738.88	$ 4.46	$ 32.61	$ 41.01	-	-
X2	3 Deck Screening Plant (5X16, 48X60)	ScreenPlant	4.85	$ 11.35	$ 2.43	$ 1.24	$ 0.39	$ -	$ 5,994.24	$ 4.62	$ 34.06	$ 42.74	-	-
X3	1 Deck Screening Plant (5X16, 48X60)	ScreenPlant	4.85	$ 11.35	$ 2.37	$ 1.14	$ 0.39	$ -	$ 5,671.66	$ 4.46	$ 32.23	$ 40.59	-	-
X4	3 Deck Screening Plant (5X16, 42X60)	ScreenPlant	4.85	$ 11.35	$ 2.38	$ 1.16	$ 0.37	$ -	$ 5,743.35	$ 4.62	$ 32.63	$ 41.16	-	-

The equipment sheet also contains the production equation coefficients for dozing (columns N-O) and scraper haul travel time coefficients (columns P-AI)

Haul Travel Time (min/m)$=A(\text{Eff. Grade \%})^4 + B(\text{Eff. Grade \%})^3 + C(\text{Eff. Grade \%})^2 + D(\text{Eff. Grade \%}) + E$

where effective grade is the sum of the measured grade and rolling resistance

See Trucks sheet (Sheet 9) for development of the Haul Travel Time Equation

EARTHWORK AND O&M EQUIPMENT

Haul Travel Time (min/m) = A(Eff. Grade %)^4 + B(Eff. Grade %)^3 + C(Eff. Grade %)^2 + D(Eff. Grade %) + E

Code	Equipment Description	Equipment Type	Loaded Uphill A	B	C	D	E	Empty Uphill A	B	C	D	E	Loaded Downhill A	B	C	D	E	Empty Downhill A	B	C	D	E
Combo1	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	Combo 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dz1	Cat D11T, U Blade	Dozer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dz2	Cat D11T CD, U Blade	Dozer[7]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dz3	Cat D9T, SU Blade	Dozer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dz4	Cat D6T, SU Blade	Dozer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dz5	Cat D6T XL, SU Blade	Dozer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ex1	Cat 319D L	Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ld1	Cat 992K	Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ld2	Cat 988H	Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ld3	Cat 980H	Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ld4	Cat 966H	Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ld5	Cat 993K	Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mg1	Cat 16M	Motor Grader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mg2	Cat 14M	Motor Grader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rp1	Cat D11T CD Multi-shank (w/ MSR-359H)	Ripper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sc1	Cat 637G	Scraper	3.2483	-1.9562	0.4337	-0.0026	0.001	0	-0.3247	0.1601	-0.0038	0.0011	0.6464	-0.6147	0.1749	-0.0004	0.0011	0	0	0.0367	0.0018	0.0009
Sc2	Cat 657G	Scraper	0.3036	-0.4512	0.2181	-0.0034	0.0013	0	-0.1016	0.0774	-0.0013	0.0012	0	-0.1612	0.1031	-0.0081	0.0016	0	0.1668	-0.094	0.0207	0.0004
Sh1	Hitachi EX3600-5	Shovel[5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tc1	Deere 7430	Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tk1	Komatsu HD-1500 5	Truck[3]	4.494	-2.4571	0.6319	-0.0051	0.0011	0	-0.2561	0.1351	-0.0004	0.001	0	0	0.0856	0.0135	0.0009	0	0	0	0.0143	0.0005
Tk2	Cat 769D	Truck	0.5429	-0.487	0.1823	0.0151	0.0007	0	0.0224	-0.0076	0.0141	0.0007	0	0	-0.0808	0.426	-0.0008	5.6146	-3.6353	0.7823	-0.0535	0.002
Tk3	Cat 725	Truck	0.1363	0.1636	-0.04	0.0342	0.0009	0	-0.024	0.0309	0.0099	0.001	0	2.5262	-0.7562	0.095	-0.002	0	0	0	0.0103	0.0009
Tk4	Komatsu 730E	Truck[4]	7.5599	-2.711	0.4209	0.005	0.0011	0	-0.0689	0.0501	0.0052	0.001	-	-1.1878	0.325	0.0042	0.001	-3.4907	2.4171	-0.55	0.0643	-0.0011
Tk5	Cat 777F	Truck	6.43	-3.2933	0.6548	-0.005	0.0009	0	-0.0197	0.0276	0.011	0.0008	2.147	-1.9812	0.5102	-0.0158	0.0009	0.7651	-0.3831	0.0898	-0.001	0.0008
Tw1	Off-Hwy Water Tanker Truck,6,000-gal.	WaterTruck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tw2	Off-Hwy Water Tanker Truck,10,000-gal.	WaterTruck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X1	2 Deck Screening Plant (5X16, 48X60)	ScreenPlant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X2	3 Deck Screening Plant (5X16, 48X60)	ScreenPlant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X3	1 Deck Screening Plant (5X16, 48X60)	ScreenPlant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
X4	3 Deck Screening Plant (5X16, 42X60)	ScreenPlant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

For example use only. Values may not match the current spreadsheet.

Results Cont'd

Equipment Sheet cont'd:

Other equipment specifications listed in the equipment sheet can also be found in the RCE report. It is important to note that each piece of equipment is assigned an operator group by which labor rates are assigned according to the most up to date labor rates from NMDOL.

		EARTHWORK AND O&M LABOR	
51		NMDOL Type A	Rate
52		Operator Group	($/hr)
53		Equipment Operator IV	$ 27.41
54		Equipment Operator V	$ 27.52
55		Equipment Operator VI	$ 27.70
56		Laborer I	$ 23.09
57		Laborer II	$ 23.84
58		Truck Driver III	$ 24.27

Sheet 2 – Demolition: Costs are based on square footage (ex: buildings), linear footage (ex: pipeline or power line length), or lump sum per item (ex: power pole, well casing). The costs are derived from the 2019 R.S. Means Online Heavy Construction cost data or actual on-site experience and bids.

Example calculation: (10,300 feet of powerline) x ($0.63 per linear foot)=$6,489

Tyrone Mine
Stockpile Spreadsheet Worksheet #2
4/29/2019

Demolition

Building Demolition costs are calculated in "1BuildingDemo", "2BuildingCover", "3BuildingVeg", and "4BuildingWaste" and summarized on the last line of this table.

Item	Activity	Quantity	Unit	Unit Cost ($/unit)	Direct Item Cost ($)	Reference	Means Line Item	Description
Power line Demolition (3 PLS to 1x1 Pond installed 2012)	-	10,300	ft	$0.63	$6,489	Means	Means Line Item 260505.10 0370	Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead power lines.
Power pole Demolition (3 PLS to 1x1 Pond installed 2012)	-	36	ea	$216.24	$7,785	Means	Means Line Item 024113.80 0200	wood utility poles 35-45 feet high
Power line Demolition (San Salvador Pit)	-	5,222	ft	$0.63	$3,290	Means	Means Line Item 260505.10 0370	Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead power lines.
Power pole Demolition (San Salvador Pit)	-	17	ea	$216.24	$3,676	Means	Means Line Item 024113.80 0200	wood utility poles 35-45 feet high
Power lines to substations or spurs for buildings to be demolished	-	66,200	ft	$0.63	$41,706	Means	Means Line Item 260505.10 0370	Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead power lines.
Power Poles to substations or spurs for buildings to be demolished	-	135	ea	$216.24	$29,192	Means	Means Line Item 024113.80 0200	wood utility poles 35-45 feet high
Telephone Lines around buildings to be demolished	-	1,400	ft	$0.63	$882	Means	Means Line Item 260505.10 0370	Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead power lines.
Light Poles around to be demolished buildings	-	13	ea	$216.24	$2,811	Means	Means Line Item 024113.80 0200	wood utility poles 35-45 feet high
Fire Hydrants Mainly by SXEW	-	14	ea	$396.73	$5,554	Means	Means Line Item 024113.33 0900	Minor Site Demolition; remove fire hydrants
Little Rock Dewatering Pipeline Alighnment #1 and #2 (Year 34 of Closure)	6"-8" Diameter Plastic	4,940	ft	$1.88	$9,266	-	-	See Pipeline UC
Water Treatment Pipelines (Year 99 of Closure)	assume 20-36-inch diameter	74,500	ft	$4.57	$340,282	-	-	See Pipeline UC
Sewer Pipelines (Year 6 of Closure)	assume 20-36-inch diameter	1,414	ft	$4.57	$6,459	-	-	See Pipeline UC
PLS Pipelines (Year 6 of Closure)	assume 20-36-inch diameter	18,893	ft	$4.57	$86,295	-	-	See Pipeline UC
2A East PLS Tank and 2A West PLS Tank (Year 6 of Closure)	Tank Demolition	2	ea	$3,934.80	$7,870	Means	Scaled Means Items	Storage Tanks, steel tank, single wall, above ground, not incl fdn, pumps or piping, 15,000 thru 30,000; scaled for a 45,500 gal tank - assuming 22 ft diameter and 16 ft high
1A and 1B PLS Tanks (Year 99 of Closure)	Tank Demolition	2	ea	$3,934.80	$7,870	Means	Scaled Means Items	Storage Tanks, steel tank, single wall, above ground, not incl fdn, pumps or piping, 15,000 thru 30,000 gal; scaled for a 45,500 gal tank - assuming 22 ft diameter and 16 ft high
Culverts at Tailing Launder Line	Culvert Removal	22	ea	$12.69	$279	Means	Means Line Item 024113.40 0190	Selective demolition, metal drainage piping, CMP, steel, 48"-60", diameter, excludes
Steel Trestle at Tailing Launder Line	Steel Trestle Demo	1	ea	$30,689.10	$30,689	-	-	Bridge demolition, pedestrian, steel, 50' to 160' long, 8' to 10' wide
Substation Removal at Mangus Pumphouse	Substation Demo	1	ea	$12,470.55	$0	-	-	See Substation Demo UC
Buildings and Associated Facilities	Demolition	See Demo Sheets	-	-	$4,499,228	-	-	-
				Total Direct Cost:	$5,089,622			

For example use only. Values may not match the current spreadsheet.

Results cont'd:

Sheet 3 – Material: No calculations are included on this sheet. Four codes, which can be referenced from the Quantities, Activity-Material Codes, and Equipment or Unit Rates sheets, are entered by hand for each row in Columns A – D. The column labeled ID concatenates the codes. The ID contains the codes for facility location (with sub-area if applicable), work activity, material and equipment used for that particular row of work. This combination determines which equipment production and cost equations are used in the rest of the spreadsheet. The other columns on this sheet then reference the ID to lookup the description from the Activity Material Codes sheet, the source and destination locations from the Quantities sheet, the total haul or push distance and grade from the Quantities sheet, and the equipment (when applicable) from the Equipment sheet.

All activities for the Tyrone RCE are listed on this sheet and carried through the succeeding worksheets of the RCE. The description (F123) lists the activity, top or outslope (if applicable), and the material. The source location (G123) lists the stockpile name (or sub-area) for the location of the activity. If borrow material is involved, it is transported from a borrow stockpile to a destination stockpile (H123). Push or haul distance (I123) is used as part of calculating equipment production on Sheets 5, 9, and 11. Grade (J123 - haul grade or facility slope) is used as part of calculating equipment production on Sheets 5, 9, 11, and 12. Equipment (K123) lists the name of the equipment referenced in the ID. Blank cells indicate that that column is not relevant to a particular activity.

The ID for the example below is 1300-D-b-Tk4. This indicates that a Komatsu 730E truck (Tk4) will be used to haul (D) cover material (b) from the Gila Borrow Area to the 3A/3B (1300). The total haul distance from STS2 to the Raffinate Pond is 11,221 feet, with an average haul grade of 1.3%.

2300-Facility and 23-Sub-area

D-Activity and b-Material

Tk4-Equipment to be used

Tyrone Mine
Stockpile Spreadsheet Worksheet #3
4/29/2019

Material Handling Plan Summary Sheet

All activities for the Tyrone RCE are listed on this sheet and carried through the succeeding worksheets of the RCE. The column labeled ID contains the codes for the facility location, activity, material and equipment used for that particular row of work. The description lists the activity, top or outslope (if applicable), and the material. The source location lists the stockpile name (or sub-area) for the location of the activity. If borrow material is involved, it is transported from a borrow stockpile to a destination stockpile. Blank cells indicate that that column is not relevant to a particular activity.

Notes and Assumptions:
1 - Haul/Push Distance based on 2015 Tyrone RCE Submittal or measured/assumed as shown in documentation
2 - Weighted Average Haul Grades based on 2015 Tyrone RCE Submittal
3 - Grade Factors from 2015 Tyrone RCE Submittal
4 - Cover haul distance for 2A/3B stockpile is volume weighted average of Gila Borrow Area (1/3) & 3AX Stockpile (2/3)

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Total Haul/Push Distance (ft)[1]	Grade (%)[2,3]	Equipment
1300	D	b	Tk4	1300-D-b-Tk4	Haul-Cover	Gila Borrow Area	3A / 3B	11,221	1.3%	Komatsu 730E
1500	D	b	Tk4	1500-D-b-Tk4	Haul-Cover	Gila Borrow Area	5A Overburden	4,750	1.9%	Komatsu 730E
2200	D	b	Tk4	2200-D-b-Tk4	Haul-Cover	Leach Stockpile	San Salvador Pit	12,570	1.8%	Komatsu 730E
2300	D	b	Tk4	2300-D-b-Tk4	Haul-Cover	Gila Borrow Area	Savanna In-Pit Leach Stockpile	5,730	1.6%	Komatsu 730E
1400	D	b	Tk4	1400-D-b-Tk4	Haul-Cover	Gila Borrow Area	4C Leach	17,830	5.0%	Komatsu 730E
1800	D	b	Tk4	1800-D-b-Tk4	Haul-Cover	Gila Borrow Area	2C, 4A, 4B, 7B Leach	13,990	3.9%	Komatsu 730E
1900	D	b	Tk4	1900-D-b-Tk4	Haul-Cover	Gila Borrow Area	6C	5,730	1.6%	Komatsu 730E
1600	D	b	Tk4	1600-D-b-Tk4	Haul-Cover	Gila Borrow Area	6B	10,050	2.0%	Komatsu 730E
1700	D	b	Tk4	1700-D-b-Tk4	Haul-Cover	Gila Borrow Area	6C	11,833	2.5%	Komatsu 730E
2701	D	b	Tk4	2701-D-b-Tk4	Haul-Cover	Gila Borrow Area	Cntmnt-1	10,811	2.9%	Komatsu 730E
3300	D	b	Tk4	3300-D-b-Tk4	Haul-Cover	Gila Borrow Area	Unplanned Disturbance Area	10,811	2.8%	Komatsu 730E
2100	D	b	Tk4	2100-D-b-Tk4	Haul-Cover	9AX Stockpile Toe	9AX	6,343	7.7%	Komatsu 730E
2600	D	b	Tk2	2600-D-b-Tk2	Haul-Cover	9AX Stockpile	Tailing Launder Line	17,721	-1.8%	Cat 769D
2300	D	b	Tk2	2300-D-b-Tk2	Haul-Cover	Tailing Launder Line	Mangus Pumphouse	14,100	-1.8%	Cat 769D

For example use only. Values may not match the current spreadsheet.

Results cont'd:

Sheet 4 – Earthwork: Repeats the ID, Description, Source Location, and Destination Location for each row from the Materials sheet. The acreage (I123), cover depth (J123), swell factor (L123), and loose/stockpile volume (M123) are referenced from the Quantities sheet. The in-place (i.e., bank) volume (K123) is calculated from the loose/stockpile volume by dividing by the swell factor. Swell is assumed to occur when cover material is moved from the borrow stockpile to the haul truck. Material left in place is assumed to have no swell, meaning the bank and loose volumes are equal.

$$Volume_{loose\_cover} = area * depth_{cover}$$

I325*J325/12*43560/27

	E	F	G	H	I	J	K	L	M
1									Tyrone Mine
2									Stockpile Spreadsheet Worksheet #4
3	***Earthwork Quantity Worksheet***								04/29/19
4									
5	**Notes and Assumptions:**								
6	1 - Acres and volumes based on 2015 Tyrone RCE Submittal								
7	2 - Cover Material Swell: The 'Loose Volume' is calculated based on the acreage to be covered, cover depth, and accounts for appropriate swell factor.								
8	3 - No swell factor for Tyrone								
9	4 - Has been agreed upon with State agencies that swell occurs when cover material is moved from source to haul truck but not from the truck to placement on stockpile								
10									
11									
12									
13									
14	ID	Description	Source Location 1	Destination Location 2	Area (ac)[1]	Cover Depth (in)	Bank/Stockpile Volume (bcy)[1,4]	Swell Factor (%)[3]	Loose/Stockpile Volume (lcy)[2]
123	1300-D-b-Tk4	Haul-Cover	Gila Borrow Area	3A / 3B	455.0	36	2,039,074	8%	2,202,200

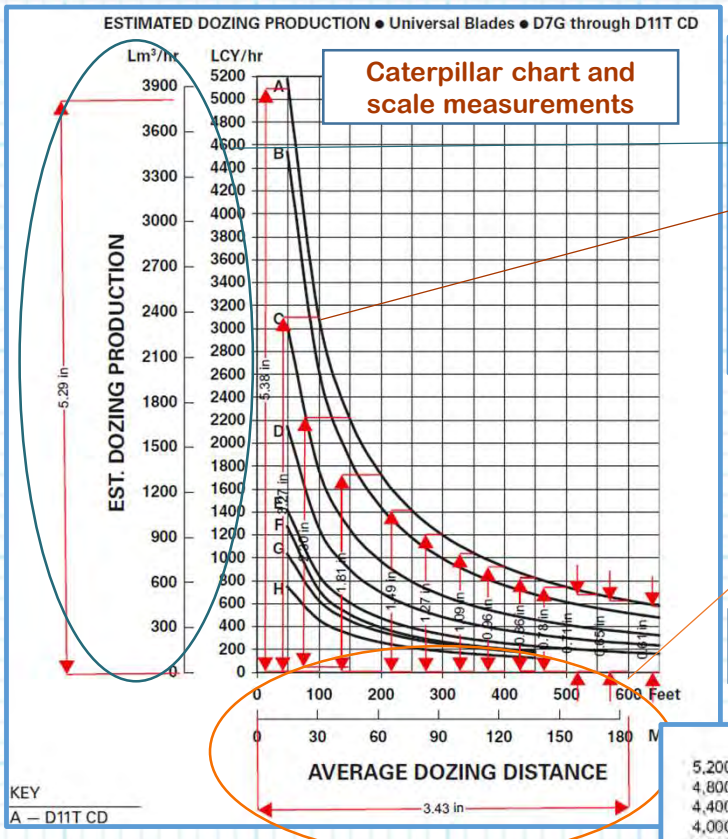
M325/(1+L325)

$$Volume_{bank} = \frac{Volume_{loose}}{(1 + F_{swell})_{bank}}$$

Sheet 5 – Dozer: Dozers are used for rough grading facilities, assisting loaders or shovels at borrow stockpiles, or pushing scrapers for grading facilities. See page 11 of this calculation documentation for a screenshot of the Dozer sheet. Columns E through K repeats ID, activity, locations, equipment from Sheet 3 (Material) and volumes from Sheet 4 (Earthwork). Columns O, P, and Z are the results of the dozer productivity calculations for grading (the multiplier and exponent coefficients C and b, respectively, for the normal productivity equation can be found in columns N and O of the Equipment sheet). Column T is the calculated task time. If the task is for dozer assist of scrapers or loaders/shovels, the dozer task time is equal to the task time of the scraper or loader/shovel, respectively. Columns Q, R, and S are calculated on the scraper and loader sheets and repeated on the dozer sheet. The remaining columns are the input factors that produce the calculation result of bulldozer material handling productivity in cubic yards per hour or acres per hour based on material weight, grade, dozing type, push distance, and operating conditions such as visibility, operator experience, and elevation.

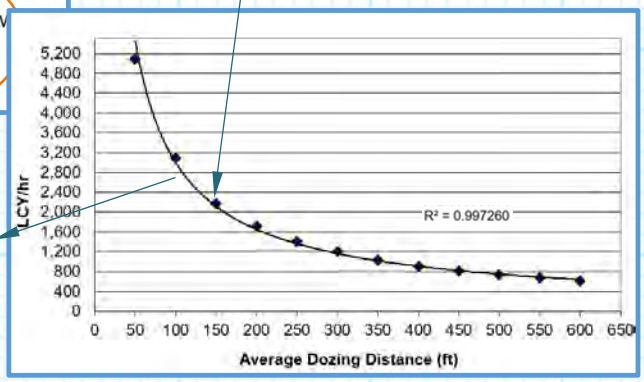
Results cont'd:

Sheet 5 – Dozer cont'd: Input values, power curves and capacities are taken from the 2017 and 2018 Caterpillar (Cat) Performance Handbook (CPH) (Editions 47 and 48) for the specific model dozer. Determining actual productivity starts by calculating the *normal* production factor using a formula derived by curve fit to productivity graphs provided in the CPH for the specific dozer. This is accomplished by scaling values from the figures and using the curve fitting tools within Microsoft Excel:



	A	B	C	D	E	F	G	H
1	D11T CD							
2	Dozer production data (based on Caterpillar Handbook)							
3						PDF		
4	Maximum					Caterpillar Image Conversions		
5	Push	Adobe	Normal			Scaled Value (in)	Chart Value	
6	Distance	Measuremer	Production			5.29	5000	LCY
7	(feet)	(in)	(cy/hr)			3.43	600	Ft
8								
9	50	5.38	5,085					
10	100	3.27	3,091		=B10/F6*G6			
11	150	2.3	2,174					
12	200	1.81	1,711					
13	250	1.49	1,408					
14	300	1.27	1,200					
15	350	1.09	1,030					
16	400	0.96	907					
17	450	0.86	813					
18	500	0.78	737					
19	550	0.71	671					
20	600	0.65	614					
21	650	0.61	577					

Graph these two columns and find best fit equation



$$Productivity_{normal} = 159{,}372.008958 * Distance_{Push}^{-0.862481}$$

For example use only. Values may not match the current spreadsheet.

Results cont'd:

Sheet 5 – Dozer cont'd: The *normal* production curves assume a flat surface with a pushed material density of 2,300 lb/cy and a material that is not loose. To account for slope, operator experience, equipment specifications, and other site-specific factors, the CPH modifies the normal production curve by multiplying various factors to obtain the overall productivity:

Productivity and Hours Required for Dozer Use---Earthmoving

Notes and Assumptions:

Uses volumes of outslope sections and dam breaches to calculate productivity
Uses push distances of outslope sections for grading productivity
Uses scraper push cycle time for dozer assist with scraper
Uses loader cycle time for dozer assist with loader at cover stockpiles
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

Number of Dozers per Assist = 1
2 dozers per assist at 3A/3B and San Salvador Pit (manually entered)

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Type of Equipment to Assist (ID)	Type of Equipment to Assist (Name)	Number of Dozers per Assist	Loose /Stockpile Volume (cy)	Area (ac)	Productivity (cy/hr)	Productivity (ac/hr)
1502-A-a-Dz2	Grade-Outslopes-Existing Ground	5A Overburden	-	Cat D11T CD	--	--	--	6,300,000	308	768	-

Tyrone Mine
Stockpile Spreadsheet Worksheet #5
04/29/19

$$Production_{normal} = C * Distance_{Push}^{b}$$

PERFORMANCE FACTORS

Scraper Pusher Cycle Time (min)	Cycles per Scraper per Hr	Loader/ Shovel/ Excavator Cycle Time	Total Task Time (hrs)	Material Factor	Grade Factor	Material Weight (lb/cy)	Production Method/ Blade	Centroid to Centroid Push Distance (ft)	Normal Production (cy/hr)	Effective Blade Width (ft)	Speed (mph)	Operator Factor	Work Hour (min/hr)	Visibility Factor	Elevation Factor	Direct Drive Trans.	Cut to Fill Haul Grade (%)
-	-	-	8,204.8	1.0	1.6	3,300	1.2	540	697	22	3	1.00	50	1.0	1.0	1.0	-23%

$$Productivity(\frac{cy}{hr}) = F_{mat'l} * F_{grade} * F_{prod-method} * F_{operator} * F_{visibility} * F_{elev} * F_{drive} * \frac{WorkHour}{60min/hr} * \frac{2{,}300\ lb/cy}{Mat'l\ Weight} * Production_{normal}$$

=U39*V39*X39*AC39*AE39*AF39*AG39*(AD39/60)*(2300/W39)*Z39

Sheet 6 –Road Maint: This sheet calculates the time required for a water truck and motor grader to be used for dust suppression and site maintenance during earthwork reclamation. Columns E through I repeats ID, activity, locations, and equipment. The Operational Maintenance Time (Column J) is assumed to be equal to the loader/shovel task time.

Productivity and Hours Required for Dust Suppression and Road Maintenance

Tyrone Mine
Stockpile Spreadsheet Worksheet #6
04/29/19

Notes and Assumptions:

6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)
May filter on equipement (D14) to show pertinent rows

Sheet to which to tie hrs 10 Loader Shovel
Equipment for hrs Sh1
Equipment for hrs Ld2

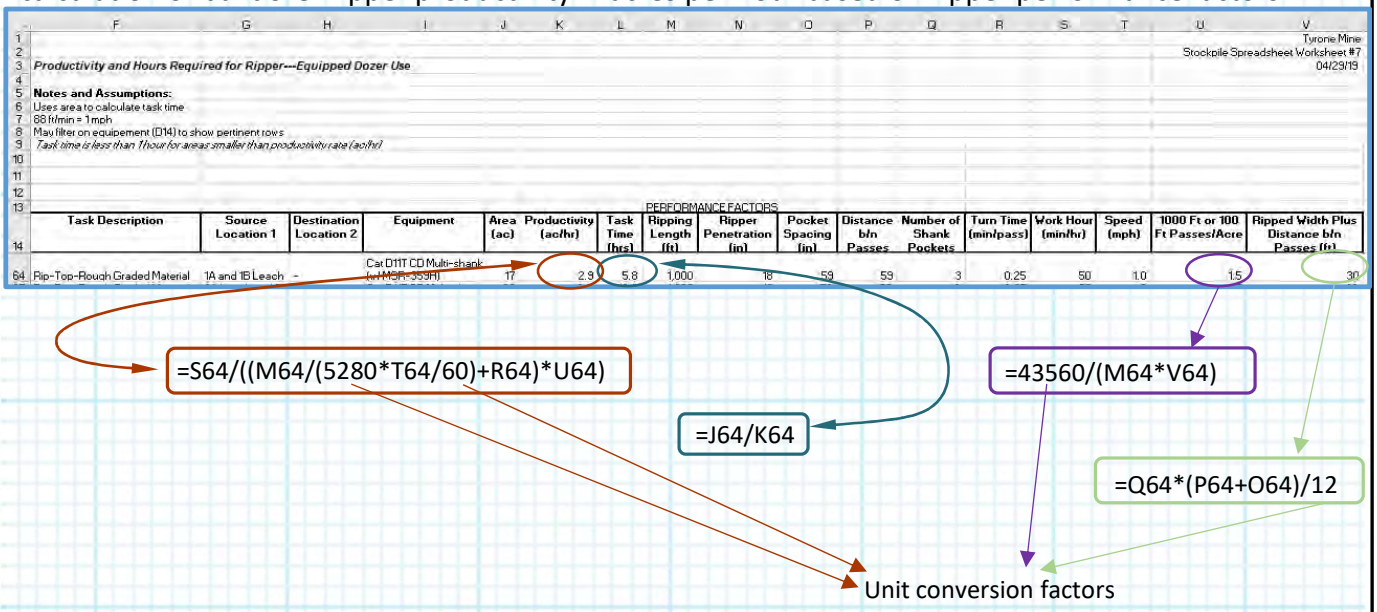
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Operational Maintenance Time
1000-P-b-Comb1	Road Maintenance	Gila Borrow Area	1A and 1B Leach	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	423

Equals loading time on Loader/Shovel sheet

For example use only. Values may not match the current spreadsheet.

Results cont'd:

Sheet 7 – Ripper: Rippers are used after rough grading, before placing cover, at all facilities (or before revegetation at borrow stockpiles) to promote revegetation. Rippers are also used to loosen the existing ground before rough grading with scrapers. Columns E through J repeat the ID, title of the activity, locations, equipment and areas from Sheets 3 & 4. Columns K and L are the results of the dozer ripper productivity calculations. The remaining columns are the inputs that allow the calculation of bulldozer ripper productivity in acres per hour based on ripper performance factors:



Tyrone Mine
Stockpile Spreadsheet Worksheet #7
04/29/19

Productivity and Hours Required for Ripper---Equipped Dozer Use

Notes and Assumptions:
Uses area to calculate task time
88 ft/min = 1 mph
May filter on equipement (D14) to show pertinent rows
Task time is less than 1 hour for areas smaller than productivity rate (ac/hr)

	Task Description	Source Location 1	Destination Location 2	Equipment	Area (ac)	Productivity (ac/hr)	Task Time (hrs)	PERFORMANCE FACTORS: Ripping Length (ft)	Ripper Penetration (in)	Pocket Spacing (in)	Distance b/n Passes	Number of Shank Pockets	Turn Time (min/pass)	Work Hour (min/hr)	Speed (mph)	1000 Ft or 100 Ft Passes/Acre	Ripped Width Plus Distance b/n Passes (ft)
64	Rip-Top-Rough Graded Material	1A and 1B Leach	–	Cat D11T CD Multi-shank (+MSR-355H)	17	2.9	5.8	1,000	18	59	59	3	0.25	50	1.0	1.5	30

=S64/((M64/(5280*T64/60)+R64)*U64)

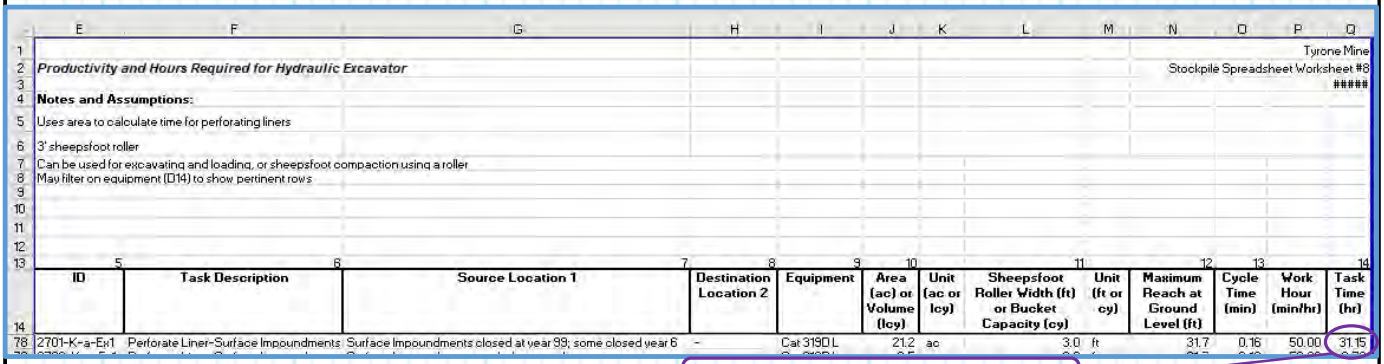
=J64/K64

=43560/(M64*V64)

=Q64*(P64+O64)/12

Unit conversion factors

Sheet 8 – Excavator: An excavator with a sheepsfoot attachment is used for perforating liners before reclamation of lined impoundments. Columns E through J repeat the ID, title of the activity, locations, equipment and areas from Sheets 3 & 4. Task time (column Q) to complete compacting the entire area is calculated using the inputs from columns J-P, which are referenced from the Equipment sheet.



Tyrone Mine
Stockpile Spreadsheet Worksheet #8
#####

Productivity and Hours Required for Hydraulic Excavator

Notes and Assumptions:
Uses area to calculate time for perforating liners
3' sheepsfoot roller
Can be used for excavating and loading, or sheepsfoot compaction using a roller
May filter on equipment (D14) to show pertinent rows

	ID	Task Description	Source Location 1	Destination Location 2	Equipment	Area (ac) or Volume (lcy)	Unit (ac or lcy)	Sheepsfoot Roller Width (ft) or Bucket Capacity (cy)	Unit (ft or cy)	Maximum Reach at Ground Level (ft)	Cycle Time (min)	Work Hour (min/hr)	Task Time (hr)
78	2701-K-a-Ex1	Perforate Liner-Surface Impoundments	Surface Impoundments closed at year 99; some closed year 6	–	Cat 319D L	21.2	ac	3.0	ft	31.7	0.16	50.00	31.15

=O78*(J78*43560)/(L78*N78)/P78

Unit conversion factor

For example use only. Values may not match the current spreadsheet.

Results cont'd

Sheet 9 – Trucks: Trucks are used to haul cover material from borrow stockpiles to destination facilities. Columns E through J repeat the ID, title of the activity, locations, equipment and volumes from Sheets 3 & 4. Column K sums the truck cycle, which includes the haul time loaded, return time empty, loading time, truck exchange time, and the dump/maneuver time. Column L reports the optimum number of trucks as limited by the number and size of loaders (calculated on the Truck Optimization sheet, as shown in the Equipment Optimization calculation summary). Column M lists the loader or shovel net bucket capacity, referenced from the Shovel sheet. Column O lists the loader or shovel task time, referenced from the Shovel sheet. Columns N and P calculate the overall productivity and time required of the load-haul-dump operations, respectively. Column P calculates the time for the truck to complete that task and compares that time to the loader task time, because the truck will have to idle while the loader/shovel finishes loading if the loader/shovel task time is longer than the truck task time (or vice versa). If the loader task time is longer, the loader task time is listed. If the truck task time is longer, the truck task time is listed.

Productivity and Hours Required for Truck Use

Notes and Assumptions:

Uses haul distance to calculate haul and return time (total task time includes loading, manuevering, dumping, hauling and return time) - moves from cover stockpile to destination stockpile
Volume of cover material based on area of destination
Cycles per truck = the greater of Heaped capacity or Struck capacity divided by Loader's per bucket capacity
1 mph = 88 ft/min
1 m/min = 0.03728227153424 mph
See Truck Optimization optimum number of trucks per loader
Haul Grade (%) assumes postive is uphill while the Effective Haul Grade (%) and Effective Return Grade (%) are postive for downhill and uphill
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Loading Equipment ID	Loose/ Stockpile Volume (cy)	Truck Cycle Time (min)	Optimum Number of Trucks	Loader/Shovel/ Excavator Net Bucket Capacity (cy)	Productivity (cy/hr)	Loader/ Shovel/ Excavator Task Time(hrs)	Truck Task Time (hrs)
1300-D-b-Tk4	Haul-Cover	Gila Borrow Area	3A / 3B	Komatsu 730E	Sh1	2,202,200	18.4	8	28.1	3,052.2	705.7	721.5

=SUM(AL123:AP123)

=AQ123*T123*N123*M123/L123

=IF(OR(K123=0,O123=0),0,IF(K123/O123<P123,P123,K123/O123))

Columns R and S are equipment specifications from the CPH. Column T calculates the loader or shovel cycles per truck, based on loader/shovel bucket capacity and truck capacity. The total haul distance (column U) can be divided into three segments (columns V-X) if the route varies greatly in slope. The average grade for each segment is calculated and entered in Columns Y-AA. Columns U through AA are obtained from the Quantities sheet. Column AB is the rolling resistance for the assumed underfooting and tires per the CPH. Columns AC-AE convert segment distances from feet to meters for application of the performance equations from the CPH.

Tyrone Mine
Stockpile Spreadsheet Worksheet #9
04/29/19

PERFORMANCE FACTORS

Struck Capacity (cy)	Heaped Capacity (cy)	Loader/ Shovel Cycles per Truck	Total Haul Distance (ft)	Haul Distance Segment 1 (ft)	Haul Distance Segment 2 (ft)	Haul Distance Segment 3 (ft)	Haul Grade Segment 1 (%)	Haul Grade Segment 2 (%)	Haul Grade Segment 3 (%)	Rolling Resistance (%)	Haul Distance Segment 1 (meters)	Haul Distance Segment 2 (meters)	Haul Distance Segment 3 (meters)
101.0	145.0	5.0	11,221	4,411	6,810	-	-7.0%	6.6%	0.0%	2.5%	1,344	2,076	-

=TRUNC(R123/ N123)

=SUM(V123:X123)

For example use only. Values may not match the current spreadsheet.

Results cont'd

Sheet 9 – Trucks cont'd: Columns AF through AK calculate the effective grade of the segment (physical grade plus the rolling resistance). Haul time (column AL) and return time (column AM) are calculated by multiplying travel times (per distance) by haul/return distance. Loading time (column AN) is based on loader/shovel productivity (Sheet 10). Times in columns AO, AP, and AQ are referenced from the Equipment sheet.

=AR123*AC123+AS123*AD123+AE123*AT123

	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
13	32	33	34	35	36	37	38	39	40	41	42	43
14	Effective Haul Grade Segment 1 (%)	Effective Haul Grade Segment 2 (%)	Effective Haul Grade Segment 3 (%)	Effective Return Grade Segment 1 (%)	Effective Return Grade Segment 2 (%)	Effective Return Grade Segment 3 (%)	Haul Time (min)	Return Time (min)	Loading Time (min)	Truck Exchange Time (min)	Dump/Maneuver Time (min)	Work Hour (min/hr)
123	4.5%	9.1%	2.5%	9.5%	4.1%	2.5%	9.6	4.7	2.25	0.7	1.1	50

=IF(Y123>=$AB123, Y123+$AB123, ABS(Y123+$AB123))

=IF(-Y123>=$AB123, -Y123+$AB123, ABS(-Y123+$AB123))

=AU123*AC123+AV123*AD123+AE123*AW123

Columns AR through AW calculate the travel time (per distance) from a curve fit based on CPH production factors, as explained on the following page. Travel time is dependent on effective grade. If the haul grade is positive (uphill), the loaded or empty uphill travel time is calculated, within the maximum speed of the truck. If the grade is negative (downhill), the loaded or empty downhill travel time is calculated, within the maximum speed of the truck.

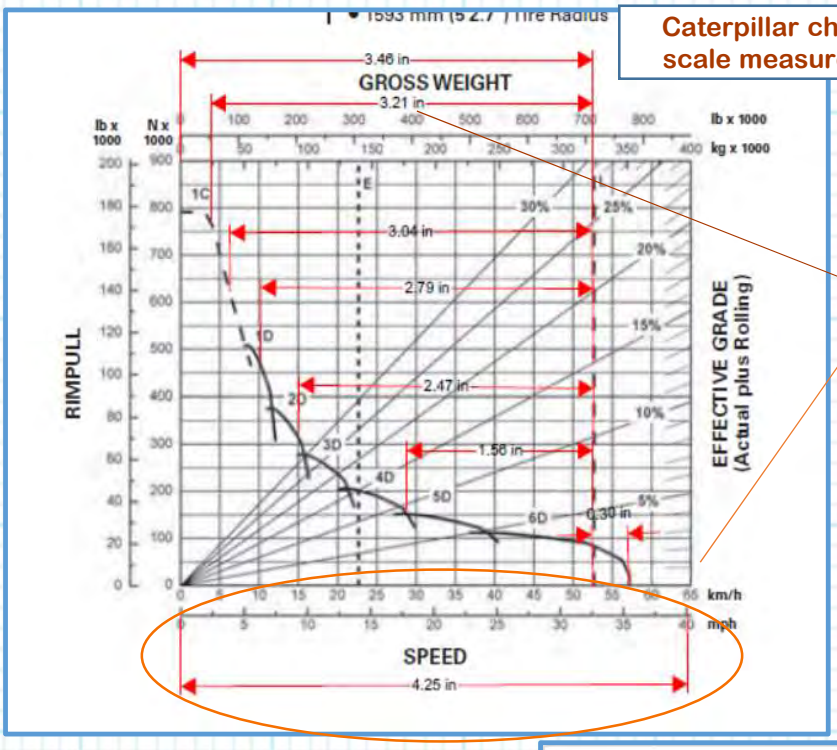
	AR	AS	AT	AU	AV	AW
1						Tyrone Mine
2						Stockpile Spreadsheet Worksheet #9
3						04/29/19
13	44	45	46	47	48	49
14	Travel Time Loaded Segment 1 (min/m)	Travel Time Loaded Segment 2 (min/m)	Travel Time Loaded Segment 3 (min/m)	Travel Time Empty Segment 1 (min/m)	Travel Time Empty Segment 2 (min/m)	Travel Time Empty Segment 3 (min/m)
123	0.00174	0.00352	0.00145	0.00189	0.00105	0.00105

For example use only. Values may not match the current spreadsheet.

Results cont'd

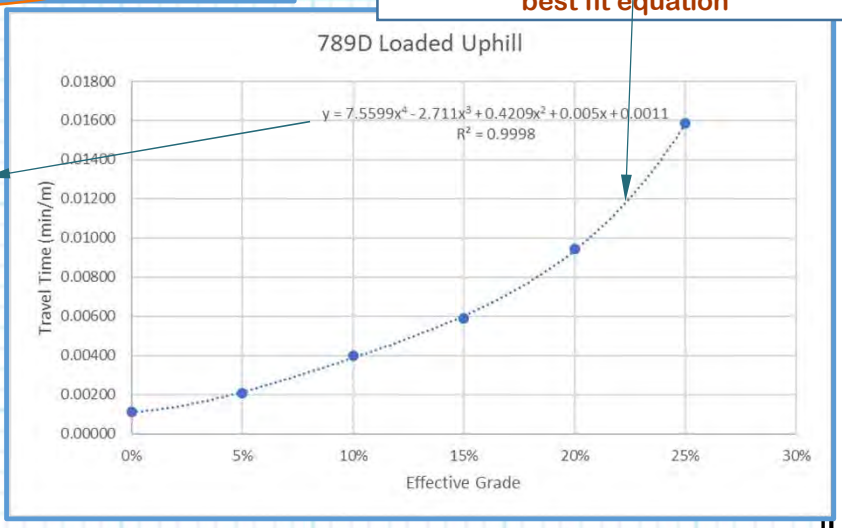
Sheet 9 – Trucks cont'd: Haul times are calculated for the trucks by using rimpull-speed-gradeability curves and retarding curves to create a relationship for travel time vs. effective resistance for travel uphill and downhill, respectively. A formula is derived by curve fit to the rimpull-speed-gradeability curves and retarding curves provided in the CPH for the specific truck. Similar to the dozer productivity curves, this is accomplished by scaling values from the figures and using the curve fitting tools within Microsoft Excel. Input values are taken from the 1998, 2011, 2017 and 2018 Caterpillar (Cat) Performance Handbook (CPH) (Editions 29, 41, 47, and 48) for the specific model truck. The example below shows how travel time is calculated for uphill routes, assuming a loaded truck:

Caterpillar chart and scale measurements



	B	C	D	E	F
1	Loaded Up Hill				
2	Measurement	Speed (mph)			
3	4.25	40			
4	3.46	32.6			
5					
6	Measurement	Speed (mph)	Travel Time (min/m)	Effective Grade	
7	3.21	2.35	0.01585	25%	
8	3.04	3.95	0.00943	20%	
9	2.79	6.31	0.00591	15%	
10	2.47	9.32	0.00400	10%	
11	1.56	17.88	0.00209	5%	
12	0	32.56	0.00114	0%	

Graph these two columns and find best fit equation



Haul Travel Time (min/m)=7.5599(Eff. Grade %)⁴ + -2.711(Eff. Grade %)³ + 0.4209(Eff. Grade %)² + 0.005(Eff. Grade %) + 0.0011

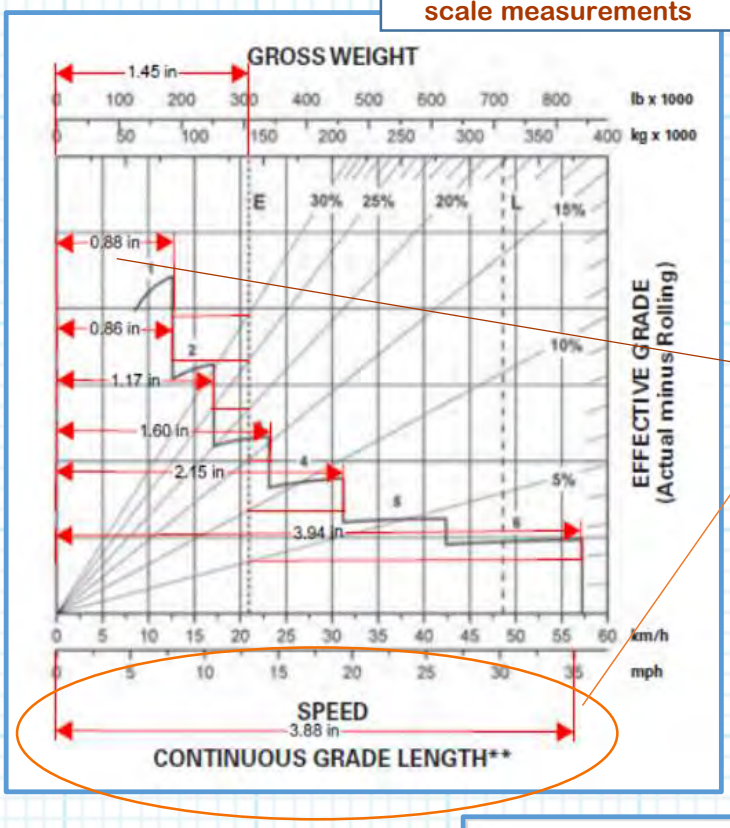
These coefficients are listed for each type of truck in columns P-AI of the Equipment sheet.

For example use only. Values may not match the current spreadsheet.

Results cont'd

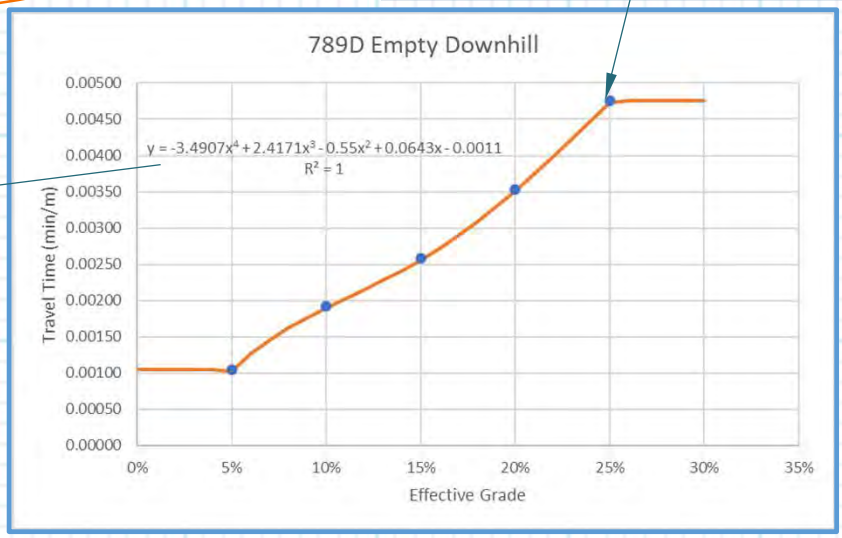
Sheet 9 – Trucks cont'd: The example below shows how travel time is calculated for downhill routes, assuming an empty truck:

Caterpillar chart and scale measurements



	B	C	D	E	F
1					
2	Measurement	Speed (mph)			
3	3.88	35			
4					
5	Measurement	Speed (mph)	Travel Time (min/m)	Effective Grade	
6	0.87	7.85	0.00475	30%	
7	0.87	7.85	0.00475	25%	
8	1.17	10.55	0.00353	20%	
9	1.6	14.43	0.00258	15%	
10	2.15	19.39	0.00192	10%	
11	3.95	35.63	0.00105	5%	
12	3.95	35.63	0.00105	0%	
13					

Graph these two columns and find best fit equation



Haul Travel Time (min/m) = -3.4907(Eff. Grade %)⁴ + 2.4171(Eff. Grade %)³ + 0.0643(Eff. Grade %)² + 0.0643(Eff. Grade %) + 0.0011

Fit has been adjusted to only include travel times for effective grades 5%-25%. If statements have been included in truck sheet to make travel time constant if effective grade is above 25% or below 5% for this truck type.

These coefficients are listed for each type of truck in columns P-AI of the Equipment sheet.

For example use only. Values may not match the current spreadsheet.

Results cont'd:

Sheet 10 – Loader Shovel: Loaders or shovels are used to load cover material onto haul trucks at borrow stockpiles. Columns E through I repeat the ID, title of the activity, locations, and equipment from Sheet 3. Column J is the hauling equipment that is loaded by the loader or shovel. Column K is from Sheet 4 and contains the total amount of material to be loaded/moved. Loader/shovel cycle time (column L), net bucket capacity (column P), and work hour (column Q) are from the Equipment sheet. Per Loader/Shovel Productivity (cy/hr) (column M) and Loader/Shovel Task Time (hrs) (column N) are calculated directly. Similar to the truck task time calculation, the maximum of either the loader/shovel task time or the truck task time is used (column O).

	E	F	G	H	I	J	K	L	M	N	O	P	Q
1													Tyrone Mine
2	***Productivity and Hours Required for Front End Loader Use or Hydraulic Shovel Use***												Stockpile Spreadsheet Worksheet #10
3													4/29/2019
4	**Assumptions:**												
5	Uses cover volume to calculate loading time of cover material												
6	May filter on equipement (D14) to show pertinent rows												
7													
8													
9													
10													
11													
12												PERFORMANCE FACTORS	
13	5	6	7	8	9	10	11	12	13	14	15	16	17
14	ID	Task Description	Source Location 1	Destination Location 2	Equipment	Hauling Equipment ID	Loose/Stockpile Volume (cy)	Loader/ Shovel Cycle Time (min)	Per Loader/Shovel Productivity (cy/hr)	Loader/ Shovel Task Time (hrs)	Max of Loader/Shovel or Truck Task Time (hrs)	Net Bucket Capacity (cy)	Work Hour (min/hr)
99	1000-C-b-Sh1	Load-Cover	Gila Borrow Area	1A and 1B Leach	Hitachi EX3600-5	Tk4	1,321,320	0.45	3,120.6	423.4	423.4	28.1	50

=P99/L99*Q99

=K99/M98

Sheet 11 – Scrapers: No scrapers are used in Tyrone RCE.

Results cont'd:

Sheet 12 – M'Grader: Motor graders are used for rough grading tops of stockpiles or for fine grading cover material. Columns E through I repeat the ID, title of the activity, locations, and equipment from Sheet 3. Column J is from Sheet 4 and contains the area of material to be graded. The grade factor (Column M) is calculated based on percent grade. Column K, shaping productivity, is calculated from the speed and effective blade width. Column L is calculated directly. Column N is an assumed material handling factor and Column U is a factor based on operator experience. Columns O-T are based on material properties and equipment information.

Tyrone Mine

Productivity and Hours Required for Motorgrader Use---Grading

Stockpile Spreadsheet Worksheet #12

4/29/2019

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)

Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)

Grade Factor = -0.02(Grade %) + 1

May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/ Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
1001-A-a-Mg1	Grade-Top-Existing Ground	1A and 1B Leach	-	Cat 16M	17	3	5.9	1.0	1.0	3,300	1.20	16.00	2.00	2.50	50	1.00

=(T46/60)*N46*(2300/O46)*P46*U46*M46*S46*(Q46-R46)*5280/43560

=IF(K115>0,J115/K115,0)

Unit conversion factors

Soil weight (lb/cy) assumed in CPH

Sheet 13 – EarthSum: This sheet summarizes all of the quantities and production rates on the individual sheets (5, and 7 through 12) and applies costs from Equipment Watch, the New Mexico labor rates table, fuel quotes, etc. Columns E through I repeat the ID, title of the activity, locations, equipment from Sheet 3. Columns J through L list the fuel, rental and maintenance, and labor unit costs from the Equipment sheet for the associated piece of equipment. The number of units of equipment is assumed to be one except for trucks and scrapers, which use an optimum number of units, calculated on the truck and scraper optimization sheets. The time required is taken from each of the equipment sheets (Sheets 5-12). The fuel, rental and maintenance, and labor costs are calculated by multiplying the unit costs by the time required for each task. The total equipment cost (column R) is the sum of the fuel, rental and maintenance, and labor costs. The total production volumes and areas are repeated from Sheet 4.

Summarizes costs for line items involving earthworks

Summary Calculation of Earthmoving Costs

Summarizes all earthmoving quantities and co

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Effici

Max. safe slope for motor graders is 2:1(50%), proposed final grade for Tyrone cover grading on stockpiles is 3

Grade Factor = -0.02(Grade %) + 1

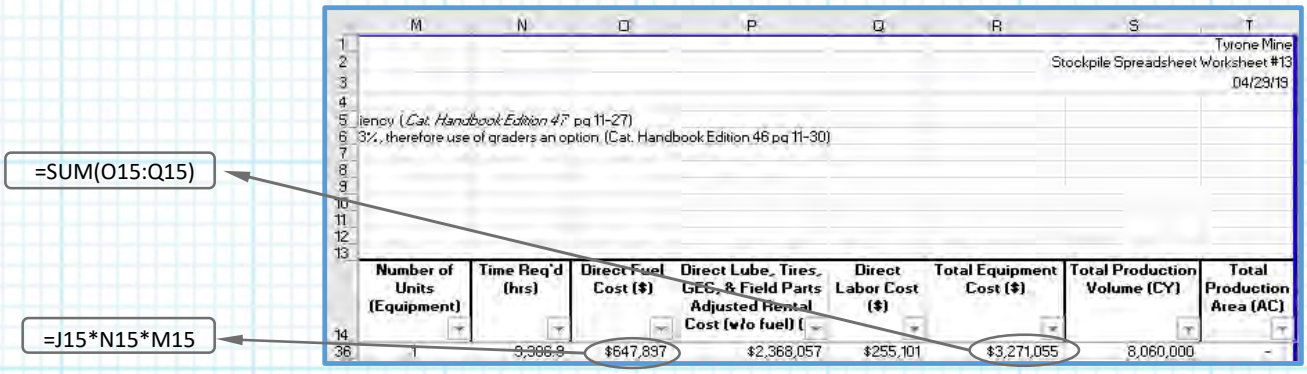
May filter on equipement (D14) to show pertinent rows

ID	Description	Source Location 1	Destination Location 2	Equipment	Fuel Cost ($/hr)	Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) ($/hr)	Labor Cost ($/hr)
1202-A-a-Dz2	Grade-Outslopes-Existing Ground	2A Leach and 2B Waste	-	Cat D11T CD	$69.62	$254.44	$27.41

For example use only. Values may not match the current spreadsheet.

Results cont'd

Sheet 13 – EarthSum cont'd:



	Number of Units (Equipment)	Time Req'd (hrs)	Direct Fuel Cost ($)	Direct Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) (	Direct Labor Cost ($)	Total Equipment Cost ($)	Total Production Volume (CY)	Total Production Area (AC)
36	1	9,388.9	$647,897	$2,368,057	$255,101	$3,271,055	8,060,000	-

Sheet 14 – Revegetation: Columns E through I repeat the ID, title of the activity, locations, and areas from Sheets 3 & 4. The calculated unit rates for revegetation (reveg fuel cost and reveg cost without fuel) are multiplied by the corresponding areas to calculate the associated direct revegetation costs for each location. The total revegetation direct cost is then the sum of all direct costs related to each location.

Tyrone Mine
Stockpile Spreadsheet Worksheet #14
04/29/19

Revegetation Costs

Description:
Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipement (D14) to show pertinent rows

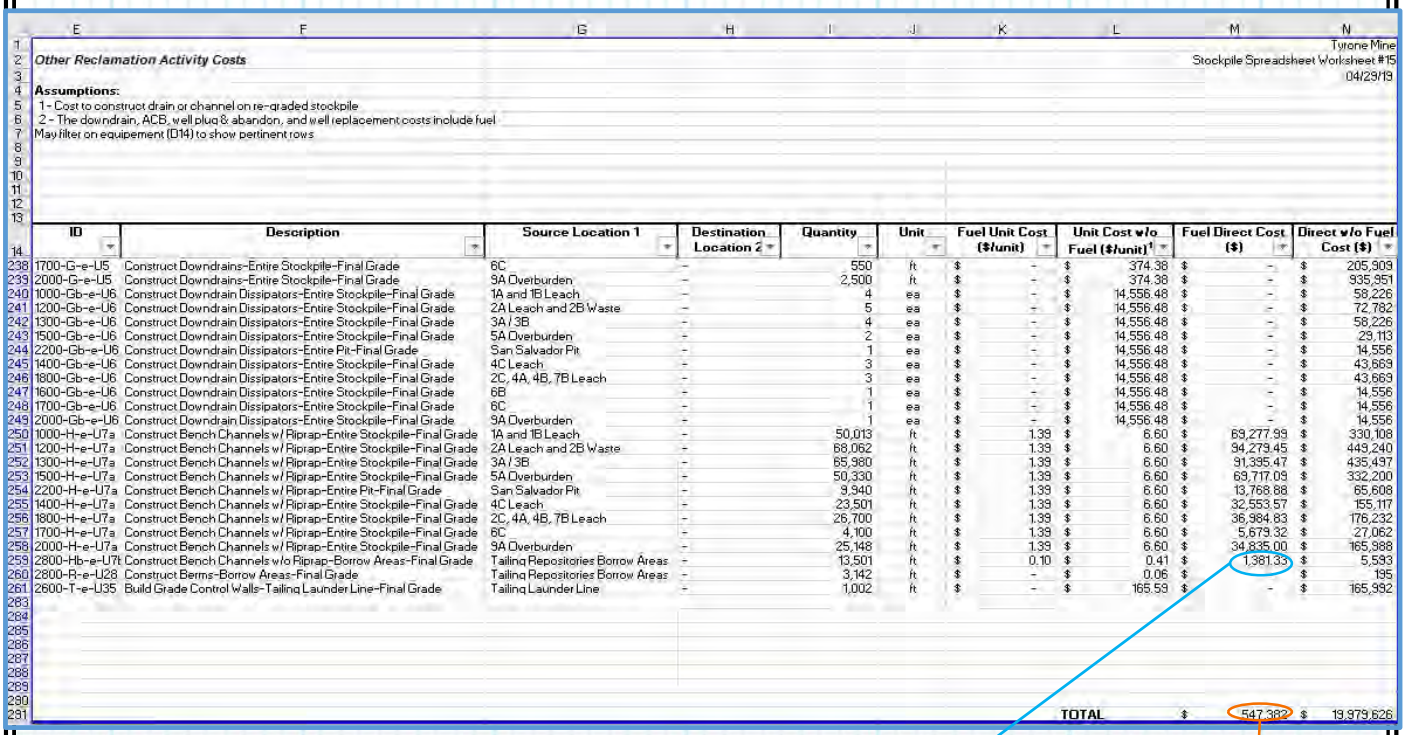
	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost ($/ac)	Reveg w/o Fuel Unit Cost ($/ac)	Fuel Direct Cost ($)	Reveg w/o Fuel Direct Cost ($)
154	1000-J-e-U2	Revegetate-Entire Stockpile-Final Grade	1A and 1B Leach	-	273.0	$ 3.85	$ 820.12	$ 1,051	$ 223,893
155	1100-J-e-U2	Revegetate-Top (Haul Road)-Final Grade	3C	-	17.0	$ 3.85	$ 820.12	$ 65	$ 13,945
156	1200-J-e-U2	Revegetate-Entire Stockpile-Final Grade	2A Leach and 2B Waste	-	487.0	$ 3.85	$ 820.12	$ 1,874	$ 399,392
157	1300-J-e-U2	Revegetate-Entire Stockpile-Final Grade	3A / 3B	-	455.0	$ 3.85	$ 820.12	$ 1,751	$ 373,155
158	1500-J-e-U2	Revegetate-Entire Stockpile-Final Grade	5A Overburden	-	371.0	$ 3.85	$ 820.12	$ 1,428	$ 304,265
159	2200-J-e-U2	Revegetate-Entire Pit-Final Grade	San Salvador Pit	-	115.0	$ 3.85	$ 820.12	$ 443	$ 94,314
160	2300-J-e-U2	Revegetate-Entire Stockpile-Final Grade	Savanna In-Pit Leach Stockpile	-	65.0	$ 3.85	$ 820.12	$ 250	$ 53,308
161	1400-J-e-U2	Revegetate-Entire Stockpile-Final Grade	4C Leach	-	183.0	$ 3.85	$ 820.12	$ 704	$ 150,082
162	1800-J-e-U2	Revegetate-Entire Stockpile-Final Grade	2C, 4A, 4B, 7B Leach	-	375.0	$ 3.85	$ 820.12	$ 1,443	$ 307,545
163	1900-J-e-U2	Revegetate-Sludge Disposal Area-Final Grade	8C	-	47.4	$ 3.85	$ 820.12	$ 182	$ 38,841
164	1600-J-e-U2	Revegetate-Entire Stockpile-Final Grade	6B	-	54.0	$ 3.85	$ 820.12	$ 208	$ 44,286
165	1700-J-e-U2	Revegetate-Entire Stockpile-Final Grade	6C	-	66.0	$ 3.85	$ 820.12	$ 254	$ 54,128
166	2000-J-e-U2	Revegetate-Entire Stockpile-Final Grade	9A Overburden	-	129.0	$ 3.85	$ 820.12	$ 496	$ 105,796
167	2600-J-e-U2	Revegetate-Tailing Launder Line-Final Grade	Tailing Launder Line	-	7.4	$ 3.85	$ 820.12	$ 28	$ 6,072
168	2900-J-e-U2	Revegetate-Mangus Pumphouse-Final Grade	Mangus Pumphouse	-	7.0	$ 3.85	$ 820.12	$ 27	$ 5,741
169	2701-J-e-U2	Revegetate-Surface Impoundments closed at year 99; some closed year 6-	Surface Impoundments closed at year 99; some closed year 6	-	21.2	$ 3.85	$ 820.12	$ 82	$ 17,411
170	2702-J-e-U2	Revegetate-Surface Impoundments graded over at closure-Final Grade	Surface Impoundments graded over at closure	-	0.5	$ 3.85	$ 820.12	$ 2	$ 394
171	3300-J-e-U2	Revegetate-Unplanned Disturbance Area-Final Grade	Unplanned Disturbance Area	-	125.0	$ 3.85	$ 820.12	$ 481	$ 102,515
172	2100-J-e-U2	Revegetate-Entire Stockpile-Final Grade	9AX	-	63.7	$ 3.85	$ 820.12	$ 245	$ 52,242
173	2803-J-e-U2	Revegetate-Revegetation Area-Final Grade	Tailing Repositories Borrow Areas	-	74.7	$ 3.85	$ 820.12	$ 287	$ 61,263
290									
291				TOTAL	####			$ 11,301	$ 2,408,586

=I173*J173

=SUM(M15:M290)

For example use only. Values may not match the current spreadsheet.

Sheet 15 – Other: This sheet contains the direct costs associated with miscellaneous (other) earthwork tasks. These tasks include grading benches, constructing downdrains, constructing downdrain dissipators, constructing bench channels (including filter and riprap production and placement), replacing infrastructure, plugging and abandoning wells, replacing wells, constructing berms, fencing (including vehicle gates and signs), and building grade control walls. Columns E through H repeat the ID, description, and locations from Sheet 3. Columns I and J document the quantity and unit associated with each quantity for each task (referenced from the Quantities sheet). The unit costs (columns K and L) are referenced from the Unit Cost sheet. The quantity multiplied by the unit costs give the direct costs for each activity. The direct costs are totaled at the bottom of the sheet.



Other Reclamation Activity Costs

Tyrone Mine
Stockpile Spreadsheet Worksheet #15
04/29/19

Assumptions:
1 - Cost to construct drain or channel on re-graded stockpile
2 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel
May filter on equipement (D14) to show pertinent rows

ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost ($/unit)	Unit Cost w/o Fuel ($/unit)[1]	Fuel Direct Cost ($)	Direct w/o Fuel Cost ($)
1700-G-e-U5	Construct Downdrains-Entire Stockpile-Final Grade	6C	-	550	ft	$ -	$ 374.38	$ -	$ 205,909
2000-G-e-U5	Construct Downdrains-Entire Stockpile-Final Grade	9A Overburden	-	2,500	ft	$ -	$ 374.38	$ -	$ 935,951
1000-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	1A and 1B Leach	-	4	ea	$ -	$ 14,556.48	$ -	$ 58,226
1200-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	2A Leach and 2B Waste	-	5	ea	$ -	$ 14,556.48	$ -	$ 72,782
1300-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	3A / 3B	-	4	ea	$ -	$ 14,556.48	$ -	$ 58,226
1500-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	5A Overburden	-	2	ea	$ -	$ 14,556.48	$ -	$ 29,113
2200-Gb-e-U6	Construct Downdrain Dissipators-Entire Pit-Final Grade	San Salvador Pit	-	1	ea	$ -	$ 14,556.48	$ -	$ 14,556
1400-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	4C Leach	-	3	ea	$ -	$ 14,556.48	$ -	$ 43,669
1800-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	2C, 4A, 4B, 7B Leach	-	3	ea	$ -	$ 14,556.48	$ -	$ 43,669
1600-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	6B	-	1	ea	$ -	$ 14,556.48	$ -	$ 14,556
1700-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	6C	-	1	ea	$ -	$ 14,556.48	$ -	$ 14,556
2000-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	9A Overburden	-	1	ea	$ -	$ 14,556.48	$ -	$ 14,556
1000-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	1A and 1B Leach	-	50,013	ft	$ 1.39	$ 6.60	$ 69,277.99	$ 330,108
1200-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	2A Leach and 2B Waste	-	68,062	ft	$ 1.39	$ 6.60	$ 94,279.45	$ 449,240
1300-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	3A / 3B	-	65,980	ft	$ 1.39	$ 6.60	$ 91,395.47	$ 435,497
1500-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	5A Overburden	-	50,330	ft	$ 1.39	$ 6.60	$ 69,717.09	$ 332,200
2200-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Pit-Final Grade	San Salvador Pit	-	9,940	ft	$ 1.39	$ 6.60	$ 13,768.88	$ 65,608
1400-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	4C Leach	-	23,501	ft	$ 1.39	$ 6.60	$ 32,553.57	$ 155,117
1800-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	2C, 4A, 4B, 7B Leach	-	26,700	ft	$ 1.39	$ 6.60	$ 36,984.83	$ 176,232
1700-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	6C	-	4,100	ft	$ 1.39	$ 6.60	$ 5,679.32	$ 27,062
2000-H-e-U7a	Construct Bench Channels w/ Riprap-Entire Stockpile-Final Grade	9A Overburden	-	25,148	ft	$ 1.39	$ 6.60	$ 34,835.00	$ 165,988
2800-Hb-e-U7b	Construct Bench Channels w/o Riprap-Borrow Areas-Final Grade	Tailing Repositories Borrow Areas	-	13,501	ft	$ 0.10	$ 0.41	$ 1,381.33	$ 5,593
2800-R-e-U28	Construct Berms-Borrow Areas-Final Grade	Tailing Repositories Borrow Areas	-	3,142	ft	$ -	$ 0.06	$ -	$ 195
2600-T-e-U35	Build Grade Control Walls-Tailing Launder Line-Final Grade	Tailing Launder Line	-	1,002	ft	$ -	$ 165.59	$ -	$ 165,992
							TOTAL	$ 547,382	$ 13,979,626

=I259*K259

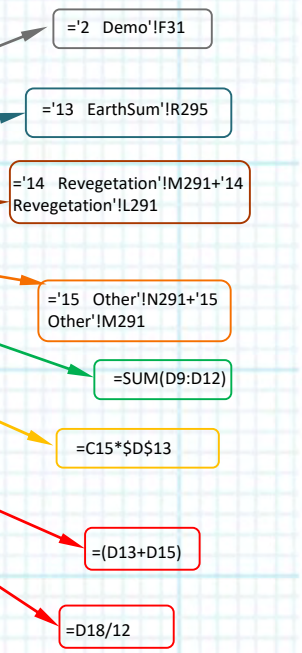
=SUM(M15:M261)

For example use only. Values may not match the current spreadsheet.

Results cont'd

Sheet 16 – Sum: This sheet summarizes the direct costs from Sheets 2, 13, 14 and 15. The indirect costs are added as a percentage of the direct costs.

	A	B	C	D	E
1					Tyrone Mine
2					Stockpile Spreadsheet Worksheet #16
3					4/29/2019
4					
5	***Tyrone Mine***				
6	Reclamation Summary Stockpiles, Haul Roads, Reservoirs, and Disturbed Areas				
7					
8				Current Value	
9	**DIRECT COSTS**	Facility and Structure Removal		$5,089,622	
10		Earthmoving		$43,140,197	
11		Revegetation		$2,419,888	
12		Other		$20,527,008	
13		**Subtotal, Direct Costs**		**$71,176,714**	
14					
15	**INDIRECT COSTS**	**Subtotal, Indirect Costs**	30.0%	$21,353,014	
16					
17					
18	**TOTAL COST**			$92,529,729	
19		Twelve Year Annual Expenditure		$7,710,811	
20					
21					
22	Notes:				
23	Indirect costs are based on 2019 agreement between FMI and agencies				
24	Indirect costs include but are not limited to mobilization and demobilization, engineering redesign fee,				
25	contingencies, contractor profit and overhead, project management fee, and state procurement cost				



Total indirect costs of 30% are applied to the capital direct costs based on discussions involving the FA Work Group completed in December 2018 and as agreed in January 2019. The FA Work Group involved representatives of Freeport-McMoRan New Mexico Operations (FNMO), MMD, NMED, and Gila Resources Information Project (GRIP). The indirect costs incorporate Mobilization and Demobilization, Contingencies, Engineering Redesign Fee, Contractor Profit and Overhead, Project Management Fee, and other administrative costs. The RCE report provides further information on the FA Work Group agreement.

Results cont'd:

Sheets 17-Facility Characteristics- This sheet summarizes direct and indirect cost for each facility in the Tyrone RCE spreadsheet. The first four facilities listed on this sheet are shown below:

Facility Characteristics

Facilities are categorized in this listing to meet the MMD reporting requirement

		1000	1100	1200	1300
	Facility	1A and 1B Leach	1C	2A Leach and 2B Waste	3A / 3B
	Reclaimed Acres[6]	273.00	17.00	486.99	455.00
	Item	**Capital Cost**	**Capital Cost**	**Capital Cost**	**Capital Cost**
Direct Costs	Cover Material Excav, Haul, Grade[1]	$1,262,102	$95,723	$3,231,529	$3,105,876
	Pullback or Backfill	$0	$0	$0	$13,577,409
	Top/Outslope Adjustment Grading[2]	$164,600	$0	$3,277,233	$1,659,024
	Scarify, Seed & Mulch, Reveg[3]	$224,943	$14,011	$401,266	$374,906
	Channels & Benches[4]	$1,928,349	$0	$3,709,623	$2,968,998
	Demolition	$0	$0	$0	$0
	Other[5]	$0	$0	$0	$0
	Capital Cost Totals	**$3,579,994**	**$109,734**	**$10,619,651**	**$21,684,211**
	Capital Cost/Acre	**$13,114**	**$6,453**	**$21,807**	**$47,658**
Indirect Costs	Cover Material Excav, Haul, Grade1	$378,631	$28,717	$969,459	$931,763
	Pullback or Backfill	$0	$0	$0	$4,073,223
	Top/Outslope Adjustment Grading[2]	$49,380	$0	$983,170	$497,707
	Scarify, Seed & Mulch, Reveg[3]	$67,483	$4,203	$120,380	$112,472
	Channels & Benches[4]	$578,505	$0	$1,112,887	$890,099
	Demolition	$0	$0	$0	$0
	Other[5]	$0	$0	$0	$0
	Indirect Cost Totals	**$1,073,998**	**$32,920**	**$3,185,895**	**$6,505,263**
	Indirect Cost/Acre	**$3,934**	**$1,936**	**$6,542**	**$14,297**
	Total Cost	**$4,653,992**	**$142,654**	**$13,805,546**	**$28,189,475**
	Total Cost Cover	$1,640,733	$124,440	$4,200,988	$4,037,638
	Pullback or Backfill	$0	$0	$0	$17,650,631
	Total Cost Top/Outslope Adjustment	$213,980	$0	$4,260,403	$2,156,731
	Total Cost Earthwork	$1,854,712	$124,440	$8,461,391	$23,845,001
	Capital Cost Re-Veg	$292,426	$18,214	$521,645	$487,377
	Capital Cost Other[5]	$0	$0	$0	$0
	Total Cost/Acre	**$17,048**	**$8,389**	**$28,349**	**$61,955**
	Total Cost/Acre Cover	**$6,010**	**$7,318**	**$8,626**	**$8,874**
	Pullback or Backfill	**$0**	**$0**	**$0**	**$38,793**
	Total Cost/Acre Top/Outslope Adjustment	**$784**	**$0**	**$8,748**	**$4,740**
	Total Cost/Acre Earthwork	**$6,794**	**$7,318**	**$17,375**	**$52,407**
	Capital Cost/Acre Re-Veg	**$1,071**	**$1,071**	**$1,071**	**$1,071**
	Capital Cost/Acre Other[5]	**$0**	**$0**	**$0**	**$0**

The Direct and Indirect Costs are each broken down into the following sections: Cover Material, Pullback or Backfill, Top/Outslope Adjustment Grading, Revegetation, Channels & Benches, Demolition, and Other. Demolition is not divided by location but is given as a total.

For example use only. Values may not match the current spreadsheet.

Results cont'd:

Remaining Sheets: The remaining sheets and data supporting the earthwork calculations described in this calculation documentation are described in the following calculation summaries:

- Equipment Optimization
- O&M
- Bench Grading Unit Cost
- Bench Channel Unit Cost (and Riprap/Gravel Unit Cost)
- Downdrain Unit Cost
- Revegetation Unit Cost
- Fuel Unit Cost

Fuel Cost

Calculation Documentation

Problem Statement:

Freeport-McMoRan (FMI) utilizes fuel price information as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). A reliable estimate of the local 2021 fuel price is needed, based on local and national data for past years.

Objective:

1. Develop an equation to predict the current estimated local fuel price for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM.

Approach:

1. Identify existing data used for the calculation.
2. Correlate local and national data for fuel price, paired by year.
3. Estimate current fuel price for use in the earthwork closure costs.

Data and Assumptions:

1. Data used for the calculations are shown below (1995-2018 as example) and include (a) U.S. No. 2 Diesel Retail Prices (annual national) and (b) FMI quotes (for specific dates within a year) for the local Silver City area. All prices are in $/gallon.

Fuel Price Data

Data 1: U.S. No 2 Diesel Retail Prices (Dollars per Gallon)

Date	U.S. No 2 Diesel Retail Prices[1]
1995	1.109
1996	1.235
1997	1.198
1998	1.044
1999	1.121
2000	1.491
2001	1.401
2002	1.319
2003	1.509
2004	1.81
2005	2.402
2006	2.705
2007	2.885
2008	3.803
2009	2.467
2010	2.992
2011	3.84
2012	3.968
2013	3.922
2014	3.825
2015	2.707
2016	2.304
2017	2.65
2018	3.178

Date	U.S. No 2 Diesel Retail Prices[1]
Jan 2019	2.98

FMI Fuel Quotes[2]

Site	Date	Dyed, low-sulfur diesel	Notes
Continental	1/21/2005	$1.40	Tom Shelley - quote from fuel broker
Chino & Tyrone	5/9/2007	$2.41	Porter Oil Quote (7500 gal capacity)
Continental	1/23/2009	$1.80	Porter Oil Quote (7500 gal capacity)
Tyrone (Little Rock)	1/14/2010	$2.49	Porter Oil Quote (7500 gal capacity)
Tyrone	7/7/2012	$3.13	Western Refining Oil
Continental	6/18/2014	$3.22	Western Refining Oil
Chino (North Lampbright)	11/5/2015	$1.74	Western Refining Oil
Chino	5/20/2016	$1.66	Western Refining Oil
Tyrone (Little Rock)	4/24/2017	$1.90	Western Refining Oil
Continental	3/12/2018	$2.75	Griffin Propane
Chino	10/10/2018	$2.75	Griffin Propane

1. U.S. Energy Information Administration
http://tonto.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=M
2. Quotes obtained from Freeport-McMoRan (FMI)

For example use only. Values may not match the current spreadsheet.

Data and Assumptions (continued):

2. The local FMI fuel quotes and annual national retail fuel (U.S. No. 2) prices are assumed to trend similarly – if the national prices increase the local prices also increase.
3. A correlation between national and local fuel prices is assumed to be a reasonable predictor of local fuel prices for any time period (e.g., annual, monthly, etc).

Calculations and Results:

1. The annual national retail fuel prices (U.S. Energy Information Administration) dataset is tabulated and plotted for comparison with the available annual local FMI fuel quotes (note that quotes are not available for blank years).

Year	U.S. No 2 Diesel Retail Prices[1]	FMI Fuel Quotes[2]
1995	1.109	
1996	1.235	
1997	1.198	
1998	1.044	
1999	1.121	
2000	1.491	
2001	1.401	
2002	1.319	
2003	1.509	
2004	1.81	
2005	2.402	$1.40
2006	2.705	
2007	2.885	$2.41
2008	3.803	
2009	2.467	$1.80
2010	2.992	$2.49
2011	3.84	
2012	3.968	$3.13
2013	3.922	
2014	3.825	$3.22
2015	2.707	$1.74
2016	2.304	$1.66
2017	2.65	$1.90
2018	3.178	$2.75

1. U.S. Energy Information Administration
http://tonto.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=M
2. Quotes obtained from Freeport-McMoRan (FMI)

For example use only. Values may not match the current spreadsheet.

Calculations and Results (continued):

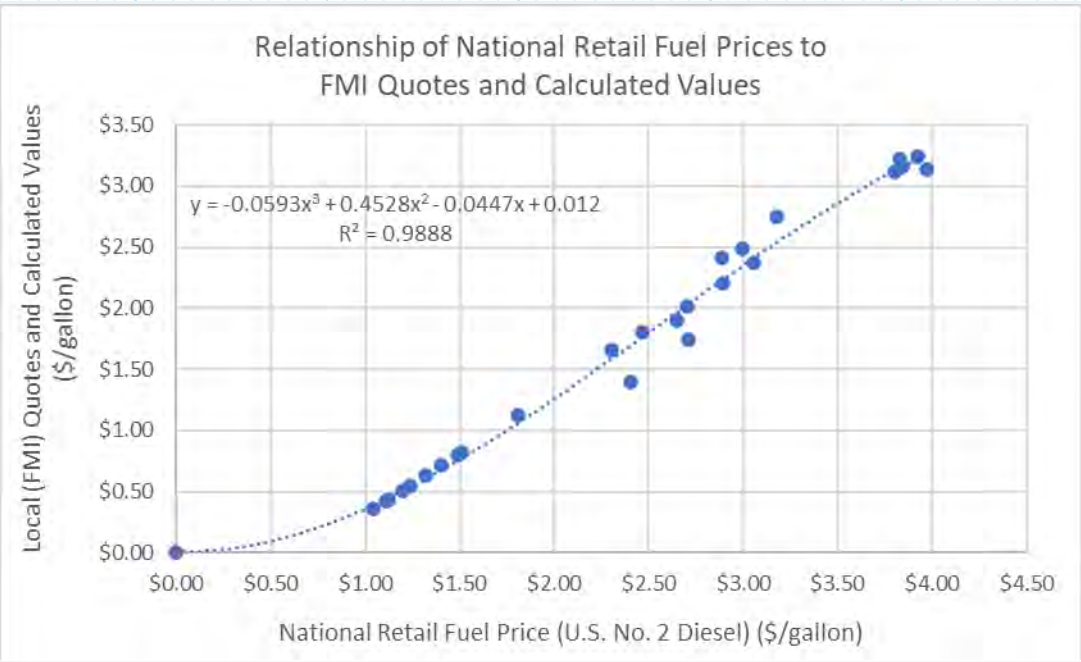
2. The annual national fuel retail prices are ranked from lowest to highest, and corresponding local FMI fuel quotes are listed for matching years in which they are available. (see Col. A and B, below)
3. The difference between the national fuel retail prices and FMI fuel quotes is calculated for each pairing. Note that FMI fuel quotes are all lower than the corresponding national fuel retail prices. The differences for all pairs are averaged. (Col. C)
4. For each year without an FMI quote, the average difference ($0.69) is subtracted from the national fuel retail prices. This results in a calculated FMI value for each unpaired data year. (Col. D)
5. The available FMI fuel quotes and calculated FMI values are combined into one column for a full listing of calculated FMI values and FMI quotes. (Col. E)
6. The annual national fuel retail prices (Col. A) are plotted vs FMI calculated values and quotes (Col. E), and a correlation is developed with national fuel prices as the independent variable and FMI values and quotes as the dependent (i.e., estimated) variable. (see Col. F and graph below)

A	B	C	D	E	F
U.S. No. 2 Diesel Retail Prices[1]	FMI Fuel Quotes[2]	Difference Between Retail Prices and FMI Quotes	Calculated FMI Values Based on Average Difference	Calculated FMI Values and Quotes	y = -0.0617x3 + 0.4659x2 - 0.0611x + 0.0148
$0.00				*$0.00*	$0.01
$1.11			$0.42	*$0.42*	$0.44
$1.24			$0.55	*$0.55*	$0.53
$1.20			$0.51	*$0.51*	$0.50
$1.04			$0.36	*$0.36*	$0.39
$1.12			$0.43	*$0.43*	$0.44
$1.49			$0.80	*$0.80*	$0.75
$1.40			$0.71	*$0.71*	$0.67
$1.32			$0.63	*$0.63*	$0.60
$1.51			$0.82	*$0.82*	$0.77
$1.81			$1.12	*$1.12*	$1.06
$2.40	$1.40	$1.00		$1.40	$1.70
$2.71			$2.02	*$2.02*	$2.04
$2.89	$2.41	$0.47		$2.41	$2.23
$3.80			$3.11	*$3.11*	$3.13
$2.47	$1.80	$0.67		$1.80	$1.77
$2.99	$2.49	$0.50		$2.49	$2.35
$3.84			$3.15	*$3.15*	$3.16
$3.97	$3.13	$0.84		$3.13	$3.25
$3.92			$3.23	*$3.23*	$3.22
$3.83	$3.22	$0.61		$3.22	$3.14
$2.71	$1.74	$0.97		$1.74	$2.04
$2.30	$1.66	$0.65		$1.66	$1.59
$2.65	$1.90	$0.75		$1.90	$1.98
$3.18	$2.75	$0.43		$2.75	$2.89
	Average	$0.69			

1. U.S. Energy Information Administration
http://tonto.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=M
2. Quotes obtained from Freeport-McMoRan (FMI)

For example use only. Values may not match the current spreadsheet.

Calculations and Results (continued):



7. The prediction equation (and coefficient of determination, R^2) is shown in the above graph where x = national retail fuel price ($/gallon) and y = predicted local fuel price ($/gallon).
8. Based on this equation, and a national retail fuel price in December of 2020 of $2.59, the predicted local FMI fuel price for U.S. No. 2 diesel (December) is

$$Local\ fuel\ price = (-0.0593)(2.59)^3 + (0.4528)(2.59)^2 - (0.0447)(2.59) + 0.012 = \$1.90/gallon$$

Summary and Conclusions:

1. National and local (FMI) fuel price data were used to develop a strongly-correlated (R^2 = 0.9888) prediction equation by which local FMI fuel prices can be predicted from national fuel price data. Note that the relationship developed in this analysis applies only to FMI operations in the Silver City (Grant County), NM area.
2. The following prediction equation developed in these calculations can be used to predict the estimated December 2020 local fuel price for use in earthwork closure costs:

$$Local\ fuel\ price = -0.0593x^3 + 0.4528x^2 - 0.0447x + 0.012$$

where x = national retail fuel price ($/gallon) and y = predicted local fuel price ($/gallon)

Bench Grading
Unit Cost

Calculation Documentation

Problem Statement:
Freeport-McMoRan (FMI) utilizes unit cost information for bench grading on side slopes of stockpiles and tailing ponds as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). The unit costs need to account for the earthwork process and site-specific conditions, equipment productivity, equipment rental rates, and associated equipment maintenance, fuel costs, and labor rates.

This calculation set presents a summary of the approach and results for estimating the unit cost for bench grading. Detailed information is presented in the earthwork reclamation cost estimate (RCE) spreadsheet file.

This calculation set is intended to serve as a guide/example even if the actual quantities and/or cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine.

Objective:

1. Develop a bench grading unit cost ($/ft) for stockpile side slopes and tailing pond side slopes for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM. Account for equipment and fuel costs in the estimate.

Approach:

1. The data, assumptions, calculations, and results for the bench grading unit cost estimate are presented within the Tyrone earthwork RCE spreadsheet file in a sheet (tab) named "Bench Grading_UC".
2. The approach for estimating bench grading unit costs is as follows:
    - Compile data and assumptions used in the calculations. Data obtained from the CCP or Scope of Work include:
        - Material factors
        - Grade factors
        - Soil weight
        - Production method/blade factors
        - Centroid to centroid push distance
        - Operator factor
        - Work hour
        - Visibility factor
        - Elevation factor
        - Transmission factor
        - Number of passes to finish grade
        - Speed
        - Volume

Approach:

- Equipment costs are referenced from the Equipment Sheet
- Estimate the unit cost for bench grading on sides slopes of the stockpiles and tailing ponds. The unit cost for bench grading operations is calculated based on two construction steps: excavate and final grade.
  - Productivity in cy/hr is calculated for excavation using the following equation:

$$Productivity\ (cy/hr) = Normal\ Production\ (cy/hr) * Operator * Material * \frac{Work\ Hour\ (min/hr)}{60\ (min/hr)} * Grade\ Factor * \frac{2300\ (lbs/cy)}{Material\ Weight\ (lbs/cy)} * Prod.\ Method * Visibility * Elev.* Drive\ Trans.$$

  - Productivity in hrs/ft is calculated for finish grade by using the following equation:

$$Productivity\ (hrs/ft) = \left(Operator * Material * Grade\ Factor * \frac{Work\ Hour\ (min/hr)}{60\ (min/hr)} * \frac{2300\ \left(\frac{lbs}{cy}\right)}{Material\ Weight\ \left(\frac{lbs}{cy}\right)} * Prod.\ Method * Visibility * Elev. * Drive\ Trans.* Speed\ (mi/hr) * 5280\ (ft/mi) * \frac{1}{\#\ Passes} \right)^{-1}$$

Results:

1. The results of the bench grading unit cost calculations are shown below (some of the final results may vary from what is shown). These results are used in the overall earthwork RCE.

Bench Grading Unit Cost

Bench Grading - Stockpiles

Task Description	Equipment	Bench Equipment Cost ($/ft)	Bench Fuel Cost ($/ft)	
Excavate	Cat D11T CD	$1.43	$0.35	
Finish Grade	Cat D6T XL, SU Blade	$0.09	$0.02	
		$1.52	$0.37	**$1.89 Total**

Bench Grading -Tailings

Task Description	Equipment	Bench Equipment Cost ($/ft)	Bench Fuel Cost ($/ft)	
Excavate	Cat D11T CD	$1.43	$0.35	
Finish Grade	Cat D6T XL, SU Blade	$0.09	$0.02	
		$1.52	$0.37	**$1.89 Total**

Bench Channel
Unit Cost

Calculation Documentation

Problem Statement:

Freeport-McMoRan (FMI) utilizes bench channel unit cost information as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). The unit cost for bench channel construction (including production and placement of riprap and filter material) needs to account for the earthwork process and site-specific conditions, equipment productivity, equipment rental rates, and associated equipment maintenance, fuel costs, and labor rates.

Objectives:

1. Develop a bench channel unit cost ($/ft) for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM.
2. Note that this calculation set presents the approach, data and assumptions, and calculations and results for developing the unit cost. It is intended to serve as a guide/example even if the actual quantities and/or cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine.

Approach:

1. The data, assumptions, calculations, and results for the bench channel unit cost estimate are presented within the Tyrone earthwork RCE spreadsheet file in sheets (tabs) named "Bench Channel_UC" and "Riprap_Gravel_UC".
2. The approach for the calculations is as follows:
    - Estimate the unit cost for each of the five following bench channel construction steps:
        - Earthwork excavate and waste
        - Load and transfer riprap and filter
        - Haul riprap and filter
        - Place riprap and filter
        - Finish grade channel and riprap
    - Estimate the cost to produce riprap and filter where these materials are obtained.
    - Combine equipment and fuel costs for the bench channel operations and riprap and filter production for a total bench channel unit cost.

Data and Assumptions:

1. Bench channel cross-section data and earthwork quantities are defined in the reclamation design, with additional calculations presented below in Calculations and Results. Basic channel dimensions are shown in Table 1.

Table 1

BENCH CHANNELS		
Dimensions:		
Left Side Slope:	3.00	H:1V
Left Side Slope:	2.50	H:1V
Depth:	2.00	ft
Left Side Slope Length:	3.61	
Right Side Slope Length:	3.20	
Bottom Width:	5.00	ft
Left Anchor	0.00	ft
Right Anchor	0.00	ft
Perimeter:	11.81	ft
Excavation Area:	21.00	sf
Filter Area[1] (cross-sectional)	5.90	sf or cf/ft [2]
Riprap Area (cross-sectional)	11.81	sf or cf/ft
1. Bench cross width* 6" filter thickness		
2. Volume (cy) =Area(sf)*Length(ft)/27		

2. Equipment and fuel cost information used for bench channel unit cost calculations is developed in the Equipment sheet of the separate Earthwork RCE spreadsheet (summary) calculation set.
3. Equipment rates from Equipment Watch include overhaul labor, parts, and time, and are corrected for a 50-minute work hour.
4. Other equipment parameters used in the calculations are assigned based on previous use at other FMI New Mexico operations.
5. The work day is set at 8 hours/day, 50 minutes/hour.
6. The following assumptions/data inputs apply to riprap and filter production:
   - For riprap and filter production, the primary plant is fed directly by two 769D haul trucks, 300 to 400 yd haul.
   - 400 tons input/hr (per Rusty McCauley, equipment peak production is 900 tons/hr).
   - 30% - 60% waste depending on smallest rip rap size used. (per Rusty McCauley, consistent w/ McCain Springs waste rate of 43% - 1" minus).
   - 3650 lb/cy (Caterpillar Performance Handbook p. 27-4, consistent with 1.8 tons/cy riprap unit weight).

For example use only. Values may not match the current spreadsheet.

Data and Assumptions (continued):

7. Key assumptions/data inputs for riprap and filter production equipment and labor are shown in Table 2.

Table 2

Equipment & Labor	Rate ($/hr)	Comment
One 988H Loader with Operator (bucket = 8.3 cy)	$ 156.46	Used to load stockpiled material to 769D trucks and 777 haul trucks
Three 769D haul trucks with drivers (22 cy, 36 ton payload each)	$ 396.83	Option: Two used to directly feed primary screening plant, one used to move material from end of conveyor
One 1 Deck Portable Screening Plant w/ 5x16 screen & 48"x60' conveyor + 1 Operator	$ 63.68	Primary screening plant, grizzly used to split oversized, 6" - 12" and 6" minus (2 conveyers) One operator required in tower to run screening plant
One 3 Deck Portable Screening Plant w/ 5x16 screen & 42"x60' conveyor + 1 Operator	$ 64.25	One operator required in tower to run screening plant Fed with 6" minus, Produce 6" - 6", 1.5" - 3", 3/8" - 1.5", 3/8 minus One operator required in tower to run screening plant
Two Cat 980H Loaders with Operator (bucket = 7.5 cy)	$ 210.53	Used move material to conveyors or load trucks
Zero Cat 992K Loaders with Operator (bucket = 16 cy)	$ -	Unused loader option
One Cat 966H Loader with Operator (bucket = 5.5 cy)	$ 100.81	Used to move material from end of conveyors & load trucks
One Water Truck with Driver (10,000 gal)	$ 91.96	Dust suppression
One Foreman	$ 23.84	

Calculations and Results:

The unit costs for each of the five following bench channel construction steps are developed:

- Earthwork excavate and waste
- Load and transfer riprap and filter
- Haul riprap and filter
- Place riprap and filter
- Finish grade channel and riprap

1. Excavate and waste (earthwork) operations comprise the first construction step (shown in "Bench Channel_UC" sheet). The unit cost is calculated based on both operations using a Cat D11T CD, U Blade dozer. Table 3 (split into 3 segments due to many columns) shows the progression of the calculations to estimate the cost for these operations. This table is followed by the calculations (or assigned parameters) for the "Excavate" row.

Table 3

	B	C	D	E	F	G	H	I	J
5		Task Description	Equipment	Volume (cy/ft)	Productivity (cy/hr)	Material Factor^2	Grade Factor^2	Material Weight^2 (lb/cy)	Production Method/ Blade Factor^2
6	Bench Channels	Excavate	Cat D11T CD, U Blade	0.78	1123	1.20	1.0	2900	1.00
7	Bench Channels	Waste	Cat D11T CD, U Blade	0.78	1001	1.20	1.0	2900	1.00

	B	C	K	L	M	N	O	P	Q
5		Task Description	Centroid to Centroid Push Distance^2 (feet)	Normal Production (cy/hr)	Operator Factor^2	Work Hour^2 (min/hr)	Visibility Factor^2	Elevation Factor^2	Transmission Factor^2
6	Bench Channels	Excavate	175	1851	0.75	50	1.00	1.00	1.00
7	Bench Channels	Waste	200	1649	0.75	50	1.00	1.00	1.00

	B	C	R	S	T	U	V	W	X	Y
5		Task Description	Productivity (hrs/ft)	Fuel Cost ($/hr)	Equipment Cost ($/hr)	Operator Cost (IV) ($/hr)	Dozer Cost ($/hr)	Bench Equipment Cost ($/ft)	Bench Fuel Cost ($/ft)	Total $/ft
6	Bench Channels	Excavate	0.0007	69.62	254.44	27.41	281.85	0.20	0.05	
7	Bench Channels	Waste	0.0008	69.62	254.44	27.41	281.85	0.22	0.05	
8								0.41	0.10	$ 0.52

The following parameters used in the calculations are based on previous use at other FMI New Mexico operations – also see Equipment sheet in the separate Earthwork RCE (summary) spreadsheet calculation set: Material Factor (Col. G), Grade Factor (Col. H), Material Weight (Col. I), Production Method/Blade Factor (Col. J), Centroid to Centroid Push Distance (Col. K), Operator Factor (Col. M), Work Hour (Col. N), Visibility Factor (Col. O), Elevation Factor (Col. P), and Transmission Factor (Col. Q).

Calculations and Results (continued):

1. Excavate and waste (earthwork) calculations (continued)

$$Volume(Col.E) = \frac{(Excav\ Area, sf\ [Bench\ channel, Table\ 1])}{(27\ cf/cy)} = \frac{21.00\ sf}{27\ cf/cy} = 0.78\ cy/ft$$

$$Productivity(Col.F) = \text{Col.}\ L\ x\ M\ x\ G\ x\ \left(\frac{N}{60}\right)\ x\ H\ x\ \left(\frac{2300}{I}\right)\ x\ J\ x\ O\ x\ P\ x\ Q =$$

$$1851\frac{cy}{hr}\ x\ 0.75\ x\ 1.20\ x\ \left(\frac{50\ min/hr}{60\ min}\right)\ x\ 1.0\ x\frac{2300\ lb/cy}{2900\ lb/cy}\ x\ 1.00\ x\ 1.00\ x\ 1.00\ x\ 1.00 =$$

1123 cy/hr

Normal Production (Col. L): If Centroid to Centroid Push Distance is not 0, then, for the equipment used, look up the production curve fit parameters C and b for equation: C x (Average dozing distance [ft])^b = 162,758.76 x (175 ft)$^{-0.86691}$ = 1851 cy/hr

$$Productivity(Col.R) = \frac{\left(Volume, \frac{cy}{ft}\ [Col.E]\right)}{(Productivity, \frac{cy}{hr}\ [Col.F])}$$ = (0.78 cy/ft)/(1123 cy/hr) = 0.00069 hr/ft (or 0.0007 hr/ft)

Fuel Cost (Col. S), Equipment Cost (Col. T), and Operator (IV) Cost (Col. U) are from Equipment cost calcs (presented in the Earthwork RCE spreadsheet calculation set).

$$Dozer\ Cost\ (Col.\ V) = \frac{\$254.44}{hr}(equipment) + \frac{\$27.41}{hr}(operator) = \frac{\$281.85}{hr}$$

Bench equipment cost (Col. W) =

$$\left(Dozer\ cost, \frac{\$}{hr}[Col.V]\right)\ x\ \left(Productivity, \frac{hr}{ft}[Col.R]\right)$$ = ($281.85/hr) x (0.00069 hr/ft) = *$0.20/ft*

Bench Fuel Cost (Col. X) =

$$\left(Fuel\ cost, \frac{\$}{hr}[Col.S]\right)\ x\ \left(Productivity, \frac{hr}{ft}[Col.R]\right)$$ = ($69.62/hr) x (0.00069 hr/ft) = *$0.05/ft*

The total unit cost for the earthwork (excavate and waste) = $0.52/ft

Calculations and Results (continued):

2. Load riprap and filter, and transfer for placing, unit cost is calculated based on the following separate operations (see "Riprap_Gravel_UC" sheet): load riprap, load filter, transfer riprap for placing, and transfer filter for placing. A Cat 992K is used for these operations. Table 4 (split into 2 segments due to many columns) shows the progression of the calculations to estimate the cost for these operations. This table is followed by the calculations (or assigned parameters) for the "Load Riprap" row.

Table 4

	B	C	D	E	F	G	H	I	J
4	Earthwork								
5	Loading per cy								
6	Task Description	Equipment		Load, Dump, Maneuver Time (min)	Work Time (min)	Loads/ hr	Net Bucket (cy/load)	Production Rate (cy/hr)	Fuel Use Gal per Hour
7	Load riprap	Cat 992K		0.65	50	76.92	14.00	1076.92	25.63
8	Load filter	Cat 992K		0.65	50	76.92	14.00	1076.92	25.63
9	Transfer riprap for placing	Cat 992K		0.65	50	76.92	14.00	1076.92	25.63
10	Transfer filter for placing	Cat 992K		0.65	50	76.92	14.00	1076.92	25.63

	B	K	L	M	N	O	P	Q
4	Earthwork							
5	Loading per cy							
6	Task Description	Fuel Cost ($/hr)	Equipment Cost ($/hr)	Operator Cost ($/hr)	Loader+Oper Cost ($/hr)	Load+Op Cost ($/cy)	Fuel Cost ($/cy)	Total Cost ($/cy)
7	Load riprap	59.97	216.23	27.70	243.93	0.23	0.06	0.28
8	Load filter	59.97	216.23	27.70	243.93	0.23	0.06	0.28
9	Transfer riprap for placing	59.97	216.23	27.70	243.93	0.23	0.06	0.28
10	Transfer filter for placing	59.97	216.23	27.70	243.93	0.23	0.06	0.28

The following parameters used in the calculations are developed in the Equipment sheet as described for the separate Earthwork RCE (summary) spreadsheet calculation set: Load, Dump, Maneuver Time (min) (Col. E); Net Bucket (cy/load) (Col. H); Fuel Use Gal per Hour (Col. J); Fuel Cost ($/hr) (Col. K); Equipment Cost ($/hr) (Col. L); and Operator Cost ($/hr) (Col. M).

Calculations and Results (continued):

2. Load/transfer riprap and filter (continued)

Work Time (Col. F) = 50 min per hour

Loads/hr (Col. G) = (Col. F)/(Col. E) = 50/0.65 = 76.92 loads/hr

Production Rate (cy/hr) (Col. I) = (Col. H) x (Col. G) = 14.00 x 76.92 = 1076.92 cy/hr

Loader + Operator Cost/hr (Col. N) = Equipment Cost (Col. L) + Operator Cost (Col. M)
= $216.23/hr + $27.70/hr = $243.93/hr

Loader + Operator Cost/cy (Col. O) = [Loader Cost, $/hr (Col. N)]/[Production Rate, cy/hr (Col. I)] = ($243.93/hr)/(1076.92 cy/hr) = $0.23/cy

Fuel Cost/cy (Col. P) = [Fuel Cost/hr (Col. K)]/[Production Rate, cy/hr (Col. I)]
= ($59.97/hr)/(1076.92 cy/hr) = $0.06/cy

The total unit cost for the loading and transferring (for placing) riprap and filter = total for equipment + total for fuel = $0.23/ft + $0.06/ft = $0.28/ft (difference due to rounding)

Calculations and Results (continued):

3. Haul riprap and filter unit cost is calculated based on the following separate operations (see "Riprap_Gravel_UC" sheet): haul riprap and haul filter. A Komatsu 730E is used for these operations. Table 5 (split into 3 segments due to many columns) shows the progression of the calculations to estimate the cost for these operations. This table is followed by the calculations (or assigned parameters) for the "Haul Riprap" row.

Table 5

	B	C	E	F	G	H	I	J
12								
13	Hauling							
14	Task Description	Equipment	Exchange Time (min)	Delivery Travel Time[1] (min)	Unload and Maneuver Time (min)	Return Travel Time[1] (min)	Load Time (min)	Total Time (min)
15	Haul riprap from source to site	Komatsu 730E	0.70	8.62	1.10	3.47	6.73	20.62
16	Haul filter from source to site	Komatsu 730E	0.70	8.62	1.10	3.47	6.73	20.62

	B	K	L	M	N	O	P
12							
13	Hauling						
14	Task Description	Work Time (min)	Loads/ hr	Heaped Capacity (cy/load)	Production Rate (cy/hr)	Fuel Use Gal per Hour	Fuel Cost ($/hr)
15	Haul riprap from source to site	50	2.42	145	352	33.48	78.34
16	Haul filter from source to site	50	2.42	145	352	33.48	78.34

	B	Q	R	T	U	V
12						
13	Hauling					
14	Task Description	Equipment Cost ($/hr)	Operator Cost ($/hr)	Truck+Op Cost ($/hr)	Truck + Op Cost ($/cy)	Fuel Cost ($/cy)	Total Cost ($/cy)
15	Haul riprap from source to site	221.79	24.27	246.06	0.70	0.22	0.92
16	Haul filter from source to site	221.79	24.27	246.06	0.70	0.22	0.92

The following parameters used in the calculations are developed in the Equipment sheet as described for the separate Earthwork RCE (summary) spreadsheet calculation set: Exchange Time (min) (Col. E); Unload and Maneuver Time (min) (Col. G); Heaped Capacity (cy/load) (Col. M); Fuel Use Gal per Hour (Col. O); Fuel Cost ($/hr) (Col. P); Equipment Cost ($/hr) (Col. Q); and Operator Cost ($/hr) (Col. R).

Delivery Travel Time (Col. F) and Return Travel Time (Col. H) are based on site-wide average borrow haul time.

Calculations and Results (continued):

3. Haul riprap and filter (continued)

Load Time (Col. I)
= Dump, Maneuver Time (Col. E in load/transfer riprap)
x [Heaped Capacity, cy/load (Col. M)]/[Net Bucket, cy/load (Col. H in load/transfer riprap)]
= 0.65 min x (145 cy/load)/(14.00 cy/load) = 6.73 min

Total Time (Col. J) = Exchange Time (Col. E) + Delivery Travel Time (Col. F) + Unload and Maneuver Time (Col. G) + Return Travel Time (Col. H) + Load Time (Col. I)
= 0.70 + 8.62 + 1.10 + 3.47 + 6.73 = 20.62 min

Work Time (Col. K) = 50 min per hour

Loads/hr (Col. L) = [Work Time (Col. K)]/[Total Time (Col. J)] = 50/20.62 = 2.42 loads/hr

Production Rate, cy/hr (Col. N) = [Heaped Capacity, cy/load (Col. M)] x [Loads/hr (Col. L)]
= (145 cy/load) x (2.42 loads/hr) = 352 cy/hr

Truck + Operator Cost/hr (Col. S) = Equipment Cost (Col. Q) + Operator Cost (Col. R)
= $221.79/hr + $24.27/hr = $246.06/hr

Truck + Operator Cost/cy (Col. T) = [Truck + Operator Cost, $/hr (Col. S)]/[Production Rate, cy/hr (Col. N)] = ($246.06/hr)/(352 cy/hr) = $0.70/cy

Fuel Cost/cy (Col. U) = [Fuel Cost/hr (Col. P)]/[Production Rate, cy/hr (Col. N)]
= ($78.34/hr)/(352 cy/hr) = $0.22/cy

The total unit cost for the hauling riprap and filter = total for equipment + total for fuel = $0.70/ft + $0.22/ft = $0.92/ft

Calculations and Results (continued):

4. Place riprap and filter unit cost is calculated based on the following separate operations (see "Riprap_Gravel_UC" sheet): place riprap and place filter. A Cat 725 is used for these operations. The sequence of calculations for the place riprap and filter unit cost is the same as for haul riprap and filter (from source to site) calculations, above. Inputs to the calculations for placing riprap and filter are generally the same except that Cat 725 operating parameters and costs are used. Delivery and return travel times are calculated based on the haul distance and the Haul Travel Time polynomial equation (see Equipment sheet) that calculates minutes/meter based on effective grade.

   Table 6 (split into 3 segments due to many columns) shows the progression of the calculations to estimate the cost for these operations.

   Table 6

	B	C	D	E	F	G	H	I
19	Placing							
20	Task Description	Equipment	Distance	Grade	Exchange Time (min)	Delivery Travel Time (min)	Unload and Maneuver Time (min)	Return Travel Time (min)
21	Place riprap	Cat 725	400.00	-30%	0.70	3.25	1.10	0.74
22	Place filter	Cat 725	400.00	-30%	0.70	3.25	1.10	0.74

	B	J	K	L	M	N	O	P
19	Placing							
20	Task Description	Load Time (min)	Total Time (min)	Work Time (min)	Loads/ hr	Heaped Capacity (cy/load)	Production Rate (cy/hr)	Fuel Use Gal per Hour
21	Place riprap	0.87	6.67	50	7.50	19	141.01	6.02
22	Place filter	0.87	6.67	50	7.50	19	141.01	6.02

	B	Q	R	S	T	U	V	W
19	Placing							
20	Task Description	Fuel Cost ($/hr)	Equipment Cost ($/hr)	Operator Cost ($/hr)	Truck + Op Cost ($/hr)	Truck+Op Cost ($/cy)	Fuel Cost ($/cy)	Total Cost ($/cy)
21	Place riprap	14.09	73.11	24.27	97.38	0.69	0.10	0.79
22	Place filter	14.09	73.11	24.27	97.38	0.69	0.10	0.79

Calculations and Results (continued):

5. Finish grade unit cost is calculated based on the following separate operations (see "Riprap_Gravel_UC" sheet): finish grade channel and finish grade riprap. A Cat D6T, SU Blade is used for these operations. The sequence of calculations for the finish grade unit cost is the same as for the first operation for bench channel construction – earthwork (excavate and waste) (see those calculations, above, for details). Inputs to the finish grade channel and finish grade riprap calculations are generally the same with the following exceptions:
   - Cat D6T, SU Blade operating parameters and costs are used.
   - Material Factor (Col. E) and Material Weight (Col. G) for riprap are used, which are different than for the excavate and waste, and channel grading, materials.

   Table 7 (split into 3 segments due to many columns) shows the progression of the calculations to estimate the cost for these operations.

   Table 7

	B	C	D	E	F	G	H	I
24								
25	Grading							
26	Task Description	Equipment	Productivity (cy/hr)	Material Factor	Grade Factor	Soil Weight (lb/cy)	Production Method/Blade Factor	Centroid to Centroid Push Distance (ft)
27	Finish grade -filter	Cat D6T, SU Blade	304.38	1.0	1.02	3500	1.0	50
28	Finish grade - Riprap	Cat D6T, SU Blade	230.34	0.8	1.02	3700	1.0	50

	B	J	K	L	M	N	O
24							
25	Grading						
26	Task Description	Normal Production (cy/hr)	Operator Factor	Work Time (min)	Visibility Factor^2	Elevation Factor	Transmission Factor
27	Finish grade -filter	727	1	50	1	1.00	1.00
28	Finish grade - Riprap	727	1	50	1	1.00	1.00

	B	P	Q	R	S	T	U	V
24								
25	Grading							
26	Task Description	Fuel Cost ($/hr)	Equipment Cost ($/hr)	Operator Cost (IV) ($/hr)	Dozer +Op Cost ($/hr)	Dozer + Op Cost ($/cy)	Fuel Cost ($/cy)	Total Cost ($/cy)
27	Finish grade -filter	16.8948	63.65	27.41	91.06	0.30	0.06	0.35
28	Finish grade - Riprap	16.8948	63.65	27.41	91.06	0.40	0.07	0.47

Calculations and Results (continued):

6. Riprap and filter production costs (where the material source is located) are estimated according to Table 8, with a summary of the calculations provided after Table 8.

Table 8

	B	C	D	E	F	G	H	I
36	Equipment	Equipment Cost	Fuel Cost	# Equipment	Operator	# Operator	Total Equipment Cost	Total Fuel Cost
37		($/hr)	($/hr)		($/hr)		($/hr)	($/hr)
38	Cat 988H	$ 128.76	$ 35.57	1	$ 27.70	1	$ 156.46	$ 35.57
39	Cat 769D	$ 108.01	$ 22.79	3	$ 24.27	3	$ 396.83	$ 68.37
40	1 Deck Screening Plant (5X16, 48X60)	$ 40.59	$ 11.35	1	$ 23.09	1	$ 63.68	$ 11.35
41	3 Deck Screening Plant (5X16, 42X60)	$ 41.16	$ 11.35	1	$ 23.09	1	$ 64.25	$ 11.35
42	Cat 980H	$ 77.56	$ 25.27	2	$ 27.70	2	$ 210.53	$ 50.54
43	Cat 992K	$ 216.23	$ 59.97	0	$ 27.70	0	$ -	$ -
44	Cat 966H	$ 73.11	$ 19.61	1	$ 27.70	1	$ 100.81	$ 19.61
45	Off-Hwy Water Tanker Truck,6,000-gal.	$ 67.69	$ 26.33	1	$ 24.27	1	$ 91.96	$ 26.33
46	Supervisor	$ -	-	0	$ 23.84	1	$ 23.84	$ -
47								
48					Direct Cost	Equipment	Fuel	
49						$ 1,108	$ 223	$/hr
50						8	8	hr/work day
51						$ 8,867	$ 1,785	$/day
52								
53					Production			
54						400	tons input/hr (total)	
55						0.30	% waste	
56						0.70	% rip rap and gravel/filter	
57						280	tons produced/hr (net)	
58						560,000	lb/hr	
59						3,650	lb/cy	
60						153	cy/hr	
61						8	hr/day (net (60 min/hr))	
62						1,227	cy/day net production	
63								
64					Production	$ 7.22	$ 1.45	$/cy
65				Filter Delivery and placement		$ 2.14	$ 0.49	$/cy
66				Rip Rap Delivery and placement		$ 2.24	$ 0.51	$/cy
67								

For example use only. Values may not match the current spreadsheet.

Calculations and Results (continued):

6. Riprap and filter production calculations (continued):

For each type of equipment used, the costs calculated (see Earthwork RCE spreadsheet calculation set) are tabulated in Table 8, including Equipment Cost (Col. C), Fuel Cost (Col. D), and Operator Cost (Col. F).

The number of pieces of equipment (Col. E) and number of operators (Col. G) are assigned based on the logistical requirements for production. Pieces of equipment match the number of operators, except for addition of a Supervisor.

Total equipment cost (Col. H) is calculated as follows, with an example calculation shown for the Cat 988H:

$$Total\ Equipment\ Cost, \$/hr = \{(Equip\ Cost\ [Col.C])\ x\ (\#\ Equipment\ [Col.E])\} + \{(Operator\ Cost\ [Col.F])\ x\ (\#\ Operator\ [Col.G])\} = \{(\$128.76)x(1)\} + \{(\$27.70)x(1)\} = \$156.46/hr$$

Total fuel cost (Col. I) is calculated as follows, with an example calculation shown for the Cat 988H:

$$Total\ Fuel\ Cost, \$/hr = \{(Fuel\ Cost\ [Col.D])\ x\ (\#\ Equipment\ [Col.E])\} = \{(\$35.57)x(1)\} = \$35.57/hr$$

The daily cost is calculated for all equipment by summing the total equipment cost (Cell G56) and total fuel cost (Cell H56), as follows:

$$Daily\ Total\ Equipment\ Cost, \frac{\$}{day} = \left(Sum\ for\ all\ equipment, \frac{\$}{hr}\right) x\ \left(8\frac{hr}{day}\right) = \left(\frac{\$1{,}108}{hr}\right) x\ \left(8\frac{hr}{day}\right) = \frac{\$8{,}867}{day}$$

$$Daily\ Total\ Fuel\ Cost, \frac{\$}{day} = \left(Sum\ for\ all\ fuel, \frac{\$}{hr}\right) x\ \left(8\frac{hr}{day}\right) = \left(\frac{\$223}{hr}\right) x\ \left(8\frac{hr}{day}\right) = \frac{\$1{,}785}{day}$$

For example use only. Values may not match the current spreadsheet.

Calculations and Results (continued):

6. Riprap and filter production calculations (continued):

Next, the production calculations are summarized (see Rows 54-62 in Table 8). Daily net production is calculated via the following sequence:

- 400 tons input/hr (total) – see production assumptions
- 30% waste – see production assumptions
- 70 % riprap and gravel/filter = 100 minus % waste
- 280 tons produced/hr (net) = (400 tons input/hr) x (70%)
- 560,000 lb/hr = (280 tons) x (2,000 lb/ton)
- 3,650 lb/cy – see production assumptions
- 153 cy/hr = (560,000 lb/hr)/(3,650 lb/cy)
- 8 hr/day (net [60 min/hr]) – see production assumptions
- 1,227 cy/day net production = (153 cy/hr) x (8 hr/day)

The total cost for production (see Row 64 in Table 8) is calculated separately for equipment and fuel as follows:

- Equipment portion of the cost = ($8,867/day)/(1,227 cy/day) = $7.22/cy
- Fuel portion of the cost = ($1,785/day)/(1,227 cy/day) = $1.45/cy
- This yields a total cost of $8.67/cy

Summary and Conclusions:

These calculations achieve the objective to develop an estimated bench channel unit cost for the earthwork RCE, as summarized below for production of filter and riprap, and delivery and placement of filter and riprap.

The cost for production of filter and riprap $7.22/cy (equipment + operator) + $1.45/cy (fuel) = $8.68/cy (difference due to rounding).

The cost for filter delivery and placement is the sum of the calculations presented above, for loading, hauling, placing, and final grading, for a total of $2.14/cy (equipment + operator) + $0.49/cy (fuel) = $2.63/cy

Similarly, the cost for riprap delivery and placement is the sum of the calculations above, for a total of $2.24/cy (equipment + operator) + $0.51/cy (fuel) = $2.75/cy

The total cost ($/ft) for bench channel construction, including the initial earthwork (excavate and waste) along with riprap placed at 0.44 cy/ft and filter placed at 0.22 cy/ft, for combined equipment/operator and fuel costs, is:

$0.52/ft (excavate and waste) + $2.47/ft (filter) + $5.00/ft (riprap) = $7.99/ft

Downdrain/ Dissipater Unit Cost

Calculation Documentation

Problem Statement:

Freeport-McMoRan (FMI) utilizes downdrain/dissipater unit cost information as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). Downdrains are constructed on regraded side slopes of rock stockpiles to convey runoff. Dissipaters are constructed as needed at the bottom end (downslope) of specific downdrains to dissipate the energy of the downdrain runoff flow. The unit cost needs to account for excavation/preparation of the subgrade, material and placement costs to install articulated concrete blocks (ACBs) in the downdrains and dissipaters, and installation of a concrete cutoff wall at the downslope end of each dissipater.

Objective:

1. Develop unit costs for downdrains ($/ft) and dissipaters ($/each) for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM.
2. Note that this calculation set presents the approach, data and assumptions, and calculations and results for developing the unit cost. It is intended to serve as a guide/example even if the actual quantities and/or cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine.

Approach:

1. The data, assumptions, calculations, and results for the downdrain/dissipater unit cost estimate are presented within the Tyrone earthwork RCE spreadsheet file.
2. The approach for the calculations is as follows:
   - Identify locations and lengths required for downdrains. Use reclamation design drawings and quantities.
   - Identify excavation equipment and estimate cost to complete the rough grade where the downdrains and dissipaters will be constructed. Use equipment cost information and calculations as also developed for other earthwork operations in the overall earthwork cost estimate.
   - Estimate cost to finish grade and place ACBs in downdrains and dissipaters. Use available unit costs from Contech Engineered Solutions (Contech ES), the manufacturer and installer of ACBs in the area.
   - Estimate cost to install cast-in-place concrete cutoff wall at downslope end of dissipaters. Use online RS Means data.

Data and Assumptions (continued):

1. Attachment A presents the following key quantity data used to develop unit costs (note that Attachment A also includes the calculations and results presented in this calculation set):
   - Downdrain base excavation area = 52 square feet/foot of length (sf/ft)
   - Downdrain ACB area coverage = 31 sf/ft
   - Dissipater area (middle [Area 2]) = 320 sf
   - Dissipater area (each side [Area 1 = Area 3]) = 253 sf
   - Cutoff wall concrete volume (each dissipater) = 14 cubic yards
2. Unit cost data from Contech ES (February 2019, see Attachment A) include the following:
   - Material costs for ACBs (includes non-woven geotextile and microgrid/geogrid) are as follows:
     - $7.42/sf (Block Class 40T, for the channel of each downdrain and both side areas of each dissipater)
     - $10.65/sf (Block Class 70T, for the center area of each dissipater)
   - Installation cost is $4.63/sf, which covers the following installation process for both sizes of ACBs: off-load the truck and place delivered ACBs in temporary storage area, fine grade base/subgrade soils, compact soils to 90% Standard Proctor (D698), place and secure filter fabric (non-woven geotextile), place 4- to 6-inch drainage layer overlaid by geogrid, place ACBs in final configuration, grout seams, and backfill ACBs with crushed stone. The installation cost includes crushed stone.
3. Cost data from RS Means for installation of a concrete cutoff wall at the downslope end of each dissipater are presented in Attachment A. The online RS Means cost is $254.97/cubic yard.

Calculations and Results:

1. The estimated cost to excavate the rough grade (where the downdrains will be constructed) is developed in the same manner as excavation costs prepared for bench channel unit costs. Therefore, see the bench channel unit cost calculation set for details. The downdrain rough grade cost = $0.83/ft.
2. The estimated cost to install ACBs in downdrains includes the finish grade and subsequent placement of ACBs. This estimated cost is developed from the Contech ES quotes (as listed above in Data and Assumptions), as follows:
   - Downdrain material cost for 40T ACBs is $7.42/sf
   - Downdrain installation cost for 40T ACBs is $4.63/sf
   - The cost per ft of downdrain ($/ft) = ($7.42/sf + $4.63/sf) x (31 sf/ft) = $12.05/sf x 31 sf/ft = $373.55/ft

$$\textbf{\textit{Total downdrain installation cost (after rough grading)}} = \$373.55/ft$$

For example use only. Values may not match the current spreadsheet.

Calculations and Results (continued):

3. Similarly, the estimated cost to install ACBs in dissipaters includes the finish grade and subsequent placement of ACBs. This estimated cost is developed from the Contech ES quotes (as listed above in Data and Assumptions), as follows:

   - Dissipater material cost for 40T ACBs is $7.42/sf
   - Dissipater material cost for 70T ACBs is $10.65/sf
   - Dissipater installation cost for 40T and 70T ACBs is $4.63/sf
   - For each dissipater, 40T ACBs cover 506 sf and 70T ACBs cover 320 sf
   - The cost for the 40T part of each downdrain ($/each) = ($7.42/sf + $4.63/sf) x (506 sf) = $12.05/sf x 506 sf = $6,097.30/each
   - The cost for the 70T part of each downdrain ($/each) = ($10.65/sf + $4.63/sf) x (320 sf) = $15.28/sf x 320 sf = $4,889.60/each
   - The total cost for ACBs in each dissipater = $6,097.30 + $4,889.60 = $10,986.90

4. The estimated cost for installing a cast-in-place concrete cutoff wall at the downslope end of each dissipater is based on on-line cost data from RS Means and the required concrete volume:

   - Cast-in-place concrete cutoff wall (RS Means) cost = $254.97/cubic yard
   - Each dissipater requires cutoff wall concrete volume of 14 cubic yard
   - The total cost for cutoff wall installation at each dissipater = ($254.97/cubic yard) x (14 cubic yard) = $3,569.58

Total dissipater installation cost (after rough grading) = $10,986.90 + $3,569.58 = $14,556.48

Summary and Conclusions:

1. Unit costs for installing downdrains ($/ft) and dissipaters ($/each) were developed for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM. Note that the estimated unit cost developed in this analysis applies only to FMI operations in the Silver City (Grant County), NM area.
2. Downdrain cost = $0.83/ft (rough grading) + $373.55/ft (after rough grading) = **$374.38/ft**
3. Dissipater cost = $10,986.90/each (rough grading is included in downdrain cost) + $3,569.58/each (cutoff wall) = **$14,556.48/each**

Downdrain Unit Cost

Rough Grade

Task Description	Equipment	Productivity (cy/hr)	Material Factor	Grade Factor	Soil Weight (lb/cy)	Production Method/Blade Factor	Centroid to Centroid Push Distance (ft)	Normal Production (cy/hr)	Operator Factor	Work Hour (min/hr)	Visibility Factor	Elevation Factor	Transmission Factor	Volume (cy/ft)	Productivity (hrs/ft)	Fuel Cost ($/hr)	Equipment Cost ($/hr)	Operator Cost (IV) ($/hr)	Dozer Cost ($/hr)	Equipment w/o Fuel Cost ($/ft)	Fuel Cost ($/ft)	Total Excavation Cost ($/ft)
Excavate	Cat D11T CD	1731	1.2	1.6	2900	1.0	175	1851	0.75	50	1.0	1.0	1.0	1.9	0.0011	$69.62	$254.44	$27.41	$281.85	$0.31	$0.08	$0.39
Waste	Cat D11T CD	1542	1.2	1.6	2900	1.0	200	1649	0.75	50	1.0	1.0	1.0	1.9	0.0012	$69.62	$254.44	$27.41	$281.85	$0.35	$0.09	$0.44
								.												$0.67	$0.16	$0.83

Finish Grade & Place ACB

	Area (sf/ft)	Unit Cost ($/sf)	$/ft
Downdrain ACBs			
40T[1]	31	$7.42	$230.02
Installation[1]	31	$4.63	$143.53
		ACB Cost/ft	**$373.55**

Total Downdrain Cost ($/ft)	**$374.38**

Place ACB

Dissipater ACBs	Area (sf)	Unit Cost ($/sf)	$/sf
70T[1]	320	$10.65	$3,408.00
Installation[1]	320	$4.63	$1,481.60
40T[1]	506	$7.42	$3,754.52
Installation[1]	506	$4.63	$2,342.78
		ACB Cost per Dissipater	**$10,986.90**

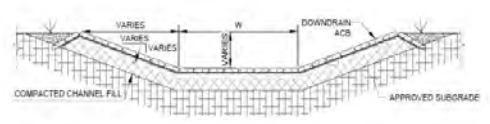
Install Cutoff Wall

Cutoff Wall (cast in place concrete)	cubic yard	$/cubic yard	**$/dissipater[2]**
RSMeans (2019)	14	$ 254.97	**$3,569.58**

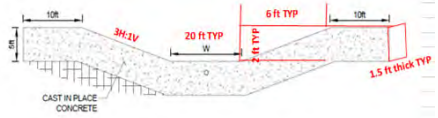
Total Dissipator Cost ($/each)	**$14,556.48**

DOWNDRAIN Dimensions:		
Left Side Slope:	3	H:1V
Left Side Slope:	3	H:1V
Depth:	2	ft
Perimeter:	31	ft
Excavation Area:	52	sf
ACB Area:	31	sf

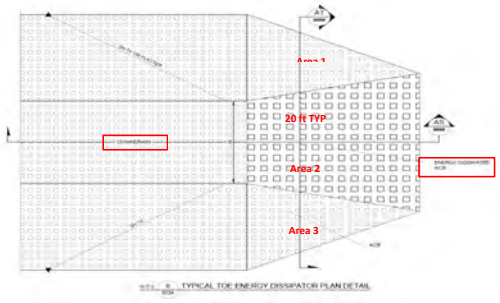
DISSIPATERS	**ACB**				**Cutoff Wall[3]**		
	Surface Area 1	**Surface Area 2**	**Surface Area 3**	**Total**	**Cross-Sectional Area**	**Thickness**	**Volume**
	(sf)	**(sf)**	**(sf)**	**(sf)**	**(sf)**	**(ft)**	**(cy)**
	253	320	253	825	260	1.5	14



N.T.S. AU 022A TYPICAL DOWNDRAIN SECTION



N.T.S. AX 022A TYPICAL CUTTOFF WALL SECTION



TYPICAL TOE ENERGY DISSIPATOR PLAN DETAIL

1. Quote from Contech ES 2018; Downdrain ACB installation includes fine grade base/subgrade soils (assuming subgrade at + 0.5 ft); equipment is D6 LGP dozer with Power Angle Tilt Blade (PAT) and GPS Blade Control
2. One cutoff wall per dissipator
3. Typical flow depth is 2'; concrete depth is 5' (diagram is not drawn to scale); concrete thickness is 1.5'

Fred Charles

From: Fawcett, Clayton <CFawcett@conteches.com>
Sent: Tuesday, February 5, 2019 9:25 AM
To: Fred Charles
Subject: RE: confirm or update costs for ACBs (reply requested by end of day Monday Feb 4, if possible)

Fred,

Hello and good morning. I hope this message finds you doing well. I made it back in to the office this morning and saw your e-mails.

Material and installation costs we discussed in September are still good. Please feel free to use those to complete your estimate.

Regarding your questions:

1. Yes, installation costs are the same for both downchutes and dissipator basins.
2. Yes, installation cost does include crushed stone infill (purchase and install)

Regarding your follow up e-mail with questions pertaining to cut-off walls.

1. Cut-off walls are not always required, however they are a good idea. The use of cut-off walls has increased in the last five years and as such, they are now recommended for inclusion at dissipator basins.
2. Material and installation costs for the installation of a cut-off wall are not included in the costs previously discussed and should be added.

I hope this information helps. Feel free to contact me directly with any additional questions.

Regards,

Clayton Fawcett PE (co)
Armortec Area Manager - West

CONTECH Engineered Solutions
970-290-2971 (cell)
cfawcett@conteches.com

From: Fred Charles [mailto:fcharles@telesto-inc.com]
Sent: Sunday, February 3, 2019 3:28 PM
To: Fawcett, Clayton <CFawcett@conteches.com>
Subject: confirm or update costs for ACBs (reply requested by end of day Monday Feb 4, if possible)

Hi Clayton. This email is a follow up to our email correspondence in September 2018 regarding material and installation costs for articulated concrete blocks (ACBs) used for downdrains at Chino. We've been using the cost info you passed along to me at that time. Now, I need you to confirm those costs or update them. We will use this information in a reclamation cost estimate (financial assurance for closure bonding) which we are currently finalizing for Chino and other mines in that area.

Costs

As we had discussed, the material costs for ACBs (includes non-woven geotextile and microgrid/geogrid) are as follows:

- $7.42/square foot (Block Class 40T, for the channel of each downdrain)

- $10.65/square foot (Block Class 70T, for the dissipation basin at bottom of each downdrain)

Also, you quoted $4.63/square foot for installation costs, which covers the following installation process: off-load the truck and place delivered ACBs in temporary storage area, fine grade base/subgrade soils, compact soils to 90% Standard Proctor (D698), place and secure filter fabric (non-woven geotextile), place 4-6" drainage layer overlaid by geogrid, place ACBs in final configuration, grout seams, and backfill ACBs with crushed stone.

2 questions
In addition to you confirming or updating the material and installation costs, I have two questions: (1) Is the installation cost ($4.63/square foot) the same for both channel downdrains and dissipation basins? (2) Does the installation or material cost include the crushed stone used to backfill the ACBs?

Please create a new email to me with updated unit costs or reply to this email to confirm what I show is still correct. I will present what you provide for documentation in the cost estimate we submit to the state agencies.

Thanks,

Fred Charles, Ph.D., P.E. Senior Engineer
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Truck and Scraper Optimization

Calculation Documentation

Problem Statement:
Freeport-McMoRan's (FMI's) Chino Mines Company utilizes truck optimization information to develop the most efficient proportions of equipment as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). Optimization needs to account for the time required and associated costs for truck loading and hauling operations.

Objectives:

1. Develop optimization calculations to determine the most efficient number of trucks (2 to 9 and a calculated maximum) per loader or shovel for loading cover material at borrow stockpiles.
2. Note that this calculation set presents the approach and calculations and results for optimizing equipment for earthwork. It is intended to serve as a guide/example even if the actual quantities and/or cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine.

Approach:

1. The data, calculations, and results for the optimization calculations are presented within the Tyrone earthwork RCE spreadsheet file in sheet (tab) named "18 Truck Optimization".
2. Truck optimization is calculated for each cover material source and destination based on
   - The truck cycle time for 1 roundtrip between a cover material source and destination and the maximum number of trucks per loader/shovel.
   - For X number of trucks (2 to 9 and a calculated maximum), the productivity, task time, cost of using X trucks per loader, the optimum number of trucks per loader/shovel, and the maximum number of trucks per loader/shovel.

Calculations and Results:

1. The truck optimization calculations are set up as shown in Table 1, which is a snapshot of a row of data/calculations in the "18 Truck Optimization" sheet. Table 1 is shown in 6 parts due to the many columns in the spreadsheet. Key calculation steps are listed after Table 1, with referencing to the Column identifier in Table 1 (and the spreadsheet).

Table 1

	E	F	G	H	I	J	K	L
13								
14	ID	Task Description	Source Location 1	Destination Location 2	Equipment	Work Hour (min/hr)	Loader/Shovel Cycles per Truck	Loader/Shovel Cycle Time (min)
299	1200-D-b-Tk4	Haul-Cover	Upper South	West Stockpile	Komatsu 730E	50	5	0.45

	M	N	O	P	Q	R	S	T	U
13									
14	Loader/Shovel Time Per Truck (min)	Truck Cycle Time Per Truck (min)	Trucks Per Loader/ Shovel	Loader/ Shovel Type	Loader/ Shovel Cost ($/hr)	Loader Net Bucket Capacity (cy)	Haul Volume (cy)	Max Trucks Round Up	Max Trucks Round Down
299	2.25	22.7	10.1	Sh1	$ 535.68	27.4	3,031,924	3,317	3,016

	V	W	X	Y	Z	AA	AB	AC
13	Productivity for X Trucks (cy/hr)							
14	9	8	7	6	5	4	3	2
299	2,714	2,412	2,111	1,809	1,508	1,206	905	603

	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
13	Task Time for X Trucks (hr)									
14	Max Trucks Round Up	Max Trucks Round Down	9	8	7	6	5	4	3	2
299	914.0	1,005.4	1,117.2	1,256.8	1,436.4	1,675.7	2,010.9	2,513.6	3,351.5	5,027.2

	AN	AO	AP	AQ	AR	AS	AT	AU
13			Cost of Using X Trucks per Loader ($					
14	Loader/ Shovel Task Time (hr)	Truck Cost ($/hr)	Max Trucks Round Up	Max Trucks Round Down	9	8	7	6
299	995.9	$ 246.06	$ 3,229,021	$ 3,012,613	$ 3,072,458	$ 3,147,264	$ 3,243,442	$ 3,371,681

	AV	AW	AX	AY	AZ	BA	BB
13	$)						
14	5	4	3	2	Lowest Cost ($)	Optimum Number of Trucks Per Loader/ Shovel	Optimum Number of Trucks Per Loader/ Shovel Within Max
299	$ 3,551,215	$ 3,820,515	$ 4,269,350	$ 5,167,019	$ 3,012,613	10	10

For example use only. Values may not match the current spreadsheet.

Calculations and Results:

1. Truck optimization (continued)

- Calculate the number of loader/shovel (or referred to as loader) cycles to load a truck and the loading time required per truck (Columns K, L, and M) – this calculation uses data from the "9 Trucks" and "10 Shovel" sheets.

Loader Time Per Truck (Col. M) =
[Loader Cycles per Truck (Col. K)] x [Loader Cycle Time, min (Col. L)]
= (5 cycles/truck) x (0.45 min/cycle) = 2.25 min/truck

- Using the truck cycle time for 1 roundtrip between a cover material source and destination (data from the "9 Trucks" sheet), calculate the maximum number of trucks per loader/shovel.

Max Number Trucks Per Loader (Col. O) = [Truck Cycle Time, min (Col. N)]/[Loader Time, min/truck (Col. M)]
= (22.7 min)/(2.25 loader min/truck) = 10.1 trucks/loader

- Calculate the productivity (cy/hr) for X number of trucks (2 to 9 and a calculated maximum).

For X=6 trucks, Productivity, cy/hr (Col. Y) =
(X) x Work Hour, min/hr (Col. J) x Loader Cycles/Truck (Col. K) x [Loader Net Bucket Capacity, cy (Col. R)]/[Truck Cycle Time Per Truck, min (Col. N)]
= [6 x (50 min/hr) x (5 loader cycles/truck) x (27.4 cy/loader cycle)]/(22.7 min/truck cycle) = 1,809 cy/hr

- Using the productivity and total volume of cover material to be hauled, calculate the task time for X trucks (2 to 9).

For X=6 trucks, Task Time, hr (Col. AI) =
[Haul Volume, cy (Col. S)]/[Productivity, cy/hr (Col. Y)]
= (3,031,924 cy)/(1,809 cy/hr) = 1,676 hr

Calculations and Results (continued):

1. Truck optimization (continued):

- Calculate the cost of using X trucks per loader (2 to 9 and a calculated maximum) using data for loader/shovel task time in "9 Trucks" (for each cover material source and destination), loader/shovel cost ($/hr), truck cost ($/hr), and task time for the number of trucks.

For X=6 trucks, Cost of Using X Trucks per Loader, $ (Col. AU) =
[Max of Task Time for Trucks (Col AI) or Loader/Shovel Task Time (Col. AN)] x
{(Loader Cost, $/hr (Col. Q) + [(X) x (Truck Cost, $/hr (Col. AO)]}
= (1,675.7 hr) x {($535.68/hr + [6 x $246.06/hr]} = $3,371,681

- The optimum number of trucks per loader is the lowest cost number of trucks per loader/shovel. This optimum number is compared with the maximum number of trucks per loader/shovel, to ensure the optimum number is within the maximum.

For this row of data, the optimum number of trucks per loader = 10, which is the same within the max.

Revegetation
Unit Cost

Calculation Documentation

Problem Statement:

Freeport-McMoRan (FMI) utilizes revegetation unit cost information as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). The unit cost for revegetation needs to account for equipment rental rates and associated maintenance, fuel costs, and labor rates.

Objectives:

1. Develop a revegetation unit cost ($/acre) for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM.
2. Note that this calculation set presents the approach, data and assumptions, and calculations and results for developing the unit cost. It is intended to serve as a guide/example even if the actual quantities and/or cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine.

Approach:

1. The data, assumptions, calculations, and results for the revegetation unit cost estimate are presented within the Tyrone earthwork RCE spreadsheet file.
2. The approach for the calculations is as follows:
   - Identify equipment types for scarifying, discing, drill seeding, mulching, crimping.
   - Obtain equipment information from EquipmentWatch (EQW) and RS Means, labor rates from NMDOL; revegetation material costs (seed, mulch) from FMI and/or their supplier; and the current fuel price from fuel cost calculations.
   - Determine the equipment traveling distance and time to cover 1 acre.
   - For each of the key operations, estimate the operating cost ($/hour).
   - Combine all operations and material costs, calculate the total unit cost.

Data and Assumptions:

1. Rental and operating cost information is accessed online from EQW for tractor (Deere 7340), ripper, and mulcher, and from RS Means for disc harrow (see Attachment A). Monthly rental rates are converted to hourly rates assuming 176 hours/month.
2. Equipment information is not available in EQW nor RS Means for drill seeding and crimping. Therefore, the drill seeder cost is assumed to be an average of the mulcher and disc (complexity is between the two, thus an average is assumed), and the crimper rental cost is assumed to be equal to the disc harrow (similar type of equipment).
3. Costs are included in the ripper and disc harrow (and drill seeder and crimper) to account for the ground engaging component (GEC) of these implements. The GEC cost for the ripper is applied to each of these other implements.
4. Local fuel price is developed from fuel cost calculations also prepared for earthwork closure cost estimates – the estimated 2019 fuel price is $2.34/gallon.
5. Revegetation material costs are from a quote by Rocky Mountain Reclamation, based on typical sources for seed and mulch (see Attachment A). The cost for seed is $210/acre and for mulch is $245/ton which, at 2 tons/acre, is $490/acre.

For example use only. Values may not match the current spreadsheet.

Data and Assumptions (continued):

6. Labor rates are from NMDOL (see Attachment A).
7. Equipment typical net coverage (width) is set at 12 feet, and equipment travel speed is set at 3 miles/hour (mph) for a 60-minute hour.

Calculations and Results:

1. The Deere 7340 tractor data, along with labor and fuel costs, are tabulated in the following table:

	B	C	D	E
5	**Tractor used for each operation is Deere 7430**	**Cost**	**Unit**	**Information or Calculation**
6	EQW base rate for tractor rental	$ 5,210.05	$ per month	EQW for Deere 7430
7	EQW base rate for tractor rental	$ 29.60	$ per hour	= ($/month)/176
8	EQW field labor rate per hour of operation	$ 2.53	$ per hour	EQW for Deere 7430, which includes mechanic's wage of $23.09 (NMDOL, 2019)
9	EQW lube material cost	$ 2.84	$ per hour	EQW for Deere 7430
10	EQW field parts cost	$ 0.61	$ per hour	EQW for Deere 7430
11	EQW tire material cost	$ 2.42	$ per hour	EQW for Deere 7430
12	EQW fuel burn rate	5.98	gallons per hour	EQW for Deere 7430
13	Local fuel cost	$ 2.34	$ per gallon	Local quote
14	Fuel cost	$ 13.99	$ per hour	= (EQW fuel burn rate) x (local fuel cost)
15	NM Department of labor equipment operator rate	$ 24.27	$ per hour	NM Department of Labor (NMDOL)
16	**Total tractor cost**	**$ 76.27**	**$ per hour**	**Sum of $ per hour costs shown in boxes**

Data in Rows 6 and 8-12 are from EQW, data in Row 8 also incorporates an NMDOL labor rate in the EQW cost, Row 13 is the estimated local fuel cost of $2.34/gallon, and Row 15 shows an NMDOL labor rate. Costs in other rows (7, 14, and 16) are calculated as follows:

$$EQW\ base\ rate\ for\ tractor\ rental = (\$5{,}210.05/\text{month})/(176\ \text{hours/month}) = \$29.60/\text{hour}$$

$$Fuel\ cost = (\text{EQW burn rate}) \times (\text{local fuel cost}) = (5.98\ \text{gallons/hour}) \times (\$2.34/\text{gallon}) = \$13.99/\text{hour}$$

$$Total\ tractor\ cost = \text{sum of rows } 7, 8, 9, 10, 11, 14, 15 =$$
$$29.60 + 2.53 + 2.84 + 0.61 + 2.42 + 13.99 + 24.27 = \$76.27/\text{hour}$$

2. Based on an equipment typical net width of 12 feet, and equipment net travel speed of 2.5 mph (3 mph x 50/60 to adjust for a 50-minute hour), each operation will travel a distance of 3,630 feet to cover 1 acre, and will require 0.275 hour to travel this distance (see calc steps in the table below). The resulting fuel cost is $3.85/acre.

	B	C	D	E
18	**Tractor coverage/rate of operation, fuel cost per acre**			
19	Tractor/equipment net width	12	feet	Assigned as a typical net width of coverage for each pass
20	Tractor/equipment travel speed	2.5	miles per hour	Assigned as approximate average speed of equipment (3 mph for 50 min/hr)
21	For 1 acre, total traveling distance	3630	feet per acre	= (43560 sf/ac)/(net width)
22	Time of travel over 1 acre	0.275	hour per acre	= [(traveling distance feet/acre)/(5280 ft/mile)]/(travel speed)
23	**Fuel cost per acre**	**$ 3.85**	**$ per acre**	**Already included in total tractor cost... Fuel cost/acre = (fuel cost/hour) x (travel time hour/acre)**

For example use only. Values may not match the current spreadsheet.

Calculations and Results (continued):

3. Operating costs for each of the 5 revegetation operations are calculated as shown in the following table. Calculation equations are also noted in the table. Note the total cost for each operation includes fuel.

	B	C	D	E
25	**Operation**			
26	*Scarifying*			
27	Base rate for ripper rental	$ 898.90	per month	EQW Ripper, Miscellaneous MSR-189H, to 260 HP
28	Base rate for ripper rental	$ 5.11	$ per hour	= ($/month)/176
29	Lube labor rate per hour of operation	$ 0.57	$ per hour	EQW for ripper, incl mechanic's wage $23.09 (NMDOL, 2019)
30	Lube material cost	$ 0.15	$ per hour	EQW for ripper
31	Field parts cost	$ 0.16	$ per hour	EQW for ripper
32	Ground Engaging Component cost	$ 0.78	$ per hour	EQW for ripper
33	**Total cost with tractor+operator included**	**$ 83.03**	**per hour**	
35	*Discing*			
36	Disc harrow attachment, for tractor	$ 616.33	per month	RS Means 01 54 33 20 1500
37	Disc harrow attachment, for tractor	$ 3.50	per hour	= ($/month)/176
38	Ground Engaging Component (GEC) cost	$ 0.78	$ per hour	Assume similar to GEC cost for ripper (EQW)
39	**Total cost with tractor+operator included**	**$ 80.55**	**per hour**	
41	*Drill seeding (assume similar to discing)*			
42	Disc harrow attachment, for tractor	$ 616.33	per month	RS Means 01 54 33 20 1500
43	Disc harrow attachment, for tractor	$ 3.50	per hour	= ($/month)/176
44	Ground Engaging Component cost	$ 0.78	$ per hour	Assume similar to GEC cost for ripper (EQW)
45	**Total cost with tractor+operator included**	**$ 80.55**	**per hour**	
47	*Mulching*			
48	Mulcher, diesel powered, trailer mounted	$ 2,167.95	per month	EQW for trailer mounted mulcher (Finn B260)
49	Mulcher, diesel powered, trailer mounted	$ 12.32	per hour	= ($/month)/176
50	Lube labor rate per hour of operation	$ 1.25	$ per hour	EQW for trailer mounted mulcher (Finn B260), incl mechanic's wage $23.09 (NMDOL, 2019)
51	Lube material cost	$ 1.60	$ per hour	EQW for trailer mounted mulcher (Finn B260)
52	Field parts cost	$ 0.15	$ per hour	EQW for trailer mounted mulcher (Finn B260)
53	Tire material cost	$ 0.60	$ per hour	EQW for trailer mounted mulcher (Finn B260)
54	Fuel burn rate	4.13	gallons per hour	EQW for trailer mounted mulcher (Finn B260)
55	Local fuel cost	$ 2.34	$ per gallon	Local quote
56	Fuel cost	$ 9.66	$ per hour	= (EQW fuel burn rate) x (local fuel cost)
57	NM Department of labor equipment operator rate	$ 24.27	$ per hour	NM Department of Labor (NMDOL)
58	**Total cost with tractor+operator included**	**$ 126.12**	**per hour**	
60	*Crimping (assume similar to discing)*			
61	Disc harrow attachment, for tractor	$ 616.33	per month	RS Means 01 54 33 20 1500
62	Disc harrow attachment, for tractor	$ 3.50	per hour	= ($/month)/176
63	Ground Engaging Component cost	$ 0.78	$ per hour	Assume similar to GEC cost for ripper (EQW)
64	**Total cost with tractor+operator included**	**$ 80.55**	**per hour**	
66	*Summary for operations*			

Calculations and Results (continued):

5. The hourly operating cost for each operation (includes fuel) is summed for a total cost of $450.79/hour. The cost for each operations is as follows:

   - Scarifying = $83.03/hour
   - Discing = $80.55/hour
   - Drill seeding = $80.55/hour
   - Mulching = $126.12/hour
   - Crimping = $80.55/hour

6. The total combined equipment operating cost with fuel ($/acre) is then calculated based on the operating cost per hour and the time of travel over 1 acre, as follows:

$$Total\ combined\ operating\ cost = \left(\frac{\$450.79}{hour}\right) x \left(0.275 \frac{hour}{acre}\right) = \$123.97/acre$$

7. Seed and mulch costs are added to the total combined operating cost ($/acre) to calculate the total revegetation unit cost as follows:

   - Total combined operating cost = $123.97/acre
   - Seed = $210/acre
   - Mulch = $490/acre

$Total\ revegetation\ unit\ cost$ = Total combined operating cost + Seed + Mulch = $123.97/acre + $210/acre + $490/acre = $823.97/acre ($824/acre)

Summary and Conclusions:

1. A revegetation unit cost was developed for use in estimating earthwork closure costs at FMI's mining operations in Grant County, NM. Note that the estimated unit cost developed in this analysis applies only to FMI operations in the Silver City (Grant County), NM area.
2. The total revegetation unit cost is $824/acre.

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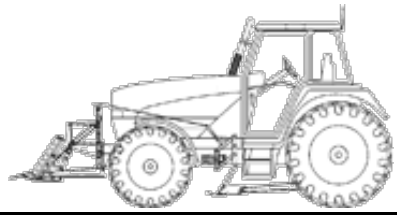
All prices shown in US$

Adjustments for MANDYLILLA27 in All Saved Models

January 17, 2019

Deere 7430 (disc. 2011)
Wheel Tractors

Size Class:
125 to 174 hp
Weight:
N/A



Configuration for 7430 (disc. 2011)

Power Mode **Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	$12.48/hr	$11.70/hr	-6.3%
Cost of Facilities Capital (CFC)	$3.12/hr	$2.43/hr	-22.1%
Overhead	$4.42/hr	$3.35/hr	-24.2%
Overhaul Labor	$6.46/hr	$1.92/hr	-70.3%
Overhaul Parts	$5.55/hr	$4.20/hr	-24.3%
Total Hourly Ownership Cost:	**$32.03/hr**	**$23.60/hr**	**-26.3%**

User Defined Adjustments: Annual Use Hours (1,030hrs -> 1,359hrs) Sales Tax (5.1% -> 0%)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	$8.51/hr	$2.53/hr	-70.3%
Field Parts	$4.86/hr	$0.61/hr	-87.4%
Ground Engaging Component (GEC)	$0.00/hr	-	-
Tire	$2.42/hr	-	-
Electrical/Fuel	$19.54/hr	$5.98/hr	-69.4%
Lube	$2.84/hr	-	-
Total Operating Ownership Cost:	**$38.17/hr**	**$14.38/hr**	**-62.3%**

User Defined Adjustments: Annual Field Repair Parts Cost ($4,174.20 -> $0.20) Diesel Cost (3.27 -> 1) Mechanics Wage ($58.84 -> $23.09)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	$32.03/hr	$23.60/hr	-26.3%
Hourly Operating Costs	$38.17/hr	$14.38/hr	-62.3%
Total Hourly Cost	**$70.20**	**$37.98/hr**	**-45.9%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	$20.02/hr	$17.48/hr	-12.7%
Idle	$51.57/hr	$29.58/hr	-42.6%

Revised Date: 1st Half 2019

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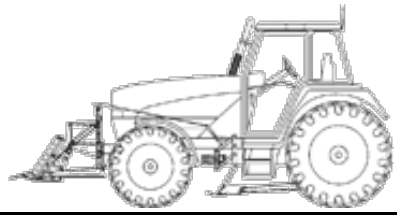
All prices shown in US$

Adjustments for MANDYLILLA27 in All Saved Models

January 17, 2019

Deere 7430 (disc. 2011)
Wheel Tractors

Size Class:
125 to 174 hp
Weight:
N/A



Configuration for 7430 (disc. 2011)

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	$3,891.00	$1,303.00	$463.00
Adjustments			
Region (New Mexico: 134%)	$1,319.05	$441.72	$156.96
User Defined			
Rental Rates (100%)	-	-	-
Total:	**$5,210.05**	**$1,744.72**	**$619.96**

Date Last Updated: Oct 01, 2018

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All prices shown in US$

Custom Cost Evaluator

February 21, 2019

Miscellaneous MSR-189H
Crawler Tractor Multi-Shank Rippers

Size Class:
To 260 HP
Weight:
3,557 lbs.

Configuration for MSR-189H

Engine Horsepower	**130 - 189**	Number of Shanks	**3**
Ripper Type	**Parallelogram**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	$2.64/hr	$2.50/hr	-5.3%
Cost of Facilities Capital (CFC)	$0.38/hr	$0.31/hr	-18.4%
Overhead	$0.66/hr	$0.52/hr	-21.2%
Overhaul Labor	$1.10/hr	$0.34/hr	-69.1%
Overhaul Parts	$0.95/hr	$0.75/hr	-21.1%
Total Hourly Ownership Cost:	**$5.73/hr**	**$4.42/hr**	**-22.9%**

User Defined Adjustments: Annual Use Hours (1,285hrs -> 1,629hrs) Sales Tax (5.1% -> 0%)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	$1.83/hr	$0.57/hr	-68.9%
Field Parts	$1.18/hr	$0.16/hr	-86.4%
Ground Engaging Component (GEC)	$0.99/hr	$0.78/hr	-21.2%
Tire	$0.00/hr	-	-
Electrical/Fuel	$0.00/hr	-	-
Lube	$0.15/hr	-	-
Total Operating Ownership Cost:	**$4.15/hr**	**$1.66/hr**	**-60%**

User Defined Adjustments: Annual Field Repair Parts Cost ($1,268.18 -> $0.18) Mechanics Wage ($58.84 -> $23.09)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	$5.73/hr	$4.42/hr	-22.9%
Hourly Operating Costs	$4.15/hr	$1.66/hr	-60%
Total Hourly Cost	**$9.88**	**$6.08/hr**	**-38.5%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	$3.68/hr	$3.33/hr	-9.5%
Idle	$5.73/hr	$4.42/hr	-22.9%

Revised Date: 1st Half 2019

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EquipmentWatch™

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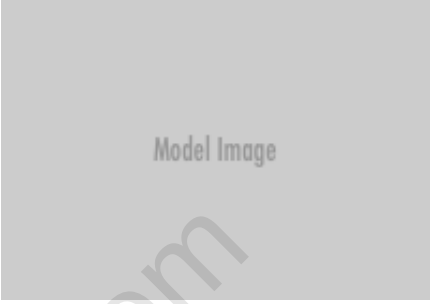
All prices shown in US$

Rental Rate Blue Book®

February 21, 2019

Miscellaneous MSR-189H
Crawler Tractor Multi-Shank Rippers

Size Class:
To 260 HP
Weight:
3,557 lbs.



Configuration for MSR-189H

Engine Horsepower	**130 - 189**	Number of Shanks	**3**
Ripper Type	**Parallelogram**		

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	**Weekly**	**Daily**	**Hourly**	**Hourly**	**Hourly**
Published Rates	$1,010.00	$285.00	$71.00	$11.00	$4.15	$9.89
Adjustments						
Region (Las Cruces, New Mexico: 89%)	($111.10)	($31.35)	($7.81)	($1.21)		
Model Year (2019: 100%)	-	-	-	-		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	**$898.90**	**$253.65**	**$63.19**	**$9.79**	**$4.15**	**$9.26**

Non-Active Use Rates

	Hourly
Standby Rate	$3.52
Idling Rate	$5.11

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	50%	$505.00/mo
Overhaul (ownership)	31%	$313.10/mo
CFC (ownership)	7%	$70.70/mo
Indirect (ownership)	12%	$121.20/mo

Fuel cost data is not available for these rates.

Revised Date: 1st Half 2019

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book Print. Visit the Cost Recovery Product Guide on our Help page for more information.

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EquipmentWatch

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All prices shown in US$

Custom Cost Evaluator

February 21, 2019

Finn B260
Trailer Mounted Mulchers

Size Class:
51 HP & Over
Weight:
4,880 lbs.

Configuration for B260

Power Mode **Diesel** Horsepower **115**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	$5.80/hr	$5.45/hr	-6%
Cost of Facilities Capital (CFC)	$0.88/hr	$0.69/hr	-21.6%
Overhead	$1.18/hr	$0.90/hr	-23.7%
Overhaul Labor	$3.36/hr	$1.00/hr	-70.2%
Overhaul Parts	$2.54/hr	$1.92/hr	-24.4%
Total Hourly Ownership Cost:	**$13.76/hr**	**$9.96/hr**	**-27.6%**

User Defined Adjustments: Annual Use Hours (1,050hrs -> 1,388hrs) Sales Tax (5.1% -> 0%)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	$4.20/hr	$1.25/hr	-70.2%
Field Parts	$1.47/hr	$0.15/hr	-89.8%
Ground Engaging Component (GEC)	$0.00/hr	-	-
Tire	$0.60/hr	-	-
Electrical/Fuel	$13.50/hr	$4.13/hr	-69.4%
Lube	$1.60/hr	-	-
Total Operating Ownership Cost:	**$21.37/hr**	**$7.73/hr**	**-63.8%**

User Defined Adjustments: Annual Field Repair Parts Cost ($1,342.66 -> $0.66) Diesel Cost (3.27 -> 1) Mechanics Wage ($58.84 -> $23.09)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	$13.76/hr	$9.96/hr	-27.6%
Hourly Operating Costs	$21.37/hr	$7.73/hr	-63.8%
Total Hourly Cost	**$35.13**	**$17.69/hr**	**-49.6%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	$7.86/hr	$7.04/hr	-10.4%
Idle	$27.26/hr	$14.09/hr	-48.3%

Revised Date: 1st Half 2019

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EquipmentWatch™

www.equipmentwatch.com

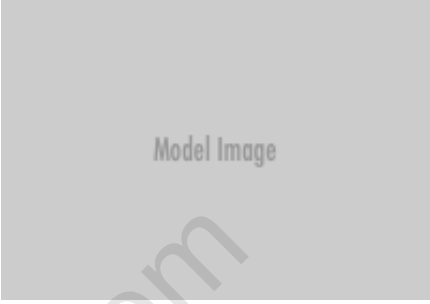
All prices shown in US$

Rental Rate Blue Book®

February 21, 2019

Finn B260
Trailer Mounted Mulchers

Size Class:
51 HP & Over
Weight:
4,880 lbs.



Configuration for B260

Power Mode	**Diesel**	Horsepower	**115**

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	**Weekly**	**Daily**	**Hourly**	**Hourly**	**Hourly**
Published Rates	$2,425.00	$680.00	$170.00	$26.00	$21.35	$35.13
Adjustments						
Region (Las Cruces, New Mexico: 89.4%)	($257.05)	($72.08)	($18.02)	($2.76)		
Model Year (2019: 100%)	-	-	-	-		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	**$2,167.95**	**$607.92**	**$151.98**	**$23.24**	**$21.35**	**$33.67**

Non-Active Use Rates

	Hourly
Standby Rate	$6.16
Idling Rate	$25.82

Rate Element Allocation

Element	**Percentage**	**Value**
Depreciation (ownership)	37%	$897.25/mo
Overhaul (ownership)	50%	$1,212.50/mo
CFC (ownership)	6%	$145.50/mo
Indirect (ownership)	7%	$169.75/mo
Fuel (operating) @ 3.27	63%	$13.50/hr

Revised Date: 1st Half 2019

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book Print. Visit the Cost Recovery Product Guide on our Help page for more information.

The equipment represented in this report has been exclusively prepared for MANDY LILLA (mlilla@fmi.com)

RS Means Online Data
Accessed February 13, 2019

Revegetation

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
015433201500	Rent disc harrow attchment for tractor, Excl. Hourly Oper. Cost.	Month	$ -	$ -	$ 616.33	$ 616.33	Year 2019	NEW MEXICO / LAS CRUCES (880)

Labor Rates

NMDOL Type A Operator Group	Base rate	Fringe rate	Apprenticeship		Total 2019 Rate ($/hr)
Equipment Operator IV	20.87	5.94	0.6	$	27.41
Equipment Operator V	20.98	5.94	0.6	$	27.52
Equipment Operator VI	21.16	5.94	0.6	$	27.70
Laborer I	16.86	5.63	0.6	$	23.09
Laborer II	17.61	5.63	0.6	$	23.84
Truck Driver III	16.15	7.52	0.60	$	24.27

Labor rates based on NM Department of Labor Type H (Heavy Engineering) 2019 labor rates. Rates include base hourly wage, fringe benefit, and apprenticeship contribution rates.

https://www.dws.state.nm.us/Portals/0/DM/LaborRelations/Prevailing_Wage_Poster_H_2019_final.pdf

Revegetation/Reclamation
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ron@reveg.us
www.reveg.us
P.O. Box 1695
Laramie, WY 82073

FREEPORT MCMORAN – NEW MEXICO MINING OPERATIONS

PRICE ESTIMATES FOR REVEGETATION SERVICES FOR BUDGETING ESTIMATES

Table 1 –Freeport McMoRan, New Mexico Mining Operations – Price Estimates for Revegetation Services for Budgeting Estimates, prepared April, 2018.

	REVEGETATION OPERATION	ESTIMATED QUANTITY	UNITS	COST/UNIT ($)	TOTAL COST
I.	**OPERATIONS:**				
1	**SCARIFYING**	500	Acres	$30.00	$15,000.00
2	**DISCING**	500	Acres	$20.00	$10,000.00
3	**DRILL SEEDING (special Rangeland Drill)**	500	Acres	$80.00	$40,000.00
4	**MULCHING**	500	Acres	$148.00	$74,000.00
5	**CRIMPING**	500	Acres	$55.00	$27,500.00
6	**DAILY PER DIEM, ETC.**	50	Days	$385.00	$19,250.00
7	**MOBILIZATION**	1	Each	$13,500.00	$13,500.00
	Subtotal				**$199,250.00**
II.	**MATERIALS:**				
1	**SEED** at 8.9 PLS/acre	500	Acres	$210.00	$105,000.00
2	**HAY MULCH** - nox. weed free, native	1000	Tons	$245.00	$245,000.00
	Subtotal				**$350,000.00**
	TOTAL ESTIMATED REVEGETATION COST BEFORE TAX				**$549,250.00**
	Add New Mexico Gross Receipts Tax	5.9375	%		**$32,611.72**
	ESTIMATED REVEGETATION COST PER ACRE:			**$1,163.72**	
	TOTAL ESTIMATED REVEGETATION COST				**$581,861.72**

Estimate prepared by Ron Schreibeis, Rocky Mountain Reclamation, for use for Budgeting Estimates.

O&M Costs

Calculation Documentation

Problem Statement:
Freeport-McMoRan (FMI) utilizes cost information for operations and maintenance (O&M) as part of earthwork closure cost estimation associated with the Emma Closure/Closeout Plan (CCP). The O&M costs need to account for vegetation maintenance costs for a 12-year period after completion of initial revegetation activities in each area, along with ongoing erosion control, road maintenance, and groundwater monitoring for a 100-year period.

This calculation set presents a summary of the approach and results for estimating O&M costs. Detailed information is presented in the earthwork reclamation cost estimate (RCE) spreadsheet file.

This calculation set is intended to serve as a guide/example even if the assumptions or actual cost data used in these calculations change due to updates or application to a different Freeport NM Operations mine.

Objective:

1. Develop the estimated O&M costs for vegetation maintenance for a 12-year period after completion of initial revegetation activities in each area, along with ongoing erosion control, road maintenance, and groundwater monitoring activities for a 100-year period. Also, develop tailing cover maintenance costs for previously reclaimed areas for the first 7 years of closure reclamation. The O&M costs are used as part of the earthwork RCE for FMI's mining operations in Grant County, NM.

Approach:

1. The data, assumptions, calculations, and results for the O&M cost estimate are presented within the Tyrone earthwork RCE spreadsheet file. Also, a summary of results is presented in the spreadsheet file.
2. The approach for estimating vegetation maintenance O&M costs is as follows:
   - For each facility (stockpile, tailing pond, reservoirs, etc), the total area is listed, along with approximate year of reclamation start, vegetation maintenance start, and vegetation maintenance complete. A 2% loss per year (i.e., 2% of vegetation fails each year) for 12 years is assumed to estimate the acreage requiring vegetation maintenance for each year.
   - Revegetation unit costs (equipment and fuel) are applied to the loss of acreage for each year to calculate the vegetation maintenance cost for each facility.

Approach (continued):

3. The approach for estimating erosion control, road maintenance, tailings cover maintenance, and groundwater monitoring ("Other") O&M costs is as follows:
    - For erosion control and road maintenance
        - Determine base costs ($/day) for equipment and fuel base. Also, estimate the number of days/yr for erosion control and road maintenance for three periods: Years 0-19, 20-39, and 40-99.
        - Calculate the annual equipment and fuel costs, based on days/yr, for the same three periods.
    - For tailing cover maintenance
        - Use erosion control equipment with reduced truck requirement and, therefore, reduced base cost. Assume 10 days/yr for Years 0-6, after which tailing cover maintenance is not required.
    - For groundwater monitoring
        - Determine base costs ($/day) for equipment and aqueous chemistry (lab analytical), and days/yr for groundwater monitoring for three periods: Years 0-19, 20-39, and 40-99.
        - Calculate the annual equipment and annual aqueous chemistry costs, based on days/yr, for the same three periods.
    - For these "Other" O&M activities
        - While reclamation is ongoing, adjust the O&M costs accordingly based on the proportion of reclamation completed as of each year. The full annual cost applies when reclamation is complete.
        - For years after reclamation is complete, assign the O&M costs for each year based on the annual costs calculated for Years 0-19, 20-39, and 40-99.

Results:

1. The vegetation maintenance and "Other" O&M costs are summed for all years, as shown in the summary table below (some of the final results may vary from what is shown). These results are used in the overall earthwork RCE.
2. The indirect costs are set at 17.5% of direct costs, based on an agreement between FMI and the agencies in January 2019. Indirect costs include but are not limited to mobilization and demobilization, contingencies, engineering redesign fees, contractor profit and overhead, project management, administrative expenses, etc.

DRAFT Operations and Maintenance Summary			
			Current Value
DIRECT COSTS	Facility and Structure Removal		$0
	Earthmoving		$0
	Vegetation		$1,328,888
	Other		$6,202,825
	Subtotal, Direct Costs		**$7,531,713**
INDIRECT COSTS[1]	**Subtotal, Indirect Costs**	17.5%	**$1,318,050**
TOTAL COST			$8,849,763

For example use only. Values may not match the current spreadsheet.

Appendix C

Indirect Costs

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

7008 0500 0001 4875 1648

Certified Mail

January 16, 2019

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

Re: Approval of Cost Estimate Resolutions (Agreement) and Request for Schedule

Dear Ms. Burt-Kested,

The New Mexico Mining and Minerals Division of the Energy, Minerals and Natural Resources Department (MMD-EMNRD), and the Mining Environmental Compliance Section (MECS) of the New Mexico Environment Department (MECS-NMED) (collectively, the Agencies) received a letter with tabulated cost estimate resolutions (Agreement) dated January 11, 2019, from Freeport McMoRan New Mexico Operations (FMNO). As noted in your letter, the Financial Assurance (FA) work group included representatives of the Agencies, FMNO, and the Gila Resources Information Project (GRIP). Over the course of multiple meetings and teleconferences, the FA work group developed the Agreement in 2018. The Agencies hereby approve the Agreement for the formulation of cost estimates for closure/closeout plans at the Continental, Little Rock, Tyrone and Chino Mines.

Since the FA work group reached agreement, the Agencies concur this precludes the need for a third party review of cost estimates that had been conditionally required by condition 8.N.7 of MMD Permit No. GR002RE Revision 15-2, and C113.E of NMED Draft DP-1403. FMNO must submit an updated cost estimate by April 3, 2019, in order to fulfill Continental permit condition 8.N.6 of MMD Permit No. GR002RE Revision 15-2, which is similar to condition C113.D of NMED Draft DP-1403.

In your letter, FMNO proposed a timeline for the Continental, Chino, and Tyrone mines for the submittal of updated cost estimates. To ensure efficient use of limited resources, the Agencies request FMNO submit a more detailed schedule that provides greater specificity of when the cost estimates and any other major milestones will be completed. The schedule should provide

managers and permit leads a best estimate of key FMNO submittals. With FMNO cooperation, the Agencies anticipate completion of reviews and approvals of cost estimates and associated changes to FA instruments before the end of 2019.

The Agencies acknowledge the successful resolution of multiple cost estimate issues. We appreciate that the FA work group reached agreement through extra effort by FMNO, GRIP, and the Agencies. This Agreement reduces much of the uncertainty associated with FMNO cost estimation and the Agencies' review process. Going forward, the Agencies believe the Agreement ensures timely updates of closure/closeout cost estimates that maintain adequate FA to the mutual benefit of all parties.

If you have any questions, please do not hesitate to contact us or the respective permit leads at MMD and NMED for Continental, Tyrone, Little Rock, and Chino Mines.

Sincerely,

Holland Shepherd
Program Manager
Mining Act Reclamation Program
Mining and Minerals Division-EMNRD
505-476-3437

Kurt Vollbrecht
Program Manager
Mining Environmental Compliance Section
New Mexico Environment Department
505-827-0195

cc: Allyson Siwik, Executive Director, GRIP
MMD mine permit files GR002RE, GR007RE, GR009RE and GR010RE.
NMED discharge permit files DP-1236, 1340, DP-1341 and DP-1403.

Table 1 Summary of Cost Estimate Resolutions

Issue Item	Resolution
Equipment Unit Cost Source and Removal of Indirect Cost Items from EquipmentWatch Ownership Values	Equipment costs determined in the following order sourced from EquipmentWatch: • Unmodified EquipmentWatch Average Rental Rate for Southern New Mexico • Unmodified EquipmentWatch Average Rental Rate for New Mexico • Unmodified Blue Book Rental Rate • If equipment is not listed in EquipmentWatch, then another piece of equipment must be used • Minimum listed rates will not be used • EquipmentWatch Average Rental Rates will be used without adjustment for duplicative indirect cost components
Revegetation	Revegetation steps costed in similar manner to other earthworks
Demolition Costs	Freeport will add 20% for buildings with large equipment (e.g., mills, SX, crusher)
Direct "Commodity" Costs / Quotes	It is fine to use quotes, but the quotes must be for the specifications and scope/scale of Freeport's default scenario (e.g., fuel to complete all Freeport New Mexico mine closures over a series of years). The following are specific examples discussed. • FNMO will compile a database of vendor quotes as they are developed for submittal to the agencies • Quotes will be used directly with no consideration to vendor's profit/overhead or other indirect costing items • Quotes will be used directly with no adjustment for duplicated indirect components
Fuel	Use historical quotes and correlate to public data for future cost estimates
Seed	Freeport quotes, specs and scope
Lime	Freeport quotes, specs and scope
Mulch	Freeport quotes, specs and scope
Articulated Concrete Blocks	Freeport quotes, specs and scope
Well Plugging/replacement	Freeport quotes, specs and scope
Geomembranes (e.g., stormwater pond replacement)	Use RS Means published data
Power	Published rates for area, scope considered
State Labor Rates	Use prevailing wage as published by NMDOLA, which includes fringe benefits
Indirect Rates	Negotiated total values (includes: mobilization and demobilization, contingencies, engineering redesign fees, contractor profit and overhead, project management, administrative expenses, bonding, state procurement costs, construction management, insurance, QA/QC, etc.)
All capital cost items	30%
All Operations and Maintenance cost items	17.5%

Items in black are reformatted from workgroup spreadsheet sent 11/19/2019 and subsequent negotiations

Items in red are from subsequent communications and added for clarity

Appendix D
Supporting Data for Cost Estimation

Appendix D

Supporting Data for Cost Estimation Updated July 2024

Appendix D.1

2024 Labor Rates (NMDOL)

Labor Rates

NMDOL Type A Operator Group	Base rate	Fringe rate	Apprenticeship	Total 2024 Rate ($/hr)
Equipment Operator IV	25.49	6.79	0.6	$ 32.88
Equipment Operator V	25.6	6.79	0.6	$ 32.99
Equipment Operator VI	25.84	6.79	0.6	$ 33.23
Equipment Operator VII	25.86	6.79	0.6	$ 33.25
Equipment Operator VIII	28.56	6.79	0.6	$ 35.95
Laborer I	18.89	7.3	0.6	$ 26.79
Laborer II	18.95	7.3	0.6	$ 26.85
Truck Driver III	19.75	9.15	0.60	$ 29.50
Truck Driver V	19.75	9.15	0.60	$ 29.50
Truck Driver VIII	19.75	9.15	0.60	$ 29.50

Labor rates based on NM Department of Labor Type H (Heavy Engineering) 2024 labor rates. Rates include
https://www.dws.state.nm.us/Portals/0/DM/LaborRelations/Prevailing_Wage_Poster_H_2024.pdf

Appendix D.2

Equipment Watch Data

EquipmentWatch

www.equipmentwatch.com

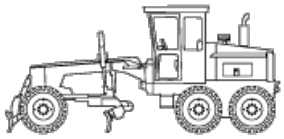
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 14M (disc. 2015)
Articulated Frame Graders

Size Class:
250 hp & Over
Weight:
46796 lbs



Configuration for 14M (disc. 2015)

Moldboard Size	**14.0 ft**	Horsepower	**259.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $34.51/hr	USD $32.28/hr	-6.5%
Cost of Facilities Capital (CFC)	USD $15.45/hr	USD $12.24/hr	-20.8%
Overhead	USD $18.57/hr	USD $14.48/hr	-22%
Overhaul Labor	USD $1.83/hr	USD $0.91/hr	-50.4%
Overhaul Parts	USD $25.44/hr	USD $19.83/hr	-22%
Total Hourly Ownership Cost:	**USD $95.80/hr**	**USD $79.73/hr**	**-16.8%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,200hrs -> 1,539hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $1.10/hr	USD $0.55/hr	-50.4%
Field Parts	USD $24.67/hr	USD $4.81/hr	-80.5%
Ground Engaging Component (GEC)	USD $2.06/hr	USD $0.00/hr	-100%
Tire	USD $9.63/hr	-	-
Electrical/Fuel	USD $30.32/hr	USD $8.29/hr	-72.7%
Lube	USD $6.74/hr	-	-
Total Operating Ownership Cost:	**USD $74.51/hr**	**USD $30.01/hr**	**-59.7%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $2,466.80 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $4,933.60 -> USD $0.00)Annual Field Repair Parts Cost (USD $24,668.00 -> USD $7,400.40)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $95.80/hr	USD $79.73/hr	-16.8%
Hourly Operating Costs	USD $74.51/hr	USD $30.01/hr	-59.7%
Total Hourly Cost	**USD $170.31**	**USD $109.74/hr**	**-35.6%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $68.53/hr	USD $58.99/hr	-13.9%
Idle	USD $126.12/hr	USD $88.02/hr	-30.2%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

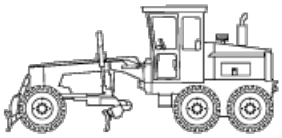
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 14M (disc. 2015)
Articulated Frame Graders

Size Class:
250 hp & Over
Weight:
46796 lbs



Configuration for 14M (disc. 2015)

Moldboard Size	**14.0 ft**	Horsepower	**259.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $15,293.00	USD $5,541.00	USD $1,960.00
Adjustments			
Region (New Mexico: 86.23%)	(USD $2,105.26)	(USD $762.78)	(USD $269.82)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $13,187.74**	**USD $4,778.22**	**USD $1,690.18**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

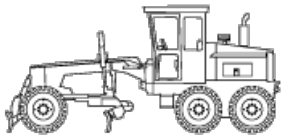
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 16M (disc. 2015)
Articulated Frame Graders

Size Class:
250 hp & Over
Weight:
59435 lbs



Configuration for 16M (disc. 2015)

Moldboard Size	**16.0 ft**	Horsepower	**297.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $53.57/hr	USD $50.10/hr	-6.5%
Cost of Facilities Capital (CFC)	USD $23.98/hr	USD $18.99/hr	-20.8%
Overhead	USD $17.44/hr	USD $13.60/hr	-22%
Overhaul Labor	USD $1.83/hr	USD $0.91/hr	-50.4%
Overhaul Parts	USD $39.48/hr	USD $30.78/hr	-22%
Total Hourly Ownership Cost:	**USD $136.30/hr**	**USD $114.38/hr**	**-16.1%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,200hrs -> 1,539hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $1.10/hr	USD $0.55/hr	-50.4%
Field Parts	USD $38.29/hr	USD $7.46/hr	-80.5%
Ground Engaging Component (GEC)	USD $3.19/hr	USD $0.00/hr	-100%
Tire	USD $14.94/hr	-	-
Electrical/Fuel	USD $34.77/hr	USD $9.50/hr	-72.7%
Lube	USD $9.23/hr	-	-
Total Operating Ownership Cost:	**USD $101.52/hr**	**USD $41.69/hr**	**-58.9%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $3,828.65 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $7,657.31 -> USD $0.00)Annual Field Repair Parts Cost (USD $38,286.53 -> USD $11,485.96)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $136.30/hr	USD $114.38/hr	-16.1%
Hourly Operating Costs	USD $101.52/hr	USD $41.69/hr	-58.9%
Total Hourly Cost	**USD $237.82**	**USD $156.07/hr**	**-34.4%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $94.99/hr	USD $82.69/hr	-13%
Idle	USD $171.06/hr	USD $123.88/hr	-27.6%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

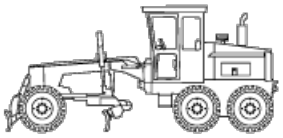
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 16M (disc. 2015)
Articulated Frame Graders

Size Class:
250 hp & Over
Weight:
59435 lbs



Configuration for 16M (disc. 2015)

Moldboard Size	**16.0 ft**	Horsepower	**297.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $15,293.00	USD $5,541.00	USD $1,960.00
Adjustments			
Region (New Mexico: 86.23%)	(USD $2,105.26)	(USD $762.78)	(USD $269.82)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $13,187.74**	**USD $4,778.22**	**USD $1,690.18**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

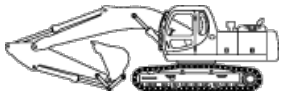
www.equipmentwatch.com

All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 319D L (disc. 2012)
Crawler Mounted Hydraulic Excavators



Size Class:
19.5 - 21.4 mt
Weight:
43872 lbs

Configuration for 319D L (disc. 2012)

Horsepower	**125.0 hp**	Operating Weight	**19.9 mt**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $14.81/hr	USD $13.86/hr	-6.4%
Cost of Facilities Capital (CFC)	USD $8.97/hr	USD $6.31/hr	-29.7%
Overhead	USD $6.28/hr	USD $4.33/hr	-31.1%
Overhaul Labor	USD $4.38/hr	USD $1.92/hr	-56.1%
Overhaul Parts	USD $18.01/hr	USD $12.41/hr	-31.1%
Total Hourly Ownership Cost:	**USD $52.45/hr**	**USD $38.83/hr**	**-26%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (743hrs -> 1,078hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.19/hr	USD $0.96/hr	-56.1%
Field Parts	USD $17.88/hr	USD $4.44/hr	-75.2%
Ground Engaging Component (GEC)	USD $2.86/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $8.69/hr	USD $2.38/hr	-72.7%
Lube	USD $2.55/hr	-	-
Total Operating Ownership Cost:	**USD $34.18/hr**	**USD $10.33/hr**	**-69.8%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $2,125.77 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $2,657.22 -> USD $0.00)Annual Field Repair Parts Cost (USD $10,628.86 -> USD $4,782.99)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $52.45/hr	USD $38.83/hr	-26%
Hourly Operating Costs	USD $34.18/hr	USD $10.33/hr	-69.8%
Total Hourly Cost	**USD $86.63**	**USD $49.16/hr**	**-43.3%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $30.06/hr	USD $24.50/hr	-18.5%
Idle	USD $61.14/hr	USD $41.21/hr	-32.6%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

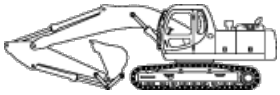
www.equipmentwatch.com

All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 319D L (disc. 2012)
Crawler Mounted Hydraulic Excavators



Size Class:
19.5 - 21.4 mt
Weight:
43872 lbs

Configuration for 319D L (disc. 2012)

Horsepower	**125.0 hp**	Operating Weight	**19.9 mt**
Power Mode	**Diesel**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $7,671.00	USD $2,954.00	USD $1,101.00
Adjustments			
Region (New Mexico: 101.13%)	USD $86.75	USD $33.40	USD $12.45
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $7,757.75**	**USD $2,987.40**	**USD $1,113.45**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

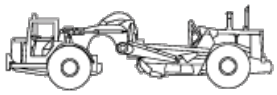
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 637G (disc. 2010)
Dual Engine Conventional Scrapers

Size Class:
18 cu yd & Over
Weight:
114744 lbs



Configuration for 637G (disc. 2010)

Horsepower	**500.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**	Scraper Capacity	**24.0 - 34.0 cu yd**
Scraper Horsepower	**283.0**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $75.03/hr	USD $70.60/hr	-5.9%
Cost of Facilities Capital (CFC)	USD $54.30/hr	USD $40.23/hr	-25.9%
Overhead	USD $34.67/hr	USD $25.34/hr	-26.9%
Overhaul Labor	USD $17.97/hr	USD $8.36/hr	-53.5%
Overhaul Parts	USD $143.90/hr	USD $105.18/hr	-26.9%
Total Hourly Ownership Cost:	**USD $325.87/hr**	**USD $249.72/hr**	**-23.4%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (796hrs -> 1,089hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $12.17/hr	USD $5.66/hr	-53.5%
Field Parts	USD $145.02/hr	USD $20.30/hr	-86%
Ground Engaging Component (GEC)	USD $6.17/hr	USD $0.00/hr	-100%
Tire	USD $12.80/hr	-	-
Electrical/Fuel	USD $145.62/hr	USD $39.81/hr	-72.7%
Lube	USD $26.54/hr	-	-
Total Operating Ownership Cost:	**USD $348.32/hr**	**USD $105.11/hr**	**-69.8%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $4,912.29 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $17,193.01 -> USD $0.00)Annual Field Repair Parts Cost (USD $98,245.77 -> USD $22,105.30)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $325.87/hr	USD $249.72/hr	-23.4%
Hourly Operating Costs	USD $348.32/hr	USD $105.11/hr	-69.8%
Total Hourly Cost	**USD $674.19**	**USD $354.83/hr**	**-47.4%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $164.00/hr	USD $136.18/hr	-17%
Idle	USD $471.49/hr	USD $289.53/hr	-38.6%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch™

www.equipmentwatch.com

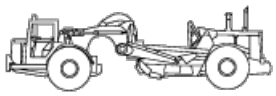
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 637G (disc. 2010)
Dual Engine Conventional Scrapers

Size Class:
18 cu yd & Over
Weight:
114744 lbs



Configuration for 637G (disc. 2010)

Horsepower	**500.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**	Scraper Capacity	**24.0 - 34.0 cu yd**
Scraper Horsepower	**283.0**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $23,658.00	USD $7,283.00	USD $2,825.00
Adjustments			
Region (: 100%)	-	-	-
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $23,658.00**	**USD $7,283.00**	**USD $2,825.00**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

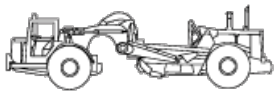
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 657G
Dual Engine Conventional Scrapers

Size Class:
18 cu yd & Over
Weight:
149417 lbs



Configuration for 657G

Horsepower	**564.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**	Scraper Capacity	**32.0 - 44.0 cu yd**
Scraper Horsepower	**410.0**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $125.42/hr	USD $118.11/hr	-5.8%
Cost of Facilities Capital (CFC)	USD $89.63/hr	USD $66.41/hr	-25.9%
Overhead	USD $159.34/hr	USD $116.47/hr	-26.9%
Overhaul Labor	USD $17.97/hr	USD $8.36/hr	-53.5%
Overhaul Parts	USD $154.96/hr	USD $113.27/hr	-26.9%
Total Hourly Ownership Cost:	**USD $547.33/hr**	**USD $422.62/hr**	**-22.8%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (796hrs -> 1,089hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $12.17/hr	USD $5.66/hr	-53.5%
Field Parts	USD $156.17/hr	USD $21.86/hr	-86%
Ground Engaging Component (GEC)	USD $6.65/hr	USD $0.00/hr	-100%
Tire	USD $13.78/hr	-	-
Electrical/Fuel	USD $176.88/hr	USD $48.35/hr	-72.7%
Lube	USD $37.46/hr	-	-
Total Operating Ownership Cost:	**USD $403.11/hr**	**USD $127.12/hr**	**-68.5%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $5,289.96 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $18,514.88 -> USD $0.00)Annual Field Repair Parts Cost (USD $105,799.29 -> USD $23,804.84)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $547.33/hr	USD $422.62/hr	-22.8%
Hourly Operating Costs	USD $403.11/hr	USD $127.12/hr	-68.5%
Total Hourly Cost	**USD $950.44**	**USD $549.74/hr**	**-42.2%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $374.40/hr	USD $301.00/hr	-19.6%
Idle	USD $724.21/hr	USD $470.98/hr	-35%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch™

www.equipmentwatch.com

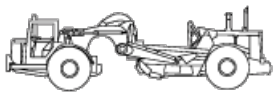
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 657G
Dual Engine Conventional Scrapers

Size Class:
18 cu yd & Over
Weight:
149417 lbs



Configuration for 657G

Horsepower	**564.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**	Scraper Capacity	**32.0 - 44.0 cu yd**
Scraper Horsepower	**410.0**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $23,658.00	USD $7,283.00	USD $2,825.00
Adjustments			
Region (New Mexico: 98.83%)	(USD $276.21)	(USD $85.03)	(USD $32.98)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $23,381.79**	**USD $7,197.97**	**USD $2,792.02**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 725 (disc. 2014)
Articulated Rear Dumps

Size Class:
19.5 - 25.4 mt
Weight:
49075 lbs

Configuration for 725 (disc. 2014)

Axle Configuration	**6 X 6**	Horsepower	**301.0 hp**
Power Mode	**Diesel**	Rated Payload	**23.6 mt**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $35.73/hr	USD $33.52/hr	-6.2%
Cost of Facilities Capital (CFC)	USD $15.66/hr	USD $12.00/hr	-23.4%
Overhead	USD $15.13/hr	USD $11.33/hr	-25.1%
Overhaul Labor	USD $21.04/hr	USD $10.02/hr	-52.4%
Overhaul Parts	USD $29.38/hr	USD $22.00/hr	-25.1%
Total Hourly Ownership Cost:	**USD $116.94/hr**	**USD $88.86/hr**	**-24%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (837hrs -> 1,118hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $16.30/hr	USD $7.77/hr	-52.4%
Field Parts	USD $18.42/hr	USD $2.30/hr	-87.5%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $12.55/hr	-	-
Electrical/Fuel	USD $22.01/hr	USD $6.02/hr	-72.7%
Lube	USD $5.76/hr	-	-
Total Operating Ownership Cost:	**USD $75.04/hr**	**USD $34.39/hr**	**-54.2%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $2,569.67 -> USD $0.00)
Annual Field Repair Parts Cost (USD $12,848.35 -> USD $2,569.67)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $116.94/hr	USD $88.86/hr	-24%
Hourly Operating Costs	USD $75.04/hr	USD $34.39/hr	-54.2%
Total Hourly Cost	**USD $191.97**	**USD $123.24/hr**	**-35.8%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $66.52/hr	USD $56.84/hr	-14.5%
Idle	USD $138.94/hr	USD $94.87/hr	-31.7%

Revised Date: 3rd quarter 2024

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EquipmentWatch

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All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 725 (disc. 2014)
Articulated Rear Dumps

Size Class:
19.5 - 25.4 mt
Weight:
49075 lbs

Configuration for 725 (disc. 2014)

Axle Configuration	**6 X 6**	Horsepower	**301.0 hp**
Power Mode	**Diesel**	Rated Payload	**23.6 mt**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $10,426.00	USD $3,813.00	USD $1,334.00
Adjustments			
Region (New Mexico: 98.86%)	(USD $118.90)	(USD $43.49)	(USD $15.21)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $10,307.09**	**USD $3,769.51**	**USD $1,318.79**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 740 (disc. 2014)
Articulated Rear Dumps

Size Class:
34.5 mt & Over
Weight:
72973 lbs

Configuration for 740 (disc. 2014)

Axle Configuration	**6 X 6**	Horsepower	**453.0 hp**
Power Mode	**Diesel**	Rated Payload	**39.5 mt**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $37.79/hr	USD $35.48/hr	-6.1%
Cost of Facilities Capital (CFC)	USD $14.41/hr	USD $12.18/hr	-15.5%
Overhead	USD $10.24/hr	USD $8.52/hr	-16.8%
Overhaul Labor	USD $19.08/hr	USD $10.10/hr	-47.1%
Overhaul Parts	USD $22.24/hr	USD $18.50/hr	-16.8%
Total Hourly Ownership Cost:	**USD $103.76/hr**	**USD $84.79/hr**	**-18.3%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,269hrs -> 1,525hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $13.70/hr	USD $7.26/hr	-47.1%
Field Parts	USD $13.72/hr	USD $1.90/hr	-86.1%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $15.53/hr	-	-
Electrical/Fuel	USD $29.54/hr	USD $8.07/hr	-72.7%
Lube	USD $7.87/hr	-	-
Total Operating Ownership Cost:	**USD $80.36/hr**	**USD $40.63/hr**	**-49.4%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $2,902.61 -> USD $0.00)
Annual Field Repair Parts Cost (USD $14,513.07 -> USD $2,902.61)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $103.76/hr	USD $84.79/hr	-18.3%
Hourly Operating Costs	USD $80.36/hr	USD $40.63/hr	-49.4%
Total Hourly Cost	**USD $184.11**	**USD $125.41/hr**	**-31.9%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $62.44/hr	USD $56.18/hr	-10%
Idle	USD $133.29/hr	USD $92.86/hr	-30.3%

Revised Date: 3rd quarter 2024

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EquipmentWatch™

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All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 740 (disc. 2014)
Articulated Rear Dumps

Size Class:
34.5 mt & Over
Weight:
72973 lbs

Configuration for 740 (disc. 2014)

Axle Configuration	**6 X 6**	Horsepower	**453.0 hp**
Power Mode	**Diesel**	Rated Payload	**39.5 mt**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $16,762.00	USD $5,872.00	USD $2,036.00
Adjustments			
Region (New Mexico: 98.86%)	(USD $191.16)	(USD $66.97)	(USD $23.22)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $16,570.84**	**USD $5,805.03**	**USD $2,012.78**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

www.equipmentwatch.com

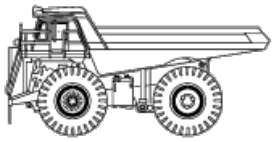
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 769D (disc. 2007)
Mechanical Drive Rear Dumps

Size Class:
29.5 - 39.4 mt
Weight:
66800 lbs



Configuration for 769D (disc. 2007)

Horsepower	**487.0 hp**	Power Mode	**Diesel**
Rated Payload	**36.4 mt**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $36.43/hr	USD $34.20/hr	-6.1%
Cost of Facilities Capital (CFC)	USD $15.20/hr	USD $12.39/hr	-18.5%
Overhead	USD $5.04/hr	USD $4.03/hr	-19.9%
Overhaul Labor	USD $1.95/hr	USD $0.99/hr	-49.1%
Overhaul Parts	USD $30.86/hr	USD $24.70/hr	-19.9%
Total Hourly Ownership Cost:	**USD $89.47/hr**	**USD $76.32/hr**	**-14.7%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,357hrs -> 1,695hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.60/hr	USD $1.32/hr	-49.1%
Field Parts	USD $18.81/hr	USD $2.51/hr	-86.7%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $18.66/hr	-	-
Electrical/Fuel	USD $30.41/hr	USD $8.31/hr	-72.7%
Lube	USD $8.62/hr	-	-
Total Operating Ownership Cost:	**USD $79.09/hr**	**USD $39.43/hr**	**-50.2%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $4,253.93 -> USD $0.00)
Annual Field Repair Parts Cost (USD $21,269.63 -> USD $4,253.93)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $89.47/hr	USD $76.32/hr	-14.7%
Hourly Operating Costs	USD $79.09/hr	USD $39.43/hr	-50.2%
Total Hourly Cost	**USD $168.56**	**USD $115.74/hr**	**-31.3%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $56.67/hr	USD $50.62/hr	-10.7%
Idle	USD $119.88/hr	USD $84.63/hr	-29.4%

Revised Date: 3rd quarter 2024

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EquipmentWatch™

www.equipmentwatch.com

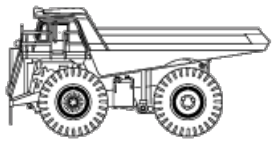
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 769D (disc. 2007)
Mechanical Drive Rear Dumps

Size Class:
29.5 - 39.4 mt
Weight:
66800 lbs



Configuration for 769D (disc. 2007)

Horsepower	**487.0 hp**	Power Mode	**Diesel**
Rated Payload	**36.4 mt**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $13,700.00	USD $4,600.00	USD $1,150.00
Adjustments			
Region (New Mexico: 76.54%)	(USD $3,213.34)	(USD $1,078.93)	(USD $269.73)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $10,486.66**	**USD $3,521.07**	**USD $880.27**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

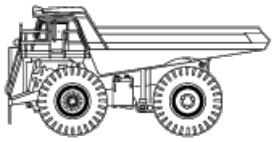
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 777F (disc. 2012)
Mechanical Drive Rear Dumps

Size Class:
89.5 - 104.4 mt
Weight:
154753 lbs



Configuration for 777F (disc. 2012)

Horsepower	**938.0 hp**	Power Mode	**Diesel**
Rated Payload	**90.7 mt**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $83.16/hr	USD $78.16/hr	-6%
Cost of Facilities Capital (CFC)	USD $34.08/hr	USD $28.43/hr	-16.6%
Overhead	USD $29.15/hr	USD $23.94/hr	-17.9%
Overhaul Labor	USD $2.30/hr	USD $1.20/hr	-47.7%
Overhaul Parts	USD $57.32/hr	USD $47.07/hr	-17.9%
Total Hourly Ownership Cost:	**USD $206.01/hr**	**USD $178.80/hr**	**-13.2%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,534hrs -> 1,868hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.58/hr	USD $1.35/hr	-47.7%
Field Parts	USD $35.37/hr	USD $4.84/hr	-86.3%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $39.17/hr	-	-
Electrical/Fuel	USD $50.99/hr	USD $13.94/hr	-72.7%
Lube	USD $19.25/hr	-	-
Total Operating Ownership Cost:	**USD $147.37/hr**	**USD $78.56/hr**	**-46.7%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $9,043.49 -> USD $0.00)
Annual Field Repair Parts Cost (USD $45,217.43 -> USD $9,043.49)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $206.01/hr	USD $178.80/hr	-13.2%
Hourly Operating Costs	USD $147.37/hr	USD $78.56/hr	-46.7%
Total Hourly Cost	**USD $353.38**	**USD $257.35/hr**	**-27.2%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $146.39/hr	USD $130.53/hr	-10.8%
Idle	USD $257.00/hr	USD $192.74/hr	-25%

Revised Date: 3rd quarter 2024

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EquipmentWatch™

www.equipmentwatch.com

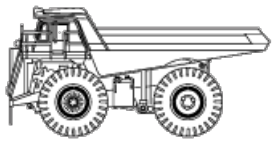
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 777F (disc. 2012)
Mechanical Drive Rear Dumps

Size Class:
89.5 - 104.4 mt
Weight:
154753 lbs



Configuration for 777F (disc. 2012)

Horsepower	**938.0 hp**	Power Mode	**Diesel**
Rated Payload	**90.7 mt**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $37,500.00	USD $15,000.00	USD $6,000.00
Adjustments			
Region (New Mexico: 100%)	-	-	-
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $37,500.00**	**USD $15,000.00**	**USD $6,000.00**

Date Last Updated: Dec 01, 2016

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 966H (disc. 2015)
4-Wd Articulated Wheel Loaders

Size Class:
250 - 274 hp
Weight:
52254 lbs

Configuration for 966H (disc. 2015)

Horsepower	**262.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $19.48/hr	USD $18.12/hr	-7%
Cost of Facilities Capital (CFC)	USD $10.18/hr	USD $8.28/hr	-18.6%
Overhead	USD $8.68/hr	USD $6.97/hr	-19.7%
Overhaul Labor	USD $8.85/hr	USD $4.52/hr	-48.9%
Overhaul Parts	USD $9.31/hr	USD $7.47/hr	-19.7%
Total Hourly Ownership Cost:	**USD $56.50/hr**	**USD $45.36/hr**	**-19.7%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,244hrs -> 1,550hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $10.79/hr	USD $5.51/hr	-48.9%
Field Parts	USD $10.27/hr	USD $2.35/hr	-77.1%
Ground Engaging Component (GEC)	USD $1.40/hr	USD $0.00/hr	-100%
Tire	USD $7.14/hr	-	-
Electrical/Fuel	USD $14.11/hr	USD $3.86/hr	-72.7%
Lube	USD $3.90/hr	-	-
Total Operating Ownership Cost:	**USD $47.61/hr**	**USD $22.75/hr**	**-52.2%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $1,740.30 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $1,903.46 -> USD $0.00)Annual Field Repair Parts Cost (USD $10,876.89 -> USD $3,642.76)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $56.50/hr	USD $45.36/hr	-19.7%
Hourly Operating Costs	USD $47.61/hr	USD $22.75/hr	-52.2%
Total Hourly Cost	**USD $104.11**	**USD $68.12/hr**	**-34.6%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $38.34/hr	USD $33.37/hr	-13%
Idle	USD $70.60/hr	USD $49.22/hr	-30.3%

Revised Date: 3rd quarter 2024

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EquipmentWatch™

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All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 966H (disc. 2015)
4-Wd Articulated Wheel Loaders

Size Class:
250 - 274 hp
Weight:
52254 lbs

Configuration for 966H (disc. 2015)

Horsepower	**262.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $10,000.00	USD $3,566.00	USD $1,270.00
Adjustments			
Region (New Mexico: 99.21%)	(USD $79.28)	(USD $28.27)	(USD $10.07)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $9,920.72**	**USD $3,537.73**	**USD $1,259.93**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 980H (disc. 2013)
4-Wd Articulated Wheel Loaders

Size Class:
275 - 349 hp
Weight:
67294 lbs

Configuration for 980H (disc. 2013)

Horsepower	**315.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $22.45/hr	USD $20.83/hr	-7.2%
Cost of Facilities Capital (CFC)	USD $12.14/hr	USD $9.86/hr	-18.8%
Overhead	USD $10.19/hr	USD $8.16/hr	-19.9%
Overhaul Labor	USD $8.95/hr	USD $4.56/hr	-49.1%
Overhaul Parts	USD $11.70/hr	USD $9.36/hr	-19.9%
Total Hourly Ownership Cost:	**USD $65.43/hr**	**USD $52.78/hr**	**-19.3%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,229hrs -> 1,535hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $10.92/hr	USD $5.57/hr	-49.1%
Field Parts	USD $12.90/hr	USD $2.95/hr	-77.2%
Ground Engaging Component (GEC)	USD $1.76/hr	USD $0.00/hr	-100%
Tire	USD $12.15/hr	-	-
Electrical/Fuel	USD $19.57/hr	USD $5.35/hr	-72.7%
Lube	USD $4.89/hr	-	-
Total Operating Ownership Cost:	**USD $62.19/hr**	**USD $30.90/hr**	**-50.3%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $2,159.58 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $2,362.04 -> USD $0.00)Annual Field Repair Parts Cost (USD $13,497.36 -> USD $4,521.62)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $65.43/hr	USD $52.78/hr	-19.3%
Hourly Operating Costs	USD $62.19/hr	USD $30.90/hr	-50.3%
Total Hourly Cost	**USD $127.62**	**USD $83.67/hr**	**-34.4%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $44.78/hr	USD $38.85/hr	-13.2%
Idle	USD $85.00/hr	USD $58.13/hr	-31.6%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch™

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All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 980H (disc. 2013)
4-Wd Articulated Wheel Loaders

Size Class:
275 - 349 hp
Weight:
67294 lbs

Configuration for 980H (disc. 2013)

Horsepower	**315.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $10,859.00	USD $3,639.00	USD $1,149.00
Adjustments			
Region (New Mexico: 99.21%)	(USD $86.09)	(USD $28.85)	(USD $9.11)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $10,772.91**	**USD $3,610.15**	**USD $1,139.89**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 988H (disc. 2014)
4-Wd Articulated Wheel Loaders

Size Class:
350 - 499 hp
Weight:
109230 lbs

Configuration for 988H (disc. 2014)

Horsepower	**475.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $48.95/hr	USD $45.55/hr	-6.9%
Cost of Facilities Capital (CFC)	USD $25.41/hr	USD $20.59/hr	-19%
Overhead	USD $21.60/hr	USD $17.25/hr	-20.1%
Overhaul Labor	USD $9.06/hr	USD $4.60/hr	-49.2%
Overhaul Parts	USD $23.48/hr	USD $18.75/hr	-20.1%
Total Hourly Ownership Cost:	**USD $128.48/hr**	**USD $106.75/hr**	**-16.9%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,215hrs -> 1,521hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $11.05/hr	USD $5.62/hr	-49.2%
Field Parts	USD $25.90/hr	USD $5.90/hr	-77.2%
Ground Engaging Component (GEC)	USD $3.53/hr	USD $0.00/hr	-100%
Tire	USD $19.19/hr	-	-
Electrical/Fuel	USD $33.38/hr	USD $9.13/hr	-72.7%
Lube	USD $9.40/hr	-	-
Total Operating Ownership Cost:	**USD $102.45/hr**	**USD $49.24/hr**	**-51.9%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $4,285.30 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $4,687.05 -> USD $0.00)Annual Field Repair Parts Cost (USD $26,783.12 -> USD $8,972.35)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $128.48/hr	USD $106.75/hr	-16.9%
Hourly Operating Costs	USD $102.45/hr	USD $49.24/hr	-51.9%
Total Hourly Cost	**USD $230.93**	**USD $155.99/hr**	**-32.5%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $95.95/hr	USD $83.39/hr	-13.1%
Idle	USD $161.86/hr	USD $115.88/hr	-28.4%

Revised Date: 3rd quarter 2024

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AED Green Book®

July 16, 2024

Caterpillar 988H (disc. 2014)
4-Wd Articulated Wheel Loaders

Size Class:
350 - 499 hp
Weight:
109230 lbs

Configuration for 988H (disc. 2014)

Horsepower	**475.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $13,397.00	USD $4,534.00	USD $1,380.00
Adjustments			
Region (New Mexico: 99.21%)	(USD $106.21)	(USD $35.95)	(USD $10.94)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $13,290.79**	**USD $4,498.05**	**USD $1,369.06**

Date Last Updated: Jun 01, 2024

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 992K (disc. 2015)
4-Wd Articulated Wheel Loaders

Size Class:
500 - 999 hp
Weight:
214948 lbs

Configuration for 992K (disc. 2015)

Horsepower	**801.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $107.82/hr	USD $100.01/hr	-7.2%
Cost of Facilities Capital (CFC)	USD $55.85/hr	USD $45.16/hr	-19.1%
Overhead	USD $29.59/hr	USD $23.58/hr	-20.3%
Overhaul Labor	USD $9.17/hr	USD $4.65/hr	-49.3%
Overhaul Parts	USD $51.10/hr	USD $40.72/hr	-20.3%
Total Hourly Ownership Cost:	**USD $253.53/hr**	**USD $214.11/hr**	**-15.5%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,506hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $11.19/hr	USD $5.67/hr	-49.3%
Field Parts	USD $56.38/hr	USD $12.81/hr	-77.3%
Ground Engaging Component (GEC)	USD $7.68/hr	USD $0.00/hr	-100%
Tire	USD $70.05/hr	-	-
Electrical/Fuel	USD $71.29/hr	USD $19.49/hr	-72.7%
Lube	USD $20.29/hr	-	-
Total Operating Ownership Cost:	**USD $236.87/hr**	**USD $128.31/hr**	**-45.8%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $9,212.04 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $10,075.67 -> USD $0.00)Annual Field Repair Parts Cost (USD $57,575.27 -> USD $19,287.71)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $253.53/hr	USD $214.11/hr	-15.5%
Hourly Operating Costs	USD $236.87/hr	USD $128.31/hr	-45.8%
Total Hourly Cost	**USD $490.41**	**USD $342.42/hr**	**-30.2%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $193.26/hr	USD $168.74/hr	-12.7%
Idle	USD $324.82/hr	USD $233.60/hr	-28.1%

Revised Date: 3rd quarter 2024

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AED Green Book®

July 16, 2024

Caterpillar 992K (disc. 2015)
4-Wd Articulated Wheel Loaders

Size Class:
500 - 999 hp
Weight:
214948 lbs

Configuration for 992K (disc. 2015)

Horsepower	**801.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $34,992.00	USD $12,700.00	USD $4,623.00
Adjustments			
Region (New Mexico: 99.21%)	(USD $277.42)	(USD $100.69)	(USD $36.65)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $34,714.58**	**USD $12,599.31**	**USD $4,586.35**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar 993K (disc. 2015)
4-Wd Articulated Wheel Loaders

Size Class:
500 - 999 hp
Weight:
294800 lbs

Configuration for 993K (disc. 2015)

Horsepower	**950.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $129.39/hr	USD $120.01/hr	-7.2%
Cost of Facilities Capital (CFC)	USD $67.02/hr	USD $54.19/hr	-19.1%
Overhead	USD $47.60/hr	USD $37.93/hr	-20.3%
Overhaul Labor	USD $9.17/hr	USD $4.65/hr	-49.3%
Overhaul Parts	USD $61.32/hr	USD $48.86/hr	-20.3%
Total Hourly Ownership Cost:	**USD $314.50/hr**	**USD $265.64/hr**	**-15.5%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,506hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $11.19/hr	USD $5.67/hr	-49.3%
Field Parts	USD $67.65/hr	USD $15.37/hr	-77.3%
Ground Engaging Component (GEC)	USD $9.21/hr	USD $0.00/hr	-100%
Tire	USD $84.06/hr	-	-
Electrical/Fuel	USD $84.55/hr	USD $23.11/hr	-72.7%
Lube	USD $24.25/hr	-	-
Total Operating Ownership Cost:	**USD $280.92/hr**	**USD $152.47/hr**	**-45.7%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $11,054.45 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $12,090.81 -> USD $0.00)Annual Field Repair Parts Cost (USD $69,090.33 -> USD $23,145.26)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $314.50/hr	USD $265.64/hr	-15.5%
Hourly Operating Costs	USD $280.92/hr	USD $152.47/hr	-45.7%
Total Hourly Cost	**USD $595.41**	**USD $418.10/hr**	**-29.8%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $244.01/hr	USD $212.13/hr	-13.1%
Idle	USD $399.05/hr	USD $288.75/hr	-27.6%

Revised Date: 3rd quarter 2024

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All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar 993K (disc. 2015)
4-Wd Articulated Wheel Loaders

Size Class:
500 - 999 hp
Weight:
294800 lbs

Configuration for 993K (disc. 2015)

Horsepower	**950.0 hp**	Operator Protection	**EROPS**
Power Mode	**Diesel**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $34,992.00	USD $12,700.00	USD $4,623.00
Adjustments			
Region (New Mexico: 99.21%)	(USD $277.42)	(USD $100.69)	(USD $36.65)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $34,714.58**	**USD $12,599.31**	**USD $4,586.35**

Date Last Updated: Jun 01, 2024

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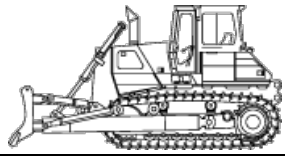
Custom Cost Evaluator

July 16, 2024

Caterpillar D6T (disc. 2019)
Standard Crawler Dozers

Size Class:
160 - 189 hp
Weight:
40550 lbs



Configuration for D6T (disc. 2019)

Dozer Type	**Semi-U**	Horsepower	**185.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $26.25/hr	USD $24.43/hr	-6.9%
Cost of Facilities Capital (CFC)	USD $12.89/hr	USD $10.37/hr	-19.6%
Overhead	USD $14.41/hr	USD $11.43/hr	-20.6%
Overhaul Labor	USD $7.89/hr	USD $3.98/hr	-49.5%
Overhaul Parts	USD $26.56/hr	USD $21.08/hr	-20.6%
Total Hourly Ownership Cost:	**USD $87.99/hr**	**USD $71.30/hr**	**-19%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,512hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $9.72/hr	USD $4.91/hr	-49.5%
Field Parts	USD $25.74/hr	USD $6.81/hr	-73.5%
Ground Engaging Component (GEC)	USD $4.29/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $23.95/hr	USD $6.55/hr	-72.7%
Lube	USD $5.31/hr	-	-
Total Operating Ownership Cost:	**USD $69.01/hr**	**USD $23.58/hr**	**-65.8%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $5,148.58 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $5,148.58 -> USD $0.00)Annual Field Repair Parts Cost (USD $25,742.90 -> USD $10,297.16)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $87.99/hr	USD $71.30/hr	-19%
Hourly Operating Costs	USD $69.01/hr	USD $23.58/hr	-65.8%
Total Hourly Cost	**USD $157.01**	**USD $94.88/hr**	**-39.6%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $53.54/hr	USD $46.23/hr	-13.6%
Idle	USD $111.94/hr	USD $77.85/hr	-30.5%

Revised Date: 3rd quarter 2024

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EquipmentWatch

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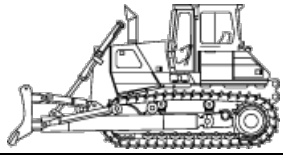
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar D6T (disc. 2019)
Standard Crawler Dozers

Size Class:
160 - 189 hp
Weight:
40550 lbs



Configuration for D6T (disc. 2019)

Dozer Type	**Semi-U**	Horsepower	**185.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $8,133.00	USD $2,815.00	USD $927.00
Adjustments			
Region (New Mexico: 108.79%)	USD $714.61	USD $247.34	USD $81.45
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $8,847.61**	**USD $3,062.34**	**USD $1,008.45**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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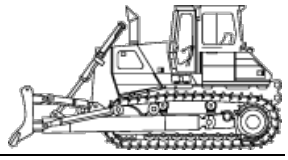
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar D6T XL (disc. 2018)
Standard Crawler Dozers

Size Class:
190 - 259 hp
Weight:
44420 lbs



Configuration for D6T XL (disc. 2018)

Dozer Type	**Semi-U**	Horsepower	**200.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $28.23/hr	USD $26.42/hr	-6.4%
Cost of Facilities Capital (CFC)	USD $12.49/hr	USD $10.06/hr	-19.5%
Overhead	USD $13.75/hr	USD $10.91/hr	-20.6%
Overhaul Labor	USD $7.89/hr	USD $3.98/hr	-49.5%
Overhaul Parts	USD $26.78/hr	USD $21.25/hr	-20.6%
Total Hourly Ownership Cost:	**USD $89.13/hr**	**USD $72.62/hr**	**-18.5%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,512hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $9.72/hr	USD $4.91/hr	-49.5%
Field Parts	USD $25.95/hr	USD $6.86/hr	-73.5%
Ground Engaging Component (GEC)	USD $4.32/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $23.56/hr	USD $6.44/hr	-72.7%
Lube	USD $5.28/hr	-	-
Total Operating Ownership Cost:	**USD $68.83/hr**	**USD $23.49/hr**	**-65.9%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $5,189.86 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $5,189.86 -> USD $0.00)Annual Field Repair Parts Cost (USD $25,949.30 -> USD $10,379.72)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $89.13/hr	USD $72.62/hr	-18.5%
Hourly Operating Costs	USD $68.83/hr	USD $23.49/hr	-65.9%
Total Hourly Cost	**USD $157.97**	**USD $96.12/hr**	**-39.2%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $54.47/hr	USD $47.39/hr	-13%
Idle	USD $112.69/hr	USD $79.06/hr	-29.8%

Revised Date: 3rd quarter 2024

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EquipmentWatch

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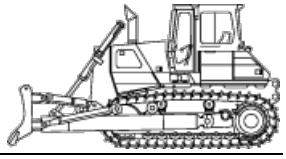
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar D6T XL (disc. 2018)
Standard Crawler Dozers

Size Class:
190 - 259 hp
Weight:
44420 lbs



Configuration for D6T XL (disc. 2018)

Dozer Type	**Semi-U**	Horsepower	**200.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $11,675.00	USD $3,949.00	USD $1,244.00
Adjustments			
Region (New Mexico: 108.79%)	USD $1,025.84	USD $346.98	USD $109.31
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $12,700.83**	**USD $4,295.98**	**USD $1,353.31**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

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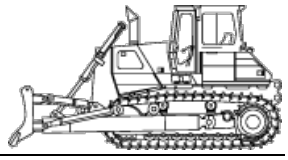
July 16, 2024

Caterpillar D9T (disc. 2023)
Standard Crawler Dozers

Size Class:
360 - 519 hp
Weight:
105600 lbs



Configuration for D9T (disc. 2023)

Dozer Type	**Semi-U**	Horsepower	**410.0 hp**
Operator Protection	**ROPS/FOPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $81.91/hr	USD $77.07/hr	-5.9%
Cost of Facilities Capital (CFC)	USD $31.74/hr	USD $26.13/hr	-17.7%
Overhead	USD $47.17/hr	USD $38.27/hr	-18.9%
Overhaul Labor	USD $15.04/hr	USD $7.76/hr	-48.4%
Overhaul Parts	USD $73.04/hr	USD $59.26/hr	-18.9%
Total Hourly Ownership Cost:	**USD $248.90/hr**	**USD $208.50/hr**	**-16.2%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,200hrs -> 1,479hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $17.61/hr	USD $9.09/hr	-48.4%
Field Parts	USD $71.14/hr	USD $19.24/hr	-73%
Ground Engaging Component (GEC)	USD $11.86/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $47.65/hr	USD $13.03/hr	-72.7%
Lube	USD $13.95/hr	-	-
Total Operating Ownership Cost:	**USD $162.21/hr**	**USD $55.31/hr**	**-65.9%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $14,228.05 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $14,228.05 -> USD $0.00)Annual Field Repair Parts Cost (USD $71,140.27 -> USD $28,456.10)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $248.90/hr	USD $208.50/hr	-16.2%
Hourly Operating Costs	USD $162.21/hr	USD $55.31/hr	-65.9%
Total Hourly Cost	**USD $411.11**	**USD $263.81/hr**	**-35.8%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $160.82/hr	USD $141.47/hr	-12%
Idle	USD $296.55/hr	USD $221.52/hr	-25.3%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

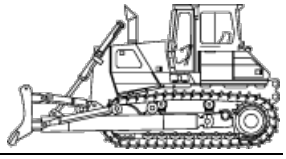
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar D9T (disc. 2023)
Standard Crawler Dozers

Size Class:
360 - 519 hp
Weight:
105600 lbs



Configuration for D9T (disc. 2023)

Dozer Type	**Semi-U**	Horsepower	**410.0 hp**
Operator Protection	**ROPS/FOPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $28,223.00	USD $10,126.00	USD $3,698.00
Adjustments			
Region (New Mexico: 108.79%)	USD $2,479.84	USD $889.73	USD $324.93
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $30,702.84**	**USD $11,015.73**	**USD $4,022.93**

Date Last Updated: Jun 01, 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

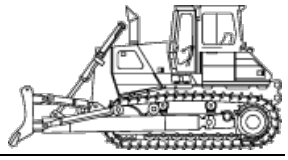
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar D11T CD (disc. 2018)
Standard Crawler Dozers

Size Class:
520 hp & Over
Weight:
N/A



Configuration for D11T CD (disc. 2018)

Dozer Type	**U Blade**	Horsepower	**850.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $83.80/hr	USD $78.85/hr	-5.9%
Cost of Facilities Capital (CFC)	USD $32.05/hr	USD $26.38/hr	-17.7%
Overhead	USD $43.91/hr	USD $35.63/hr	-18.9%
Overhaul Labor	USD $15.04/hr	USD $7.76/hr	-48.4%
Overhaul Parts	USD $87.93/hr	USD $71.34/hr	-18.9%
Total Hourly Ownership Cost:	**USD $262.72/hr**	**USD $219.97/hr**	**-16.3%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,200hrs -> 1,479hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $17.61/hr	USD $9.09/hr	-48.4%
Field Parts	USD $85.64/hr	USD $23.16/hr	-73%
Ground Engaging Component (GEC)	USD $14.27/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $97.10/hr	USD $26.54/hr	-72.7%
Lube	USD $18.99/hr	-	-
Total Operating Ownership Cost:	**USD $233.61/hr**	**USD $77.78/hr**	**-66.7%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $17,127.44 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $17,127.44 -> USD $0.00)Annual Field Repair Parts Cost (USD $85,637.19 -> USD $34,254.88)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $262.72/hr	USD $219.97/hr	-16.3%
Hourly Operating Costs	USD $233.61/hr	USD $77.78/hr	-66.7%
Total Hourly Cost	**USD $496.33**	**USD $297.75/hr**	**-40%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $159.75/hr	USD $140.87/hr	-11.8%
Idle	USD $359.82/hr	USD $246.52/hr	-31.5%

Revised Date: 3rd quarter 2024

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EquipmentWatch

www.equipmentwatch.com

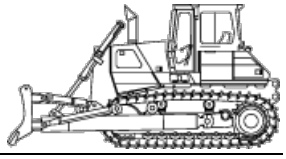
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar D11T CD (disc. 2018)
Standard Crawler Dozers

Size Class:
520 hp & Over
Weight:
N/A



Configuration for D11T CD (disc. 2018)

Dozer Type	**U Blade**	Horsepower	**850.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $36,670.00	USD $13,570.00	USD $4,999.00
Adjustments			
Region (New Mexico: 108.79%)	USD $3,222.04	USD $1,192.34	USD $439.24
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $39,892.04**	**USD $14,762.34**	**USD $5,438.24**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

www.equipmentwatch.com

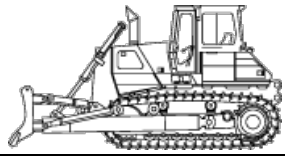
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Caterpillar D11T (disc. 2018)
Standard Crawler Dozers

Size Class:
520 hp & Over
Weight:
208885 lbs



Configuration for D11T (disc. 2018)

Dozer Type	**U Blade**	Horsepower	**850.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $162.97/hr	USD $153.36/hr	-5.9%
Cost of Facilities Capital (CFC)	USD $62.33/hr	USD $51.31/hr	-17.7%
Overhead	USD $69.53/hr	USD $56.41/hr	-18.9%
Overhaul Labor	USD $15.04/hr	USD $7.76/hr	-48.4%
Overhaul Parts	USD $171.00/hr	USD $138.74/hr	-18.9%
Total Hourly Ownership Cost:	**USD $480.86/hr**	**USD $407.58/hr**	**-15.2%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,200hrs -> 1,479hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $17.61/hr	USD $9.09/hr	-48.4%
Field Parts	USD $166.55/hr	USD $45.04/hr	-73%
Ground Engaging Component (GEC)	USD $27.76/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $97.10/hr	USD $26.54/hr	-72.7%
Lube	USD $27.75/hr	-	-
Total Operating Ownership Cost:	**USD $336.76/hr**	**USD $108.43/hr**	**-67.8%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Annual Ground Engaging Component (USD $33,309.26 -> USD $0.00)Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $33,309.26 -> USD $0.00)Annual Field Repair Parts Cost (USD $166,546.28 -> USD $66,618.52)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $480.86/hr	USD $407.58/hr	-15.2%
Hourly Operating Costs	USD $336.76/hr	USD $108.43/hr	-67.8%
Total Hourly Cost	**USD $817.62**	**USD $516.01/hr**	**-36.9%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $294.82/hr	USD $261.08/hr	-11.4%
Idle	USD $577.96/hr	USD $434.13/hr	-24.9%

Revised Date: 3rd quarter 2024

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EquipmentWatch

www.equipmentwatch.com

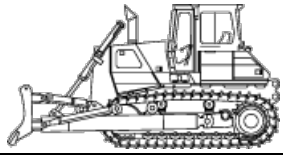
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Caterpillar D11T (disc. 2018)
Standard Crawler Dozers

Size Class:
520 hp & Over
Weight:
208885 lbs



Configuration for D11T (disc. 2018)

Dozer Type	**U Blade**	Horsepower	**850.0 hp**
Operator Protection	**EROPS**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $36,670.00	USD $13,570.00	USD $4,999.00
Adjustments			
Region (New Mexico: 108.79%)	USD $3,222.04	USD $1,192.34	USD $439.24
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $39,892.04**	**USD $14,762.34**	**USD $5,438.24**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

www.equipmentwatch.com

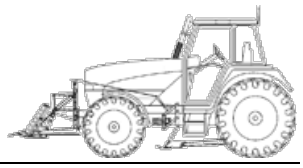
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Deere 7430 (disc. 2011)
Wheel Tractors

Size Class:
125 - 174 hp
Weight:
N/A



Configuration for 7430 (disc. 2011)

Horsepower	**166.0 hp**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $14.60/hr	USD $13.67/hr	-6.4%
Cost of Facilities Capital (CFC)	USD $7.74/hr	USD $4.89/hr	-36.8%
Overhead	USD $11.29/hr	USD $6.90/hr	-38.9%
Overhaul Labor	USD $9.62/hr	USD $3.74/hr	-61.1%
Overhaul Parts	USD $13.25/hr	USD $8.10/hr	-38.9%
Total Hourly Ownership Cost:	**USD $56.50/hr**	**USD $37.30/hr**	**-34%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (517hrs -> 846hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $12.69/hr	USD $4.93/hr	-61.1%
Field Parts	USD $11.62/hr	USD $1.18/hr	-89.8%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $1.22/hr	-	-
Electrical/Fuel	USD $21.86/hr	USD $5.98/hr	-72.7%
Lube	USD $3.00/hr	-	-
Total Operating Ownership Cost:	**USD $50.39/hr**	**USD $16.31/hr**	**-67.6%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $1,001.12 -> USD $0.00)
Annual Field Repair Parts Cost (USD $5,005.59 -> USD $1,001.12)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $56.50/hr	USD $37.30/hr	-34%
Hourly Operating Costs	USD $50.39/hr	USD $16.31/hr	-67.6%
Total Hourly Cost	**USD $106.89**	**USD $53.61/hr**	**-49.8%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $33.63/hr	USD $25.46/hr	-24.3%
Idle	USD $78.36/hr	USD $43.27/hr	-44.8%

Revised Date: 3rd quarter 2024

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EquipmentWatch

www.equipmentwatch.com

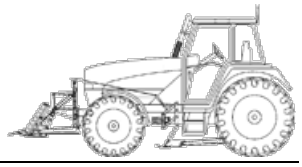
All prices shown in US dollars ($)

AED Green Book®

July 16, 2024

Deere 7430 (disc. 2011)
Wheel Tractors

Size Class:
125 - 174 hp
Weight:
N/A



Configuration for 7430 (disc. 2011)

Horsepower	**166.0 hp**	Power Mode	**Diesel**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $3,891.00	USD $1,303.00	USD $463.00
Adjustments			
Region (New Mexico: 104.3%)	USD $167.42	USD $56.07	USD $19.92
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $4,058.42**	**USD $1,359.07**	**USD $482.92**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

www.equipmentwatch.com

All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Finn B260
Trailer Mounted Mulchers

Size Class:
51 hp & Over
Weight:
4880 lbs

Configuration for B260

Horsepower	**115.0**	Power Mode	**Diesel**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $5.80/hr	USD $5.45/hr	-6.1%
Cost of Facilities Capital (CFC)	USD $3.14/hr	USD $1.73/hr	-45%
Overhead	USD $3.33/hr	USD $1.75/hr	-47.5%
Overhaul Labor	USD $7.08/hr	USD $2.36/hr	-66.6%
Overhaul Parts	USD $7.16/hr	USD $3.75/hr	-47.5%
Total Hourly Ownership Cost:	**USD $26.51/hr**	**USD $15.04/hr**	**-43.3%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (373hrs -> 711hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $8.85/hr	USD $2.95/hr	-66.6%
Field Parts	USD $4.14/hr	USD $0.28/hr	-93.2%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $0.60/hr	-	-
Electrical/Fuel	USD $15.10/hr	USD $4.13/hr	-72.7%
Lube	USD $1.76/hr	-	-
Total Operating Ownership Cost:	**USD $30.45/hr**	**USD $9.73/hr**	**-68.1%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $201.40 -> USD $0.00)
Annual Field Repair Parts Cost (USD $1,342.66 -> USD $201.40)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $26.51/hr	USD $15.04/hr	-43.3%
Hourly Operating Costs	USD $30.45/hr	USD $9.73/hr	-68.1%
Total Hourly Cost	**USD $56.97**	**USD $24.77/hr**	**-56.5%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $12.28/hr	USD $8.92/hr	-27.3%
Idle	USD $41.62/hr	USD $19.17/hr	-53.9%

Revised Date: 3rd quarter 2024

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EquipmentWatch

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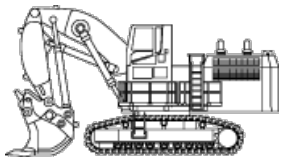
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Hitachi EX3600-5 (disc. 2009)
Hydraulic Shovels

Size Class:
150.5 mt & Over
Weight:
772000 lbs



Configuration for EX3600-5 (disc. 2009)

Horsepower	**1880.0 hp**	Operating Weight	**350.0 mt**
Power Mode	**Diesel**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $157.54/hr	USD $148.69/hr	-5.6%
Cost of Facilities Capital (CFC)	USD $64.97/hr	USD $59.36/hr	-8.6%
Overhead	USD $72.89/hr	USD $66.17/hr	-9.2%
Overhaul Labor	USD $22.84/hr	USD $13.19/hr	-42.2%
Overhaul Parts	USD $176.95/hr	USD $160.62/hr	-9.2%
Total Hourly Ownership Cost:	**USD $495.19/hr**	**USD $448.03/hr**	**-9.5%**

User Defined Adjustments: Sales Tax (5.1% -> 0%) Annual Use Hours (1,850hrs -> 2,038hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $12.18/hr	USD $7.04/hr	-42.2%
Field Parts	USD $193.75/hr	USD $63.31/hr	-67.3%
Ground Engaging Component (GEC)	USD $31.00/hr	USD $0.00/hr	-100%
Tire	USD $0.00/hr	-	-
Electrical/Fuel	USD $302.59/hr	USD $82.72/hr	-72.7%
Lube	USD $62.36/hr	-	-
Total Operating Ownership Cost:	**USD $601.88/hr**	**USD $215.44/hr**	**-64.2%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00) Annual Ground Engaging Component (USD $57,348.98 -> USD $0.00) Mechanics Wage (USD $44.02 -> USD $28.01) Annual Misc Supply Parts (USD $71,686.22 -> USD $0.00) Annual Field Repair Parts Cost (USD $286,744.88 -> USD $129,035.20)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $495.19/hr	USD $448.03/hr	-9.5%
Hourly Operating Costs	USD $601.88/hr	USD $215.44/hr	-64.2%
Total Hourly Cost	**USD $1,097.07**	**USD $663.47/hr**	**-39.5%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $295.40/hr	USD $274.21/hr	-7.2%
Idle	USD $797.78/hr	USD $530.75/hr	-33.5%

Revised Date: 3rd quarter 2024

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EquipmentWatch

www.equipmentwatch.com

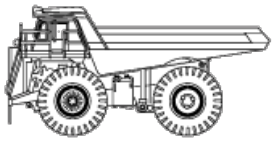
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Komatsu 730E
Electric Drive Rear Dumps

Size Class:
169.5 - 199.4 mt
Weight:
309950 lbs



Configuration for 730E

Horsepower	**1860.0 hp**	Power Mode	**Diesel**
Rated Payload	**183.7 mt**	Wheel Motor Model	**GE788**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $57.76/hr	USD $54.40/hr	-5.8%
Cost of Facilities Capital (CFC)	USD $25.23/hr	USD $22.17/hr	-12.1%
Overhead	USD $29.49/hr	USD $25.66/hr	-13%
Overhaul Labor	USD $10.21/hr	USD $5.65/hr	-44.6%
Overhaul Parts	USD $23.65/hr	USD $20.58/hr	-13%
Total Hourly Ownership Cost:	**USD $146.34/hr**	**USD $128.46/hr**	**-12.2%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,850hrs -> 2,126hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $12.18/hr	USD $6.75/hr	-44.6%
Field Parts	USD $11.14/hr	USD $1.62/hr	-85.5%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $21.21/hr	-	-
Electrical/Fuel	USD $104.62/hr	USD $28.60/hr	-72.7%
Lube	USD $20.01/hr	-	-
Total Operating Ownership Cost:	**USD $169.16/hr**	**USD $78.18/hr**	**-53.8%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $3,436.08 -> USD $0.00)
Annual Field Repair Parts Cost (USD $17,180.42 -> USD $3,436.08)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $146.34/hr	USD $128.46/hr	-12.2%
Hourly Operating Costs	USD $169.16/hr	USD $78.18/hr	-53.8%
Total Hourly Cost	**USD $315.51**	**USD $206.64/hr**	**-34.5%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $112.49/hr	USD $102.24/hr	-9.1%
Idle	USD $250.96/hr	USD $157.06/hr	-37.4%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch

www.equipmentwatch.com

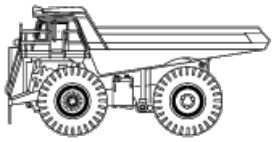
All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Komatsu HD1500-5 (disc. 2008)
Mechanical Drive Rear Dumps

Size Class:
104.5 - 139.4 mt
Weight:
221481 lbs



Configuration for HD1500-5 (disc. 2008)

Horsepower	**1406.0 hp**	Power Mode	**Diesel**
Rated Payload	**136.0 mt**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $55.67/hr	USD $52.28/hr	-6.1%
Cost of Facilities Capital (CFC)	USD $23.13/hr	USD $19.54/hr	-15.5%
Overhead	USD $26.84/hr	USD $22.36/hr	-16.7%
Overhaul Labor	USD $0.77/hr	USD $0.41/hr	-47%
Overhaul Parts	USD $40.40/hr	USD $33.65/hr	-16.7%
Total Hourly Ownership Cost:	**USD $146.82/hr**	**USD $128.24/hr**	**-12.7%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,710hrs -> 2,053hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.32/hr	USD $1.23/hr	-47%
Field Parts	USD $17.13/hr	USD $2.38/hr	-86.1%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $34.26/hr	-	-
Electrical/Fuel	USD $98.24/hr	USD $26.86/hr	-72.7%
Lube	USD $20.53/hr	-	-
Total Operating Ownership Cost:	**USD $172.48/hr**	**USD $85.25/hr**	**-50.6%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $4,882.43 -> USD $0.00)
Annual Field Repair Parts Cost (USD $24,412.13 -> USD $4,882.43)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $146.82/hr	USD $128.24/hr	-12.7%
Hourly Operating Costs	USD $172.48/hr	USD $85.25/hr	-50.6%
Total Hourly Cost	**USD $319.30**	**USD $213.50/hr**	**-33.1%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $105.65/hr	USD $94.18/hr	-10.9%
Idle	USD $245.06/hr	USD $155.10/hr	-36.7%

Revised Date: 3rd quarter 2024

The equipment represented in this report has been exclusively prepared for Walter Niccoli (wniccoli@telesto-inc.com)

EquipmentWatch™

www.equipmentwatch.com

All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Miscellaneous 6000 330
Off-Highway Water Tanker Trucks

Size Class:
300 - 399 hp
Weight:
54400 lbs

Configuration for 6000 330

Horsepower	**330.0**	Power Mode	**Diesel**
Tank Capacity	**6000.0 gal**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $22.90/hr	USD $21.43/hr	-6.4%
Cost of Facilities Capital (CFC)	USD $16.53/hr	USD $11.41/hr	-31%
Overhead	USD $15.43/hr	USD $10.45/hr	-32.3%
Overhaul Labor	USD $3.10/hr	USD $1.33/hr	-56.9%
Overhaul Parts	USD $11.96/hr	USD $8.10/hr	-32.3%
Total Hourly Ownership Cost:	**USD $69.91/hr**	**USD $52.72/hr**	**-24.6%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (711hrs -> 1,050hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $1.55/hr	USD $0.67/hr	-56.9%
Field Parts	USD $22.55/hr	USD $2.54/hr	-88.7%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $6.42/hr	-	-
Electrical/Fuel	USD $41.16/hr	USD $11.25/hr	-72.7%
Lube	USD $6.58/hr	-	-
Total Operating Ownership Cost:	**USD $78.27/hr**	**USD $27.47/hr**	**-64.9%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $2,671.74 -> USD $0.00)
Annual Field Repair Parts Cost (USD $13,358.67 -> USD $2,671.74)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $69.91/hr	USD $52.72/hr	-24.6%
Hourly Operating Costs	USD $78.27/hr	USD $27.47/hr	-64.9%
Total Hourly Cost	**USD $148.18**	**USD $80.19/hr**	**-45.9%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $54.86/hr	USD $43.29/hr	-21.1%
Idle	USD $111.08/hr	USD $63.97/hr	-42.4%

Revised Date: 3rd quarter 2024

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AED Green Book®

July 16, 2024

Miscellaneous 6000 330
Off-Highway Water Tanker Trucks

Size Class:
300 - 399 hp
Weight:
54400 lbs

Configuration for 6000 330

Horsepower	**330.0**	Power Mode	**Diesel**
Tank Capacity	**6000.0 gal**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $10,644.00	USD $3,853.00	USD $1,435.00
Adjustments			
Region (New Mexico: 98.83%)	(USD $124.27)	(USD $44.98)	(USD $16.75)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $10,519.73**	**USD $3,808.02**	**USD $1,418.25**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Miscellaneous 10000 450
Off-Highway Water Tanker Trucks

Size Class:
400 - 499 hp
Weight:
82200 lbs

Configuration for 10000 450

Horsepower	**450.0**	Power Mode	**Diesel**
Tank Capacity	**10000.0 gal**		

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $37.31/hr	USD $34.91/hr	-6.4%
Cost of Facilities Capital (CFC)	USD $25.45/hr	USD $17.90/hr	-29.7%
Overhead	USD $23.70/hr	USD $16.35/hr	-31%
Overhaul Labor	USD $2.92/hr	USD $1.28/hr	-56.1%
Overhaul Parts	USD $18.37/hr	USD $12.67/hr	-31%
Total Hourly Ownership Cost:	**USD $107.75/hr**	**USD $83.11/hr**	**-22.9%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (754hrs -> 1,093hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $1.46/hr	USD $0.64/hr	-56.1%
Field Parts	USD $34.63/hr	USD $3.98/hr	-88.5%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $10.47/hr	-	-
Electrical/Fuel	USD $56.13/hr	USD $15.35/hr	-72.7%
Lube	USD $9.63/hr	-	-
Total Operating Ownership Cost:	**USD $112.33/hr**	**USD $40.07/hr**	**-64.3%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $4,352.35 -> USD $0.00)
Annual Field Repair Parts Cost (USD $21,761.77 -> USD $4,352.35)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $107.75/hr	USD $83.11/hr	-22.9%
Hourly Operating Costs	USD $112.33/hr	USD $40.07/hr	-64.3%
Total Hourly Cost	**USD $220.07**	**USD $123.18/hr**	**-44%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $86.46/hr	USD $69.16/hr	-20%
Idle	USD $163.88/hr	USD $98.45/hr	-39.9%

Revised Date: 3rd quarter 2024

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AED Green Book®

July 16, 2024

Miscellaneous 10000 450
Off-Highway Water Tanker Trucks

Size Class:
400 - 499 hp
Weight:
82200 lbs

Configuration for 10000 450

Horsepower	**450.0**	Power Mode	**Diesel**
Tank Capacity	**10000.0 gal**		

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $13,500.00	USD $5,000.00	USD $1,500.00
Adjustments			
Region (New Mexico: 98.83%)	(USD $157.62)	(USD $58.38)	(USD $17.51)
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $13,342.38**	**USD $4,941.62**	**USD $1,482.49**

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Miscellaneous 48 X 60' - 510
Single Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
21700 lbs

Configuration for 48 X 60' - 510

Conveyor Size	**48' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**5' X 10'**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $8.64/hr	USD $8.17/hr	-5.5%
Cost of Facilities Capital (CFC)	USD $2.94/hr	USD $2.28/hr	-22.3%
Overhead	USD $3.54/hr	USD $2.68/hr	-24.2%
Overhaul Labor	USD $4.39/hr	USD $2.12/hr	-51.8%
Overhaul Parts	USD $7.71/hr	USD $5.84/hr	-24.2%
Total Hourly Ownership Cost:	**USD $27.21/hr**	**USD $21.08/hr**	**-22.5%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,033hrs -> 1,363hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.17/hr	USD $1.05/hr	-51.8%
Field Parts	USD $7.16/hr	USD $1.09/hr	-84.8%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $0.33/hr	-	-
Electrical/Fuel	USD $17.74/hr	USD $4.85/hr	-72.7%
Lube	USD $2.43/hr	-	-
Total Operating Ownership Cost:	**USD $29.84/hr**	**USD $9.74/hr**	**-67.3%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $1,479.18 -> USD $0.00) Annual Field Repair Parts Cost (USD $5,916.70 -> USD $1,479.18)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $27.21/hr	USD $21.08/hr	-22.5%
Hourly Operating Costs	USD $29.84/hr	USD $9.74/hr	-67.3%
Total Hourly Cost	**USD $57.04**	**USD $30.83/hr**	**-46%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $15.11/hr	USD $13.13/hr	-13.1%
Idle	USD $44.95/hr	USD $25.94/hr	-42.3%

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AED Green Book®

July 16, 2024

Miscellaneous 48 X 60' - 510
Single Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
21700 lbs

Configuration for 48 X 60' - 510

Conveyor Size	**48' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**5' X 10'**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $11,357.00	USD $3,786.00	USD $1,196.00
Adjustments			
Region (New Mexico: 101.97%)	USD $224.15	USD $74.72	USD $23.61
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $11,581.15**	**USD $3,860.72**	**USD $1,219.61**

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EquipmentWatch

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Custom Cost Evaluator

July 16, 2024

Miscellaneous 48 X 60' - 4
Double Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
20300 lbs

Configuration for 48 X 60' - 4

Conveyor Size	**48' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**4' X 8'**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $15.91/hr	USD $15.03/hr	-5.5%
Cost of Facilities Capital (CFC)	USD $5.87/hr	USD $3.70/hr	-36.9%
Overhead	USD $7.11/hr	USD $4.28/hr	-39.7%
Overhaul Labor	USD $4.37/hr	USD $1.67/hr	-61.7%
Overhaul Parts	USD $15.42/hr	USD $9.29/hr	-39.7%
Total Hourly Ownership Cost:	**USD $48.67/hr**	**USD $33.99/hr**	**-30.2%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (514hrs -> 853hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.14/hr	USD $0.82/hr	-61.7%
Field Parts	USD $14.25/hr	USD $1.72/hr	-87.9%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $0.33/hr	-	-
Electrical/Fuel	USD $17.74/hr	USD $4.85/hr	-72.7%
Lube	USD $2.43/hr	-	-
Total Operating Ownership Cost:	**USD $36.89/hr**	**USD $10.15/hr**	**-72.5%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $1,464.46 -> USD $0.00) Annual Field Repair Parts Cost (USD $5,857.85 -> USD $1,464.46)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $48.67/hr	USD $33.99/hr	-30.2%
Hourly Operating Costs	USD $36.89/hr	USD $10.15/hr	-72.5%
Total Hourly Cost	**USD $85.56**	**USD $44.13/hr**	**-48.4%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $28.88/hr	USD $23.02/hr	-20.3%
Idle	USD $66.42/hr	USD $38.84/hr	-41.5%

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AED Green Book®

July 16, 2024

Miscellaneous 48 X 60' - 4
Double Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
20300 lbs

Configuration for 48 X 60' - 4

Conveyor Size	**48' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**4' X 8'**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $11,463.00	USD $3,821.00	USD $1,235.00
Adjustments			
Region (New Mexico: 109.51%)	USD $1,090.61	USD $363.54	USD $117.50
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $12,553.61**	**USD $4,184.54**	**USD $1,352.50**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Miscellaneous 42 X 60' - 4
Triple Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
20500 lbs

Configuration for 42 X 60' - 4

Conveyor Size	**42' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**4' X 8'**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $8.52/hr	USD $8.05/hr	-5.5%
Cost of Facilities Capital (CFC)	USD $2.48/hr	USD $2.01/hr	-18.9%
Overhead	USD $2.94/hr	USD $2.33/hr	-20.7%
Overhaul Labor	USD $4.40/hr	USD $2.22/hr	-49.6%
Overhaul Parts	USD $6.33/hr	USD $5.01/hr	-20.7%
Total Hourly Ownership Cost:	**USD $24.67/hr**	**USD $19.63/hr**	**-20.4%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,250hrs -> 1,577hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.22/hr	USD $1.12/hr	-49.6%
Field Parts	USD $6.05/hr	USD $0.96/hr	-84.1%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $0.31/hr	-	-
Electrical/Fuel	USD $17.74/hr	USD $4.85/hr	-72.7%
Lube	USD $2.44/hr	-	-
Total Operating Ownership Cost:	**USD $28.75/hr**	**USD $9.67/hr**	**-66.4%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $1,511.57 -> USD $0.00) Annual Field Repair Parts Cost (USD $6,046.30 -> USD $1,511.57)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $24.67/hr	USD $19.63/hr	-20.4%
Hourly Operating Costs	USD $28.75/hr	USD $9.67/hr	-66.4%
Total Hourly Cost	**USD $53.43**	**USD $29.31/hr**	**-45.1%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $13.94/hr	USD $12.40/hr	-11.1%
Idle	USD $42.42/hr	USD $24.48/hr	-42.3%

Revised Date: 3rd quarter 2024

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EquipmentWatch

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AED Green Book®

July 16, 2024

Miscellaneous 42 X 60' - 4
Triple Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
20500 lbs

Configuration for 42 X 60' - 4

Conveyor Size	**42' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**4' X 8'**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $16,452.00	USD $5,485.00	USD $1,801.00
Adjustments			
Region (New Mexico: 108.11%)	USD $1,333.56	USD $444.60	USD $145.98
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $17,785.56**	**USD $5,929.60**	**USD $1,946.98**

Date Last Updated: Jun 01, 2024

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EquipmentWatch

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All prices shown in US dollars ($)

Custom Cost Evaluator

July 16, 2024

Miscellaneous 48 X 60' - 4
Triple Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
21600 lbs

Configuration for 48 X 60' - 4

Conveyor Size	**48' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**4' X 8'**

Hourly Ownership Costs

	Standard Value	User Adjusted Value	Variance
Depreciation	USD $9.21/hr	USD $8.71/hr	-5.5%
Cost of Facilities Capital (CFC)	USD $2.68/hr	USD $2.18/hr	-18.9%
Overhead	USD $3.18/hr	USD $2.52/hr	-20.7%
Overhaul Labor	USD $4.40/hr	USD $2.22/hr	-49.6%
Overhaul Parts	USD $6.84/hr	USD $5.42/hr	-20.7%
Total Hourly Ownership Cost:	**USD $26.32/hr**	**USD $21.05/hr**	**-20%**

User Defined Adjustments: Sales Tax (5.1% -> 0%)Annual Use Hours (1,250hrs -> 1,577hrs)

Hourly Operating Costs

	Standard Value	User Adjusted Value	Variance
Field Labor	USD $2.22/hr	USD $1.12/hr	-49.6%
Field Parts	USD $6.54/hr	USD $1.04/hr	-84.1%
Ground Engaging Component (GEC)	USD $0.00/hr	-	-
Tire	USD $0.33/hr	-	-
Electrical/Fuel	USD $17.74/hr	USD $4.85/hr	-72.7%
Lube	USD $2.49/hr	-	-
Total Operating Ownership Cost:	**USD $29.32/hr**	**USD $9.83/hr**	**-66.5%**

User Defined Adjustments: Fuel (USD $3.66 -> USD $1.00)Mechanics Wage (USD $44.02 -> USD $28.01)Annual Misc Supply Parts (USD $1,634.16 -> USD $0.00) Annual Field Repair Parts Cost (USD $6,536.66 -> USD $1,634.16)

Total

	Standard Value	User Adjusted Value	Variance
Hourly Ownership Costs	USD $26.32/hr	USD $21.05/hr	-20%
Hourly Operating Costs	USD $29.32/hr	USD $9.83/hr	-66.5%
Total Hourly Cost	**USD $55.64**	**USD $30.87/hr**	**-44.5%**

Non-active use rates

	Standard Value	User Adjusted Value	Variance
Standby	USD $15.08/hr	USD $13.41/hr	-11.1%
Idle	USD $44.06/hr	USD $25.90/hr	-41.2%

Revised Date: 3rd quarter 2024

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AED Green Book®

July 16, 2024

Miscellaneous 48 X 60' - 4
Triple Deck Portable Screening Plants

Size Class:
37 in & Over
Weight:
21600 lbs

Configuration for 48 X 60' - 4

Conveyor Size	**48' X 60'**	Horsepower	**110.0**
Power Mode	**Diesel**	Screen Size	**4' X 8'**

AED Rental Rates

These rental rates reflect an average for equipment of this type and size. Rates shown for specific brands or models are provided for convenience only. Rates charged by rental companies for specific brands or models will vary depending on many factors

	Monthly	Weekly	Daily
Published Rates	USD $16,452.00	USD $5,485.00	USD $1,801.00
Adjustments			
Region (New Mexico: 108.11%)	USD $1,333.56	USD $444.60	USD $145.98
User Defined			
Rental Rates (100%)	-	-	-
Total:	**USD $17,785.56**	**USD $5,929.60**	**USD $1,946.98**

Date Last Updated: Jun 01, 2024

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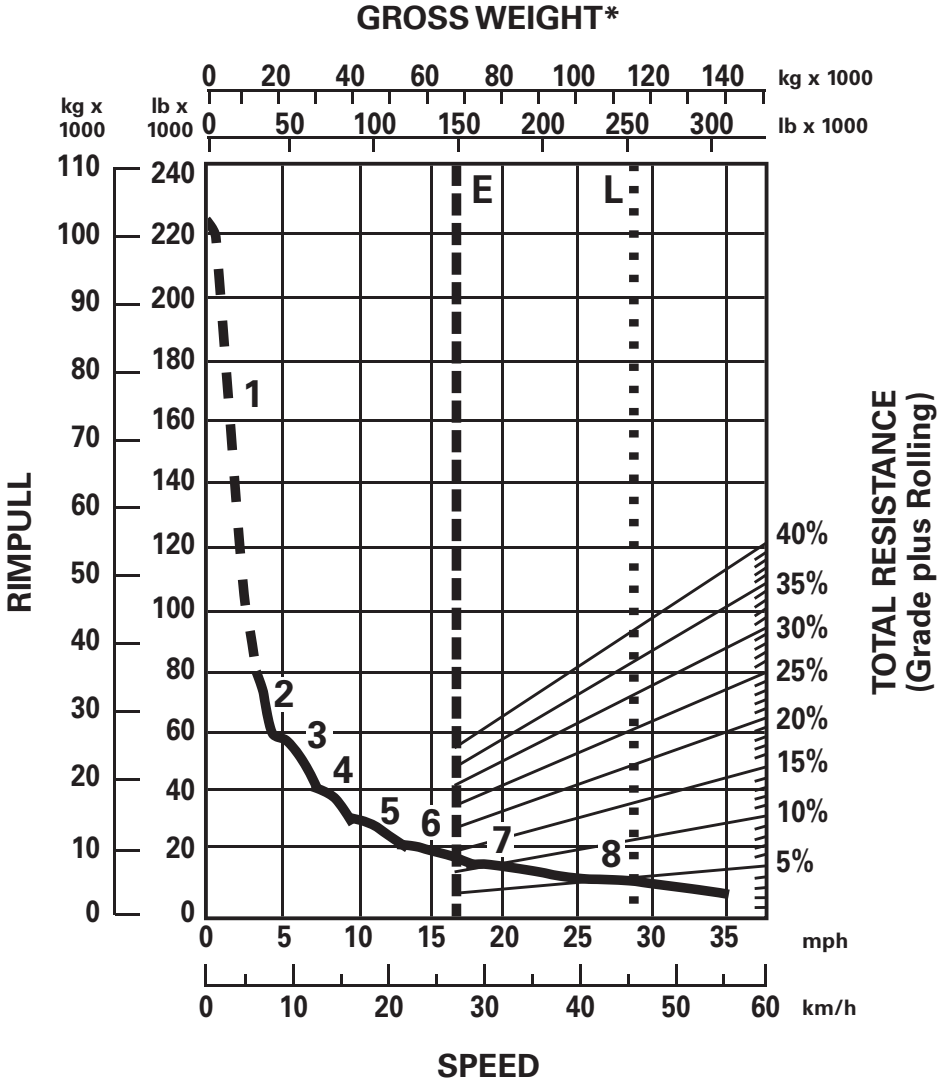


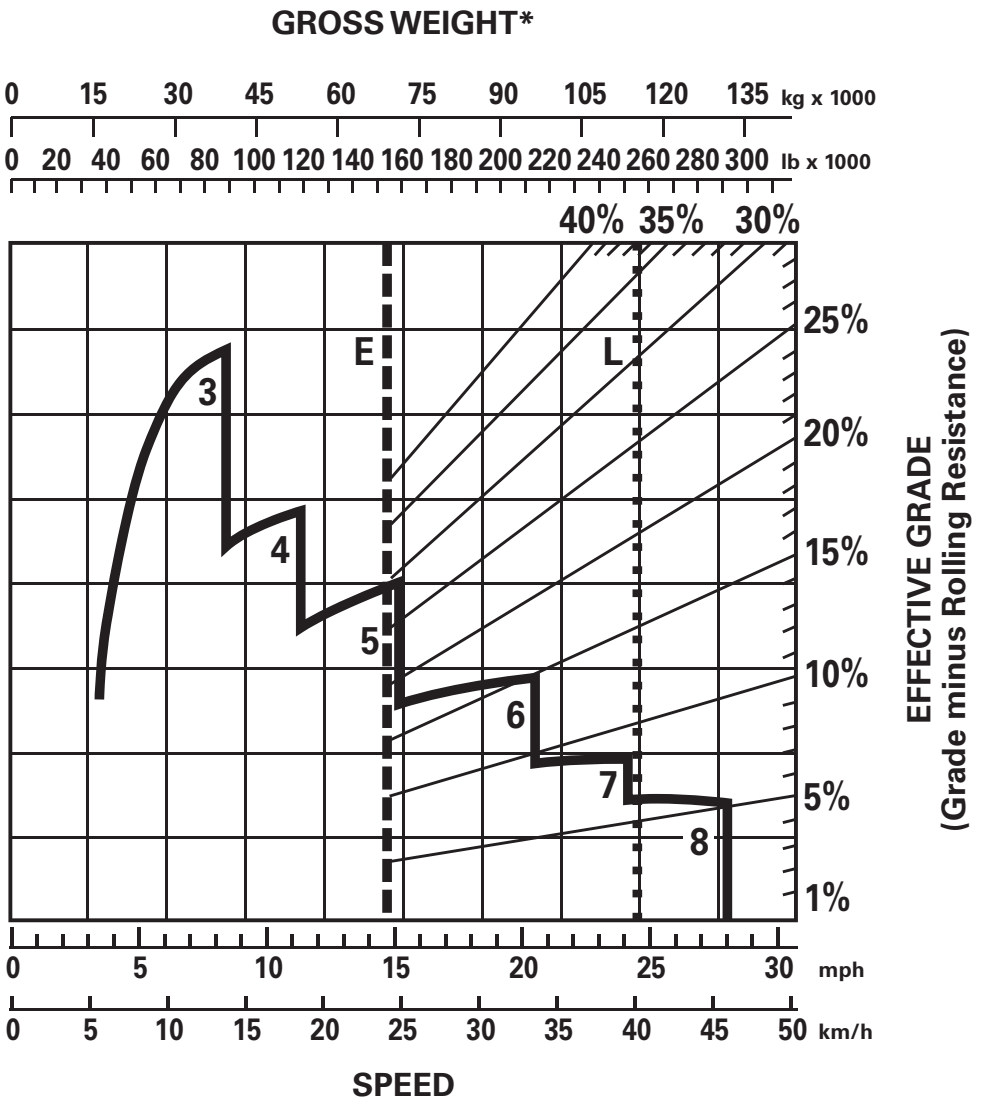
*at sea level

KEY

1 — 1st Gear Torque Converter Drive
2 — 2nd Gear Torque Converter Drive
3 — 3rd Gear Direct Drive
4 — 4th Gear Direct Drive
5 — 5th Gear Direct Drive
6 — 6th Gear Direct Drive
7 — 7th Gear Direct Drive
8 — 8th Gear Direct Drive

KEY

E — Empty 72 804 kg (160,505 lb)
L — Loaded 119 978 kg (264,505 lb)



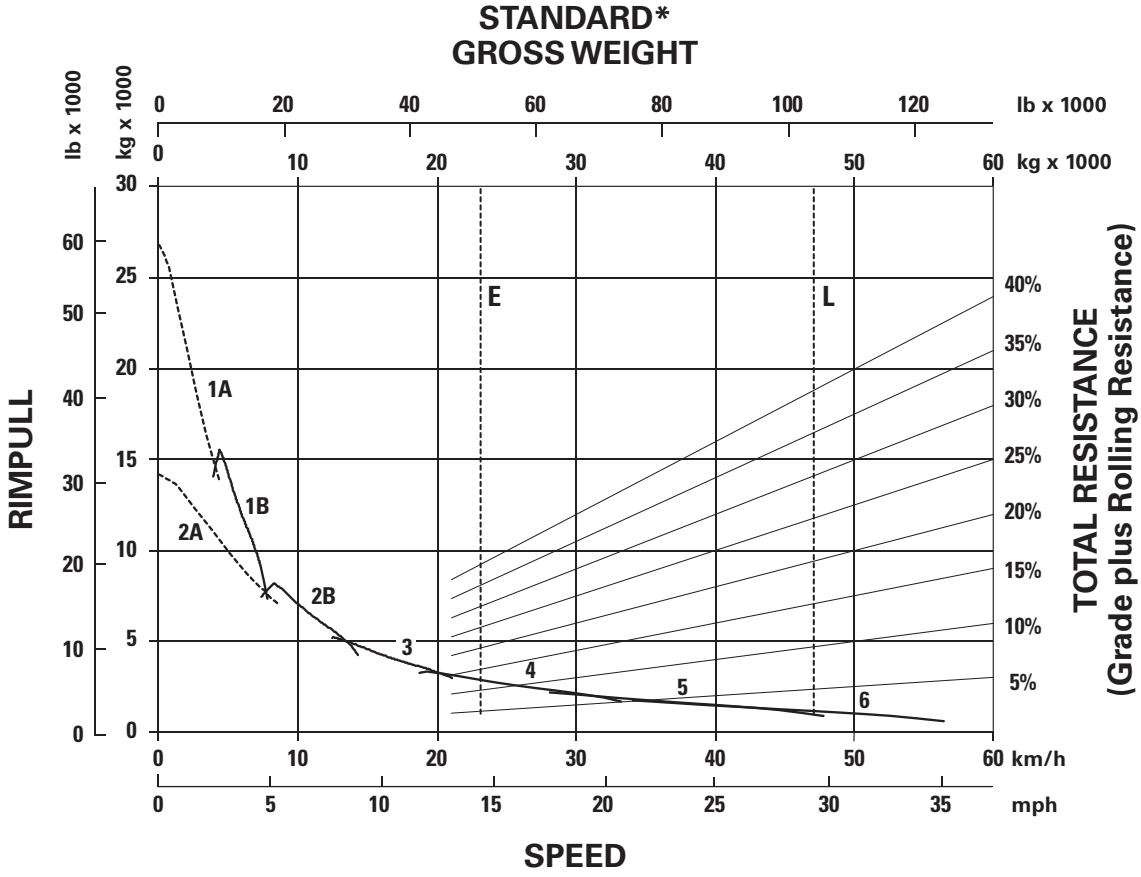
*at sea level

KEY

3 — 3rd Gear Direct Drive
4 — 4th Gear Direct Drive
5 — 5th Gear Direct Drive
6 — 6th Gear Direct Drive
7 — 7th Gear Direct Drive
8 — 8th Gear Direct Drive

KEY

E — Empty 72 804 kg (160,505 lb)
L — Loaded 119 978 kg (264,505 lb)



KEY

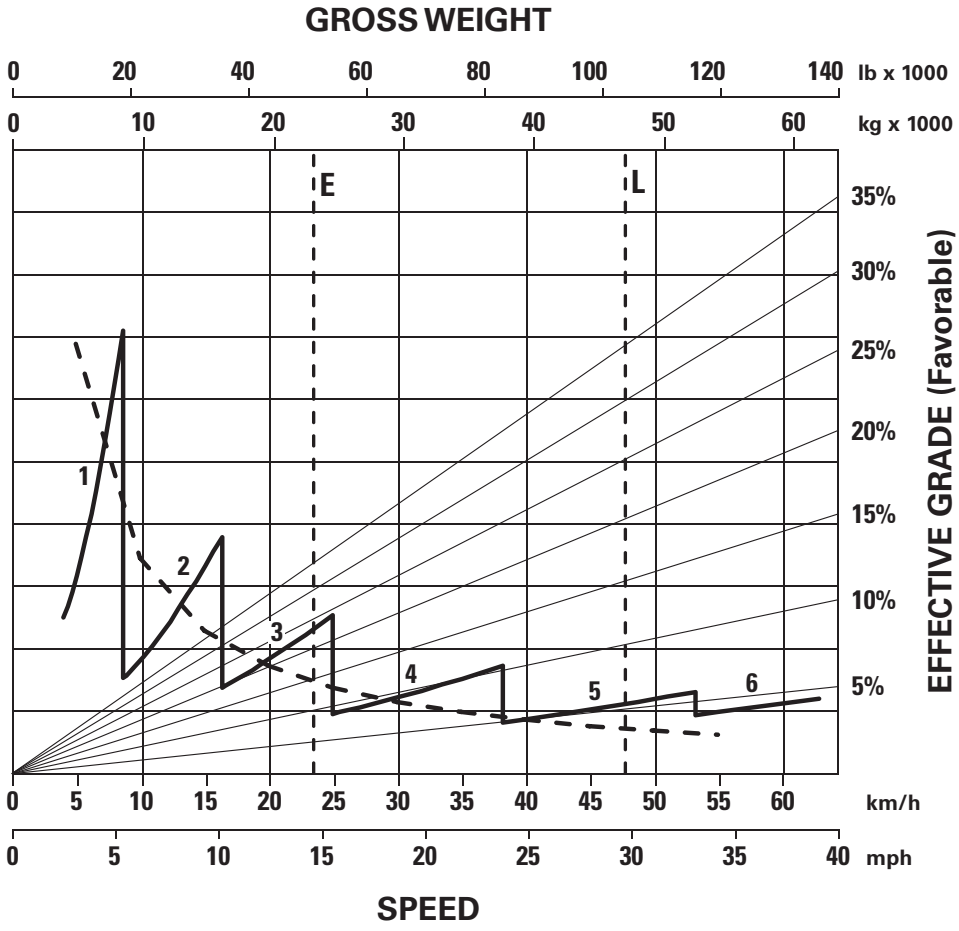
1A — 1st Gear (Converter Drive)
1B — 1st Gear (Direct Drive)
2A — 2nd Gear (Converter Drive
2B — 2nd Gear (Direct Drive)
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear

KEY

E — Empty 23 040 kg (50,795 lb)
L — Loaded 47 040 kg (103,707 lb)

*At sea level.

725C2 Brake/Retarder Performance Curve
- 23.5R25 Tires
- Tier 4 Final/Stage IV/Japan 2014 (Tier 4 Final)

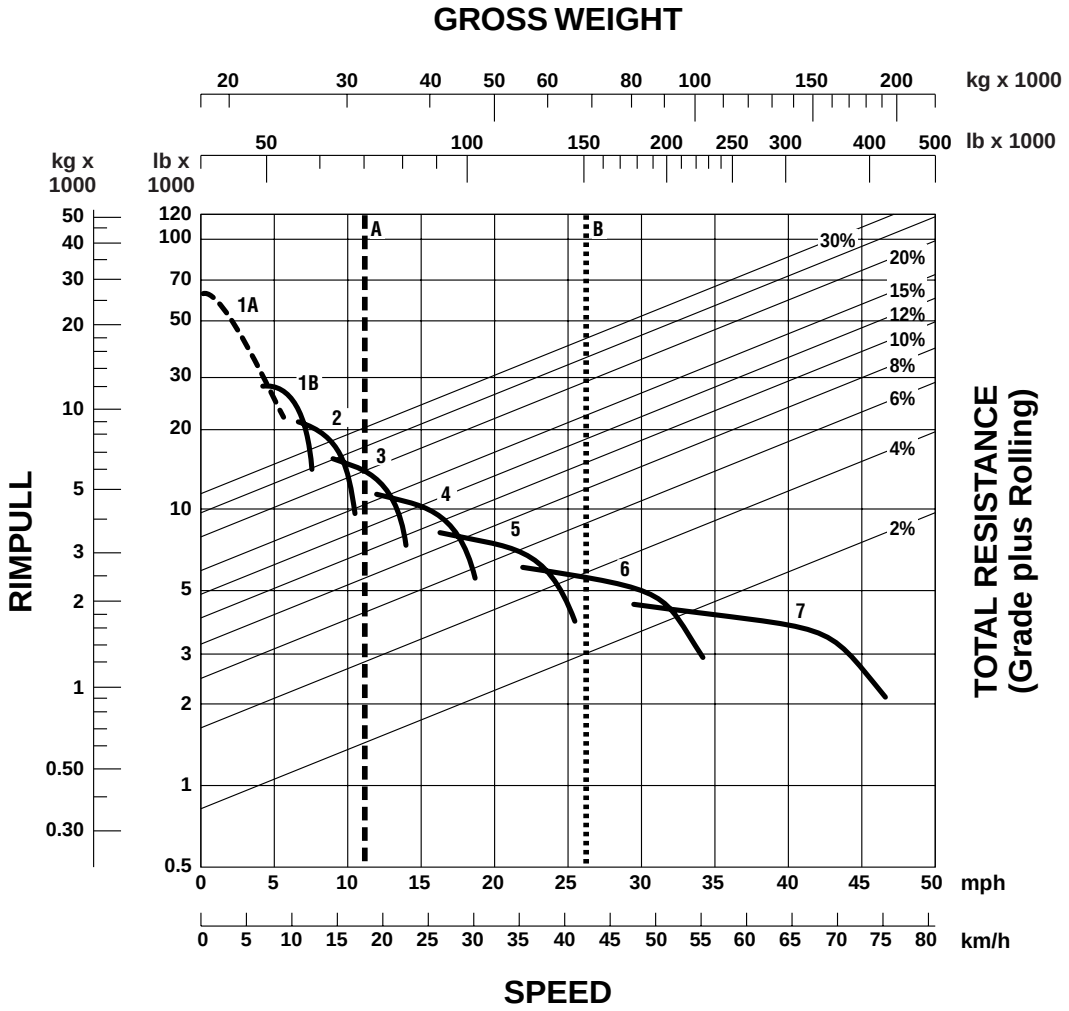


KEY

1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear

KEY

E — Empty 23 040 kg (50,795 lb)
L — Loaded 47 040 kg (103,707 lb)



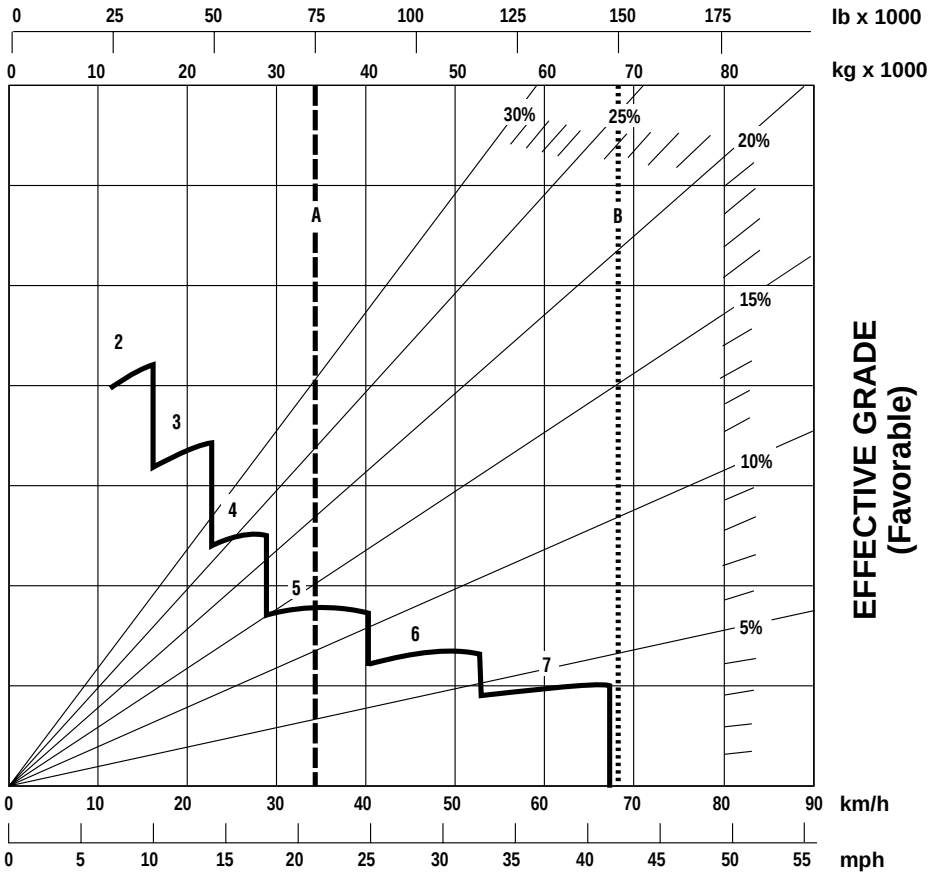
KEY

1A — 1st Gear (Torque Converter)
1B — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear

KEY

A — Empty 31 250 kg (68,900 lb)
B — Max GMW 68 182 kg (150,000 lb)

GROSS WEIGHT



SPEED

CONTINUOUS GRADE LENGTH

KEY

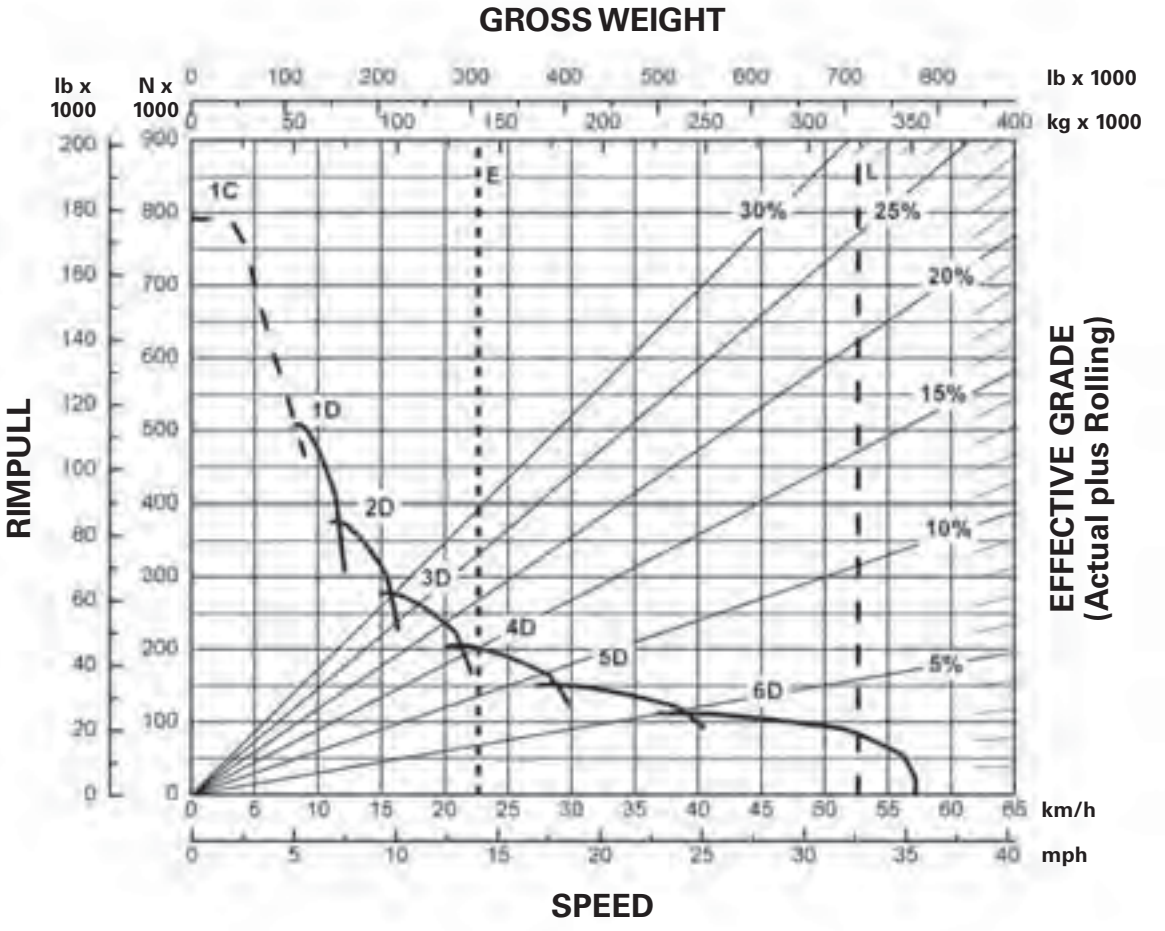
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear
7 — 7th Gear

KEY

A — Empty 31 250 kg (68,900 lb)
B — Max GMW 68 182 kg (150,000 lb)

9

789D 2100 HP Rimpull-Speed-Gradeability
- 37.00R57 Tires**
- 1593 mm **(5'2.7")** Tire Radius



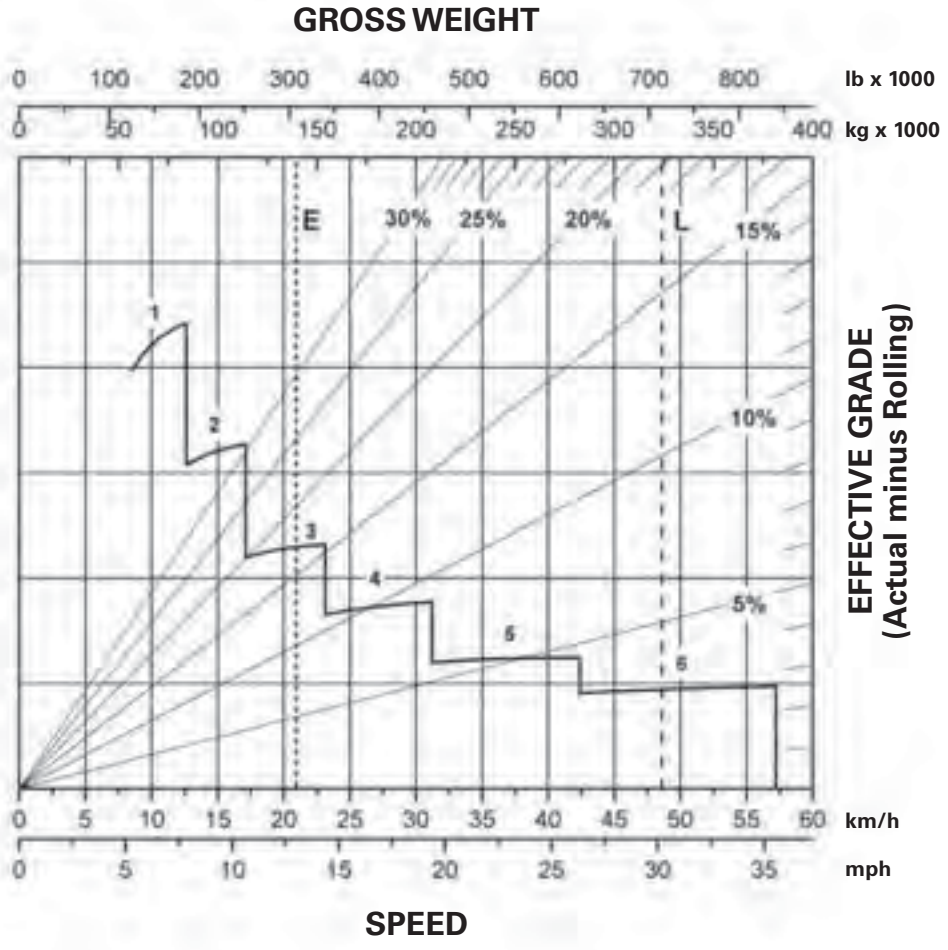
KEY

1C — 1st Gear (Torque Converter)
1D — 1st Gear
2D — 2nd Gear
3D — 3rd Gear
4D — 4th Gear
5D — 5th Gear
6D — 6th Gear

KEY

E — Empty Operating Weight 141 214 kg (311,324 lb)*
L — Target GMW 324 319 kg (715,000 lb)

*Truck equipped with sideboards and liners.
**At Sea Level.



KEY

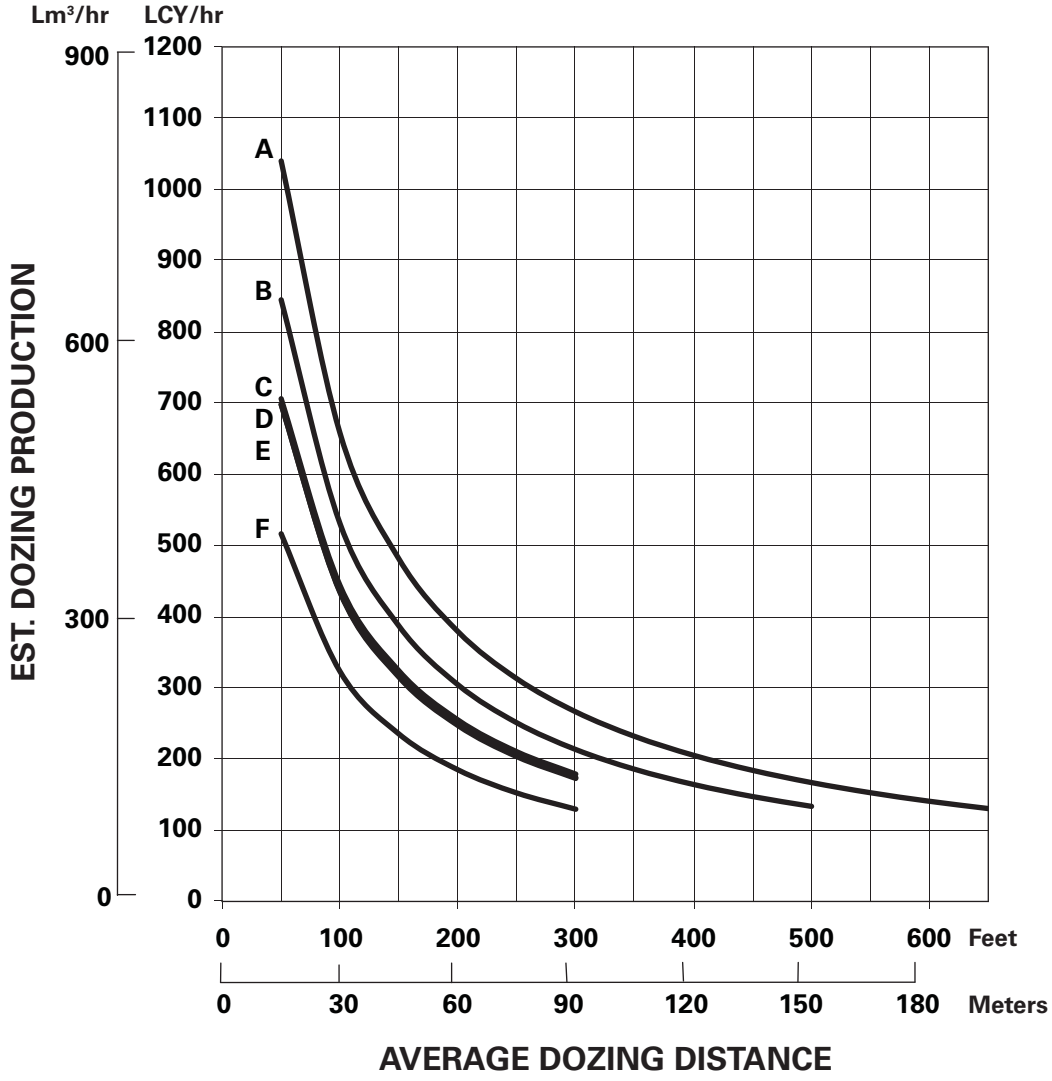
1 — 1st Gear
2 — 2nd Gear
3 — 3rd Gear
4 — 4th Gear
5 — 5th Gear
6 — 6th Gear

KEY

E — Empty Operating Weight 141 214 kg (311,324 lb)*
L — Target GMW 324 319 kg (715,000 lb)

*Truck equipped with sideboards and liners.
**At Sea Level.

ESTIMATED DOZING PRODUCTION ● Semi-Universal Blades ● D6N through D8R

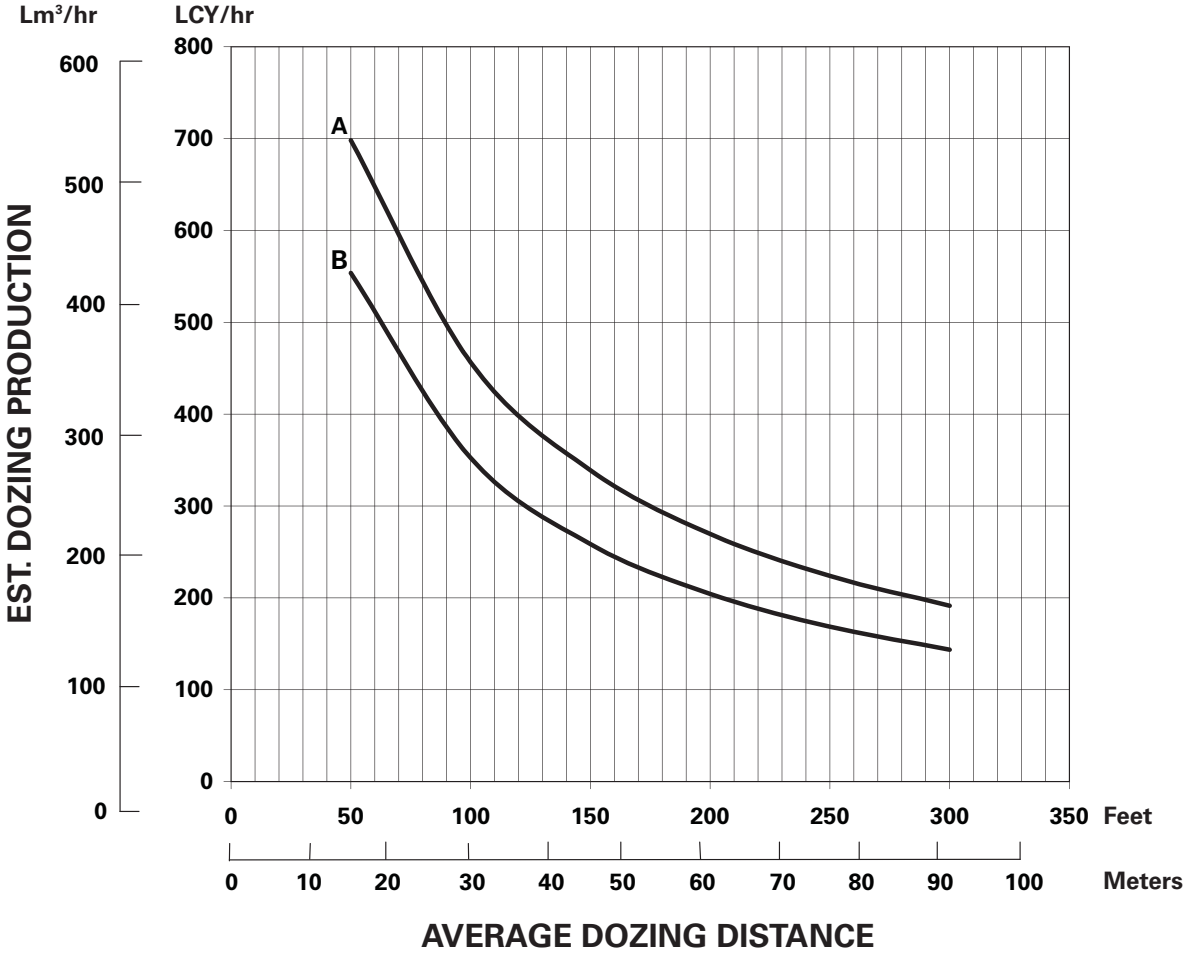


KEY

A — D8R
B — D7R
C — D6T Tier 4 Interim/Stage IIIB/Japan 2011 (Tier 4 Interim)
D — D6T
E — D6R
F — D6N

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

ESTIMATED DOZING PRODUCTION ● Straight Blades ● D6T through D7E

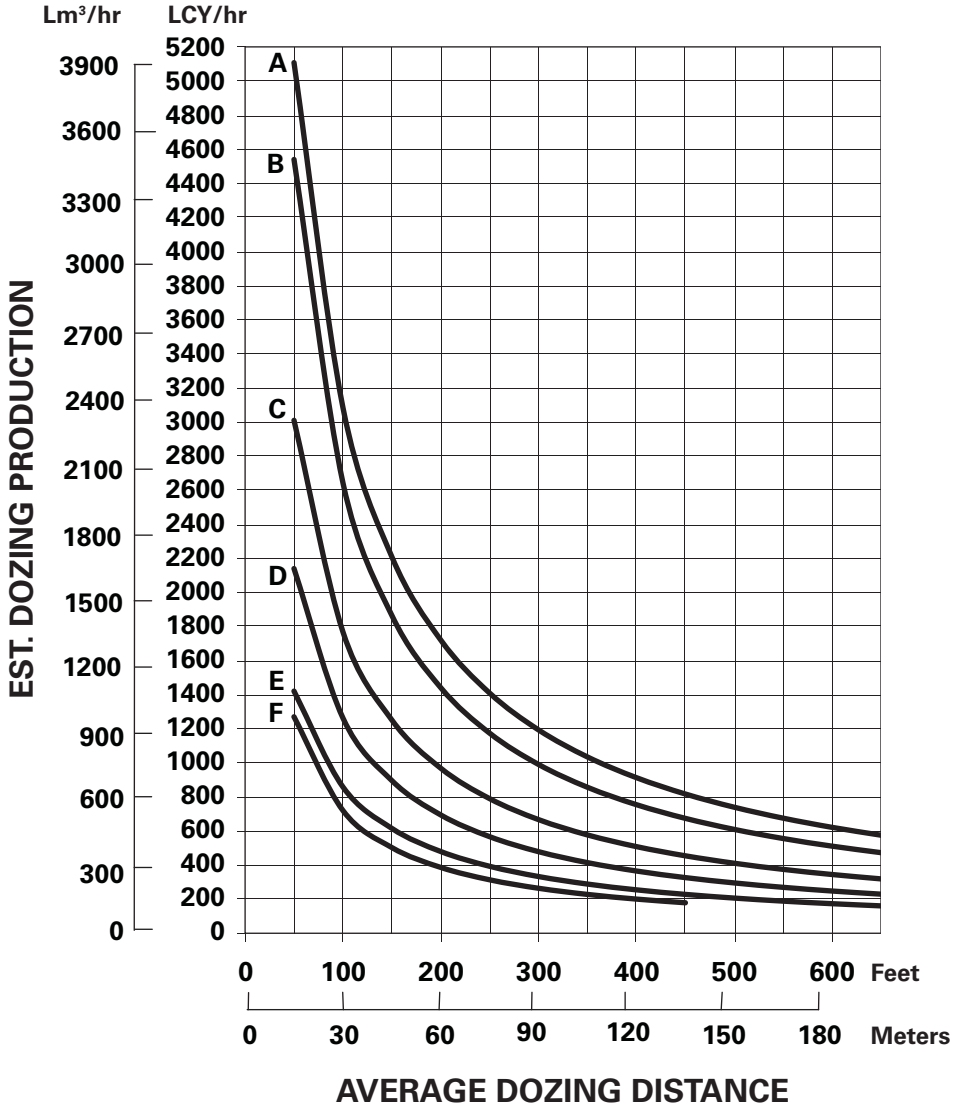


KEY

A — D7E
B — D6T

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

ESTIMATED DOZING PRODUCTION ● Universal Blades ● D7E through D11T CD

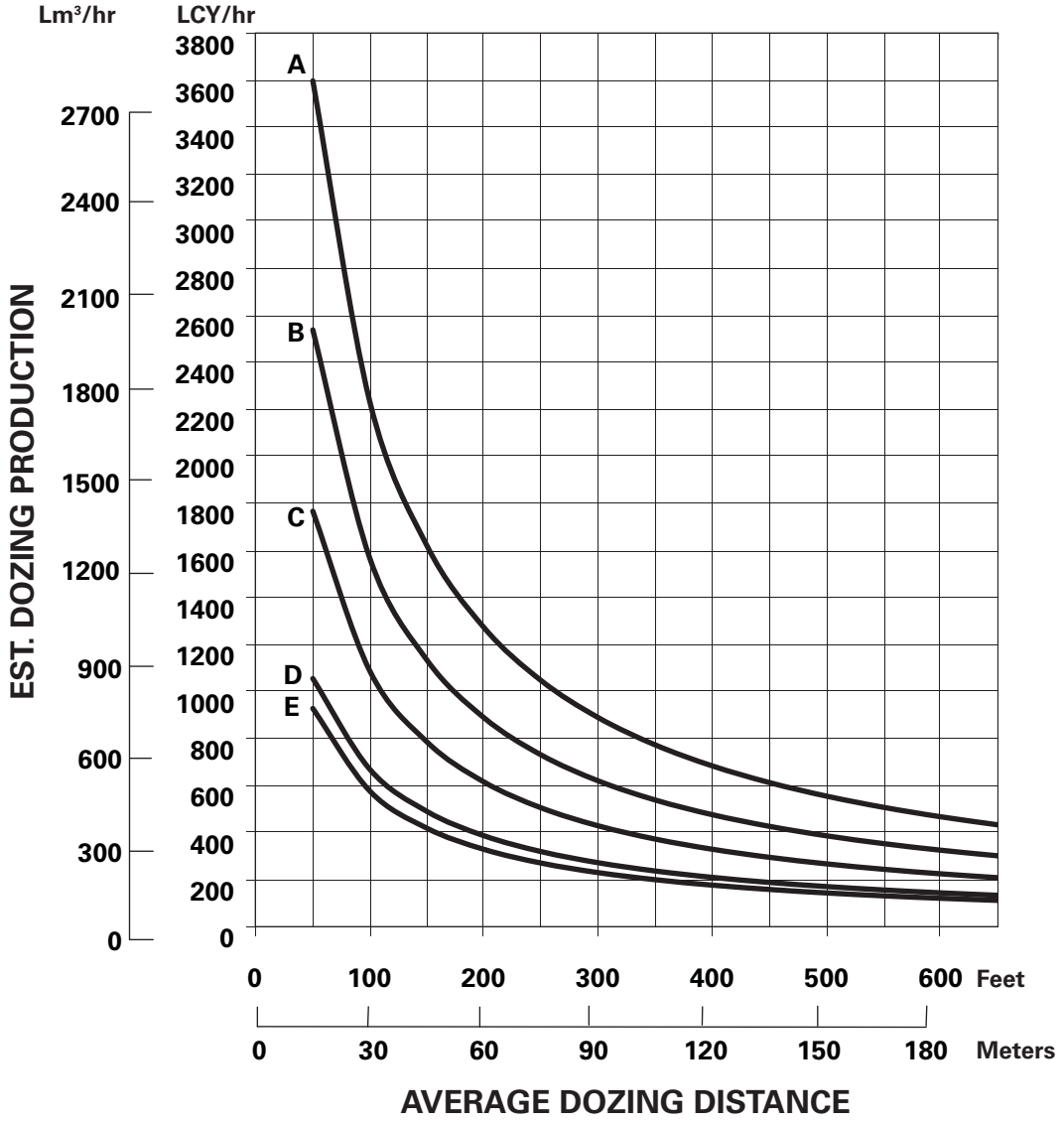


KEY

A — D11T CD
B — D11T
C — D10T2
D — D9T
E — D8T
F — D7E

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

ESTIMATED DOZING PRODUCTION ● Semi-Universal Blades ● D7E through D11T

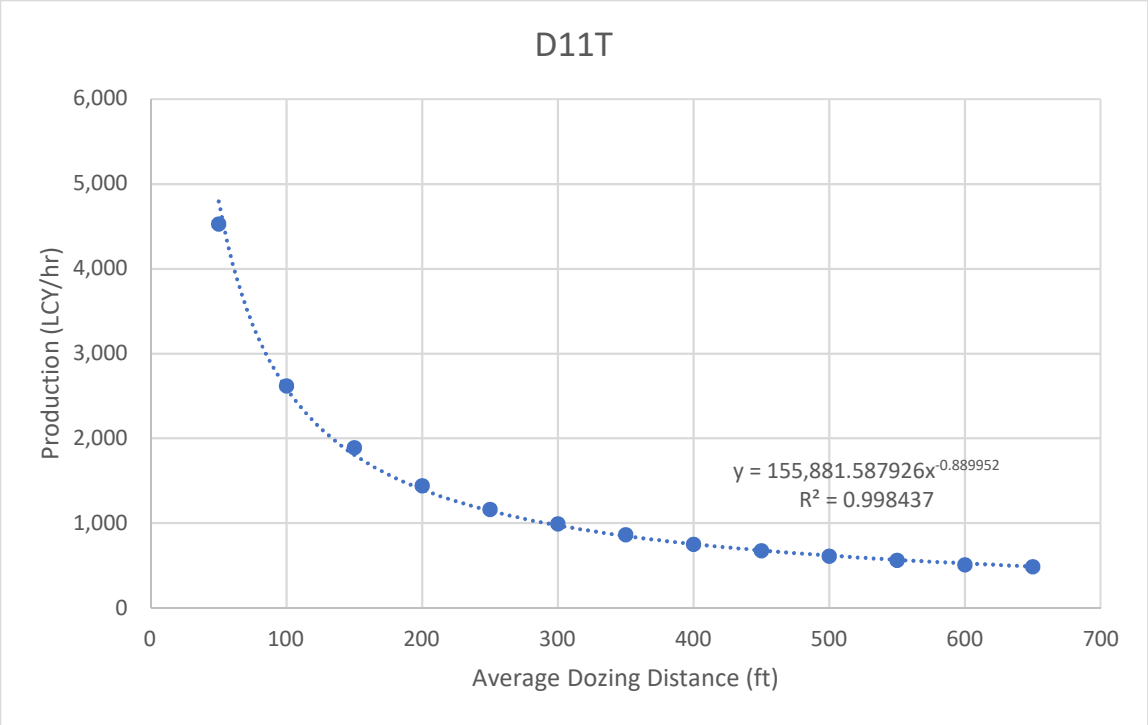


KEY

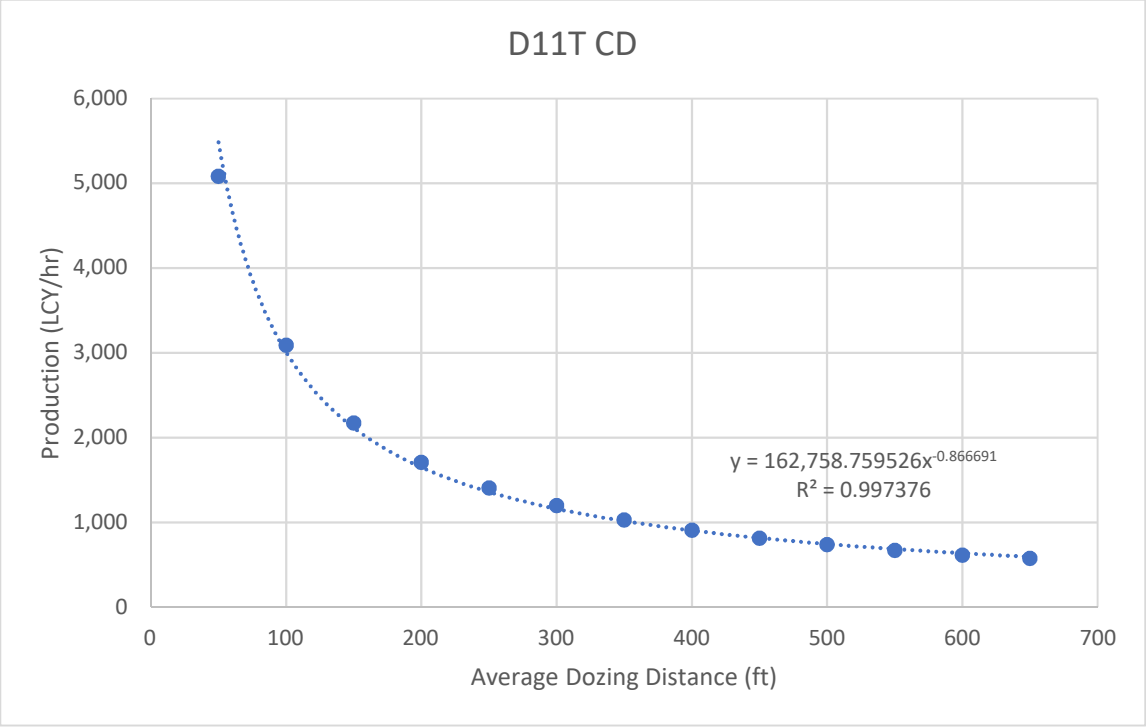
A — D11T
B — D10T2
C — D9T
D — D8T
E — D7E

NOTE: This chart is based on numerous field studies made under varying job conditions. Refer to correction factors following these charts.

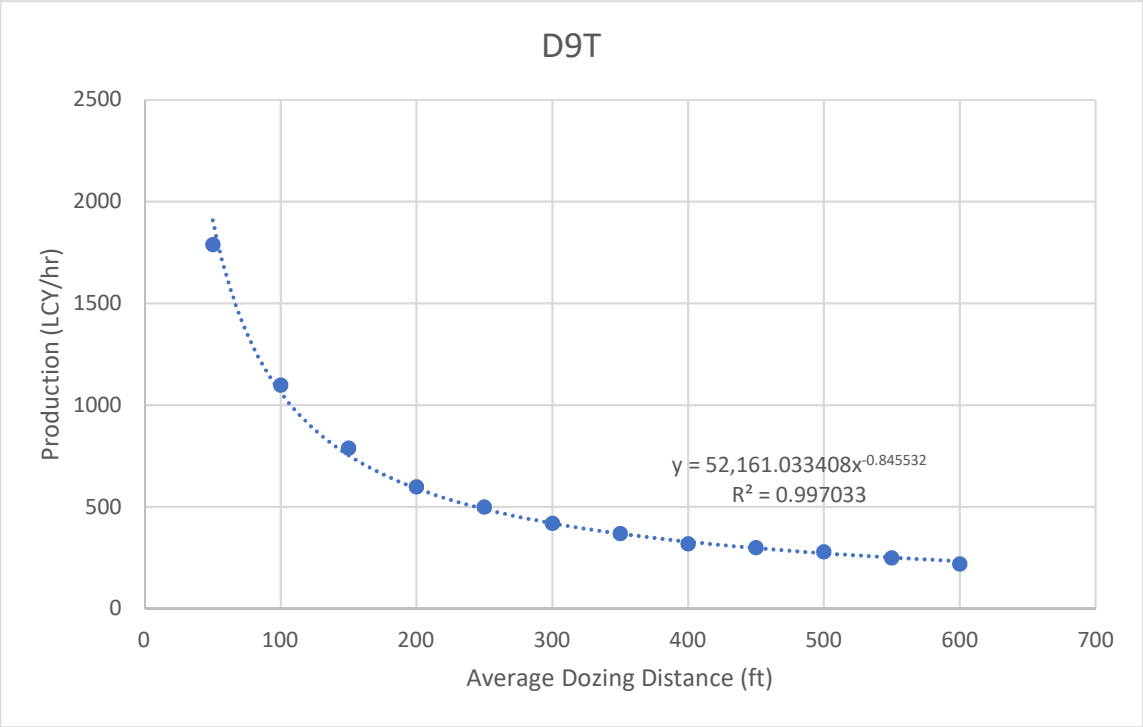
Dozing Production



Caterpillar Performance Handbook Edition 47, 19-51



Caterpillar Performance Handbook Edition 47, 19-51



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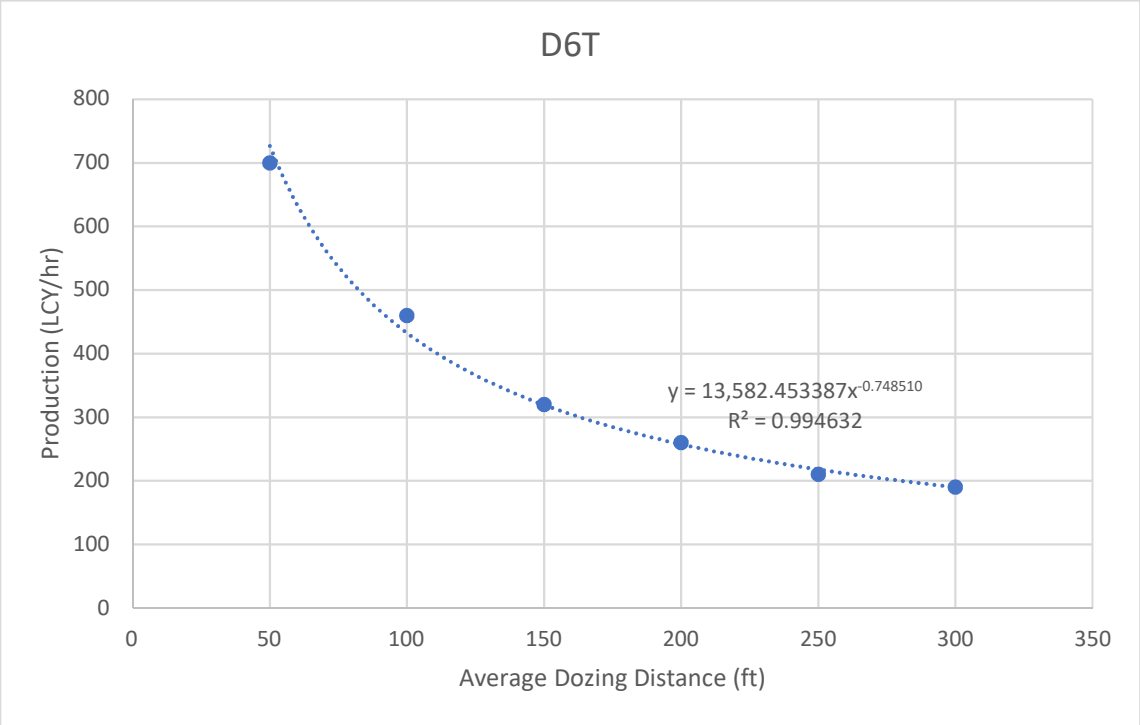
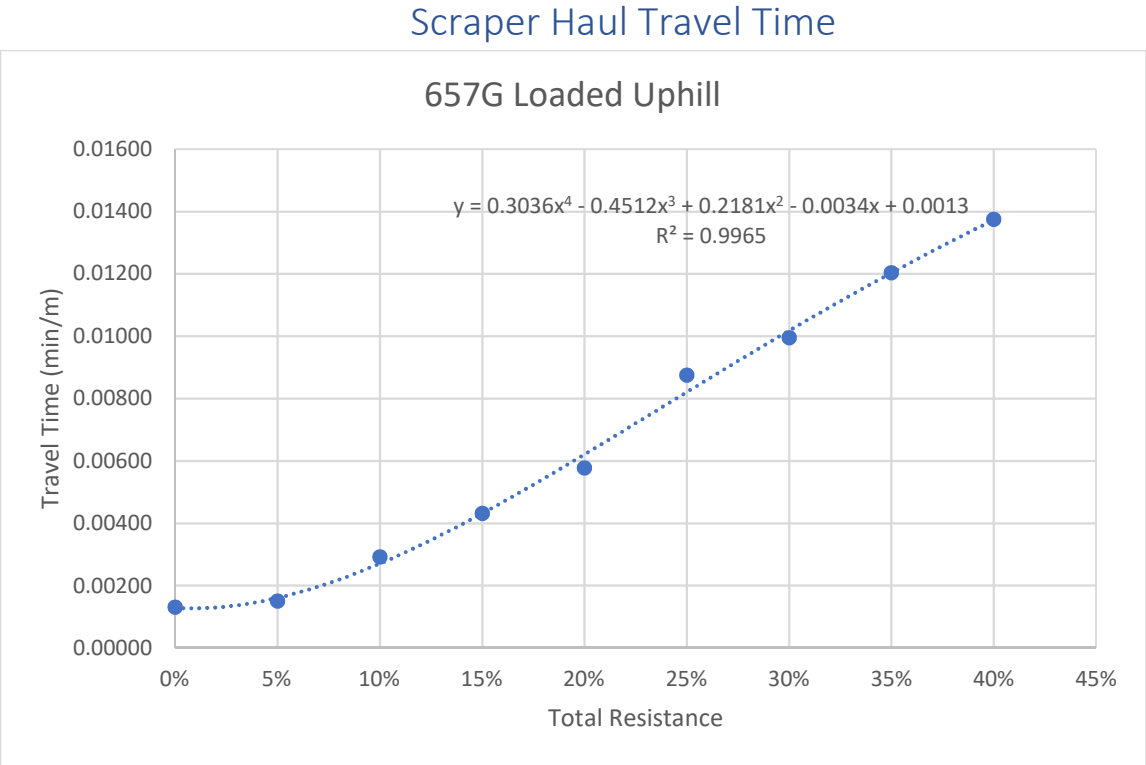
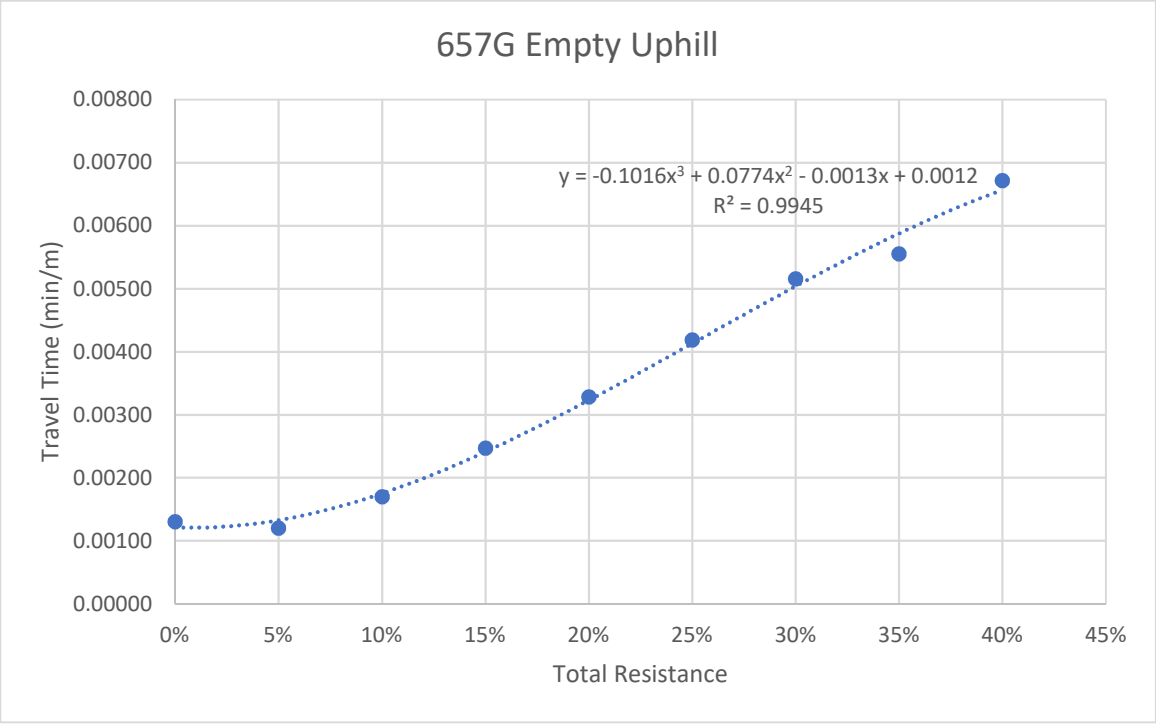


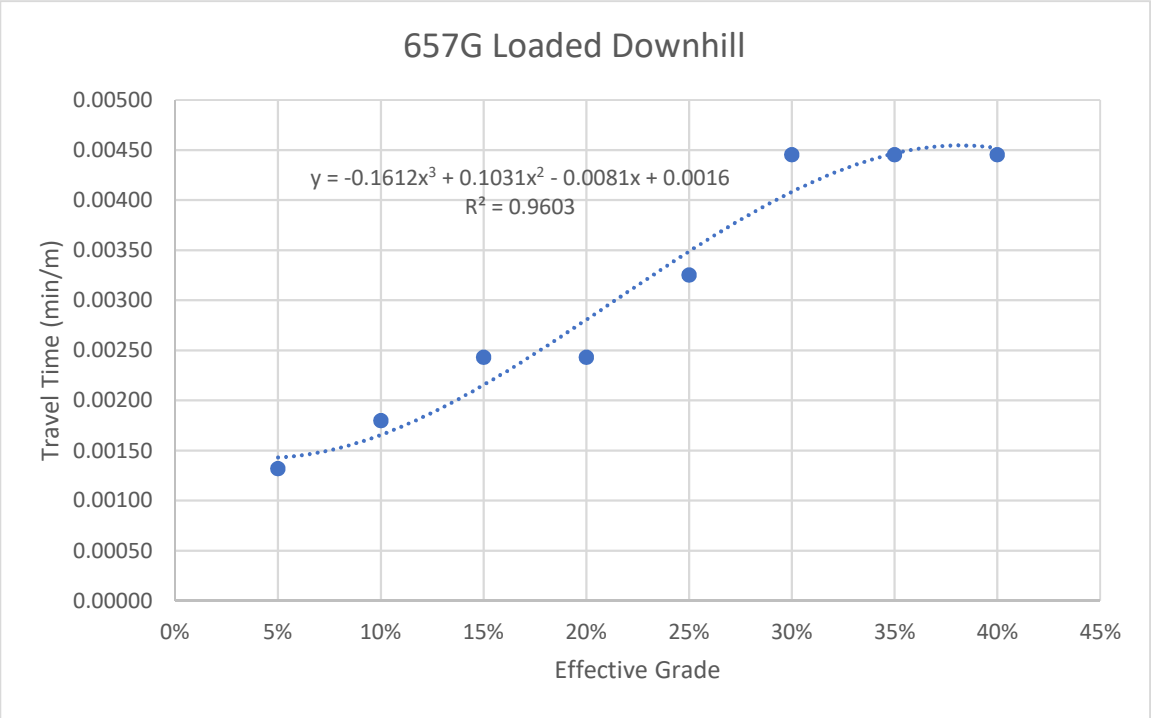
Caterpillar Performance Handbook Edition 47, 19-53



Caterpillar Performance Handbook Edition 47, 24-29



Caterpillar Performance Handbook Edition 47, 24-29



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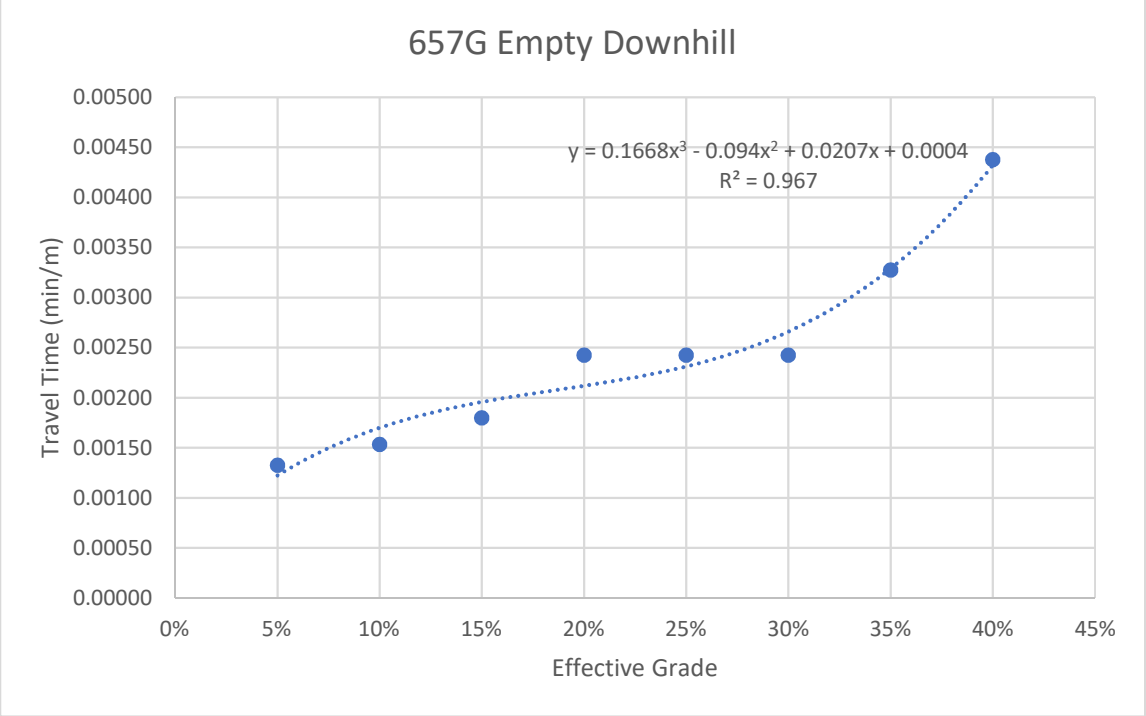

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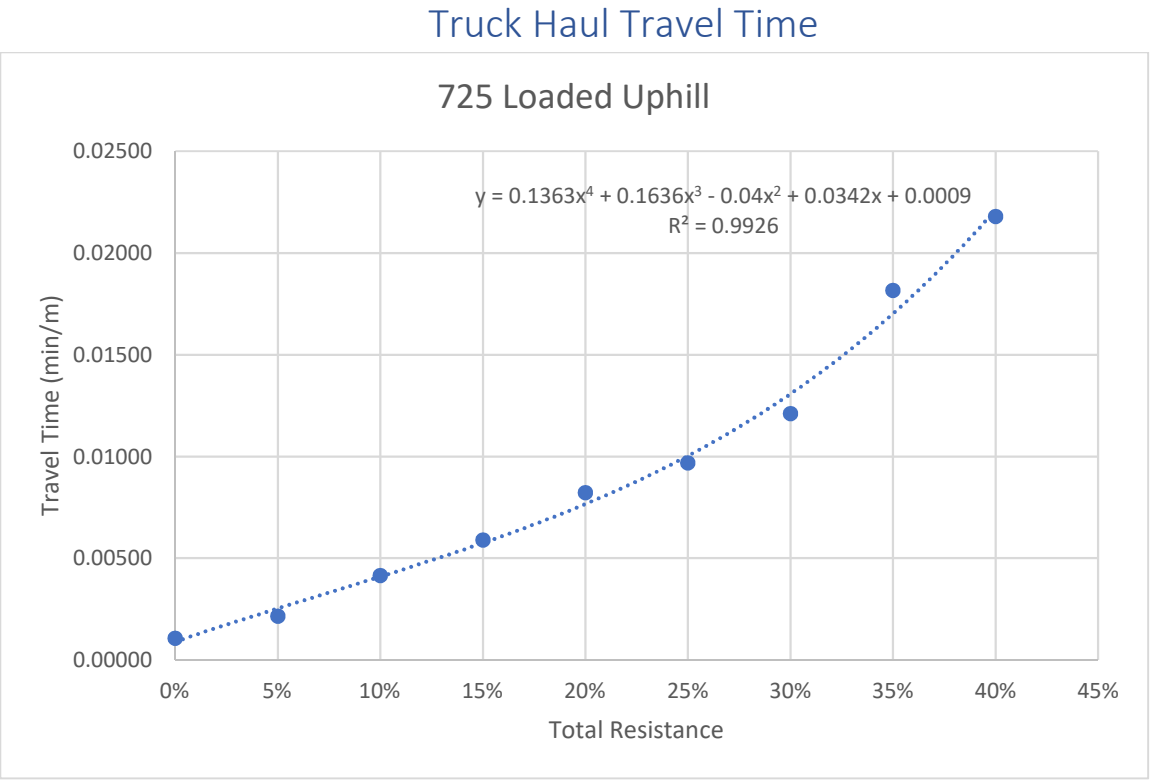
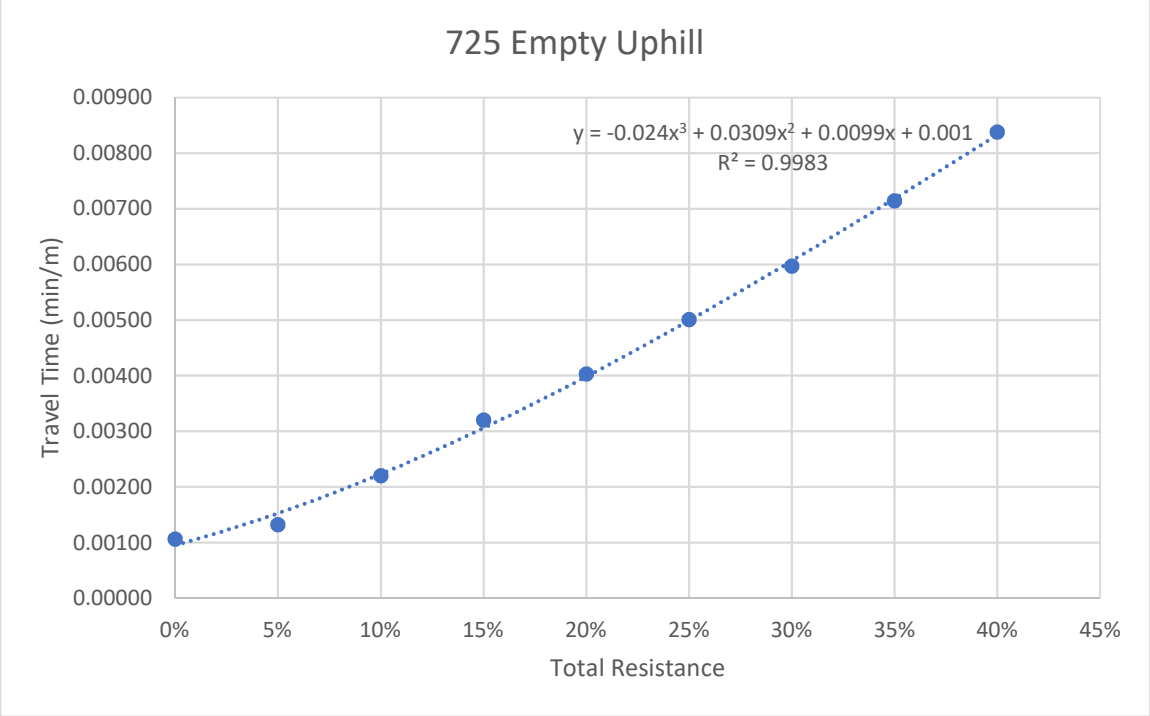


Caterpillar Performance Handbook Edition 47, 1-9



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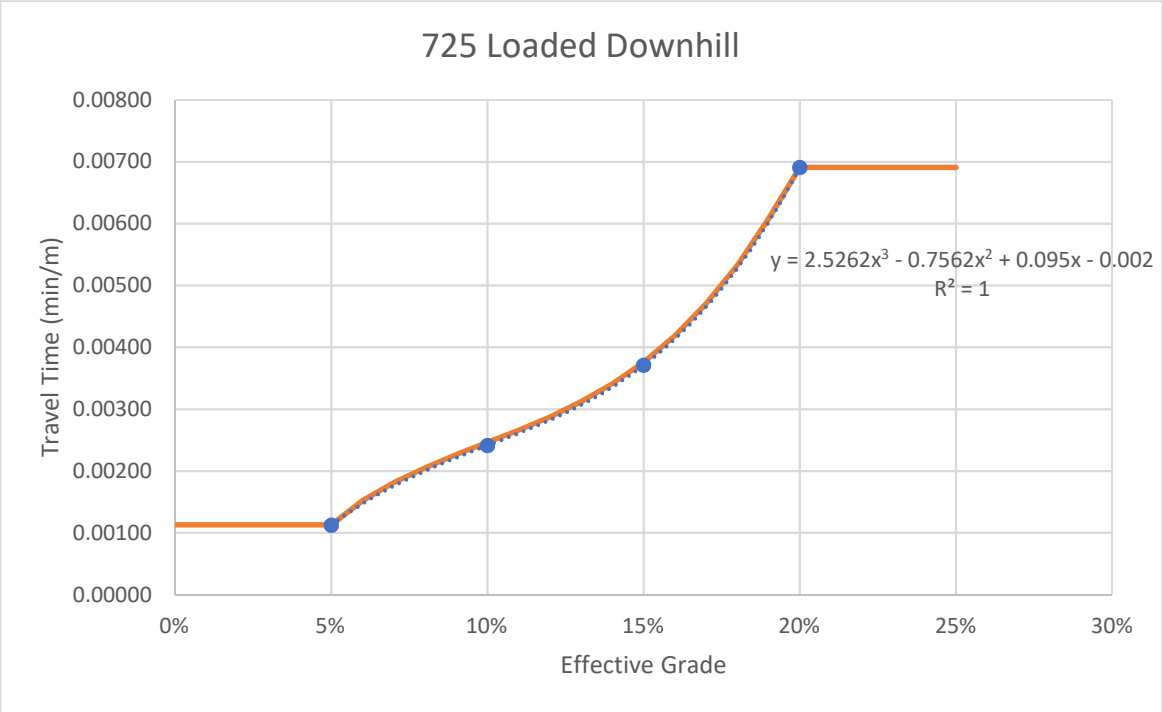

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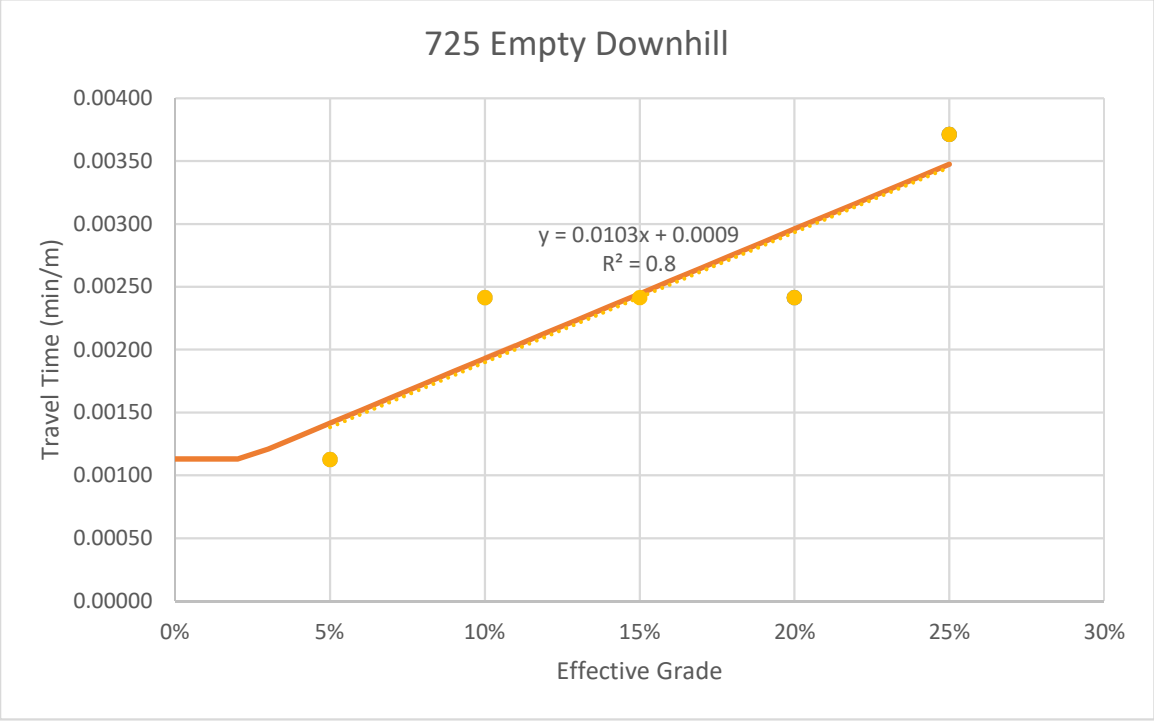
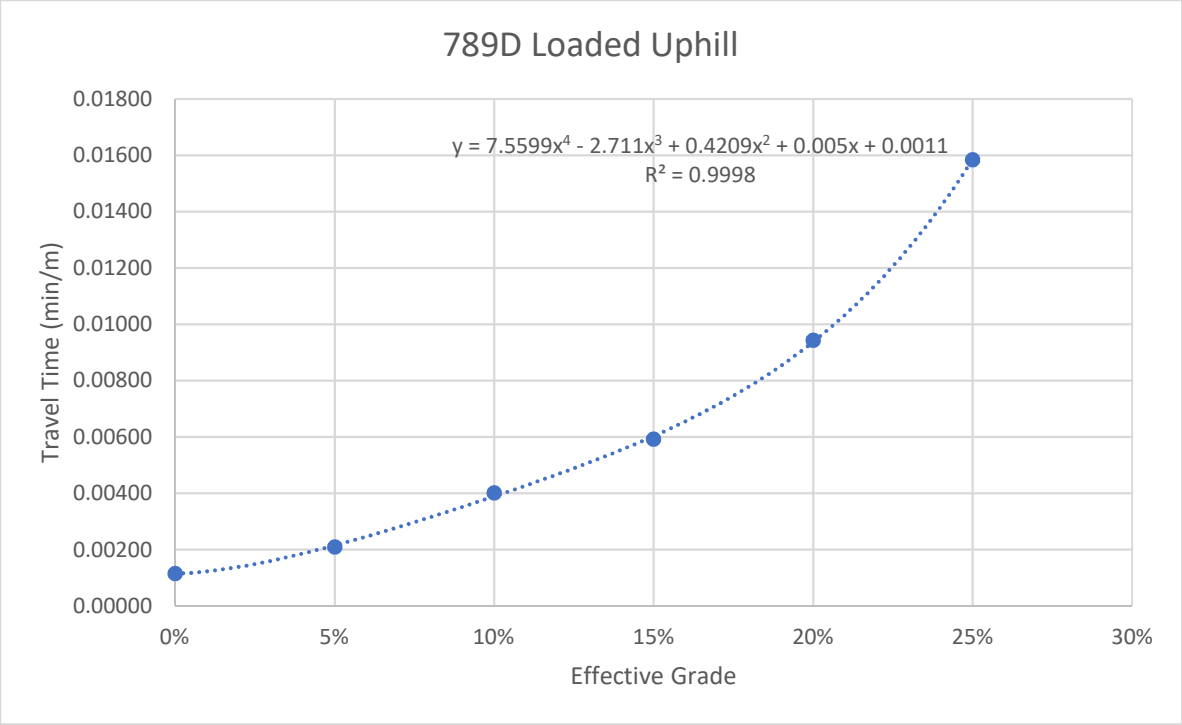


Caterpillar Performance Handbook Edition 47, 1-10



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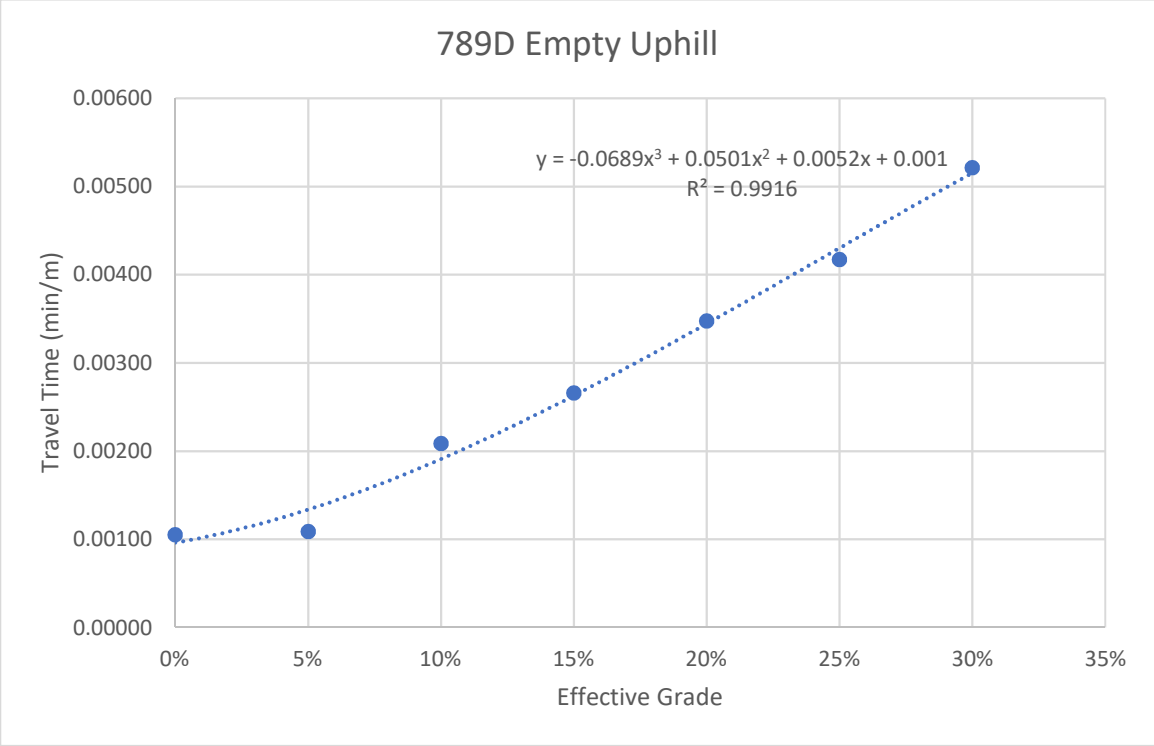
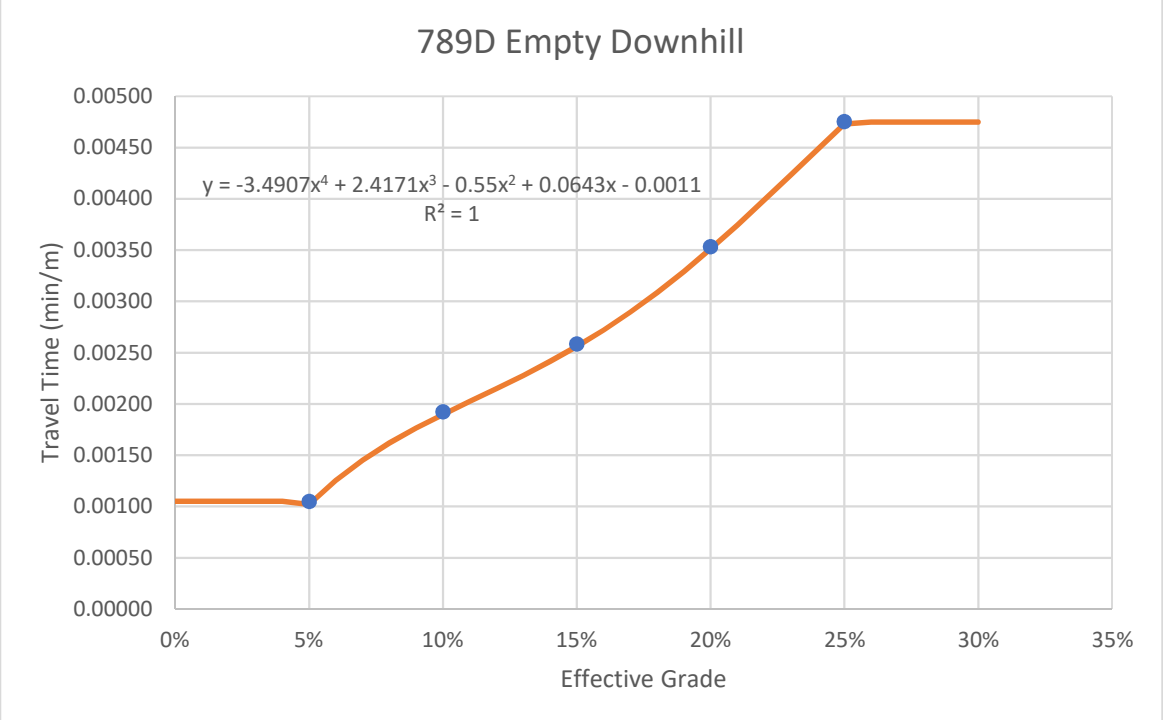


Caterpillar Performance Handbook Edition 47, 10-64

Caterpillar Performance Handbook Edition 47, 10-65



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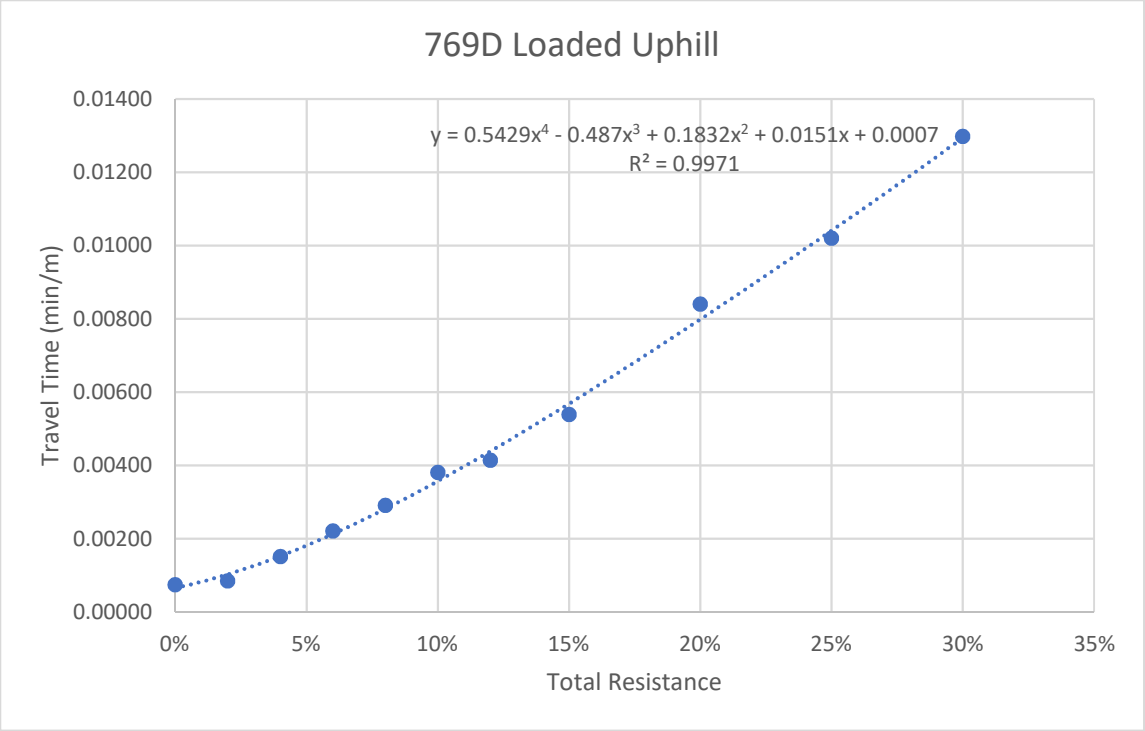
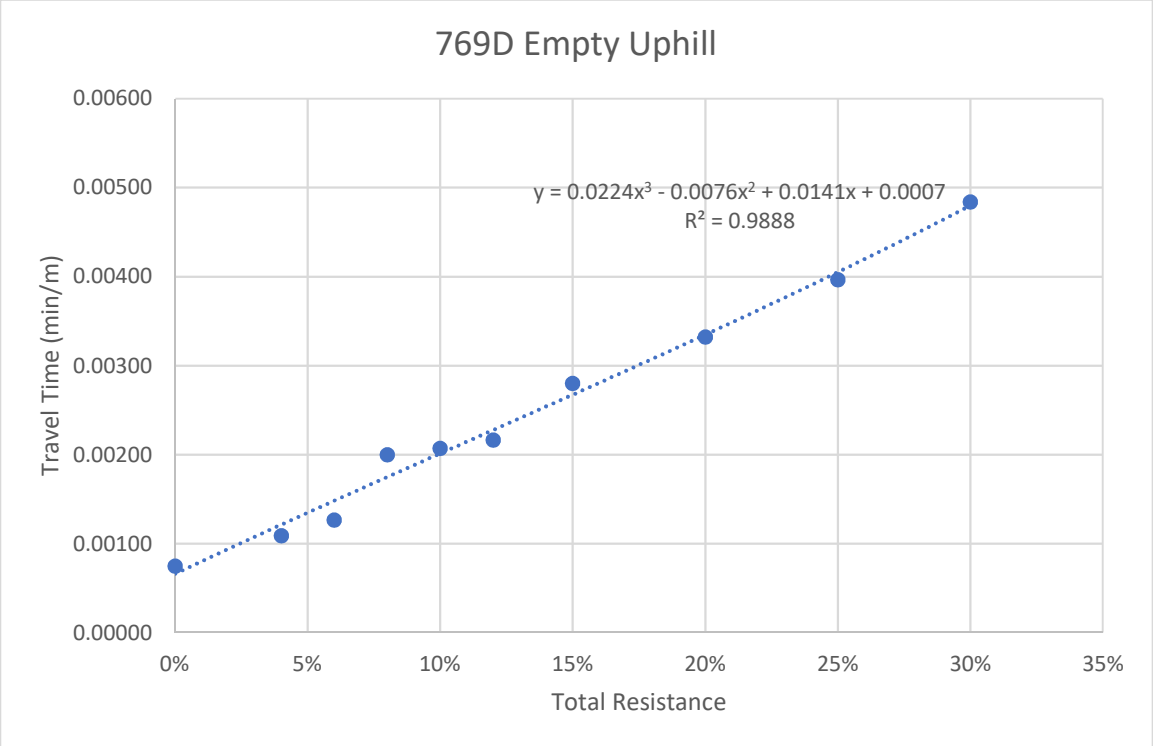


Caterpillar Performance Handbook Edition 29, 9-10



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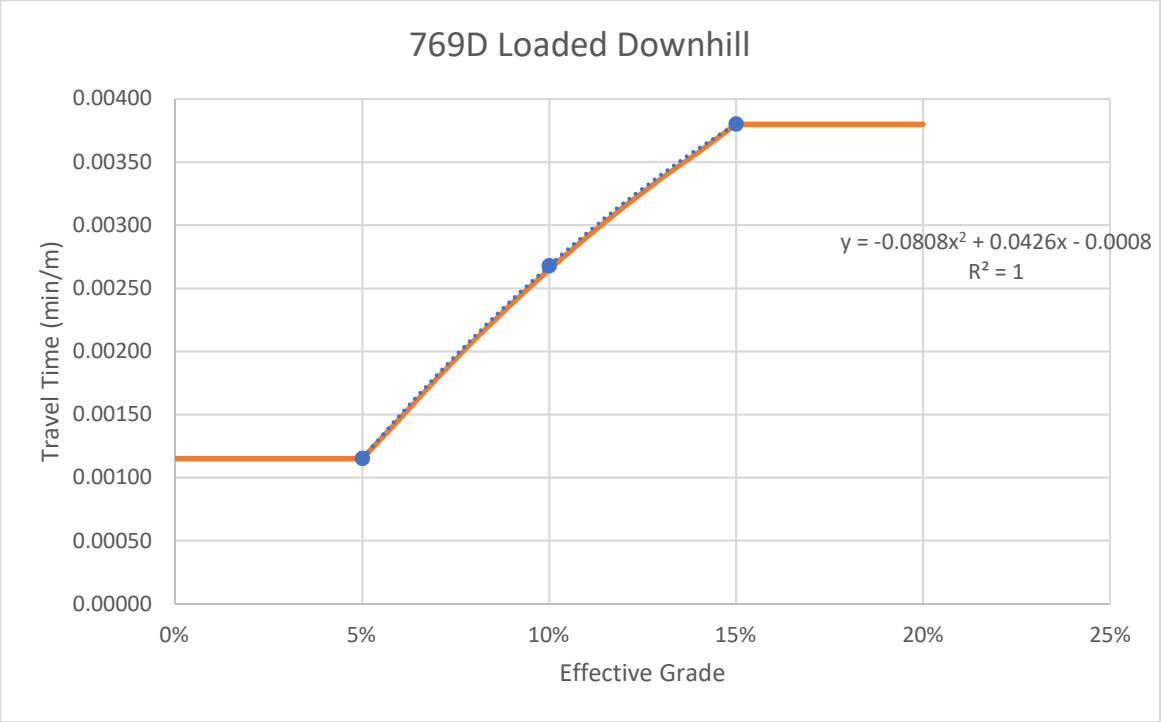
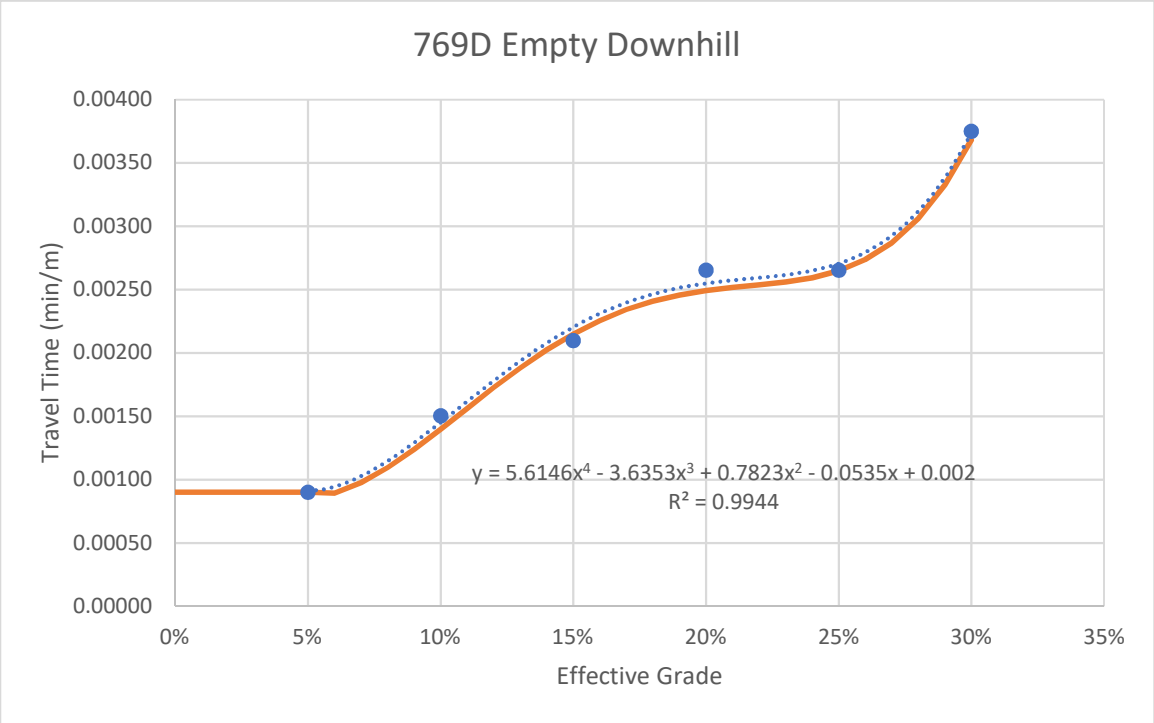


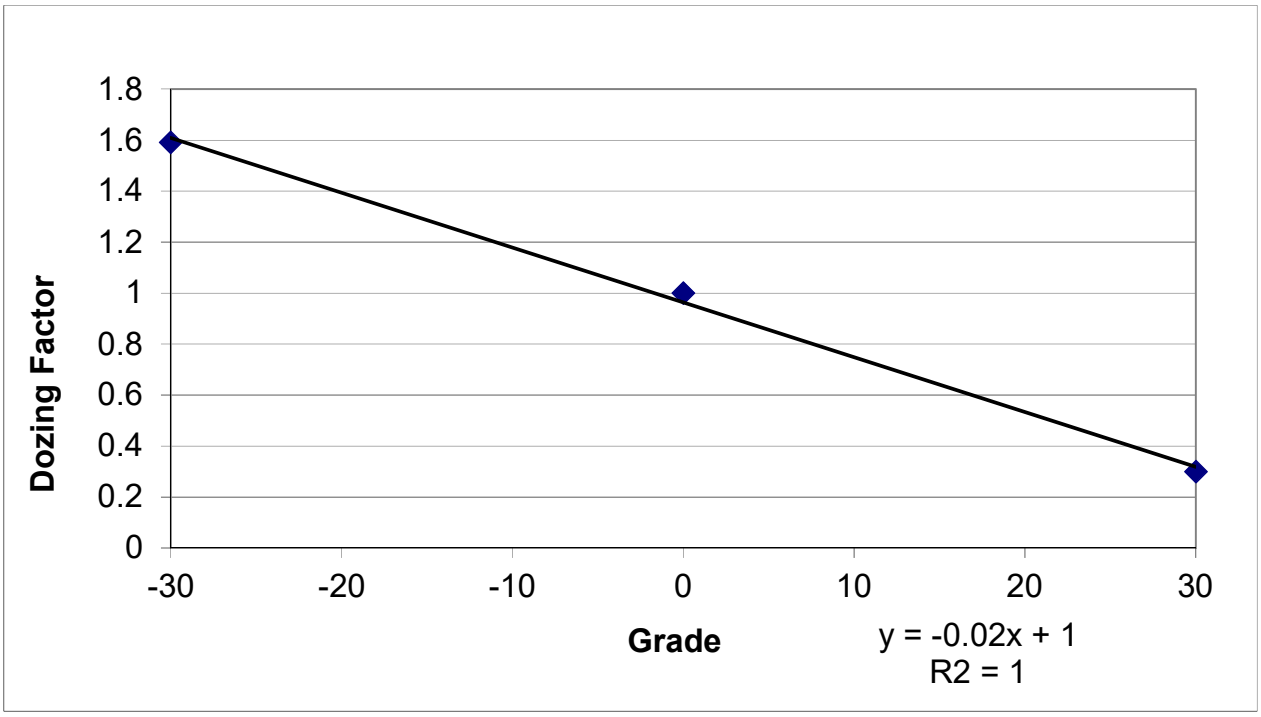
Caterpillar Performance Handbook Edition 29, 9-11



Caterpillar Performance Handbook Edition 29, 9-11

Grade vs. Dozing Factor

Grade %	Dozing Factor
0	1
-30	1.59
30	0.3



Appendix D.4

R.S. Means
Online Data

RS Means Online Data

Demolition/Remediation - accessed July 17, 2024

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
024113400190	Selective demolition, metal drainage piping, CMP, steel, 48"-60", diameter, excludes excavation	L.F.	$ -	$ 11.45	$ 9.86	$ 21.31	Year 2024	NEW MEXICO / LAS CRUCES (880)
024116130100	Building demolition, large urban projects, mixture of types, excludes foundation demolition, dump fees	C.F.	$ -	$ 0.14	$ 0.24	$ 0.38	Year 2024	NEW MEXICO / LAS CRUCES (880)
024116170400	Building footings and foundations, floors, concrete slab on grade, plain concrete, 6" thick, excludes disposal costs and dump fees	S.F.	$ -	$ 0.21	$ 0.61	$ 0.82	Year 2024	NEW MEXICO / LAS CRUCES (880)
130505750530	Steel tank, single wall, above ground, 5,000 thru 10,000 gallon, selective demolition, excluding foundation, pumps or piping	Ea.	$ -	$ 670.19	$ 1,264.50	$ 1,934.69	Year 2024	NEW MEXICO / LAS CRUCES (880)
130505750540	Steel tank, single wall, above ground, 15,000 thru 30,000 gallon, selective demolition, excluding foundation, pumps or piping	Ea.	$ -	$ 927.30	$ 2,107.50	$ 3,034.80	Year 2024	NEW MEXICO / LAS CRUCES (880)
260505100390	Non metallic sheathed cable, (Romex), #10, 3 wire, electrical demolition, remove	L.F.	$ -	$ 0.94	$ -	$ 0.94	Year 2024	NEW MEXICO / LAS CRUCES (880)
024113800200	Selective demolition, utility poles & cross arms, utility poles, wood, 35'-45' high	Ea.	$ -	$ 218.31	$ 33.72	$ 252.03	Year 2024	NEW MEXICO / LAS CRUCES (880)
028120101120/1130	Hazardous waste cleanup/pickup/disposal, solid pickup, bulk material, minimum/maximum	Ton	$ -	$ -	$ -	$ 392.50	Year 2024	NEW MEXICO / LAS CRUCES (880)
028120101260/1270	Hazardous waste cleanup/pickup/disposal, transportation to disposal site, truckload = 80 drums or 25 C.Y. or 18 tons, minimum/maximum	Mile	$ -	$ -	$ -	$ 5.60	Year 2024	NEW MEXICO / LAS CRUCES (880)
024113230900	Utility removal, hydrants, fire, remove only, excludes hauling	Ea.	$ -	$ 371.51	$ 112.12	$ 483.63	Year 2024	NEW MEXICO / LAS CRUCES (880)
026510300320	Removal of underground storage tanks, petroleum storage tanks, non-leaking, remove sludge, water and remaining product from tank bottom of tank with vacuum truck, 9,000 - 12,000 gallon tank	Ea.	$ -	$ 113.85	$ 240.26	$ 354.11	Year 2024	NEW MEXICO / LAS CRUCES (880)
260505101570	Transformer, dry type, primary, 3 phase, to 600V, 750 kVA, electrical demolition, remove, including removal of supports, wire & conduit terminations	Ea.	$ -	$ 958.10	$ 154.27	$ 1,112.37	Year 2024	NEW MEXICO / LAS CRUCES (880)
015433406300	Rent steam cleaner 100 gph	Week	$ -	$ -	$ -	$ 240.55	Year 2024	NEW MEXICO / LAS CRUCES (880)

Revegetation - accessed July 17, 2024

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
015433201500	Rent disc harrow attchment for tractor, Excl. Hourly Oper. Cost.	Month	$ -	$ -	$ 3,050.60	$ 3,050.60	Year 2024	NEW MEXICO / LAS CRUCES (880)
329343100560	Planting, trees, shrubs, and ground cover, medium soil, bare root seedlings, 3" to 5", includes planting only	Ea.	$ -	$ 0.45	$ -	$ 0.45	Year 2024	NEW MEXICO / LAS CRUCES (880)

Concrete cutoff wall (dissipater [dissipation basin]) & Grade Control Wall - accessed July 17, 2024

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
033053406200	Structural concrete, in place, gravity retaining wall (3000 psi), 4' high, includes forms(4 uses), Grade 60 rebar, concrete (Portland cement Type I), placing and finishing	C.Y.	$ 206.49	$ 111.75	$ 11.38	$ 329.62	Year 2024	NEW MEXICO / LAS CRUCES (880)
033053403945	Structural concrete, in place, continuous strip footing (3000 psi), 36" wide x 12" deep, unreinforced, includes forms(4 uses), concrete (Portland cement Type I), placing and finishing, excludes reinforcing	C.Y.	$ 176.40	$ 47.59	$ 0.38	$ 224.37	Year 2024	NEW MEXICO / LAS CRUCES (880)

Perimeter Items - accessed July 17, 2024

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
323126200020	Wire fencing & gates, wire fencing general, barbed wire, galvanized, domestic steel, standard, 12-3/4 ga.	M.L.F.	$ 184.99	$ -	$ -	$ 184.99	Year 2024	NEW MEXICO / LAS CRUCES (880)
323113200800	Fence, chain link industrial, galvanized steel, 6 ga. wire, 2" posts @ 10' OC, 6' high, includes excavation, & concrete, excludes barbed wire	L.F.	$ 25.14	$ 3.15	$ 1.60	$ 29.89	Year 2024	NEW MEXICO / LAS CRUCES (880)
323113205070	Fence, chain link industrial, double swing gates, 6' high, 20' opening, includes excavation, posts & hardware in concrete	Opng.	$ 965.35	$ 302.21	$ 154.27	$ 1,421.83	Year 2024	NEW MEXICO / LAS CRUCES (880)
101453200600	Signs, guide and directional signs, reflectorized, 12" x 18", excludes posts	Ea.	$ 39.50	$ 21.08	$ 8.22	$ 68.80	Year 2024	NEW MEXICO / LAS CRUCES (880)

Excavation/Hauling - accessed July 17, 2024

Line Number	Description	Unit	Material	Labor	Equipment	Total	Data Release	CCI Location
312316466010	Excavating, bulk, dozer, open site, bank measure, common earth, 700 HP dozer, 50' haul	B.C.Y.	$ -	$ 0.18	$ 1.32	$ 1.50	Year 2024	NEW MEXICO / LAS CRUCES (880)
312316466070	Excavating, bulk, dozer, open site, bank measure, common earth, 700 HP dozer, 300' haul	B.C.Y.	$ -	$ 0.61	$ 4.43	$ 5.04	Year 2024	NEW MEXICO / LAS CRUCES (880)
312323156075	Borrow clay, till, or blasted rock, 5 C.Y. bucket, loading and/or spreading, front end loader, track mounted	B.C.Y.	$ 16.78	$ 0.30	$ 0.85	$ 17.93	Year 2024	NEW MEXICO / LAS CRUCES (880)
312323205040	Cycle hauling (wait, load, travel, unload or dump & return) time per cycle, excavated or borrow, loose cubic yards, 15 min load/wait/unload, 22 C.Y. truck, cycle 1 mile, 5 MPH, excludes loading equipment	L.C.Y.	$ -	$ 0.93	$ 3.55	$ 4.48	Year 2024	NEW MEXICO / LAS CRUCES (880)

Fred Charles

From: Fawcett, Clayton <CFawcett@conteches.com>
Sent: Tuesday, February 5, 2019 9:25 AM
To: Fred Charles
Subject: RE: confirm or update costs for ACBs (reply requested by end of day Monday Feb 4, if possible)

Fred,

Hello and good morning. I hope this message finds you doing well. I made it back in to the office this morning and saw your e-mails.

Material and installation costs we discussed in September are still good. Please feel free to use those to complete your estimate.

Regarding your questions:

1. Yes, installation costs are the same for both downchutes and dissipator basins.
2. Yes, installation cost does include crushed stone infill (purchase and install)

Regarding your follow up e-mail with questions pertaining to cut-off walls.

1. Cut-off walls are not always required, however they are a good idea. The use of cut-off walls has increased in the last five years and as such, they are now recommended for inclusion at dissipator basins.
2. Material and installation costs for the installation of a cut-off wall are not included in the costs previously discussed and should be added.

I hope this information helps. Feel free to contact me directly with any additional questions.

Regards,

Clayton Fawcett PE (co)
Armortec Area Manager - West

CONTECH Engineered Solutions
970-290-2971 (cell)
cfawcett@conteches.com

From: Fred Charles [mailto:fcharles@telesto-inc.com]
Sent: Sunday, February 3, 2019 3:28 PM
To: Fawcett, Clayton <CFawcett@conteches.com>
Subject: confirm or update costs for ACBs (reply requested by end of day Monday Feb 4, if possible)

Hi Clayton. This email is a follow up to our email correspondence in September 2018 regarding material and installation costs for articulated concrete blocks (ACBs) used for downdrains at Chino. We've been using the cost info you passed along to me at that time. Now, I need you to confirm those costs or update them. We will use this information in a reclamation cost estimate (financial assurance for closure bonding) which we are currently finalizing for Chino and other mines in that area.

Costs

As we had discussed, the material costs for ACBs (includes non-woven geotextile and microgrid/geogrid) are as follows:

- $7.42/square foot (Block Class 40T, for the channel of each downdrain)

- $10.65/square foot (Block Class 70T, for the dissipation basin at bottom of each downdrain)

Also, you quoted $4.63/square foot for installation costs, which covers the following installation process: off-load the truck and place delivered ACBs in temporary storage area, fine grade base/subgrade soils, compact soils to 90% Standard Proctor (D698), place and secure filter fabric (non-woven geotextile), place 4-6" drainage layer overlaid by geogrid, place ACBs in final configuration, grout seams, and backfill ACBs with crushed stone.

2 questions
In addition to you confirming or updating the material and installation costs, I have two questions: (1) Is the installation cost ($4.63/square foot) the same for both channel downdrains and dissipation basins? (2) Does the installation or material cost include the crushed stone used to backfill the ACBs?

Please create a new email to me with updated unit costs or reply to this email to confirm what I show is still correct. I will present what you provide for documentation in the cost estimate we submit to the state agencies.

Thanks,

Fred Charles, Ph.D., P.E. Senior Engineer
Office: 970-484-7704, Ext 120 Cell: 720-318-5021
3801 Automation Way, Suite 201, Fort Collins, CO 80525
fcharles@telesto-inc.com

TELESTO SOLUTIONS INCORPORATED

www.telesto-inc.com

Taryn Tigges

From: Clayton Fawcett <Clayton.Fawcett@ContechLLC.com>
Sent: Monday, January 11, 2021 10:45 AM
To: Taryn Tigges
Subject: RE: [EXTERNAL] RE: Tyrone Mine Armorflex Analysis 40T

That make sense.

We are including the geotextile, geogrid, ACB, and freight to the jobsite.

Clayton Fawcett PE (co)
Armortec Area Manager - West

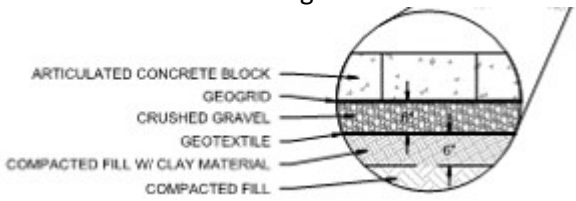
CONTECH Engineered Solutions
970-290-2971 (cell)
cfawcett@conteches.com

From: Taryn Tigges [mailto:ttigges@telesto-inc.com]
Sent: Monday, January 11, 2021 10:44 AM
To: Clayton Fawcett <Clayton.Fawcett@ContechLLC.com>
Subject: [EXTERNAL] RE: Tyrone Mine Armorflex Analysis 40T

Hi Clayton,

You too! Weekends go by too quickly.

Thanks for the information. They are just updating costing information. Can you also confirm again what's included in that cost? Our current design includes the following:



Can you let me know what I need to account for separately? I believe you had mentioned geotextile is part of the cost.

Thanks,

Taryn Tigges, PE | Civil Engineer
Office: 970-484-7704 | Cell: 515-520-9454
750 14th St SW | Loveland, CO 80537

www.telesto-inc.com

From: Clayton Fawcett <Clayton.Fawcett@ContechLLC.com>
Sent: Monday, January 11, 2021 10:39 AM
To: Taryn Tigges <ttigges@telesto-inc.com>; CFawcett@conteches.com
Cc: KMeyer@conteches.com
Subject: RE: Tyrone Mine Armorflex Analysis 40T

Hi Taryn,

I hope the weekend treated you well. Current pricing as of January 2021 is 10.27 / sf delivered for this material.

Are they getting ready to proceed or just updating the costing information?

Regards,

Clayton Fawcett PE (co)
Armortec Area Manager - West

CONTECH Engineered Solutions
970-290-2971 (cell)
cfawcett@conteches.com

From: Taryn Tigges [mailto:ttigges@telesto-inc.com]
Sent: Thursday, January 7, 2021 2:15 PM
To: CFawcett@conteches.com
Cc: KMeyer@conteches.com
Subject: FW: Tyrone Mine Armorflex Analysis 40T

Hi Clayton,

It has been a few months since I talked to you but I was wondering if you could send an updated cost for current (January 2021) prices for the Armorflex 50T ACB system? Let me know if you need any additional information.

Thanks,

Taryn Tigges, PE | Civil Engineer
Office: 970-484-7704 | Cell: 515-520-9454
750 14th St SW | Loveland, CO 80537

www.telesto-inc.com

From: Fawcett, Clayton <CFawcett@conteches.com>
Sent: Thursday, May 28, 2020 3:28 PM
To: Taryn Tigges <ttigges@telesto-inc.com>
Cc: Meyer, Kenneth <KMeyer@conteches.com>
Subject: RE: Tyrone Mine Armorflex Analysis 40T

Taryn,

Good speaking with you this afternoon. See attached for revised calculations per your direction below. That is, with the exception of the Manning's *n* value which is 0.025.

Cost for the Armorflex 50T ACB system is $9.77 / sf delivered. This does include ACB mats with galvanized cable, geotextile fabric, and freight to the jobsite via Over the Road Flatbed Trucks.

Feel free to let me know if you have any additional questions.

Regards,

Clayton Fawcett PE (co)
Armortec Area Manager - West

CONTECH Engineered Solutions
970-290-2971 (cell)
cfawcett@conteches.com

From: Taryn Tigges [mailto:ttigges@telesto-inc.com]
Sent: Thursday, May 28, 2020 2:16 PM
To: Fawcett, Clayton <CFawcett@conteches.com>
Subject: RE: Tyrone Mine Armorflex Analysis 40T

Hi Clayton,

You previously spoke with our intern, Jessica, for ACB selection on a Freeport project. I have a couple questions for you regarding that project:

1. I had run some calculations with the following factor of safety method, which is giving me different results than your spreadsheet: https://www.conteches.com/knowledge-center/pdh-article-series/articulated-concrete-block-design
   Are you using a newer method?

2. Can you revise your calculations for the following channel design and flow rate:
   a. Manning's n = 0.015
   b. Bed Slope = 0.05
   c. Side slope = 2:1
   d. Bottom width = 15 feet, Top width = 28 feet
   e. Hydraulic Depth = 3.3 feet
   f. Radius of curvature = 240 feet

g. Flow rate = 2717 cfs (velocity = 38.8 ft/s for area of 70.1 sf)

A side slope of 3:1 is not obtainable for this project so you don't need to run that calculation. Let me know if you need additional information and let me know what block type you recommend based on these conditions.

Thank you for your time!

Taryn Tigges, PE | Civil Engineer
Office: 970-484-7704 | Cell: 515-520-9454
750 14th St SW | Loveland, CO 80537

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From: Jessica Menconi <jmenconi@telesto-inc.com>
Sent: Wednesday, April 22, 2020 2:12 PM
To: Taryn Tigges <ttigges@telesto-inc.com>
Subject: FW: Tyrone Mine Armorflex Analysis 40T

From: Fawcett, Clayton <CFawcett@conteches.com>
Sent: Wednesday, April 22, 2020 12:29 PM
To: Jessica Menconi <jmenconi@telesto-inc.com>
Cc: Taryn Tigges <taryn.tigges@gmail.com>
Subject: RE: Tyrone Mine Armorflex Analysis 40T

Jessica,

I have to apologize. I thought I sent that already.

See attached. My guess is that Freeport won't accept it as it is below the minimum 1.8 Factor of Safety that they have previously established.

Regards,

Clayton Fawcett PE (co)
Armortec Area Manager - West

CONTECH Engineered Solutions
970-290-2971 (cell)
cfawcett@conteches.com

From: Jessica Menconi [mailto:jmenconi@telesto-inc.com]
Sent: Wednesday, April 22, 2020 12:15 PM

Revegetation/Reclamation
Rangeland Rehabilitation
Landscaping / Fencing
Hydroseeding
Environmental Consulting

ROCKY MOUNTAIN RECLAMATION

Phone (307) 745-5235
(307) 745-5230
ron@reveg.us
www.reveg.us
P.O. Box 1695
Laramie, WY 82073

FREEPORT MCMORAN – NEW MEXICO MINING OPERATIONS

PRICE ESTIMATES FOR REVEGETATION SERVICES FOR BUDGETING ESTIMATES

Table 1 –Freeport McMoRan, New Mexico Mining Operations – Price Estimates for Revegetation Services for Budgeting Estimates, prepared April, 2018.

	REVEGETATION OPERATION	ESTIMATED QUANTITY	UNITS	COST/UNIT ($)	TOTAL COST
I.	**OPERATIONS:**				
1	**SCARIFYING**	500	Acres	$30.00	$15,000.00
2	**DISCING**	500	Acres	$20.00	$10,000.00
3	**DRILL SEEDING (special Rangeland Drill)**	500	Acres	$80.00	$40,000.00
4	**MULCHING**	500	Acres	$148.00	$74,000.00
5	**CRIMPING**	500	Acres	$55.00	$27,500.00
6	**DAILY PER DIEM, ETC.**	50	Days	$385.00	$19,250.00
7	**MOBILIZATION**	1	Each	$13,500.00	$13,500.00
	Subtotal				**$199,250.00**
II.	**MATERIALS:**				
1	**SEED** at 8.9 PLS/acre	500	Acres	$210.00	$105,000.00
2	**HAY MULCH** - nox. weed free, native	1000	Tons	$245.00	$245,000.00
	Subtotal				**$350,000.00**
	TOTAL ESTIMATED REVEGETATION COST BEFORE TAX				**$549,250.00**
	Add New Mexico Gross Receipts Tax	5.9375	%		**$32,611.72**
	ESTIMATED REVEGETATION COST PER ACRE:			**$1,163.72**	
	TOTAL ESTIMATED REVEGETATION COST				**$581,861.72**

Estimate prepared by Ron Schreibeis, Rocky Mountain Reclamation, for use for Budgeting Estimates.

Appendix D.6

Fuel Cost

Fuel Price Data

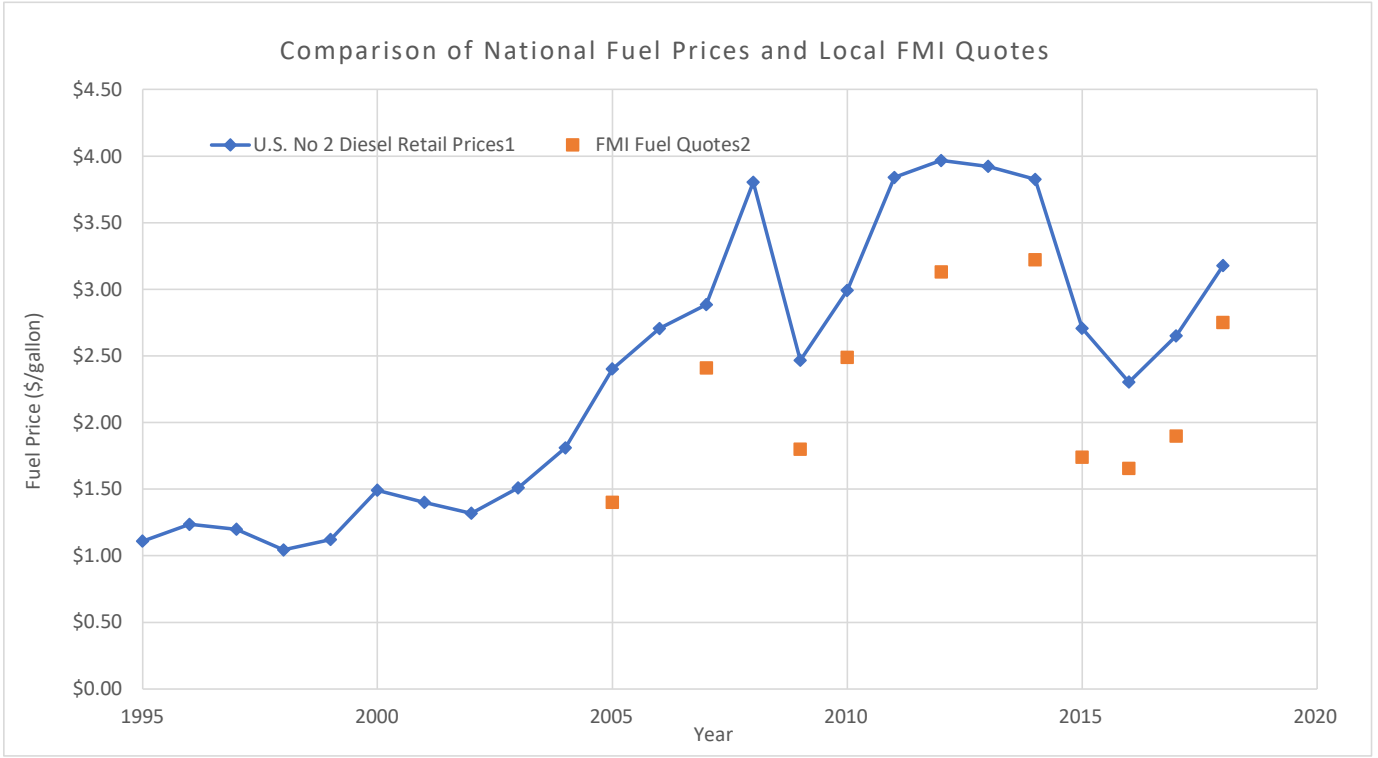
Data 1: U.S. No 2 Diesel Retail Prices (Dollars per Gallon)	
Date	**U.S. No 2 Diesel Retail Prices[1]**
1995	1.109
1996	1.235
1997	1.198
1998	1.044
1999	1.121
2000	1.491
2001	1.401
2002	1.319
2003	1.509
2004	1.81
2005	2.402
2006	2.705
2007	2.885
2008	3.803
2009	2.467
2010	2.992
2011	3.84
2012	3.968
2013	3.922
2014	3.825
2015	2.707
2016	2.304
2017	2.65
2018	3.178
2019	3.056
2020	2.551
2021	3.125
Date	**U.S. No 2 Diesel Retail Prices[1]**
July 2024	3.722

FMI Fuel Quotes[2]			
Site	**Date**	**Dyed, low-sulfur diesel**	**Notes**
Continental	1/21/2005	$1.40	Tom Shelley - quote from fuel broker
Chino & Tyrone	5/9/2007	$2.41	Porter Oil Quote (7500 gal capacity)
Continental	1/23/2009	$1.80	Porter Oil Quote (7500 gal capacity)
Tyrone (Little Rock)	1/14/2010	$2.49	Porter Oil Quote (7500 gal capacity)
Tyrone	7/7/2012	$3.13	Western Refining Oil
Continental	6/18/2014	$3.22	Western Refining Oil
Chino (North Lampbright)	11/5/2015	$1.74	Western Refining Oil
Chino	5/20/2016	$1.66	Western Refining Oil
Tyrone (Little Rock)	4/24/2017	$1.90	Western Refining Oil
Continental	3/12/2018	$2.75	Griffin Propane
Chino	10/10/2018	$2.75	Griffin Propane

1. U.S. Energy Information Administration
https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=M
2. Quotes obtained from Freeport-McMoRan (FMI)

Correlation Between U.S. No.2 Diesel Retail Prices and FMI Fuel Quotes Since 1995

Year	U.S. No 2 Diesel Retail Prices[1]	FMI Fuel Quotes[2]
1995	1.109	
1996	1.235	
1997	1.198	
1998	1.044	
1999	1.121	
2000	1.491	
2001	1.401	
2002	1.319	
2003	1.509	
2004	1.81	
2005	2.402	$1.40
2006	2.705	
2007	2.885	$2.41
2008	3.803	
2009	2.467	$1.80
2010	2.992	$2.49
2011	3.84	
2012	3.968	$3.13
2013	3.922	
2014	3.825	$3.22
2015	2.707	$1.74
2016	2.304	$1.66
2017	2.65	$1.90
2018	3.178	$2.75
2019	3.056	
2020	2.551	
2021	3.125	



Correlation 0.952

1. U.S. Energy Information Administration
https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMD_EPD2D_PTE_NUS_DPG&f=M
2. Quotes obtained from Freeport-McMoRan (FMI)

Appendix E
Cost Spreadsheet

Continental Mine
Stockpile/Tailings Spreadsheet Worksheet #1
7/18/2024

General Information

Applicant	Chino Mines Company Hurley, New Mexico 88043
Disturbed Surface Area (acres)	866
Type of Operation	Existing/Surface/Copper
Current value of earthwork and O&M before escalation and discounting	**$27,617,771**
EOY 2026 Mine Plan	**Stockpiles, Tailing, Reservoirs, Haul Roads and Disturbed Areas**

Demolition

Building Demolition costs are calculated in "1 BuildingDemo", "2 BuildingCover", "3 BuildingVeg", and "4BuildingWaste" and summarized on the last line of this table.

Item	Material	Quantity	Unit	Unit Cost ($/unit)	Direct Item Cost ($)	Reference	Means Line Item	Description
Pipelines	6"-8" Diameter Plastic	15,000	ft	$2.45	$36,750	Unit Cost Sheet	024113.38-1700	Demolition, water and sewer piping and fittings, excludes excavation, plastic pipe 6"-8" in diameter.
Pipelines	10"-18" Diameter Plastic	15,000	ft	$4.09	$61,350	Unit Cost Sheet	024113.38-1800	Demolition, water and sewer piping and fittings, excludes excavation, plastic pipe 10"-18" in diameter.
Corrugated Metal Culverts Removal	CMP	4,225	ft	$21.31	$90,035	R.S. Means	024113.40-0190	Excludes excavation, CMP steel 48" to 60"
Buildings and Associated Facilities	Demolition	See Demo Sheets	-	.	$2,434,366	-	-	-

Total Direct Cost: $2,622,501

Material Handling Plan Summary Sheet

All activities are listed on this sheet and carried through the succeeding worksheets of the RCE. The column labeled ID contains the codes for the facility location, activity, material and equipment used for that particular row of work. The description lists the activity, top or outslope (if applicable), and the material. The source location lists the stockpile name (or sub-area) for the location of the activity. If borrow material is involved, it is transported from a borrow stockpile to a destination stockpile. Blank cells indicate that that column is not relevant to a particular activity.

Notes and Assumptions:

1 - Haul/Push Distance based on CCP drawings
2 - Haul Grades based on CCP drawings
3 - Grade Factors from CCP drawings

ID	Description	Source Location 1	Destination Location 2	Total Haul/Push Distance (ft)[1]	Grade (%)[2,3]	Equipment
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	1,000	-1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	-	0.0%	Hitachi EX3600-5
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	-	0.0%	Cat D11T, U Blade
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	1,624	-9.1%	Komatsu 730E
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	415	-28.6%	Cat D11T, U Blade
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	200	-28.6%	Cat D11T, U Blade
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	481	-33.3%	Cat D11T, U Blade
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	-	0.0%	Hitachi EX3600-5
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	-	0.0%	Hitachi EX3600-5
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	-	0.0%	Hitachi EX3600-5
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	-	0.0%	Cat D11T, U Blade
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	-	0.0%	Cat D11T, U Blade
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	-	0.0%	Cat D11T, U Blade
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	-	0.0%	Cat D11T, U Blade
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	8,415	2.1%	Komatsu 730E
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	8,415	1.4%	Komatsu 730E
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	8,415	1.4%	Komatsu 730E
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	-	-	Cat 16M
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	-	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	1,000	-1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	-	0.0%	Hitachi EX3600-5
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	1,868	0.0%	Komatsu 730E
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	-	0.0%	Hitachi EX3600-5
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	1,868	0.0%	Komatsu 730E
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	1,000	-1.0%	Cat D11T, U Blade
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	437	-33.0%	Cat D11T, U Blade
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	-	0.0%	Hitachi EX3600-5
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	-	0.0%	Hitachi EX3600-5
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	-	0.0%	Cat D11T, U Blade
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	-	0.0%	Cat D11T, U Blade
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	8,415	1.4%	Komatsu 730E
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	8,415	1.4%	Komatsu 730E
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	-	0.0%	Cat 16M
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	0.0%	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	0.0%	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	0.0%	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	0.0%	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	-	0.0%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	0.0%	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	0.0%	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	200	-1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	200	-1.0%	Cat 16M
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	200	-33.3%	Cat D11T, U Blade
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	-	0.0%	Hitachi EX3600-5
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	-	0.0%	Hitachi EX3600-5
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	-	0.0%	Hitachi EX3600-5
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	-	0.0%	Cat D11T, U Blade
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	-	0.0%	Cat D11T, U Blade
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	-	0.0%	Cat D11T, U Blade
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	-	0.0%	Cat D11T, U Blade
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	8,415	2.0%	Komatsu 730E
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	8,415	2.1%	Komatsu 730E
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	8,415	2.1%	Komatsu 730E
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	200	-1.0%	Cat 16M
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	200	-33.3%	Cat 16M
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	200	-33.3%	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	200	-33.3%	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	-	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	500	-1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	-	0.0%	Hitachi EX3600-5
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	-	0.0%	Hitachi EX3600-5
9203-C-b-Sh1	Load-Cover	USS	NOB-0	-	0.0%	Hitachi EX3600-5
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	-	0.0%	Cat D11T, U Blade
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	-	0.0%	Cat D11T, U Blade
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	-	0.0%	Cat D11T, U Blade
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	-	0.0%	Cat D11T, U Blade
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	8,415	1.7%	Komatsu 730E
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	8,415	2.7%	Komatsu 730E
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	8,415	2.7%	Komatsu 730E
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	-	-	Cat 16M
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	-	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	1,340	1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	1,000	-1.6%	Hitachi EX3600-5
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	-	-1.6%	Komatsu 730E
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	75	0.0%	Cat 16M
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	50	-28.6%	Cat D11T, U Blade
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	292	-28.6%	Cat D11T, U Blade
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	51	-33.3%	Cat D11T, U Blade
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	75	0.0%	Cat D11T, U Blade
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	-	0.0%	Hitachi EX3600-5
9204-C-b-Sh1	Load-Cover	USS	MTI-0	-	0.0%	Hitachi EX3600-5
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	-	0.0%	Cat D11T, U Blade
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	-	0.0%	Cat D11T, U Blade
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	8,415	2.2%	Komatsu 730E
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	8,415	2.2%	Komatsu 730E
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	-	-	Cat 16M
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	-	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	120	-1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	230	-28.6%	Cat D11T, U Blade
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	-	0.0%	Hitachi EX3600-5
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	-	0.0%	Hitachi EX3600-5
9207-C-b-Sh1	Load-Cover	USS	MTI-3	-	0.0%	Hitachi EX3600-5
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	-	0.0%	Cat D11T, U Blade
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	-	0.0%	Cat D11T, U Blade
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	-	0.0%	Cat D11T, U Blade
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	-	0.0%	Cat D11T, U Blade
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	8,415	2.2%	Komatsu 730E
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	8,415	1.9%	Komatsu 730E
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	8,415	1.9%	Komatsu 730E
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	120	-1.0%	Cat 16M
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	120	-1.0%	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	120	-1.0%	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	120	-1.0%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	120	-1.0%	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	120	-1.0%	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	100	1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	-	0.0%	Hitachi EX3600-5
9105-C-b-Sh1	Load-Cover	CHR	HM-2	-	0.0%	Hitachi EX3600-5
9205-C-b-Sh1	Load-Cover	USS	HM-2	-	0.0%	Hitachi EX3600-5
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	-	0.0%	Cat D11T, U Blade
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	-	0.0%	Cat D11T, U Blade
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	-	0.0%	Cat D11T, U Blade
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	-	0.0%	Cat D11T, U Blade
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	8,415	1.5%	Komatsu 730E
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	8,415	2.5%	Komatsu 730E
9205-D-b-Tk4	Haul-Cover	USS	HM-2	8,415	2.5%	Komatsu 730E
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	100	1.0%	Cat 16M
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	100	1.0%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	100	1.0%	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	100	1.0%	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	100	1.0%	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	200	-1.0%	Cat D11T CD Multi-shank (w/ MSR-359H)
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	400	-28.6%	Cat D11T, U Blade
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	-	0.0%	Hitachi EX3600-5
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	-	0.0%	Hitachi EX3600-5
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	-	0.0%	Hitachi EX3600-5
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	-	0.0%	Cat D11T, U Blade
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	-	0.0%	Cat D11T, U Blade
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	-	0.0%	Cat D11T, U Blade
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	-	0.0%	Cat D11T, U Blade
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	8,415	2.2%	Komatsu 730E
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	8,415	2.5%	Komatsu 730E
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	8,415	1.9%	Komatsu 730E
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	-	0.0%	Cat 16M
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	0.0%	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	0.0%	-

Material Handling Plan Summary Sheet

All activities are listed on this sheet and carried through the succeeding worksheets of the RCE. The column labeled ID contains the codes for the facility location, activity, material and equipment used for that particular row of work. The description lists the activity, top or outslope (if applicable), and the material. The source location lists the stockpile name (or sub-area) for the location of the activity. If borrow material is involved, it is transported from a borrow stockpile to a destination stockpile. Blank cells indicate that that column is not relevant to a particular activity.

Notes and Assumptions:

1 - Haul/Push Distance based on CCP drawings
2 - Haul Grades based on CCP drawings
3 - Grade Factors from CCP drawings

ID	Description	Source Location 1	Destination Location 2	Total Haul/Push Distance (ft)[1]	Grade (%)[2,3]	Equipment
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	0.0%	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	0.0%	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	-	0.0%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	0.0%	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	0.0%	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	200	0.5%	Cat 319D L
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	200	0.5%	Cat 319D L
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	200	0.5%	Cat 319D L
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	-	0.0%	Hitachi EX3600-5
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	-	0.0%	Hitachi EX3600-5
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	-	0.0%	Hitachi EX3600-5
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	-	0.0%	Hitachi EX3600-5
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	-	0.0%	Hitachi EX3600-5
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	-	0.0%	Hitachi EX3600-5
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	-	0.0%	Hitachi EX3600-5
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	-	0.0%	Hitachi EX3600-5
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	-	0.0%	Hitachi EX3600-5
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	-	0.0%	Hitachi EX3600-5
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	-	0.0%	Cat D11T, U Blade
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	-	0.0%	Cat D11T, U Blade
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	-	0.0%	Cat D11T, U Blade
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	-	0.0%	Cat D11T, U Blade
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	-	0.0%	Cat D11T, U Blade
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	-	0.0%	Cat D11T, U Blade
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	-	0.0%	Cat D11T, U Blade
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	-	0.0%	Cat D11T, U Blade
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	-	0.0%	Cat D11T, U Blade
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	-	0.0%	Cat D11T, U Blade
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	8,415	1.6%	Komatsu 730E
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	8,415	2.5%	Komatsu 730E
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	8,415	2.0%	Komatsu 730E
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	8,415	1.6%	Komatsu 730E
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	8,415	2.1%	Komatsu 730E
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	8,415	2.5%	Komatsu 730E
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	8,415	2.4%	Komatsu 730E
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	8,415	2.3%	Komatsu 730E
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	8,415	2.3%	Komatsu 730E
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	8,415	1.6%	Komatsu 730E
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	-	0.0%	Hitachi EX3600-5
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	-	0.0%	Hitachi EX3600-5
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	-	0.0%	Hitachi EX3600-5
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	-	0.0%	Hitachi EX3600-5
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	-	0.0%	Hitachi EX3600-5
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	-	0.0%	Hitachi EX3600-5
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	-	0.0%	Hitachi EX3600-5
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	-	0.0%	Hitachi EX3600-5
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	-	0.0%	Hitachi EX3600-5
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	-	0.0%	Hitachi EX3600-5
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	-	0.0%	Cat D11T, U Blade
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	-	0.0%	Cat D11T, U Blade
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	-	0.0%	Cat D11T, U Blade
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	-	0.0%	Cat D11T, U Blade
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	-	0.0%	Cat D11T, U Blade
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	-	0.0%	Cat D11T, U Blade
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	-	0.0%	Cat D11T, U Blade
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	-	0.0%	Cat D11T, U Blade
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	-	0.0%	Cat D11T, U Blade
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	-	0.0%	Cat D11T, U Blade
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	8,415	2.7%	Komatsu 730E
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	8,415	1.4%	Komatsu 730E
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	8,415	1.5%	Komatsu 730E
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	8,415	2.7%	Komatsu 730E
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	8,415	1.4%	Komatsu 730E
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	8,415	1.4%	Komatsu 730E
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	8,415	1.9%	Komatsu 730E
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	8,415	1.9%	Komatsu 730E
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	8,415	1.8%	Komatsu 730E
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	8,415	2.7%	Komatsu 730E
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	-	-	Cat 16M
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	-	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	200	0.5%	Cat D11T CD Multi-shank (w/ MSR-359H)
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	-	0.0%	Hitachi EX3600-5
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	-	0.0%	Hitachi EX3600-5
9218-C-b-Sh1	Load-Cover	USS	Misc-2	-	0.0%	Hitachi EX3600-5
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	-	0.0%	Cat D11T, U Blade
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	-	0.0%	Cat D11T, U Blade
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	-	0.0%	Cat D11T, U Blade
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	-	0.0%	Cat D11T, U Blade
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	8,415	2.2%	Komatsu 730E
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	8,415	2.1%	Komatsu 730E
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	8,415	2.1%	Komatsu 730E
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	200	0.5%	Cat 16M
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	200	0.5%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	200	0.5%	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	200	0.5%	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	200	0.5%	Cat D11T CD Multi-shank (w/ MSR-359H)
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	200	0.5%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	200	0.5%	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	200	0.5%	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	200	0.5%	Cat D11T CD Multi-shank (w/ MSR-359H)
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	-	0.0%	Hitachi EX3600-5
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	-	0.0%	Hitachi EX3600-5
9219-C-b-Sh1	Load-Cover	USS	Misc-4	-	0.0%	Hitachi EX3600-5
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	-	0.0%	Cat D11T, U Blade
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	-	0.0%	Cat D11T, U Blade
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	-	0.0%	Cat D11T, U Blade
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	-	0.0%	Cat D11T, U Blade
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	8,415	2.3%	Komatsu 730E
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	8,415	2.3%	Komatsu 730E
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	8,415	2.3%	Komatsu 730E
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	200	0.5%	Cat 16M
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	200	0.5%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	200	0.5%	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	200	0.5%	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	200	0.5%	Cat D11T CD Multi-shank (w/ MSR-359H)
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	-	0.0%	Hitachi EX3600-5
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	-	0.0%	Hitachi EX3600-5
9220-C-b-Sh1	Load-Cover	USS	Misc-5	-	0.0%	Hitachi EX3600-5
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	-	0.0%	Cat D11T, U Blade
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	-	0.0%	Cat D11T, U Blade
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	-	0.0%	Cat D11T, U Blade
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	-	0.0%	Cat D11T, U Blade
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	8,415	2.1%	Komatsu 730E
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	8,415	2.0%	Komatsu 730E
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	8,415	2.0%	Komatsu 730E
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	200	0.5%	Cat 16M
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	200	0.5%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	200	0.5%	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	200	0.5%	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	200	0.5%	Cat D11T CD Multi-shank (w/ MSR-359H)
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	-	0.0%	Hitachi EX3600-5
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	-	0.0%	Hitachi EX3600-5
9221-C-b-Sh1	Load-Cover	USS	Misc-7	-	0.0%	Hitachi EX3600-5
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	-	0.0%	Cat D11T, U Blade
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	-	0.0%	Cat D11T, U Blade
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	-	0.0%	Cat D11T, U Blade
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	-	0.0%	Cat D11T, U Blade
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	8,415	2.4%	Komatsu 730E
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	8,415	2.4%	Komatsu 730E
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	8,415	2.4%	Komatsu 730E
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	200	0.5%	Cat 16M
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	200	0.5%	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	200	0.5%	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	200	0.5%	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	200	0.5%	-

Earthwork Quantity Worksheet

Notes and Assumptions:

1 - Acres and volumes based on 3CCP drawings

2 - Cover Material Swell: The 'Loose Volume' is calculated based on the acreage to be covered, cover depth, and accounts for appropriate swell factor.

3 - Has been agreed upon with State agencies that swell occurs when cover material is moved from source to haul truck but not from the truck to placement on stockpile

ID	Description	Source Location 1	Destination Location 2	Area (ac)[1]	Cover Depth (in)	Bank/Stockpile Volume (bcy)[1]	Swell Factor (%)[3]	Loose/Stockpile Volume (lcy)[2]
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	107.3	-	-	0%	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	14.4	-	1,026,535	0%	1,026,535
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	14.4	-	1,026,535	0%	1,026,535
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	14.4	-	1,026,535	0%	1,026,535
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	98.9	-	2,175,386	0%	2,175,386
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	15.9	-	350,027	0%	350,027
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	44.7	-	982,052	0%	982,052
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	281.3	12.0	420,150	8%	453,762
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	281.3	17.2	600,815	8%	648,880
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	281.3	6.8	239,486	8%	258,644
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	281.3	12.0	420,150	8%	453,762
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	281.3	12.0	420,150	8%	453,762
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	281.3	17.2	600,815	8%	648,880
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	281.3	6.8	239,486	8%	258,644
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	281.3	12.0	420,150	8%	453,762
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	281.3	17.2	600,815	8%	648,880
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	281.3	6.8	239,486	8%	258,644
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	281.3	36.0	1,361,286	0%	1,361,286
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	-	4,534,000	0%	4,534,000
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	-	4,534,000	0%	4,534,000
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	-	4,534,000	0%	4,534,000
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	-	4,534,000	0%	4,534,000
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	-	-	-	-	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	-	4,534,000	0%	4,534,000
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	-	4,534,000	0%	4,534,000
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	37.4	-	-	0%	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	-	-	529,788	0%	529,788
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	-	-	529,788	0%	529,788
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	-	-	276,506	0%	276,506
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	-	-	276,506	0%	276,506
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	37.4	-	-	0%	-
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	38.9	-	1,546,000	0%	1,546,000
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	76.2	17.2	162,874	8%	175,904
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	76.2	6.8	64,922	8%	70,116
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	76.2	17.2	162,874	8%	175,904
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	76.2	6.8	64,922	8%	70,116
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	76.2	17.2	162,874	8%	175,904
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	76.2	6.8	64,922	8%	70,116
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	76.2	36.0	369,030	0%	369,030
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	-	2,352,294	0%	2,352,294
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	-	2,352,294	0%	2,352,294
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	-	2,352,294	0%	2,352,294
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	-	2,352,294	0%	2,352,294
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	-	-	-	-	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	-	2,352,294	0%	2,352,294
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	-	2,352,294	0%	2,352,294
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	16.0	-	-	0%	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	16.0	-	-	0%	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	3.5	-	18,718	0%	18,718
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	19.5	12.0	29,114	8%	31,443
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	19.5	17.2	41,633	8%	44,964
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	19.5	6.8	16,595	8%	17,923
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	19.5	12.0	29,114	8%	31,443
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	19.5	12.0	29,114	8%	31,443
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	19.5	17.2	41,633	8%	44,964
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	19.5	6.8	16,595	8%	17,923
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	19.5	12.0	29,114	8%	31,443
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	19.5	17.2	41,633	8%	44,964
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	19.5	6.8	16,595	8%	17,923
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	16.0	36.0	77,535	0%	77,535
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	3.5	36.0	16,795	0%	16,795
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	3.5	-	18,718	0%	18,718
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	3.5	-	18,718	0%	18,718
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	-	-	-	-	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	19.5	-	105,133	0%	105,133
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	19.5	-	105,133	0%	105,133
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	0.8	-	-	0%	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	2.6	12.0	3,928	8%	4,243
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	2.6	17.2	5,618	8%	6,067
9203-C-b-Sh1	Load-Cover	USS	NOB-0	2.6	6.8	2,239	8%	2,418
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	2.6	12.0	3,928	8%	4,243
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	2.6	12.0	3,928	8%	4,243
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	2.6	17.2	5,618	8%	6,067
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	2.6	6.8	2,239	8%	2,418
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	2.6	12.0	3,928	8%	4,243
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	2.6	17.2	5,618	8%	6,067
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	2.6	6.8	2,239	8%	2,418
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	2.6	36.0	12,728	0%	12,728
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	2.6	-	-	0%	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	2.6	-	-	0%	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	2.6	-	-	0%	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	2.6	-	-	0%	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	113.8	-	-	0%	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	2.5	-	68,536	0%	68,536
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	2.5	-	68,536	0%	68,536
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	7.5	-	-	0%	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	4.6	-	27,027	0%	27,027
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	42.2	-	515,089	0%	515,089
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	2.2	-	7,977	0%	7,977
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	7.5	-	56,346	0%	56,346
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	172.7	17.2	368,854	8%	398,363
9204-C-b-Sh1	Load-Cover	USS	MTI-0	172.7	6.8	147,026	8%	158,788
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	172.7	17.2	368,854	8%	398,363
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	172.7	6.8	147,026	8%	158,788
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	172.7	17.2	368,854	8%	398,363
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	172.7	6.8	147,026	8%	158,788
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	172.7	36.0	835,726	0%	835,726
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	-	703,245	0%	703,245
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	-	703,245	0%	703,245
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	-	703,245	0%	703,245
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	-	703,245	0%	703,245
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	-	703,245	0%	703,245
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	-	703,245	0%	703,245
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	100.0	-	-	0%	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	12.6	-	89,176	0%	89,176
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	100.0	12.0	149,383	8%	161,333
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	42.2	17.2	90,136	8%	97,347
9207-C-b-Sh1	Load-Cover	USS	MTI-3	42.2	6.8	35,928	8%	38,803
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	100.0	12.0	149,383	8%	161,333
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	100.0	12.0	149,383	8%	161,333
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	42.2	17.2	90,136	8%	97,347
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	42.2	6.8	35,928	8%	38,803
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	100.0	12.0	149,383	8%	161,333
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	42.2	17.2	90,136	8%	97,347
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	42.2	6.8	35,928	8%	38,803
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	100.0	36.0	484,000	0%	484,000
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	100.0	-	4,644	0%	4,644
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	100.0	-	4,644	0%	4,644
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	100.0	-	4,644	0%	4,644
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	100.0	-	4,644	0%	4,644
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	86.6	-	-	0%	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	86.6	12.0	129,348	8%	139,696
9105-C-b-Sh1	Load-Cover	CHR	HM-2	86.6	17.2	184,967	8%	199,765
9205-C-b-Sh1	Load-Cover	USS	HM-2	86.6	6.8	73,728	8%	79,626
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	86.6	12.0	129,348	8%	139,696
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	86.6	12.0	129,348	8%	139,696
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	86.6	17.2	184,967	8%	199,765
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	86.6	6.8	73,728	8%	79,626
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	86.6	12.0	129,348	8%	139,696
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	86.6	17.2	184,967	8%	199,765
9205-D-b-Tk4	Haul-Cover	USS	HM-2	86.6	6.8	73,728	8%	79,626
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	86.6	36.0	419,087	0%	419,087
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	-	-	0%	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	-	-	0%	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	-	-	0%	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	-	-	0%	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	-	-	0%	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	-	-	0%	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	11.7	-	-	0%	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	11.7	-	-	0%	-

Earthwork Quantity Worksheet

Notes and Assumptions:

1 - Acres and volumes based on 3CCP drawings

2 - Cover Material Swell: The 'Loose Volume' is calculated based on the acreage to be covered, cover depth, and accounts for appropriate swell factor.

3 - Has been agreed upon with State agencies that swell occurs when cover material is moved from source to haul truck but not from the truck to placement on stockpile

ID	Description	Source Location 1	Destination Location 2	Area (ac)[1]	Cover Depth (in)	Bank/Stockpile Volume (bcy)[1]	Swell Factor (%)[3]	Loose/Stockpile Volume (lcy)[2]
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	16.6	-	-	0%	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	16.6	-	-	0%	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	6.3	-	-	0%	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	13.5	-	121,536	0%	121,536
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	19.8	12.0	29,642	8%	32,013
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	19.8	17.2	42,388	8%	45,779
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	19.8	6.8	16,896	8%	18,248
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	19.8	12.0	29,642	8%	32,013
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	19.8	12.0	29,642	8%	32,013
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	19.8	17.2	42,388	8%	45,779
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	19.8	6.8	16,896	8%	18,248
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	19.8	12.0	29,642	8%	32,013
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	19.8	17.2	42,388	8%	45,779
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	19.8	6.8	16,896	8%	18,248
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	19.8	36.0	96,040	0%	96,040
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	-	178,257	0%	178,257
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	-	178,257	0%	178,257
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	-	178,257	0%	178,257
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	-	178,257	0%	178,257
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	-	178,257	0%	178,257
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	-	178,257	0%	178,257
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	0.0	-	296	0%	296
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	0.6	-	296	0%	296
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	0.5	-	40	0%	40
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	0.4	-	296	0%	296
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	0.2	-	296	0%	296
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	0.5	-	296	0%	296
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	0.5	-	54	0%	54
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	0.3	-	31	0%	31
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	0.8	-	47	0%	47
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	1.5	-	296	0%	296
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	0.0	12.0	15	8%	16
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	0.6	12.0	926	8%	1,000
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	0.5	12.0	747	8%	807
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	0.4	12.0	568	8%	613
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	0.2	12.0	299	8%	323
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	0.5	12.0	687	8%	742
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	0.5	12.0	777	8%	839
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	0.3	12.0	508	8%	549
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	0.8	12.0	1,255	8%	1,355
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	1.5	12.0	2,286	8%	2,468
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	0.0	12.0	15	8%	16
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	0.6	12.0	926	8%	1,000
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	0.5	12.0	747	8%	807
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	0.4	12.0	568	8%	613
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	0.2	12.0	299	8%	323
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	0.5	12.0	687	8%	742
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	0.5	12.0	777	8%	839
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	0.3	12.0	508	8%	549
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	0.8	12.0	1,255	8%	1,355
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	1.5	12.0	2,286	8%	2,468
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	0.0	12.0	15	8%	16
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	0.6	12.0	926	8%	1,000
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	0.5	12.0	747	8%	807
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	0.4	12.0	568	8%	613
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	0.2	12.0	299	8%	323
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	0.5	12.0	687	8%	742
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	0.5	12.0	777	8%	839
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	0.3	12.0	508	8%	549
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	0.8	12.0	1,255	8%	1,355
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	1.5	12.0	2,286	8%	2,468
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	0.0	12.0	15	8%	16
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	0.6	12.0	926	8%	1,000
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	0.5	12.0	747	8%	807
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	0.4	12.0	568	8%	613
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	0.2	12.0	299	8%	323
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	0.5	12.0	687	8%	742
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	0.5	12.0	777	8%	839
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	0.3	12.0	508	8%	549
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	0.8	12.0	1,255	8%	1,355
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	1.5	12.0	2,286	8%	2,468
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	0.0	17.2	21	8%	23
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	0.6	17.2	1,324	8%	1,430
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	0.5	17.2	1,068	8%	1,154
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	0.4	17.2	812	8%	877
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	0.2	17.2	427	8%	461
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	0.5	17.2	983	8%	1,061
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	0.5	17.2	1,111	8%	1,200
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	0.3	17.2	726	8%	784
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	0.8	17.2	1,794	8%	1,938
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	1.5	17.2	3,268	8%	3,530
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	0.0	12.0	15	8%	16
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	0.6	12.0	926	8%	1,000
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	0.5	12.0	747	8%	807
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	0.4	12.0	568	8%	613
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	0.2	12.0	299	8%	323
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	0.5	12.0	687	8%	742
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	0.5	12.0	777	8%	839
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	0.3	12.0	508	8%	549
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	0.8	12.0	1,255	8%	1,355
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	1.5	12.0	2,286	8%	2,468
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	0.0	17.2	21	8%	23
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	0.6	17.2	1,324	8%	1,430
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	0.5	17.2	1,068	8%	1,154
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	0.4	17.2	812	8%	877
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	0.2	17.2	427	8%	461
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	0.5	17.2	983	8%	1,061
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	0.5	17.2	1,111	8%	1,200
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	0.3	17.2	726	8%	784
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	0.8	17.2	1,794	8%	1,938
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	1.5	17.2	3,268	8%	3,530
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	5.4	36.0	26,136	0%	26,136
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	5.4	-	1,948	0%	1,948
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	1.4	-	-	0%	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	1.4	12.0	2,160	8%	2,333
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	1.4	17.2	3,089	8%	3,336
9218-C-b-Sh1	Load-Cover	USS	Misc-2	1.4	6.8	1,231	8%	1,330
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	1.4	12.0	2,160	8%	2,333
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	1.4	12.0	2,160	8%	2,333
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	1.4	17.2	3,089	8%	3,336
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	1.4	6.8	1,231	8%	1,330
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	1.4	12.0	2,160	8%	2,333
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	1.4	17.2	3,089	8%	3,336
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	1.4	6.8	1,231	8%	1,330
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	1.4	36.0	6,999	0%	6,999
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	1.4	-	-	0%	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	1.4	-	-	0%	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	4.4	-	-	0%	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	4.4	-	-	0%	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	4.4	-	-	0%	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	18.5	-	-	0%	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	4.4	12.0	6,519	8%	7,040
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	18.5	17.2	39,513	8%	42,674
9219-C-b-Sh1	Load-Cover	USS	Misc-4	18.5	6.8	15,750	8%	17,010
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	4.4	12.0	6,519	8%	7,040
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	4.4	12.0	6,519	8%	7,040
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	18.5	17.2	39,513	8%	42,674
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	18.5	6.8	15,750	8%	17,010
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	4.4	12.0	6,519	8%	7,040
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	18.5	17.2	39,513	8%	42,674
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	18.5	6.8	15,750	8%	17,010
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	18.5	36.0	89,525	0%	89,525
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	18.5	-	-	0%	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	18.5	-	-	0%	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	2.8	-	-	0%	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	2.8	12.0	4,122	8%	4,452
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	2.8	17.2	5,895	8%	6,366
9220-C-b-Sh1	Load-Cover	USS	Misc-5	2.8	6.8	2,350	8%	2,538
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	2.8	12.0	4,122	8%	4,452

Earthwork Quantity Worksheet

Notes and Assumptions:

1 - Acres and volumes based on 3CCP drawings

2 - Cover Material Swell: The 'Loose Volume' is calculated based on the acreage to be covered, cover depth, and accounts for appropriate swell factor.

3 - Has been agreed upon with State agencies that swell occurs when cover material is moved from source to haul truck but not from the truck to placement on stockpile

ID	Description	Source Location 1	Destination Location 2	Area (ac)[1]	Cover Depth (in)	Bank/Stockpile Volume (bcy)[1]	Swell Factor (%)[3]	Loose/Stockpile Volume (lcy)[2]
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	2.8	12.0	4,122	8%	4,452
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	2.8	17.2	5,895	8%	6,366
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	2.8	6.8	2,350	8%	2,538
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	2.8	12.0	4,122	8%	4,452
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	2.8	17.2	5,895	8%	6,366
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	2.8	6.8	2,350	8%	2,538
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	2.8	36.0	13,356	0%	13,356
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	-	-	-	-	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	2.8	-	-	0%	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	2.8	-	-	0%	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	50.0	-	-	0%	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	50.0	12.0	74,691	8%	80,667
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	50.0	17.2	106,809	8%	115,353
9221-C-b-Sh1	Load-Cover	USS	Misc-7	50.0	6.8	42,574	8%	45,980
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	50.0	12.0	74,691	8%	80,667
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	50.0	12.0	74,691	8%	80,667
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	50.0	17.2	106,809	8%	115,353
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	50.0	6.8	42,574	8%	45,980
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	50.0	12.0	74,691	8%	80,667
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	50.0	17.2	106,809	8%	115,353
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	50.0	6.8	42,574	8%	45,980
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	50.0	36.0	242,000	0%	242,000
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	-	-	-	-	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	50.0	-	-	0%	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	50.0	-	-	0%	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	0.0	-	-	0%	-

Productivity and Hours Required for Dozer Use---Earthmoving

Notes and Assumptions:
Uses volumes of outslope sections and dam breaches to calculate productivity
Uses push distances of outslope sections for grading productivity
Uses scraper push cycle time for dozer assist with scraper
Uses loader cycle time for dozer assist with loader at cover stockpiles
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

Number of Dozers per Assist = 1

												hide	hide	hide	PERFORMANCE FACTORS										
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Type of Equipment to Assist (ID)	Type of Equipment to Assist (Name)	Number of Dozers per Assist	Loose /Stockpile Volume (cy)	Area (ac)	Productivity (cy/hr)	Productivity (ac/hr)	Scraper Pusher Cycle Time (min)	Cycles per Scraper per Hr	Loader/ Shovel/ Excavator Cycle Time (hr)	Total Task Time (hrs)	Material Factor	Grade Factor	Material Weight (lb/cy)	Production Method/ Blade	Centroid to Centroid Push Distance (ft)	Normal Production (cy/hr)	Effective Blade Width (ft)	Speed (mph)	Operator Factor	Work Hour (min/hr)	Visibility Factor
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Gro	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,026,535	14	-	-	-	-	329.0	329.0	1.2	1.0	3,300	1.2	-	-	18	3	1.00	50	1.0
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	--	--	2,175,386	99	959	-	-	-	2,268.4	2,268.4	1.2	1.6	3,300	1.2	415	730	18	3	1.00	50	1.0
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	--	--	350,027	16	1,835	-	-	-	190.7	190.7	1.2	1.6	3,300	1.2	200	1,396	18	3	1.00	50	1.0
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	--	--	982,052	45	891	-	-	-	-	1,102.4	1.2	1.7	3,300	1.2	481	639	18	3	1.00	50	1.0
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	453,762	281	-	-	-	-	147.1	147.1	-	-	-	-	-	-	-	-	-	50	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	453,762	281	-	-	-	-	147.1	147.1	-	-	-	-	-	-	-	-	-	50	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	648,880	281	-	-	-	-	210.3	210.3	-	-	-	-	-	-	-	-	-	50	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	258,644	281	-	-	-	-	83.8	83.8	-	-	-	-	-	-	-	-	-	50	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	--	--	--	-	37	284	5	-	-	-	-	1.2	1.0	3,300	1.2	1,000	333	18	3	1.00	50	1.0
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	--	--	--	1,546,000	39	967	-	-	-	-	1,598.9	1.2	1.7	3,300	1.2	437	696	18	3	1.00	50	1.0
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	175,904	76	-	-	-	-	57.0	57.0	-	-	-	-	-	-	-	-	-	50	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	70,116	76	-	-	-	-	22.7	22.7	-	-	-	-	-	-	-	-	-	50	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	--	--	--	18,718	3	1,535	-	-	-	-	12.2	1.2	1.7	4,185	1.2	200	1,396	18	3	1.00	50	1.0
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	31,443	19	-	-	-	-	10.2	10.2	-	-	-	-	-	-	-	-	-	50	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	31,443	19	-	-	-	-	10.2	10.2	-	-	-	-	-	-	-	-	-	50	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	44,964	19	-	-	-	-	14.6	14.6	-	-	-	-	-	-	-	-	-	50	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	17,923	19	-	-	-	-	5.8	5.8	-	-	-	-	-	-	-	-	-	50	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	4,243	3	-	-	-	-	1.4	1.4	-	-	-	-	-	-	-	-	-	50	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	4,243	3	-	-	-	-	1.4	1.4	-	-	-	-	-	-	-	-	-	50	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	6,067	3	-	-	-	-	2.0	2.0	-	-	-	-	-	-	-	-	-	50	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	2,418	3	-	-	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	--	--	27,027	5	5,777	-	-	-	-	4.7	1.2	1.6	3,600	1.2	50	4,795	18	3	1.00	50	1.0
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	--	--	515,089	42	1,201	-	-	-	-	428.8	1.2	1.6	3,600	1.2	292	997	18	3	1.00	50	1.0
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	--	--	7,977	2	6,020	-	-	-	-	1.3	1.2	1.7	3,600	1.2	51	4,711	18	3	1.00	50	1.0
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	--	--	56,346	7	2,563	-	-	-	-	22.0	1.2	1.0	3,600	1.2	75	3,343	18	3	1.00	50	1.0
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	398,363	173	-	-	-	-	129.1	129.1	-	-	-	-	-	-	-	-	-	50	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	158,788	173	-	-	-	-	51.5	51.5	-	-	-	-	-	-	-	-	-	50	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blade	--	--	--	89,176	13	1,486	-	-	-	-	60.0	1.2	1.6	3,600	1.2	230	1,233	18	3	1.00	50	1.0
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	161,333	100	-	-	-	-	52.3	52.3	-	-	-	-	-	-	-	-	-	50	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	161,333	100	-	-	-	-	52.3	52.3	-	-	-	-	-	-	-	-	-	50	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	97,347	42	-	-	-	-	31.6	31.6	-	-	-	-	-	-	-	-	-	50	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	38,803	42	-	-	-	-	12.6	12.6	-	-	-	-	-	-	-	-	-	50	-

Hours Required for Dozer Use---Earthmoving

ions:
lope sections and dam breaches to calculate productivity
of outslope sections for grading productivity
/cle time for dozer assist with scraper
e for dozer assist with loader at cover stockpiles
[Grade %) + 1
ent (D14) to show pertinent rows

Task Description	Source Location 1	Destination Location 2	Equipment	Elevation Factor	Direct Drive Trans.	Cut to Fill Haul Grade (%)
Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD Multi-sh	-	-	0%
Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3600-5	-	-	0%
Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Gro	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	1.0	1.0	0%
Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 730E	-	-	0%
Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	1.0	1.0	-29%
Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	1.0	1.0	-29%
Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	1.0	1.0	-33%
Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	-	-	0%
Haul-Cover	CHR	SWRDF-0	Komatsu 730E	-	-	0%
Haul-Cover	USS	SWRDF-0	Komatsu 730E	-	-	0%
Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	-	-	0%
Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0%
Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0%
Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0%
Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0%
Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0%
Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0%
Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-sh	-	-	0%
Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	0%
Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	0%
Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	0%
Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	0%
Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	1.0	1.0	-1%
Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	1.0	1.0	-33%
Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	EWRF-0	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	-	-	0%
Haul-Cover	CHR	EWRF-0	Komatsu 730E	-	-	0%
Haul-Cover	USS	EWRF-0	Komatsu 730E	-	-	0%
Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	-	-	0%
Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0%
Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0%
Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0%
Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0%
Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0%
Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0%
Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-sh	-	-	0%
Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	-	-	0%
Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	1.0	1.0	-33%
Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	MGTI-0	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	MGTI-0	Komatsu 730E	-	-	0%
Haul-Cover	CHR	MGTI-0	Komatsu 730E	-	-	0%
Haul-Cover	USS	MGTI-0	Komatsu 730E	-	-	0%
Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	-	-	0%
Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	-	-	0%
Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	0%
Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	0%
Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	0%
Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	0%
Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-sh	-	-	0%
Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	NOB-0	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	NOB-0	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	NOB-0	Komatsu 730E	-	-	0%
Haul-Cover	CHR	NOB-0	Komatsu 730E	-	-	0%
Haul-Cover	USS	NOB-0	Komatsu 730E	-	-	0%
Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	-	-	0%
Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0%
Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0%
Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0%
Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0%
Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-sh	-	-	0%
Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	-	-	0%
Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	-	-	0%
Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	-	-	0%
Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	1.0	1.0	-29%
Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	1.0	1.0	-29%
Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	1.0	1.0	-33%
Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	1.0	1.0	0%
Load-Cover	CHR	MTI-0	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	MTI-0	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	-	-	0%
Haul-Cover	CHR	MTI-0	Komatsu 730E	-	-	0%
Haul-Cover	USS	MTI-0	Komatsu 730E	-	-	0%
Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	-	-	0%
Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0%
Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0%
Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0%
Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0%
Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0%
Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0%
Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-sh	-	-	0%
Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blade	1.0	1.0	-29%
Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	MTI-3	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	MTI-3	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	-	-	0%

Productivity and Hours Required for Dozer Use---Earthmoving

Notes and Assumptions:
Uses volumes of outslope sections and dam breaches to calculate productivity
Uses push distances of outslope sections for grading productivity
Uses scraper push cycle time for dozer assist with scraper
Uses loader cycle time for dozer assist with loader at cover stockpiles
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

Number of Dozers per Assist = 1

hide hide hide PERFORMANCE FACTORS

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Type of Equipment to Assist (ID)	Type of Equipment to Assist (Name)	Number of Dozers per Assist	Loose /Stockpile Volume (cy)	Area (ac)	Productivity (cy/hr)	Productivity (ac/hr)	Scraper Pusher Cycle Time (min)	Cycles per Scraper per Hr	Loader/ Shovel/ Excavator Cycle Time (hr)	Total Task Time (hrs)	Material Factor	Grade Factor	Material Weight (lb/cy)	Production Method/ Blade	Centroid to Centroid Push Distance (ft)	Normal Production (cy/hr)	Effective Blade Width (ft)	Speed (mph)	Operator Factor	Work Hour (min/hr)	Visibility Factor
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-sh	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	139,696	87	-	-	-	-	45.3	45.3	-	-	-	-	-	-	-	-	-	50	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	139,696	87	-	-	-	-	45.3	45.3	-	-	-	-	-	-	-	-	-	50	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	199,765	87	-	-	-	-	64.8	64.8	-	-	-	-	-	-	-	-	-	50	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	79,626	87	-	-	-	-	25.8	25.8	-	-	-	-	-	-	-	-	-	50	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1801-E-a-Rp1	Rip-Top - Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD Multi-sh	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T, U Blade	--	--	--	121,536	14	908	-	-	-	-	133.9	1.2	1.6	3,600	1.2	400	754	18	3	1.00	50	1.0
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	32,013	20	-	-	-	-	10.4	10.4	-	-	-	-	-	-	-	-	-	50	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	32,013	20	-	-	-	-	10.4	10.4	-	-	-	-	-	-	-	-	-	50	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	45,779	20	-	-	-	-	14.8	14.8	-	-	-	-	-	-	-	-	-	50	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	18,248	20	-	-	-	-	5.9	5.9	-	-	-	-	-	-	-	-	-	50	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Gro	Containments	-	Cat 319D L	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	16	0	-	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	-	50	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,000	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	807	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	613	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	323	0	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-	-	-	50	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	742	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	839	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	549	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,355	1	-	-	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	50	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	2,468	2	-	-	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	16	0	-	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	-	50	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,000	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	807	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	613	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	323	0	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-	-	-	50	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	742	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	839	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	549	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,355	1	-	-	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	50	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	2,468	2	-	-	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	16	0	-	-	-	-	0.0	0.0	-	-	-	-	-	-	-	-	-	50	-

Hours Required for Dozer Use---Earthmoving

ions:
lope sections and dam breaches to calculate productivity
of outslope sections for grading productivity
/cle time for dozer assist with scraper
e for dozer assist with loader at cover stockpiles
[Grade %) + 1
ent (D14) to show pertinent rows

Task Description	Source Location 1	Destination Location 2	Equipment	Elevation Factor	Direct Drive Trans.	Cut to Fill Haul Grade (%)
Haul-Cover	EWRF	CHR-0	Komatsu 730E	-	-	0%
Haul-Cover	CHR	MTI-3	Komatsu 730E	-	-	0%
Haul-Cover	USS	MTI-3	Komatsu 730E	-	-	0%
Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	-	-	0%
Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0%
Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0%
Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0%
Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0%
Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-sh	-	-	0%
Load-Cover	EWRF	HM-2	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	HM-2	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	HM-2	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	HM-2	Komatsu 730E	-	-	0%
Haul-Cover	CHR	HM-2	Komatsu 730E	-	-	0%
Haul-Cover	USS	HM-2	Komatsu 730E	-	-	0%
Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	-	-	0%
Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	0%
Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	-	-	0%
Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-	-	0%
Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD Multi-sh	-	-	0%
Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T, U Blade	1.0	1.0	-29%
Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	-	-	0%
Haul-Cover	CHR	LGWRF-0	Komatsu 730E	-	-	0%
Haul-Cover	USS	LGWRF-0	Komatsu 730E	-	-	0%
Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	-	-	0%
Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0%
Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0%
Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0%
Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0%
Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0%
Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0%
Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	-	-	0%
Perforate Liner-Upper Creek Containment Pond 1 -Existing Gro	Containments	-	Cat 319D L	-	-	0%
Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	-	-	0%
Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	-	-	0%
Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	-	-	0%
Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	0%

Productivity and Hours Required for Dozer Use---Earthmoving

Notes and Assumptions:
Uses volumes of outslope sections and dam breaches to calculate productivity
Uses push distances of outslope sections for grading productivity
Uses scraper push cycle time for dozer assist with scraper
Uses loader cycle time for dozer assist with loader at cover stockpiles
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

Number of Dozers per Assist = 1

												hide	hide	hide	PERFORMANCE FACTORS										
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Type of Equipment to Assist (ID)	Type of Equipment to Assist (Name)	Number of Dozers per Assist	Loose /Stockpile Volume (cy)	Area (ac)	Productivity (cy/hr)	Productivity (ac/hr)	Scraper Pusher Cycle Time (min)	Cycles per Scraper per Hr	Loader/ Shovel/ Excavator Cycle Time (hr)	Total Task Time (hrs)	Material Factor	Grade Factor	Material Weight (lb/cy)	Production Method/ Blade	Centroid to Centroid Push Distance (ft)	Normal Production (cy/hr)	Effective Blade Width (ft)	Speed (mph)	Operator Factor	Work Hour (min/hr)	Visibility Factor
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,000	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	807	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	613	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	323	0	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-	-	-	50	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	742	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	839	1	-	-	-	-	0.3	0.3	-	-	-	-	-	-	-	-	-	50	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	549	0	-	-	-	-	0.2	0.2	-	-	-	-	-	-	-	-	-	50	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,355	1	-	-	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	50	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	2,468	2	-	-	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	2,333	1	-	-	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	2,333	1	-	-	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	3,336	1	-	-	-	-	1.1	1.1	-	-	-	-	-	-	-	-	-	50	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	1,330	1	-	-	-	-	0.4	0.4	-	-	-	-	-	-	-	-	-	50	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	7,040	4	-	-	-	-	2.3	2.3	-	-	-	-	-	-	-	-	-	50	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	7,040	4	-	-	-	-	2.3	2.3	-	-	-	-	-	-	-	-	-	50	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	42,674	18	-	-	-	-	13.8	13.8	-	-	-	-	-	-	-	-	-	50	-
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	17,010	18	-	-	-	-	5.5	5.5	-	-	-	-	-	-	-	-	-	50	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	1.4	1.4	-	-	-	-	-	-	-	-	-	50	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	1.4	1.4	-	-	-	-	-	-	-	-	-	50	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	2.1	2.1	-	-	-	-	-	-	-	-	-	50	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	0.8	0.8	-	-	-	-	-	-	-	-	-	50	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Grad	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	26.1	26.1	-	-	-	-	-	-	-	-	-	50	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	26.1	26.1	-	-	-	-	-	-	-	-	-	50	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	37.4	37.4	-	-	-	-	-	-	-	-	-	50	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blade	Sh1	Hitachi EX3600-5 Shovel	1	#VALUE!	#VALUE!	-	#VALUE!	-	-	14.9	14.9	-	-	-	-	-	-	-	-	-	50	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 730E	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	--	--	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Hours Required for Dozer Use---Earthmoving

ions:
lope sections and dam breaches to calculate productivity
of outslope sections for grading productivity
/cle time for dozer assist with scraper
e for dozer assist with loader at cover stockpiles
[Grade %) + 1
ent (D14) to show pertinent rows

Task Description	Source Location 1	Destination Location 2	Equipment	Elevation Factor	Direct Drive Trans.	Cut to Fill Haul Grade (%)
Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	0%
Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-9	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Cntmnt-10	Komatsu 730E	-	-	0%
Grade-All Containments-Placed Cover	Containments	-	Cat 16M	-	-	0%
Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-All Containments-Final Grade	Containments	-	-	-	-	0%
Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	-	-	0%
Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Misc-2	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	Misc-2	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	Misc-2	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Misc-2	Komatsu 730E	-	-	0%
Haul-Cover	USS	Misc-2	Komatsu 730E	-	-	0%
Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0%
Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	0%
Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	0%
Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	-	-	0%
Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	0%
Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	0%
Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	-	-	0%
Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Misc-4	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	Misc-4	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	Misc-3	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Misc-4	Komatsu 730E	-	-	0%
Haul-Cover	USS	Misc-4	Komatsu 730E	-	-	0%
Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0%
Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	0%
Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	0%
Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	-	-	0%
Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Misc-5	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	Misc-5	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	Misc-5	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Misc-5	Komatsu 730E	-	-	0%
Haul-Cover	USS	Misc-5	Komatsu 730E	-	-	0%
Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0%
Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	-	0%
Post-Closure O&M-High Grade Ore Remaining Area-Final Grad	Miscellaneous	-	-	-	-	0%
Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	-	-	0%
Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	-	-	0%
Load-Cover	CHR	Misc-7	Hitachi EX3600-5	-	-	0%
Load-Cover	USS	Misc-7	Hitachi EX3600-5	-	-	0%
Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blade	-	-	0%
Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blade	-	-	0%
Haul-Cover	EWRF	Misc-7	Komatsu 730E	-	-	0%
Haul-Cover	CHR	Misc-7	Komatsu 730E	-	-	0%
Haul-Cover	USS	Misc-7	Komatsu 730E	-	-	0%
Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0%
Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy Wa	-	-	0%
Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	-	0%
Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	-	0%
Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	-	-	0%

Productivity and Hours Required for Water Truck Use

Notes and Assumptions:
6,000 gal water truck for compaction (water truck hours tied to 1/3 of grading time for fill material)
May filter on equipement (D14) to show pertinent rows
Compaction volume assumed to 1/3 of fill material

Sheet to which to tie hrs 12 Scrapers
Equipment for hrs Sc2

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Operational Maintenance Time (hrs)
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal	-	Hitachi EX3600-5	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existi	South Waste Rock Disposal	-	Cat D11T, U Blade	-
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal	-	Komatsu 730E	-
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal	-	Cat D11T, U Blade	-
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal	-	Cat D11T, U Blade	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal	-	Cat D11T, U Blade	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	-
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	-
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	-
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposa	-	Cat 16M	-
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposa	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final G	South Waste Rock Disposa	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposa	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final	South Waste Rock Disposa	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposa	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposa	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	-
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	-
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	-
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final G	East Waste Rock Facility	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final	East Waste Rock Facility	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	-
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	-
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	-
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	-
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	-

Productivity and Hours Required for Water Truck Use

Notes and Assumptions:

6,000 gal water truck for compaction (water truck hours tied to 1/3 of grading time for fill material)

1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	-
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final G	Magnetite Tailings	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Gı	Main Tailings Impoundment	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final (	Main Tailings Impoundment	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blade	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	-
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	-

Productivity and Hours Required for Water Truck Use

Notes and Assumptions:

6,000 gal water truck for compaction (water truck hours tied to 1/3 of grading time for fill material)

9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grad	Hanover Mountain Pit	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grad	Hanover Mountain Pit	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Gra	Hanover Mountain Pit	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Gra	Hanover Mountain Pit	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock	-	Cat D11T, U Blade	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	-
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	-
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Roc	-	Cat 16M	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Roc	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Roc	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Roc	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Roc	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Roc	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Roc	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Roc	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Gr	Containments	-	Cat 319D L	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Grour	Containments	-	Cat 319D L	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Gro	Containments	-	Cat 319D L	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Exist	Containments	-	Cat 319D L	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	-
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	-
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	-
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	-
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	-
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	-
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	-
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	-
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	-
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-

Productivity and Hours Required for Water Truck Use

Notes and Assumptions:

6,000 gal water truck for compaction (water truck hours tied to 1/3 of grading time for fill material)

9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	-
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	-
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	-
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	-
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	-
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	-
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	-
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	-
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	-
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	-
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	-
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	-
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	-
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	-
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	-
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	-
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	-
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	-
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	-
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	-
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	-
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	-
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	-
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	-
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	-
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	-
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	-
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	Komatsu 730E	-
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	Komatsu 730E	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	-
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blade	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blade	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	-
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 730E	-
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 730E	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grad	Miscellaneous	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	-

Productivity and Hours Required for Water Truck Use

Notes and Assumptions:

6,000 gal water truck for compaction (water truck hours tied to 1/3 of grading time for fill material)

9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blade	-
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blade	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	-
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 730E	-
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 730E	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blade	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blade	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	-
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 730E	-
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 730E	-
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	-
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grad	Miscellaneous	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Fin	Miscellaneous	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	-
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blade	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blade	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	-
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 730E	-
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 730E	-
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	-
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final G	Miscellaneous	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	-

Productivity and Hours Required for Dust Suppression and Road Maintenance

Notes and Assumptions:
6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)
May filter on equipement (D14) to show pertinent rows

Sheet to which to tie hrs 11 Loader Shovel
Equipment for hrs Sh1
Equipment for hrs Ld1

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Operational Maintenance Time (hrs)
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal	-	Hitachi EX3600-5	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existir	South Waste Rock Disposal	-	Cat D11T, U Blade	-
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal	-	Komatsu 730E	-
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal	-	Cat D11T, U Blade	-
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal	-	Cat D11T, U Blade	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal	-	Cat D11T, U Blade	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	-
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	-
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	-
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal	-	Cat 16M	-
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Gı	South Waste Rock Disposal	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final (	South Waste Rock Disposal	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	-
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	-
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	-
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Gı	East Waste Rock Facility	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final (	East Waste Rock Facility	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	-
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	-
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	-
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	-
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	-
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	-
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final G	Magnetite Tailings	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-

Productivity and Hours Required for Dust Suppression and Road Maintenance

Notes and Assumptions:

6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)

9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Gı	Main Tailings Impoundment	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final (	Main Tailings Impoundment	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blade	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	-
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grad	Hanover Mountain Pit	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grad	Hanover Mountain Pit	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Gra	Hanover Mountain Pit	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Gra	Hanover Mountain Pit	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	-

Productivity and Hours Required for Dust Suppression and Road Maintenance

Notes and Assumptions:

6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)

1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock	-	Cat D11T, U Blade	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	-
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	-
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock	-	Cat 16M	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Gr	Containments	-	Cat 319D L	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Groun	Containments	-	Cat 319D L	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Gro	Containments	-	Cat 319D L	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Exist	Containments	-	Cat 319D L	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	-
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	-
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	-
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	-
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	-
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	-
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	-
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	-
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	-
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	-
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	-
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	-
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	-
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	-
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	-
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	-
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	-
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	-
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	-
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	-
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	-
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	-
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	-
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	-
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	-
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	-

Productivity and Hours Required for Dust Suppression and Road Maintenance

Notes and Assumptions:

6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)

9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	-
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	-
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	-
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	-
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	-
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	-
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	-
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	-
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	-
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	-
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	Komatsu 730E	-
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	Komatsu 730E	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	-
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blade	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blade	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	-
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 730E	-
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 730E	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grad	Miscellaneous	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	-
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blade	-
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blade	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	-
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 730E	-
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 730E	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blade	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blade	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	-
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 730E	-
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 730E	-
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	-
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grad	Miscellaneous	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Fin	Miscellaneous	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	-

Productivity and Hours Required for Dust Suppression and Road Maintenance

Notes and Assumptions:

6,000 gal water truck and 14M motor grader for dust suppression and site maintenance (water truck hours and 14M hours tied to loading time for cover material)

9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blade	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blade	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	-
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 730E	-
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 730E	-
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	-
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy Water Tanker Truck,6,000-gal.	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final C	Miscellaneous	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	-

Productivity and Hours Required for Ripper---Equipped Dozer Use

Notes and Assumptions:
Uses area to calculate task time
66 ft/min = 1 mph
Max filter on equipement (D14) to show pertinent rows

							PERFORMANCE FACTORS									
ID	**Task Description**	**Source Location 1**	**Destination Location 2**	**Equipment**	**Area (ac)**	**Productivity (ac/hr)**	**Task Time (hrs)**	**Ripping Length (ft)**	**Ripper Penetration (in)**	**Pocket Spacing (in)**	**Distance b/n Passes**	**Number of Shank Pockets**	**Turn Time (min/pass)**	**Work Hour (min/hr)**	**Speed (mph)**	**1000 Ft Passes/Acre**	**Ripped Width Plus Distance b/n Passes (ft)**
1001-E-a-Rs1	Rib-Toe -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD Multi-shank (w/ MSR-359H)	107.32	2.9	36.8	1.000	18	59	59	3	0.25	50	1.0	1.5	30
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-B-a-Dz1	Dozer Assist Screer Gradino-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-D-a-Tr4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1003-A-a-Dz1	Grade-3:1 Interbench Outsloses-South-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1004-A-a-Dz1	Grade-3:1 Interbench Outsloses-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-D-b-Tr4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-D-b-Tr4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-D-b-Tr4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-A-d-Mo1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-F-e-Lf3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Rb-e-Ut0b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Dc-e-Ut	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Dc-e-Ut	Construct Downdrains-Diversions-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Rd-Comb1	Road Maintenance-Entire Stockpile	South Waste Rock Disposal Facility	-	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Je-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Mi-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-E-a-Rs1	Rib-Toe-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-shank (w/ MSR-359H)	37.36	2.9	12.8	1.000	18	59	59	3	0.25	50	1.0	1.5	30
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
1103-D-a-Tr4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
1104-D-a-Tr4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-A-a-Dz1	Grade-Toe-Existing Ground	East Waste Rock Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1102-A-a-Dz1	Grade-3:1Interbench Outsloce-Existing Ground	East Waste Rock Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-D-b-Tr4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-D-b-Tr4	Haul-Cover	USS	EWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-A-d-Mo1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-F-e-Lf3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Rb-e-Ut0b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-G-e-Ut6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Dc-e-Ut	Construct Downdrain Diversions-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	East Waste Rock Facility	-	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Je-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Mi-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rs1	Rib-Toe-Existing Ground	Maxnetite Tailings	-	Cat D11T CD Multi-shank (w/ MSR-359H)	16.07	2.9	5.5	1.000	18	59	59	3	0.25	50	1.0	1.5	30
1301-A-a-Mo1	Grade-Toe-Existing Ground	Maxnetite Tailings	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-A-a-Dz1	Grade-Toe-Existing Ground	Maxnetite Tailings	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-C-b-Sh1	Load-Cover	EWRF	MGT1-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-C-b-Sh1	Load-Cover	CHR	MGT1-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-C-b-Sh1	Load-Cover	USS	MGT1-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGT1-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGT1-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGT1-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGT1-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-D-b-Tr4	Haul-Cover	EWRF	MGT1-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-D-b-Tr4	Haul-Cover	CHR	MGT1-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-D-b-Tr4	Haul-Cover	USS	MGT1-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-d-Mo1	Grade-Toe -Placed Cover	Maxnetite Tailings	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-d-Mo1	Grade-Dam Outsloce-Placed Cover	Maxnetite Tailings	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-G-e-Ut6	Construct Downdrains-Dam Outsloce-Final Grade	Maxnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-Dc-e-Ut	Construct Downdrain Diversions-Dam Outsloce-Final Grade	Maxnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Maxnetite Tailings	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-Je-U2a	Revegetate-Entire Impoundment-Final Grade	Maxnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-Mi-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Maxnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rs1	Rib-Toe-Existing Ground	North OB Stockpile Toe	-	Cat D11T CD Multi-shank (w/ MSR-359H)	6.79	2.9	0.3	1.000	18	59	59	3	0.25	50	1.0	1.5	30
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-D-b-Tr4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-D-b-Tr4	Haul-Cover	CHR	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-D-b-Tr4	Haul-Cover	USS	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-A-d-Mo1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-F-e-Lf3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-G-e-Ut6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-Je-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-Mi-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1401-E-a-Rs1	Rib-Toe Includino waste-Existino Ground	Main Tailinos Impoundment	-	Cat D11T CD Multi-shank (w/ MSR-359H)	113.76	2.9	39.0	1.000	18	59	59	3	0.25	50	1.0	1.5	30
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailinos Impoundment	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
1406-D-a-Tr4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailinos Impoundment	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1405-E-c-Mo1	Rib-Reclaim Pond-Rough Graded Material	Main Tailinos Impoundment	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailinos Impoundment	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailinos Impoundment	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailinos Impoundment	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existino Ground	Main Tailinos Impoundment	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-D-b-Tr4	Haul-Cover	CHR	MTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-D-b-Tr4	Haul-Cover	USS	MTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-A-d-Mo1	Grade-Entire Stockpile-Placed Cover	Main Tailinos Impoundment	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-F-e-Lf3	Grade Benches-Entire Stockpile-Final Grade	Main Tailinos Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Rb-e-Ut0b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailinos Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-G-e-Ut6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailinos Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Dc-e-Ut	Construct Downdrain Diversions-Entire Stockpile-Final Grade	Main Tailinos Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailinos Impoundment	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Je-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailinos Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Mi-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailinos Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-E-a-Rs1	Rib-Entire Road-Existino Ground	Cobre Haul Road	-	Cat D11T CD Multi-shank (w/ MSR-359H)	100.00	2.9	34.3	1.000	18	59	59	3	0.25	50	1.0	1.5	30
1503-A-a-Dz1	Grade-West HC Outsloce-sushdown-Existino Ground	Cobre Haul Road	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-C-b-Sh1	Load-Cover	CHR-0	EWRF	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-D-b-Tr4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-D-b-Tr4	Haul-Cover	CHR	MTI-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-D-b-Tr4	Haul-Cover	USS	MTI-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-A-d-Mo1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-F-e-Lf3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-G-e-Ut6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-Je-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-Mi-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-E-a-Rs1	Rib-Accessible Flat Areas-Existino Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-shank (w/ MSR-359H)	88.45	2.9	29.7	1.000	18	59	59	3	0.25	50	1.0	1.5	30
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-D-b-Tr4	Haul-Cover	EWRF	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-D-b-Tr4	Haul-Cover	CHR	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-D-b-Tr4	Haul-Cover	USS	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-A-d-Mo1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-Lf3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-Lf3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-Ut6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-Ut6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-P-b-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-Je-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-Mi-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berme-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berme-Perimeter-Final Grade	Continental Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1801-E-a-Rs1	Rib-Toe -Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD Multi-shank (w/ MSR-359H)	8.51	2.9	2.7	1.000	18	59	59	3	0.25	50	1.0	1.5	30
1801-A-a-Dz1	Grade-Toe-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T IJ Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-D-b-Tr4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-D-b-Tr4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-D-b-Tr4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-A-d-Mo1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-Lf3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-Lf3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-Ut6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-Ut6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-P-b-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off-Hwy Water Tanker Truck 6,000-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-Je-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-Mi-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackmar's Seep (Pond #2) -Existino Ground	Containments	-	Cat 316D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existino Ground	Containments	-	Cat 316D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existino Ground	Containments	-	Cat 316D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2004-K-a-Ex1	Perforate Liner-Grase Gulch Pond #3-Existino Ground	Containments	-	Cat 316D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2005-K-a-Ex1	Perforate Liner-Marcella Seepage Pond-Existino Ground	Containments	-	Cat 316D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2006-K-a-Ex1	Perforate Liner-North Tailing Decant Pond-Existino Ground	Containments	-	Cat 316D L	-	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Ripper---Equipped Dozer Use

Notes and Assumptions:
Uses area to calculate task time
66 ft/min = 1 mph
Mav filter on equipement (D14) to show pertinent rows

						PERFORMANCE FACTORS										
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Area (ac)	Productivity (ac/hr)	Task Time (hrs)	Ripping Length (ft)	Ripper Penetratio n (in)	Pocket Spacing (in)	Distance b/n Passes	Number of Shank Pockets	Turn Time (min/pass)	Work Hour (min/hr)	Speed (mph)	1000 Ft Passes/Acre	Ripped Width Plus Distance b/n Passes (ft)
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	EWRF	Criterei-1	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-C-b-Sh1	Load-Cover	EWRF	Criterei-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-C-b-Sh1	Load-Cover	EWRF	Criterei-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-C-b-Sh1	Load-Cover	EWRF	Criterei-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-C-b-Sh1	Load-Cover	EWRF	Criterei-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-C-b-Sh1	Load-Cover	EWRF	Criterei-6	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-C-b-Sh1	Load-Cover	EWRF	Criterei-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-C-b-Sh1	Load-Cover	EWRF	Criterei-8	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-C-b-Sh1	Load-Cover	EWRF	Criterei-9	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-C-b-Sh1	Load-Cover	EWRF	Criterei-10	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-1	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-2	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-3	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-4	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-5	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-6	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-7	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-8	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-9	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-10	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	CHR	Criterei-1	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-C-b-Sh1	Load-Cover	CHR	Criterei-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-C-b-Sh1	Load-Cover	CHR	Criterei-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-C-b-Sh1	Load-Cover	CHR	Criterei-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-C-b-Sh1	Load-Cover	CHR	Criterei-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-C-b-Sh1	Load-Cover	CHR	Criterei-6	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-C-b-Sh1	Load-Cover	CHR	Criterei-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-C-b-Sh1	Load-Cover	CHR	Criterei-8	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-C-b-Sh1	Load-Cover	CHR	Criterei-9	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-C-b-Sh1	Load-Cover	CHR	Criterei-10	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-1	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-2	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Df1	Dozer Assist-Cover	FWRF	Criterei-3	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Df1	Dozer Assist-Cover	FWRF	Criterei-4	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Df1	Dozer Assist-Cover	FWRF	Criterei-5	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Df1	Dozer Assist-Cover	FWRF	Criterei-6	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-7	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-8	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-9	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Df1	Dozer Assist-Cover	EWRF	Criterei-10	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9108-D-b-Th4	Haul-Cover	CHR	Criterei-1	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9109-D-b-Th4	Haul-Cover	CHR	Criterei-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9110-D-b-Th4	Haul-Cover	CHR	Criterei-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9111-D-b-Th4	Haul-Cover	CHR	Criterei-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9112-D-b-Th4	Haul-Cover	CHR	Criterei-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9113-D-b-Th4	Haul-Cover	CHR	Criterei-6	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9114-D-b-Th4	Haul-Cover	CHR	Criterei-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9115-D-b-Th4	Haul-Cover	CHR	Criterei-8	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9116-D-b-Th4	Haul-Cover	CHR	Criterei-9	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9117-D-b-Th4	Haul-Cover	CHR	Criterei-10	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-A-s4-Mo1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M OR-Hwy Water Tanker Truck 6 000-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-J-a-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-E-a-Ro1	Rio-Tailiinos Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	1.45	2.9	0.5	1.000	18	59	59	3	0.25	50	1.0	1.5	30
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-B-b-Df1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9318-B-b-Df1	Dozer Assist-Cover	USS	Misc-2	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-D-b-Th4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-D-b-Th4	Haul-Cover	CHR	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-D-b-Th4	Haul-Cover	USS	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-A-s4-Mo1	Grade-Tailiinos Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-P-a-Comb1	Road Maintenance-Tailiinos Pipeline Corridor	Miscellaneous	-	Cat 14M OR-Hwy Water Tanker Truck 6 000-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-J-a-U2a	Revegetate-Tailiinos Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-M-a-U24	Post-Closure O&M-Tailiinos Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-E-a-Ro1	Rio-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	4.36	2.9	1.5	1.000	18	59	59	3	0.25	50	1.0	1.5	30
3003-P-a-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M OR-Hwy Water Tanker Truck 6 000-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-J-a-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-M-a-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-E-a-Ro1	Rio-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	18.50	2.9	6.3	1.000	18	59	59	3	0.25	50	1.0	1.5	30
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-B-b-Df1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-B-b-Df1	Dozer Assist-Cover	USS	Misc-4	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-D-b-Th4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-D-b-Th4	Haul-Cover	CHR	Misc-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-D-b-Th4	Haul-Cover	USS	Misc-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-A-s4-Mo1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M OR-Hwy Water Tanker Truck 6 000-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-J-a-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-M-a-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-E-a-Ro1	Rio-Hish Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	2.76	2.9	0.9	1.000	18	59	59	3	0.25	50	1.0	1.5	30
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-B-b-Df1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-B-b-Df1	Dozer Assist-Cover	USS	Misc-5	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-D-b-Th4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-D-b-Th4	Haul-Cover	CHR	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-D-b-Th4	Haul-Cover	USS	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-A-s4-Mo1	Grade-Hish Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-P-a-Comb1	Road Maintenance-Hish Grade Ore Remaining Area	Miscellaneous	-	Cat 14M OR-Hwy Water Tanker Truck 6 000-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-J-a-U2a	Revegetate-Hish Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-M-a-U24	Post-Closure O&M-Hish Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-E-a-Ro1	Rio-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank (w/ MSR-359H)	50.00	2.9	17.1	1.000	18	59	59	3	0.25	50	1.0	1.5	30
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Df1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Df1	Dozer Assist-Cover	FWRF	Misc-7	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-B-b-Df1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-B-b-Df1	Dozer Assist-Cover	USS	Misc-7	Cat D11T U Blade	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-D-b-Th4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-D-b-Th4	Haul-Cover	CHR	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-D-b-Th4	Haul-Cover	USS	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-A-s4-Mo1	Grade-Undanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-P-a-Comb1	Road Maintenance-Undanned Disturbance Area	Miscellaneous	-	Cat 14M OR-Hwy Water Tanker Truck 6 000-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-J-a-U2a	Revegetate-Undanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-M-a-U24	Post-Closure O&M-Undanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3008-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Hydraulic Excavator

Notes and Assumptions:

Uses area to calculate time for perforating liners

3' sheepsfoot roller

Can be used for excavating and loading, or sheepsfoot compaction using a roller
May filter on equipment (D14) to show pertinent rows

5	6	7	8	9	10	11		12	13		14
ID	**Task Description**	**Source Location 1**	**Destination Location 2**	**Equipment**	**Area (ac) or Volume (lcy)**	**Unit (ac or lcy)**	**Sheepsfoot Roller Width (ft) or Bucket Capacity (cy)**	**Unit (ft or cy)**	**Maximum Reach at Ground Level (ft)**	**Cycle Time (min)**	**Work Hour (min/hr)**	**Task Time (hr)**
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	-	-	-	-	-	-	-	-
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Ro	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	-	-	-	-	-	-	-	-
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	-	-	-	-	-	-	-	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	-	-	-	-	-	-	-	-
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	-	-	-	-	-	-	-	-
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	-	-	-	-	-	-	-	-
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	-	-	-	-	-	-	-	-
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	-	-	-	-	-	-	-	-
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailing	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-

Productivity and Hours Required for Hydraulic Excavator

9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	-	-	-	-	-	-	-	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockp	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	-	-	-	-	-	-	-	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	-	-	-	-	-	-	-	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	-	-	-	-	-	-	-	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	-	-	-	-	-	-	-	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	-	-	-	-	-	-	-	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Im	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	-	-	-	-	-	-	-	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	-	-	-	-	-	-	-	-
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	-	-	-	-	-	-	-	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	-	-	-	-	-	-	-	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Roa	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	-	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-	-	-	-	-	-	-	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-

Productivity and Hours Required for Hydraulic Excavator

9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	Cat 319D L	0.0	ac	3.0	ft	31.7	0.16	50.00	0.01	
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	0.6	ac	3.0	ft	31.7	0.16	50.00	0.91	
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	0.5	ac	3.0	ft	31.7	0.16	50.00	0.73	
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	0.4	ac	3.0	ft	31.7	0.16	50.00	0.56	
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	Cat 319D L	0.2	ac	3.0	ft	31.7	0.16	50.00	0.29	
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	Cat 319D L	0.5	ac	3.0	ft	31.7	0.16	50.00	0.67	
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	0.5	ac	3.0	ft	31.7	0.16	50.00	0.76	
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	0.3	ac	3.0	ft	31.7	0.16	50.00	0.50	
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	0.8	ac	3.0	ft	31.7	0.16	50.00	1.23	
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	Cat 319D L	1.5	ac	3.0	ft	31.7	0.16	50.00	2.24	
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	-	-	-	-	-	-	-	-	
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	-	-	-	-	-	-	-	-	
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	-	-	-	-	-	-	-	-	
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	-	-	-	-	-	-	-	-	
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	-	-	-	-	-	-	-	-	
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	-	-	-	-	-	-	-	-	
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	-	-	-	-	-	-	-	-	
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	-	-	-	-	-	-	-	-	
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	-	-	-	-	-	-	-	-	
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	-	-	-	-	-	-	-	-	
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	-	-	-	-	-	-	-	-	
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	-	-	-	-	-	-	
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	-	-	-	-	-	-	-	-	
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	-	-	-	-	-	-	-	-	
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	-	-	-	-	-	-	-	-	
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	-	-	-	-	-	-	-	-	
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	-	-	-	-	-	-	-	-	
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	-	-	-	-	-	-	-	-	
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	-	-	-	-	-	-	-	-	
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	-	-	-	-	-	-	-	-	

Productivity and Hours Required for Hydraulic Excavator

9116-D-b-Tk4	Haul-Cover		CHR	Cntmnt-9	Komatsu 730E	-	-	-	-	-	-	-	-
9117-D-b-Tk4	Haul-Cover		CHR	Cntmnt-10	Komatsu 730E	-	-	-	-	-	-	-	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover		Containments	-	Cat 16M	-	-	-	-	-	-	-	-
2000-P-a-Comb1	Road Maintenance-All Containments		Containments	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade		Containments	-	-	-	-	-	-	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground		Miscellaneous	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
9018-C-b-Sh1	Load-Cover		EWRF	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9118-C-b-Sh1	Load-Cover		CHR	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9218-C-b-Sh1	Load-Cover		USS	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover		EWRF	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover		EWRF	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9118-B-b-Dz1	Dozer Assist-Cover		CHR	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9218-B-b-Dz1	Dozer Assist-Cover		USS	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9018-D-b-Tk4	Haul-Cover		EWRF	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-
9118-D-b-Tk4	Haul-Cover		CHR	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-
9218-D-b-Tk4	Haul-Cover		USS	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover		Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor		Miscellaneous	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade		Miscellaneous	-	-	-	-	-	-	-	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade		Miscellaneous	-	-	-	-	-	-	-	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground		Miscellaneous	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads		USS	Misc-3	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade		Miscellaneous	-	-	-	-	-	-	-	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade		Miscellaneous	-	-	-	-	-	-	-	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground		Miscellaneous	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
9019-C-b-Sh1	Load-Cover		EWRF	Misc-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9119-C-b-Sh1	Load-Cover		CHR	Misc-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9219-C-b-Sh1	Load-Cover		USS	Misc-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover		EWRF	Misc-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover		EWRF	Misc-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9119-B-b-Dz1	Dozer Assist-Cover		CHR	Misc-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9219-B-b-Dz1	Dozer Assist-Cover		USS	Misc-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9019-D-b-Tk4	Haul-Cover		EWRF	Misc-3	Komatsu 730E	-	-	-	-	-	-	-	-
9119-D-b-Tk4	Haul-Cover		CHR	Misc-4	Komatsu 730E	-	-	-	-	-	-	-	-
9219-D-b-Tk4	Haul-Cover		USS	Misc-4	Komatsu 730E	-	-	-	-	-	-	-	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover		Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads		Miscellaneous	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade		Miscellaneous	-	-	-	-	-	-	-	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade		Miscellaneous	-	-	-	-	-	-	-	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground		Miscellaneous	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
9020-C-b-Sh1	Load-Cover		EWRF	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9120-C-b-Sh1	Load-Cover		CHR	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9220-C-b-Sh1		#VALUE!	USS	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9020-B-b-Dz1		#VALUE!	EWRF	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9020-B-b-Dz1		#VALUE!	EWRF	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9120-B-b-Dz1		#VALUE!	CHR	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9220-B-b-Dz1		#VALUE!	USS	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9020-D-b-Tk4		#VALUE!	EWRF	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-
9120-D-b-Tk4		#VALUE!	CHR	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-
9220-D-b-Tk4		#VALUE!	USS	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-
3005-A-d-Mg1		#VALUE!	Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-
3005-P-a-Comb1		#VALUE!	Miscellaneous	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
3005-J-e-U2a		#VALUE!	Miscellaneous	-	-	-	-	-	-	-	-	-	-
3005-M-e-U24		#VALUE!	Miscellaneous	-	-	-	-	-	-	-	-	-	-
3007-E-a-Rp1		#VALUE!	Miscellaneous	-	Cat D11T CD Multi-	-	-	-	-	-	-	-	-
9021-C-b-Sh1		#VALUE!	EWRF	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9121-C-b-Sh1		#VALUE!	CHR	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9221-C-b-Sh1		#VALUE!	USS	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-
9021-B-b-Dz1		#VALUE!	EWRF	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9021-B-b-Dz1		#VALUE!	EWRF	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9121-B-b-Dz1		#VALUE!	CHR	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9221-B-b-Dz1		#VALUE!	USS	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-
9021-D-b-Tk4		#VALUE!	EWRF	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-
9121-D-b-Tk4		#VALUE!	CHR	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-
9221-D-b-Tk4		#VALUE!	USS	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-
3007-A-d-Mg1		#VALUE!	Miscellaneous	-	Cat 16M	-	-	-	-	-	-	-	-
3007-P-a-Comb1		#VALUE!	Miscellaneous	-	Cat 14M, Off-Hwy V	-	-	-	-	-	-	-	-
3007-J-e-U2a		#VALUE!	Miscellaneous	-	-	-	-	-	-	-	-	-	-
3007-M-e-U24		#VALUE!	Miscellaneous	-	-	-	-	-	-	-	-	-	-
3006-N-a-U18		#VALUE!	Miscellaneous	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Truck Use

Notes and Assumptions:
Uses haul distance to calculate haul and return time (total task time includes loading, manuevering, dumping, hauling and return time) - moves from cover stockpile to destination stockpile
Volume of cover material based on area of destination
Cycles per truck = the greater of Heaped capacity or Struck capacity divided by Loader's per bucket capacity
1 mph = 88 ft/min
1 m/min = 0.03728227153424 mph
See Truck Optimization optimum number of trucks per loader
Haul Grade (%) assumes postive is uphill while the Effective Haul Grade (%) and Effective Return Grade (%) are postive for downhill and uphill
May filter on equipement (D14) to show pertinent rows

PERFORMANCE FACTORS

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Loading Equipment ID	Loose/Stockpile Volume (cy)	Truck Cycle Time (min)	Optimum Number of Trucks	Loader/Shovel/Excavator Net Bucket Capacity (cy)	Productivity (cy/hr)	Loader/Shovel/Excavator Task Time(hrs)	Truck Task Time (hrs)	Struck Capacity (cy)	Heaped Capacity (cy)	Loader/Shovel Cycles per Truck	Total Haul Distance (ft)	Haul Distance Segment 1 (ft)	Haul Distance Segment 2 (ft)	Haul Distance Segment 3 (ft)	Haul Grade Segment 1 (%)	Haul Grade Segment 2 (%)	Haul Grade Segment 3 (%)	Rolling Resistance (%)	Haul Distance Segment 1 (meters)	Haul Distance Segment 2 (meters)	Haul Distance Segment 3 (meters)	Effective Haul Grade Segment 1 (%)	Effective Haul Grade Segment 2 (%)	Effective Haul Grade Segment 3 (%)	Effective Return Grade Segment 1 (%)	Effective Return Grade Segment 2 (%)	Effective Return Grade Segment 3 (%)	Haul Time (min)	Return Time (min)	Loading Time (min)	Truck Exchange Time (min)	Dump/Maneuver Time (min)	Work Hour (min/hr)	Travel Time Loaded Segment 1 (min/m)	Travel Time Loaded Segment 2 (min/m)	Travel Time Loaded Segment 3 (min/m)	Travel Time Empty Segment 1 (min/m)	Travel Time Empty Segment 2 (min/m)	Travel Time Empty Segment 3 (min/m)
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1001-F-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Dis	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1002-C-a-Sh1	Load-SF-UH Excess Cut-Existing Ground	South Waste Rock Dis	-	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SF-UH Excess Cut-Existing Gro	South Waste Rock Dis	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1002-D-a-Tk4	Haul-SF-UH Excess Cut-Existing Ground	South Waste Rock Dis	-	Komatsu 730E	Sh1	1,026,535	6.3	3	28.1	3,349.1	329.0	329.0	101.0	145.0	5.0	1,624	1,624	-	-	-9.1%	0.0%	0.0%	2.5%	495	-	-	6.6%	2.5%	2.5%	11.6%	2.5%	2.5%	1.2	1.1	2.25	0.7	1.1	50	0.00235	0.00145	0.00145	0.00217	0.00105	0.00105
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Dis	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Dis	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Dis	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	Sh1	453,762	38.7	17	28.1	3,085.2	145.4	147.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	Sh1	648,880	38.7	17	28.1	3,085.2	207.9	210.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	Sh1	258,644	38.7	17	28.1	3,085.2	82.9	83.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Dis	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Dis	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Dis	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Dis	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Dis	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Dis	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Dis	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1101-F-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Fac	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Fac	-	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Fac	-	Komatsu 730E	Sh1	529,788	6.1	3	28.1	3,469.7	169.8	169.8	101.0	145.0	5.0	1,868	870	998	-	5.7%	-5.0%	0.0%	2.5%	265	304	-	8.2%	2.5%	2.5%	3.2%	7.5%	2.5%	1.2	0.8	2.25	0.7	1.1	50	0.00320	0.00129	0.00145	0.00105	0.00164	0.00105
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Fac	-	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Fac	-	Komatsu 730E	Sh1	276,506	6.1	3	28.1	3,469.7	88.6	88.6	101.0	145.0	5.0	1,868	870	998	-	5.7%	-5.0%	0.0%	2.5%	265	304	-	8.2%	2.5%	2.5%	3.2%	7.5%	2.5%	1.2	0.8	2.25	0.7	1.1	50	0.00320	0.00129	0.00145	0.00105	0.00164	0.00105
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Fac	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Fac	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	Sh1	175,904	38.7	17	28.1	3,085.2	56.4	57.0	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	Sh1	70,116	38.7	17	28.1	3,085.2	22.5	22.7	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Fac	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Fac	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Fac	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Fac	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Fac	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Fac	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Fac	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1201-F-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	Sh1	31,443	38.7	17	28.1	3,085.2	10.1	10.2	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	Sh1	44,964	38.7	17	28.1	3,085.2	14.4	14.6	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	Sh1	17,923	38.7	17	28.1	3,085.2	5.7	5.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1301-F-a-Rp1	Rip-Top-Existing Ground	North OB Stockpile To	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	Sh1	4,243	38.7	17	28.1	3,085.2	1.4	1.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	Sh1	6,067	38.7	17	28.1	3,085.2	1.9	2.0	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	Sh1	2,418	38.7	17	28.1	3,085.2	0.8	0.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1401-F-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoun	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoun	-	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoun	-	Komatsu 730E	Sh1	68,536	4.1	2	28.1	3,467.3	22.0	22.0	101.0	145.0	5.0	-	-	-	-	0.0%	0.0%	0.0%	2.5%	-	-	-	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	-	-	2.25	0.7	1.1	50	0.00145	0.00145	0.00145	0.00105	0.00105	0.00105
1405-F-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoun	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoun	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoun	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoun	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoun	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	Sh1	398,363	38.7	17	28.1	3,085.2	127.7	129.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	Sh1	158,788	38.7	17	28.1	3,085.2	50.9	51.5	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoun	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoun	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoun	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoun	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoun	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoun	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoun	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	Sh1	161,333	38.7	17	28.1	3,085.2	51.7	52.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	Sh1	97,347	38.7	17	28.1	3,085.2	31.2	31.6	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	Sh1	38,803	38.7	17	28.1	3,085.2	12.4	12.6	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	Sh1	139,696	38.7	17	28.1	3,085.2	44.8	45.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	Sh1	199,765	38.7	17	28.1	3,085.2	64.0	64.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	Sh1	79,626	38.7	17	28.1	3,085.2	25.5	25.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1801-F-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste	-	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	Sh1	32,013	38.7	17	28.1	3,085.2	10.3	10.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	Sh1	45,779	38.7	17	28.1	3,085.2	14.7	14.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	Sh1	18,248	38.7	17	28.1	3,085.2	5.8	5.9	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Wast	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Wast	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Wast	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Wast	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Wast	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Wast	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Wast	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Wast	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Gro	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	Sh1	16	38.7	17	28.1	3,085.2	0.0	0.0	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	Sh1	1,000	38.7	17	28.1	3,085.2	0.3	0.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	Sh1	807	38.7	17	28.1	3,085.2	0.3	0.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	Sh1	613	38.7	17	28.1	3,085.2	0.2	0.2	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	Sh1	323	38.7	17	28.1	3,085.2	0.1	0.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	Sh1	742	38.7	17	28.1	3,085.2	0.2	0.2	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	Sh1	839	38.7	17	28.1	3,085.2	0.3	0.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	Sh1	549	38.7	17	28.1	3,085.2	0.2	0.2	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	Sh1	1,355	38.7	17	28.1	3,085.2	0.4	0.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	Sh1	2,468	38.7	17	28.1	3,085.2	0.8	0.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	Sh1	23	38.7	17	28.1	3,085.2	0.0	0.0	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	Sh1	1,430	38.7	17	28.1	3,085.2	0.5	0.5	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	Sh1	1,154	38.7	17	28.1	3,085.2	0.4	0.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	Sh1	877	38.7	17	28.1	3,085.2	0.3	0.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	Sh1	461	38.7	17	28.1	3,085.2	0.1	0.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	Sh1	1,061	38.7	17	28.1	3,085.2	0.3	0.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105

Productivity and Hours Required for Truck Use

Notes and Assumptions:
Uses haul distance to calculate haul and return time (total task time includes loading, manuevering, dumping, hauling and return time) - moves from cover stockpile to destination stockpile
Volume of cover material based on area of destination
Cycles per truck = the greater of Heaped capacity or Struck capacity divided by Loader's per bucket capacity
1 mph = 88 ft/min
1 m/min = 0.03728227153424 mph
See Truck Optimization optimum number of trucks per loader
Haul Grade (%) assumes postive is uphill while the Effective Haul Grade (%) and Effective Return Grade (%) are postive for downhill and uphill
May filter on equipement (D14) to show pertinent rows

PERFORMANCE FACTORS

ID	Task Description	Source Location 1	Destination Location 2	Equipment	Loading Equipment ID	Loose/Stockpile Volume (cy)	Truck Cycle Time (min)	Optimum Number of Trucks	Loader/Shovel/Excavator Net Bucket Capacity (cy)	Productivity (cy/hr)	Loader/Shovel/Excavator Task Time(hrs)	Truck Task Time (hrs)	Struck Capacity (cy)	Heaped Capacity (cy)	Loader/Shovel Cycles per Truck	Total Haul Distance (ft)	Haul Distance Segment 1 (ft)	Haul Distance Segment 2 (ft)	Haul Distance Segment 3 (ft)	Haul Grade Segment 1 (%)	Haul Grade Segment 2 (%)	Haul Grade Segment 3 (%)	Rolling Resistance (%)	Haul Distance Segment 1 (meters)	Haul Distance Segment 2 (meters)	Haul Distance Segment 3 (meters)	Effective Haul Grade Segment 1 (%)	Effective Haul Grade Segment 2 (%)	Effective Haul Grade Segment 3 (%)	Effective Return Grade Segment 1 (%)	Effective Return Grade Segment 2 (%)	Effective Return Grade Segment 3 (%)	Haul Time (min)	Return Time (min)	Loading Time (min)	Truck Exchange Time (min)	Dump/Maneuver Time (min)	Work Hour (min/hr)	Travel Time Loaded Segment 1 (min/m)	Travel Time Loaded Segment 2 (min/m)	Travel Time Loaded Segment 3 (min/m)	Travel Time Empty Segment 1 (min/m)	Travel Time Empty Segment 2 (min/m)	Travel Time Empty Segment 3 (min/m)
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
9114-D-b-Tk4	Haul-Cover	CHR	Cotmnt-7	Komatsu 730E	Sh1	1,200	38.7	17	28.1	3,085.2	0.4	0.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9115-D-b-Tk4	Haul-Cover	CHR	Cotmnt-8	Komatsu 730E	Sh1	784	38.7	17	28.1	3,085.2	0.3	0.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9116-D-b-Tk4	Haul-Cover	CHR	Cotmnt-9	Komatsu 730E	Sh1	1,938	38.7	17	28.1	3,085.2	0.6	0.6	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9117-D-b-Tk4	Haul-Cover	CHR	Cotmnt-10	Komatsu 730E	Sh1	3,530	38.7	17	28.1	3,085.2	1.1	1.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	Sh1	2,333	38.7	17	28.1	3,085.2	0.7	0.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 730E	Sh1	3,336	38.7	17	28.1	3,085.2	1.1	1.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 730E	Sh1	1,330	38.7	17	28.1	3,085.2	0.4	0.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	Sh1	7,040	38.7	17	28.1	3,085.2	2.3	2.3	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 730E	Sh1	42,674	38.7	17	28.1	3,085.2	13.7	13.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 730E	Sh1	17,010	38.7	17	28.1	3,085.2	5.5	5.5	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	Sh1	4,452	38.7	17	28.1	3,085.2	1.4	1.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 730E	Sh1	6,366	38.7	17	28.1	3,085.2	2.0	2.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 730E	Sh1	2,538	38.7	17	28.1	3,085.2	0.8	0.8	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Gra	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Mu	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blad	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	Sh1	80,667	38.7	17	28.1	3,085.2	25.9	26.1	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 730E	Sh1	115,353	38.7	17	28.1	3,085.2	37.0	37.4	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 730E	Sh1	45,980	38.7	17	28.1	3,085.2	14.7	14.9	101.0	145.0	5.0	38,204	11,855	12,786	13,563	-4.6%	3.5%	0.6%	2.5%	3,614	3,897	4,134	2.1%	6.0%	3.1%	7.1%	1.0%	1.9%	20.4	14.2	2.25	0.7	1.1	50	0.00123	0.00243	0.00157	0.00160	0.00105	0.00105
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Front End Loader Use or Hydraulic Shovel Use

Assumptions:
Uses cover volume to calculate loading time of cover material
May filter on equipement (D14) to show pertinent rows

5	6	7	8	9	10	11	12	13	14	15	16	17	
								PERFORMANCE FACTORS					
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Hauling Equipment ID	Loose/Stockpile Volume (cy)	Loader/ Shovel Cycle Time (min)	Per Loader/Shovel Productivity (cy/hr)	Loader/ Shovel Task Time (hrs)	Max of Loader/Shovel or Truck Task Time (hrs)	Net Bucket Capacity (cy)	Work Hour (min/hr)	
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-	
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3600-5	Tk4	1,026,535	0.45	3,120.6	329.0	329.0	28.1	50	
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing G	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 730E	--	-	-	-	-	-	-	-	
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	Tk4	453,762	0.45	3,120.6	145.4	147.1	28.1	50	
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	Tk4	648,880	0.45	3,120.6	207.9	210.3	28.1	50	
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	Tk4	258,644	0.45	3,120.6	82.9	83.8	28.1	50	
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	--	-	-	-	-	-	-	-	
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	--	-	-	-	-	-	-	-	
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	--	-	-	-	-	-	-	-	
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	--	-	-	-	-	-	-	-	
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	-	-	-	-	-	-	-	
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	-	-	-	-	-	-	-	
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	-	-	-	-	-	-	-	
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grac	South Waste Rock Disposal Facility	-	-	--	-	-	-	-	-	-	-	
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-	
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	-	-	-	-	-	-	-	
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	--	-	-	-	-	-	-	-	
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-	
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	Tk4	529,788	0.45	3,120.6	169.8	169.8	28.1	50	
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	--	-	-	-	-	-	-	-	
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	Tk4	276,506	0.45	3,120.6	88.6	88.6	28.1	50	
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	--	-	-	-	-	-	-	-	
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	Tk4	175,904	0.45	3,120.6	56.4	57.0	28.1	50	
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	Tk4	70,116	0.45	3,120.6	22.5	22.7	28.1	50	
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	--	-	-	-	-	-	-	-	
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	--	-	-	-	-	-	-	-	
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	--	-	-	-	-	-	-	-	
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	-	-	-	-	-	-	-	
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	-	-	-	-	-	-	-	
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	-	-	-	-	-	-	-	
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grac	East Waste Rock Facility	-	-	--	-	-	-	-	-	-	-	
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-	
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	-	-	-	-	-	-	-	
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	--	-	-	-	-	-	-	-	
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-	
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	--	-	-	-	-	-	-	-	
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	Tk4	31,443	0.45	3,120.6	10.1	10.2	28.1	50	
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	Tk4	44,964	0.45	3,120.6	14.4	14.6	28.1	50	
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	Tk4	17,923	0.45	3,120.6	5.7	5.8	28.1	50	
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-	
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	--	-	-	-	-	-	-	-	
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	--	-	-	-	-	-	-	-	
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	--	-	-	-	-	-	-	-	
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	--	-	-	-	-	-	-	-	
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	--	-	-	-	-	-	-	-	
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-	
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	--	-	-	-	-	-	-	-	
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-	
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	Tk4	4,243	0.45	3,120.6	1.4	1.4	28.1	50	
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	Tk4	6,067	0.45	3,120.6	1.9	2.0	28.1	50	

9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	Tk4	2,418	0.45	3,120.6	0.8	0.8	28.1	50
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	--	-	-	-	-	-	-	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	--	-	-	-	-	-	-	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	--	-	-	-	-	-	-	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	--	-	-	-	-	-	-	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	--	-	-	-	-	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	Tk4	68,536	0.45	3,120.6	22.0	22.0	28.1	50
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	--	-	-	-	-	-	-	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	--	-	-	-	-	-	-	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	Tk4	398,363	0.45	3,120.6	127.7	129.1	28.1	50
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	Tk4	158,788	0.45	3,120.6	50.9	51.5	28.1	50
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	--	-	-	-	-	-	-	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	--	-	-	-	-	-	-	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	--	-	-	-	-	-	-	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	-	-	-	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	-	-	-	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	-	-	-	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grad	Main Tailings Impoundment	-	-	--	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	-	-	-	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	--	-	-	-	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	Tk4	161,333	0.45	3,120.6	51.7	52.3	28.1	50
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	Tk4	97,347	0.45	3,120.6	31.2	31.6	28.1	50
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	Tk4	38,803	0.45	3,120.6	12.4	12.6	28.1	50
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	--	-	-	-	-	-	-	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	--	-	-	-	-	-	-	-
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	--	-	-	-	-	-	-	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	--	-	-	-	-	-	-	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	--	-	-	-	-	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	Tk4	139,696	0.45	3,120.6	44.8	45.3	28.1	50
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	Tk4	199,765	0.45	3,120.6	64.0	64.8	28.1	50
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	Tk4	79,626	0.45	3,120.6	25.5	25.8	28.1	50
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	--	-	-	-	-	-	-	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	--	-	-	-	-	-	-	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	--	-	-	-	-	-	-	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	--	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	--	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	--	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	--	-	-	-	-	-	-	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	Tk4	32,013	0.45	3,120.6	10.3	10.4	28.1	50
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	Tk4	45,779	0.45	3,120.6	14.7	14.8	28.1	50
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	Tk4	18,248	0.45	3,120.6	5.8	5.9	28.1	50
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	--	-	-	-	-	-	-	-

9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	--	-	-	-	-	-	-	-
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	--	-	-	-	-	-	-	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	--	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	-	-	-	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	-	-	-	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	--	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing G	Containments	-	Cat 319D L	--	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	Tk4	16	0.45	3,120.6	0.0	0.0	28.1	50
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	Tk4	1,000	0.45	3,120.6	0.3	0.3	28.1	50
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	Tk4	807	0.45	3,120.6	0.3	0.3	28.1	50
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	Tk4	613	0.45	3,120.6	0.2	0.2	28.1	50
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	Tk4	323	0.45	3,120.6	0.1	0.1	28.1	50
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	Tk4	742	0.45	3,120.6	0.2	0.2	28.1	50
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	Tk4	839	0.45	3,120.6	0.3	0.3	28.1	50
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	Tk4	549	0.45	3,120.6	0.2	0.2	28.1	50
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	Tk4	1,355	0.45	3,120.6	0.4	0.4	28.1	50
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	Tk4	2,468	0.45	3,120.6	0.8	0.8	28.1	50
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	--	-	-	-	-	-	-	-
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	--	-	-	-	-	-	-	-
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	--	-	-	-	-	-	-	-
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	--	-	-	-	-	-	-	-
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	--	-	-	-	-	-	-	-
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	--	-	-	-	-	-	-	-
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	--	-	-	-	-	-	-	-
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	--	-	-	-	-	-	-	-
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	--	-	-	-	-	-	-	-
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	--	-	-	-	-	-	-	-
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	Tk4	23	0.45	3,120.6	0.0	0.0	28.1	50
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	Tk4	1,430	0.45	3,120.6	0.5	0.5	28.1	50
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	Tk4	1,154	0.45	3,120.6	0.4	0.4	28.1	50
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	Tk4	877	0.45	3,120.6	0.3	0.3	28.1	50
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	Tk4	461	0.45	3,120.6	0.1	0.1	28.1	50
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	Tk4	1,061	0.45	3,120.6	0.3	0.3	28.1	50
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	Tk4	1,200	0.45	3,120.6	0.4	0.4	28.1	50
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	Tk4	784	0.45	3,120.6	0.3	0.3	28.1	50
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	Tk4	1,938	0.45	3,120.6	0.6	0.6	28.1	50
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	Tk4	3,530	0.45	3,120.6	1.1	1.1	28.1	50
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	--	-	-	-	-	-	-	-
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	--	-	-	-	-	-	-	-
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	--	-	-	-	-	-	-	-
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	--	-	-	-	-	-	-	-
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	--	-	-	-	-	-	-	-
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	--	-	-	-	-	-	-	-
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	--	-	-	-	-	-	-	-

9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	--	-	-	-	-	-	-	-
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	Komatsu 730E	--	-	-	-	-	-	-	-
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	Komatsu 730E	--	-	-	-	-	-	-	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	--	-	-	-	-	-	-	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	--	-	-	-	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	Tk4	2,333	0.45	3,120.6	0.7	0.8	28.1	50
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	Tk4	3,336	0.45	3,120.6	1.1	1.1	28.1	50
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	Tk4	1,330	0.45	3,120.6	0.4	0.4	28.1	50
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	--	-	-	-	-	-	-	-
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 730E	--	-	-	-	-	-	-	-
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 730E	--	-	-	-	-	-	-	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	Tk4	7,040	0.45	3,120.6	2.3	2.3	28.1	50
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	Tk4	42,674	0.45	3,120.6	13.7	13.8	28.1	50
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	Tk4	17,010	0.45	3,120.6	5.5	5.5	28.1	50
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	--	-	-	-	-	-	-	-
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 730E	--	-	-	-	-	-	-	-
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 730E	--	-	-	-	-	-	-	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	Tk4	4,452	0.45	3,120.6	1.4	1.4	28.1	50
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	Tk4	6,366	0.45	3,120.6	2.0	2.1	28.1	50
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	Tk4	2,538	0.45	3,120.6	0.8	0.8	28.1	50
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	--	-	-	-	-	-	-	-
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 730E	--	-	-	-	-	-	-	-
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 730E	--	-	-	-	-	-	-	-
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final G	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-sh	--	-	-	-	-	-	-	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	Tk4	80,667	0.45	3,120.6	25.9	26.1	28.1	50
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	Tk4	115,353	0.45	3,120.6	37.0	37.4	28.1	50
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	Tk4	45,980	0.45	3,120.6	14.7	14.9	28.1	50
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blade	--	-	-	-	-	-	-	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	--	-	-	-	-	-	-	-
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 730E	--	-	-	-	-	-	-	-
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 730E	--	-	-	-	-	-	-	-
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	--	-	-	-	-	-	-	-
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy Wa	--	-	-	-	-	-	-	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grad	Miscellaneous	-	-	--	-	-	-	-	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	--	-	-	-	-	-	-	-

Productivity for Scrapers

Notes and Assumptions:
Uses volumes of stockpile or cover for hauling and grading times
Haul & Scrape Grade (%) assumes positive is downhill
May filter on equipement (D14) to show pertinent rows

Number of scrapers used for grading cover = 1
1609.344 meters/mile

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ID	Task Description	Source Location 1	Destination Location 2	Equipment	Loose/Stockpile Volume (cy)	Total Haul Distance One Way (feet)	Haul & Scrape Grade (%)	Rolling Resistance (%)	Effective Grade Uphill (%)	Effective Grade Downhill (%)	Load Time (min)	Maneuver & Spread Time (min)	Full Scraper Haul Speed (mph)	Empty Scraper Return Speed (mph)	Scraper R/T Cycle Task Time (min)	Pusher Cycle Time (min/cycle)	Rated Load (lb)	Soil Weight (lbs/cy)	Heaped Capacity (cy)	Work Hour (min/hr)	Cycles per Scraper per Hr	Productivity per Heaped Scraper (cy/hr)	Total Task Time (hrs)	Number of Scrapers	Task Time w All Scrapers (hrs)
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1102-A-a-Dz1	Grade-3:1 Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3E	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	Cat 319D L	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T. U	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 73(	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	-	-	0.00%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-E	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Gro	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Grou	South Waste Rock Disposal Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	Cat 16M	281	3	92.9	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Fina	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Fi	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Ro	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9201-C-b-Sh1	Load-Cover	USS	EWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	Cat 16M	76	3	25.2	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Fina	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Fi	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Roc	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	Cat 16M	16	2	6.7	1.0	1.0	4,185	1.20	16.00	2.00	2.50	50	1.00
1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9202-C-b-Sh1	Load-Cover	USS	MGTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	Cat 16M	16	3	5.2	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	Cat 16M	3	5	0.7	1.7	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Fin	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailin	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9103-C-b-Sh1	Load-Cover	CHR	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9203-C-b-Sh1	Load-Cover	USS	NOB-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9203-D-b-Tk4	Haul-Cover	USS	NOB-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	Cat 16M	3	3	0.9	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stock	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	7	2	3.1	1.0	1.2	3,600	1.20	16.00	2.00	2.50	50	0.75
1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9104-C-b-Sh1	Load-Cover	CHR	MTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9204-C-b-Sh1	Load-Cover	USS	MTI-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9204-D-b-Tk4	Haul-Cover	USS	MTI-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	Cat 16M	173	3	57.0	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Fina	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Fi	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings In	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Groun	Cobre Haul Road	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9107-C-b-Sh1	Load-Cover	CHR	MTI-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9207-C-b-Sh1	Load-Cover	USS	MTI-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9207-D-b-Tk4	Haul-Cover	USS	MTI-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	Cat 16M	100	3	32.4	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Roa	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
9005-C-b-Sh1	Load-Cover	EWRF	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9105-C-b-Sh1	Load-Cover	CHR	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9205-C-b-Sh1	Load-Cover	USS	HM-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9105-D-b-Tk4	Haul-Cover	CHR	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9205-D-b-Tk4	Haul-Cover	USS	HM-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	Cat 16M	87	3	29.2	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final G	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final G	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grac	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final	Hanover Mountain Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	Cat 16M	20	3	6.6	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Gro	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Grou	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing G	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -E	Containments	-	Cat 319D L	-	-	-	-	-	-	-	-	-	-	-	-
9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	Cat 16M	5	3	1.8	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9118-C-b-Sh1	Load-Cover	CHR	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9218-C-b-Sh1	Load-Cover	USS	Misc-2	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9218-D-b-Tk4	Haul-Cover	USS	Misc-2	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	Cat 16M	1	3	0.5	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final (	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9119-C-b-Sh1	Load-Cover	CHR	Misc-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9219-C-b-Sh1	Load-Cover	USS	Misc-4	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-

Productivity and Hours Required for Motorgrader Use---Grading

Notes and Assumptions:

Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for Tyrone cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Task Description	Source Location 1	Destination Location 2	Grading Equipment	Area (ac)	Grading Shaping Productivity (ac/hr)	Task Time (hrs)	Grade Factor	Material Factor	Material Weight (lb/cy)	Production Method/Blade	Effective Blade Width (ft)	Pass Overlap (ft)	Speed (mph)	Work Hour (min/hr)	Operator Factor
9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9219-D-b-Tk4	Haul-Cover	USS	Misc-4	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	Cat 16M	18	3	6.2	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Groun	Miscellaneous	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9120-C-b-Sh1	Load-Cover	CHR	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9220-C-b-Sh1	Load-Cover	USS	Misc-5	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9220-D-b-Tk4	Haul-Cover	USS	Misc-5	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cov	Miscellaneous	-	Cat 16M	3	3	0.9	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final (	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	Cat D11T CD Multi-shank	-	-	-	-	-	-	-	-	-	-	-	-
9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9121-C-b-Sh1	Load-Cover	CHR	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9221-C-b-Sh1	Load-Cover	USS	Misc-7	Hitachi EX3600-5	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	Cat D11T, U Blade	-	-	-	-	-	-	-	-	-	-	-	-
9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
9221-D-b-Tk4	Haul-Cover	USS	Misc-7	Komatsu 730E	-	-	-	-	-	-	-	-	-	-	-	-
3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	Cat 16M	50	3	16.7	1.0	1.2	2,900	1.20	16.00	2.00	2.50	50	0.75
3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	Cat 14M, Off-Hwy Water	-	-	-	-	-	-	-	-	-	-	-	-
3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grad	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Fin	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Summary Calculation of Earthmoving Costs

Summarizes costs for line items involving earthworks

Notes and Assumptions:
Productivity (based on area of overall stockpile) = Sq.ft per hour = Speed x (Eff. Blade L -Blade Overlap) x Efficiency (*Cat. Handbook Edition 47* pg 11-27)
Max. safe slope for motor graders is 2:1 (50%), proposed final grade for cover grading on stockpiles is 33%, therefore use of graders an option (Cat. Handbook Edition 46 pg 11-30)
Grade Factor = -0.02(Grade %) + 1
May filter on equipement (D14) to show pertinent rows

ID	Description	Source Location 1	Destination Location 2	Equipment	Fuel Cost ($/hr)	Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) ($/hr)	Labor Cost ($/hr)	Number of Units (Equipment)	Time Req'd Per Unit (hrs)	Direct Fuel Cost ($)	Direct Lube, Tires, GEC, & Field Parts Adjusted Rental Cost (w/o fuel) ($)	Direct Labor Cost ($)	Total Equipment Cost ($)	Total Production Volume (CY)	Total Production Area (AC)
1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	Cat 16M	$29.07	$107.11	$35.95	1	3.1	$89	$329	$110	$528	-	7.5
									TOTAL	$2,888,091	$7,635,604	$934,212	$11,457,907	21,943,663	$1,448

Revegetation Costs

Description:
Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost ($/ac)	Reveg w/o Fuel Unit Cost ($/ac)	Fuel Direct Cost ($)	Reveg w/o Fuel Direct Cost ($)
1001	E	a	Rp1	1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1002	C	a	Sh1	1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1002	B	a	Dz1	1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1002	D	a	Tk4	1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1003	A	a	Dz1	1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1004	A	a	Dz1	1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1005	A	a	Dz1	1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
9000	C	b	Sh1	9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9100	C	b	Sh1	9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9200	C	b	Sh1	9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9000	B	b	Dz1	9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9000	B	b	Dz1	9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9100	B	b	Dz1	9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9200	B	b	Dz1	9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9000	D	b	Tk4	9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9100	D	b	Tk4	9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	0.0	$ -	$ -	$ -	$ -
9200	D	b	Tk4	9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	0.0	$ -	$ -	$ -	$ -
1000	A	d	Mg1	1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1000	F	e	U3	1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1000	Hb	e	U8b	1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1000	G	e	U6	1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1000	Gb	e	U7	1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1000	P	b	Comb1	1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	0.0	$ -	$ -	$ -	$ -
1000	J	e	U2a	1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	281.3	$ 5.03	$ 1,158.15	$ 1,415	$ 325,737
1000	M	e	U24	1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	0.0	$ -	$ -	$ -	$ -
1101	E	a	Rp1	1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1103	C	a	Sh1	1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1103	D	a	Tk4	1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1104	C	a	Sh1	1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1104	D	a	Tk4	1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1101	A	a	Dz1	1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1102	A	a	Dz1	1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
9101	C	b	Sh1	9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	0.0	$ -	$ -	$ -	$ -
9201	C	b	Sh1	9201-C-b-Sh1	Load-Cover	USS	EWRF-0	0.0	$ -	$ -	$ -	$ -
9101	B	b	Dz1	9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	0.0	$ -	$ -	$ -	$ -
9201	B	b	Dz1	9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	0.0	$ -	$ -	$ -	$ -
9101	D	b	Tk4	9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	0.0	$ -	$ -	$ -	$ -
9201	D	b	Tk4	9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	0.0	$ -	$ -	$ -	$ -
1100	A	d	Mg1	1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1100	F	e	U3	1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1100	Hb	e	U8b	1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1100	G	e	U6	1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1100	Gb	e	U7	1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1100	P	b	Comb1	1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	0.0	$ -	$ -	$ -	$ -
1100	J	e	U2a	1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	76.2	$ 5.03	$ 1,158.15	$ 384	$ 88,304
1100	M	e	U24	1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1201	E	a	Rp1	1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1201	A	a	Mg1	1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1202	A	a	Dz1	1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
9002	C	b	Sh1	9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	0.0	$ -	$ -	$ -	$ -
9102	C	b	Sh1	9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	0.0	$ -	$ -	$ -	$ -
9202	C	b	Sh1	9202-C-b-Sh1	Load-Cover	USS	MGTI-0	0.0	$ -	$ -	$ -	$ -
9002	B	b	Dz1	9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	0.0	$ -	$ -	$ -	$ -
9002	B	b	Dz1	9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	0.0	$ -	$ -	$ -	$ -
9102	B	b	Dz1	9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	0.0	$ -	$ -	$ -	$ -
9202	B	b	Dz1	9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	0.0	$ -	$ -	$ -	$ -
9002	D	b	Tk4	9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	0.0	$ -	$ -	$ -	$ -
9102	D	b	Tk4	9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	0.0	$ -	$ -	$ -	$ -
9202	D	b	Tk4	9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	0.0	$ -	$ -	$ -	$ -
1201	A	d	Mg1	1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1202	A	d	Mg1	1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1202	G	e	U6	1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1202	Gb	e	U7	1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1200	P	b	Comb1	1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	0.0	$ -	$ -	$ -	$ -
1200	J	e	U2a	1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	19.5	$ 5.03	$ 1,158.15	$ 98	$ 22,572
1200	M	e	U24	1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	0.0	$ -	$ -	$ -	$ -
1301	E	a	Rp1	1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	0.0	$ -	$ -	$ -	$ -
9003	C	b	Sh1	9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	0.0	$ -	$ -	$ -	$ -
9103	C	b	Sh1	9103-C-b-Sh1	Load-Cover	CHR	NOB-0	0.0	$ -	$ -	$ -	$ -

Revegetation Costs

Description:
Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost ($/ac)	Reveg w/o Fuel Unit Cost ($/ac)	Fuel Direct Cost ($)	Reveg w/o Fuel Direct Cost ($)
9203	C	b	Sh1	9203-C-b-Sh1	Load-Cover	USS	NOB-0	0.0	$ -	$ -	$ -	$ -
9003	B	b	Dz1	9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	0.0	$ -	$ -	$ -	$ -
9003	B	b	Dz1	9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	0.0	$ -	$ -	$ -	$ -
9103	B	b	Dz1	9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	0.0	$ -	$ -	$ -	$ -
9203	B	b	Dz1	9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	0.0	$ -	$ -	$ -	$ -
9003	D	b	Tk4	9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	0.0	$ -	$ -	$ -	$ -
9103	D	b	Tk4	9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	0.0	$ -	$ -	$ -	$ -
9203	D	b	Tk4	9203-D-b-Tk4	Haul-Cover	USS	NOB-0	0.0	$ -	$ -	$ -	$ -
1300	A	d	Mg1	1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	0.0	$ -	$ -	$ -	$ -
1300	F	e	U3	1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	0.0	$ -	$ -	$ -	$ -
1300	G	e	U6	1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	0.0	$ -	$ -	$ -	$ -
1300	P	b	Comb1	1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	0.0	$ -	$ -	$ -	$ -
1300	J	e	U2a	1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	2.6	$ 5.03	$ 1,158.15	$ 13	$ 3,046
1300	M	e	U24	1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	0.0	$ -	$ -	$ -	$ -
1401	E	a	Rp1	1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1406	C	a	Sh1	1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1406	D	a	Tk4	1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1405	E	c	Mg1	1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1402	A	a	Dz1	1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1403	A	a	Dz1	1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1404	A	a	Dz1	1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1405	A	a	Dz1	1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
9104	C	b	Sh1	9104-C-b-Sh1	Load-Cover	CHR	MTI-0	0.0	$ -	$ -	$ -	$ -
9204	C	b	Sh1	9204-C-b-Sh1	Load-Cover	USS	MTI-0	0.0	$ -	$ -	$ -	$ -
9104	B	b	Dz1	9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	0.0	$ -	$ -	$ -	$ -
9204	B	b	Dz1	9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	0.0	$ -	$ -	$ -	$ -
9104	D	b	Tk4	9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	0.0	$ -	$ -	$ -	$ -
9204	D	b	Tk4	9204-D-b-Tk4	Haul-Cover	USS	MTI-0	0.0	$ -	$ -	$ -	$ -
1400	A	d	Mg1	1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1400	F	e	U3	1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1400	Hb	e	U8b	1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1400	G	e	U6	1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1400	Gb	e	U7	1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1400	P	b	Comb1	1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	0.0	$ -	$ -	$ -	$ -
1400	J	e	U2a	1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	172.7	$ 5.03	$ 1,158.15	$ 869	$ 199,978
1400	M	e	U24	1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	0.0	$ -	$ -	$ -	$ -
1500	E	a	Rp1	1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	0.0	$ -	$ -	$ -	$ -
1503	A	a	Dz1	1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	0.0	$ -	$ -	$ -	$ -
9007	C	b	Sh1	9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	0.0	$ -	$ -	$ -	$ -
9107	C	b	Sh1	9107-C-b-Sh1	Load-Cover	CHR	MTI-3	0.0	$ -	$ -	$ -	$ -
9207	C	b	Sh1	9207-C-b-Sh1	Load-Cover	USS	MTI-3	0.0	$ -	$ -	$ -	$ -
9007	B	b	Dz1	9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	0.0	$ -	$ -	$ -	$ -
9007	B	b	Dz1	9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	0.0	$ -	$ -	$ -	$ -
9107	B	b	Dz1	9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	0.0	$ -	$ -	$ -	$ -
9207	B	b	Dz1	9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	0.0	$ -	$ -	$ -	$ -
9007	D	b	Tk4	9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	0.0	$ -	$ -	$ -	$ -
9107	D	b	Tk4	9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	0.0	$ -	$ -	$ -	$ -
9207	D	b	Tk4	9207-D-b-Tk4	Haul-Cover	USS	MTI-3	0.0	$ -	$ -	$ -	$ -
1500	A	d	Mg1	1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	0.0	$ -	$ -	$ -	$ -
1500	F	e	U3	1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	0.0	$ -	$ -	$ -	$ -
1500	G	e	U6	1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	0.0	$ -	$ -	$ -	$ -
1500	P	b	Comb1	1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	0.0	$ -	$ -	$ -	$ -
1500	J	e	U2a	1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	100.0	$ 5.03	$ 1,158.15	$ 503	$ 115,815
1500	M	e	U24	1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	0.0	$ -	$ -	$ -	$ -
1602	E	a	Rp1	1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
9005	C	b	Sh1	9005-C-b-Sh1	Load-Cover	EWRF	HM-2	0.0	$ -	$ -	$ -	$ -
9105	C	b	Sh1	9105-C-b-Sh1	Load-Cover	CHR	HM-2	0.0	$ -	$ -	$ -	$ -
9205	C	b	Sh1	9205-C-b-Sh1	Load-Cover	USS	HM-2	0.0	$ -	$ -	$ -	$ -
9005	B	b	Dz1	9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	0.0	$ -	$ -	$ -	$ -
9005	B	b	Dz1	9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	0.0	$ -	$ -	$ -	$ -
9105	B	b	Dz1	9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	0.0	$ -	$ -	$ -	$ -
9205	B	b	Dz1	9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	0.0	$ -	$ -	$ -	$ -
9005	D	b	Tk4	9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	0.0	$ -	$ -	$ -	$ -
9105	D	b	Tk4	9105-D-b-Tk4	Haul-Cover	CHR	HM-2	0.0	$ -	$ -	$ -	$ -
9205	D	b	Tk4	9205-D-b-Tk4	Haul-Cover	USS	HM-2	0.0	$ -	$ -	$ -	$ -
1602	A	d	Mg1	1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1602	F	e	U3	1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1602	F	e	U3	1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1602	G	e	U6	1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -

Revegetation Costs

Description:
Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost ($/ac)	Reveg w/o Fuel Unit Cost ($/ac)	Fuel Direct Cost ($)	Reveg w/o Fuel Direct Cost ($)
1602	G	e	U6	1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1602	P	a	Comb1	1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1602	J	e	U2a	1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	86.6	$ 5.03	$ 1,158.15	$ 436	$ 100,282
1602	M	e	U24	1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1601	R	e	U27	1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1601	Sb	e	U28	1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	0.0	$ -	$ -	$ -	$ -
1701	R	e	U27	1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	0.0	$ -	$ -	$ -	$ -
1701	Sb	e	U28	1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	0.0	$ -	$ -	$ -	$ -
1801	E	a	Rp1	1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1802	A	a	Dz1	1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
9006	C	b	Sh1	9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9106	C	b	Sh1	9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9206	C	b	Sh1	9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9006	B	b	Dz1	9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9006	B	b	Dz1	9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9106	B	b	Dz1	9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9206	B	b	Dz1	9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9006	D	b	Tk4	9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9106	D	b	Tk4	9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	0.0	$ -	$ -	$ -	$ -
9206	D	b	Tk4	9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	0.0	$ -	$ -	$ -	$ -
1800	A	d	Mg1	1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1800	F	e	U3	1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1800	F	e	U3	1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1800	G	e	U6	1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1800	G	e	U6	1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1800	P	a	Comb1	1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
1800	J	e	U2a	1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	19.8	$ 5.03	$ 1,158.15	$ 100	$ 22,981
1800	M	e	U24	1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	0.0	$ -	$ -	$ -	$ -
2001	K	a	Ex1	2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2002	K	a	Ex1	2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2003	K	a	Ex1	2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2004	K	a	Ex1	2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2005	K	a	Ex1	2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2006	K	a	Ex1	2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2007	K	a	Ex1	2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2008	K	a	Ex1	2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2009	K	a	Ex1	2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
2010	K	a	Ex1	2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	0.0	$ -	$ -	$ -	$ -
9008	C	b	Sh1	9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	0.0	$ -	$ -	$ -	$ -
9009	C	b	Sh1	9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9010	C	b	Sh1	9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9011	C	b	Sh1	9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9012	C	b	Sh1	9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9013	C	b	Sh1	9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9014	C	b	Sh1	9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9015	C	b	Sh1	9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9016	C	b	Sh1	9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9017	C	b	Sh1	9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
9008	B	b	Dz1	9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	0.0	$ -	$ -	$ -	$ -
9009	B	b	Dz1	9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9010	B	b	Dz1	9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9011	B	b	Dz1	9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9012	B	b	Dz1	9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9013	B	b	Dz1	9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9014	B	b	Dz1	9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9015	B	b	Dz1	9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9016	B	b	Dz1	9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9017	B	b	Dz1	9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
9008	B	b	Dz1	9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	0.0	$ -	$ -	$ -	$ -
9009	B	b	Dz1	9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9010	B	b	Dz1	9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9011	B	b	Dz1	9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9012	B	b	Dz1	9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9013	B	b	Dz1	9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9014	B	b	Dz1	9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9015	B	b	Dz1	9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9016	B	b	Dz1	9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9017	B	b	Dz1	9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
9008	D	b	Tk4	9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	0.0	$ -	$ -	$ -	$ -

Revegetation Costs

Description:
Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost ($/ac)	Reveg w/o Fuel Unit Cost ($/ac)	Fuel Direct Cost ($)	Reveg w/o Fuel Direct Cost ($)
9009	D	b	Tk4	9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9010	D	b	Tk4	9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9011	D	b	Tk4	9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9012	D	b	Tk4	9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9013	D	b	Tk4	9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9014	D	b	Tk4	9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9015	D	b	Tk4	9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9016	D	b	Tk4	9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9017	D	b	Tk4	9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
9108	C	b	Sh1	9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	0.0	$ -	$ -	$ -	$ -
9109	C	b	Sh1	9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9110	C	b	Sh1	9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9111	C	b	Sh1	9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9112	C	b	Sh1	9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9113	C	b	Sh1	9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9114	C	b	Sh1	9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9115	C	b	Sh1	9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9116	C	b	Sh1	9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9117	C	b	Sh1	9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
9008	B	b	Dz1	9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	0.0	$ -	$ -	$ -	$ -
9009	B	b	Dz1	9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9010	B	b	Dz1	9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9011	B	b	Dz1	9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9012	B	b	Dz1	9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9013	B	b	Dz1	9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9014	B	b	Dz1	9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9015	B	b	Dz1	9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9016	B	b	Dz1	9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9017	B	b	Dz1	9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
9108	D	b	Tk4	9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	0.0	$ -	$ -	$ -	$ -
9109	D	b	Tk4	9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	0.0	$ -	$ -	$ -	$ -
9110	D	b	Tk4	9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	0.0	$ -	$ -	$ -	$ -
9111	D	b	Tk4	9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	0.0	$ -	$ -	$ -	$ -
9112	D	b	Tk4	9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	0.0	$ -	$ -	$ -	$ -
9113	D	b	Tk4	9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	0.0	$ -	$ -	$ -	$ -
9114	D	b	Tk4	9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	0.0	$ -	$ -	$ -	$ -
9115	D	b	Tk4	9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	0.0	$ -	$ -	$ -	$ -
9116	D	b	Tk4	9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	0.0	$ -	$ -	$ -	$ -
9117	D	b	Tk4	9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	0.0	$ -	$ -	$ -	$ -
2000	A	d	Mg1	2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	0.0	$ -	$ -	$ -	$ -
2000	P	a	Comb1	2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	0.0	$ -	$ -	$ -	$ -
2000	J	e	U2a	2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	5.4	$ 5.03	$ 1,158.15	$ 27	$ 6,254
3002	E	a	Rp1	3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
9018	C	b	Sh1	9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	0.0	$ -	$ -	$ -	$ -
9118	C	b	Sh1	9118-C-b-Sh1	Load-Cover	CHR	Misc-2	0.0	$ -	$ -	$ -	$ -
9218	C	b	Sh1	9218-C-b-Sh1	Load-Cover	USS	Misc-2	0.0	$ -	$ -	$ -	$ -
9018	B	b	Dz1	9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	0.0	$ -	$ -	$ -	$ -
9018	B	b	Dz1	9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	0.0	$ -	$ -	$ -	$ -
9118	B	b	Dz1	9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	0.0	$ -	$ -	$ -	$ -
9218	B	b	Dz1	9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	0.0	$ -	$ -	$ -	$ -
9018	D	b	Tk4	9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	0.0	$ -	$ -	$ -	$ -
9118	D	b	Tk4	9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	0.0	$ -	$ -	$ -	$ -
9218	D	b	Tk4	9218-D-b-Tk4	Haul-Cover	USS	Misc-2	0.0	$ -	$ -	$ -	$ -
3002	A	d	Mg1	3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3002	P	a	Comb1	3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3002	J	e	U2a	3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	1.4	$ 5.03	$ 1,158.15	$ 7	$ 1,675
3002	M	e	U24	3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3003	E	a	Rp1	3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3003	P	b	Comb1	3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	0.0	$ -	$ -	$ -	$ -
3003	J	e	U2a	3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	4.4	$ 5.03	$ 1,158.15	$ 22	$ 5,054
3003	M	e	U24	3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3004	E	a	Rp1	3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
9019	C	b	Sh1	9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	0.0	$ -	$ -	$ -	$ -
9119	C	b	Sh1	9119-C-b-Sh1	Load-Cover	CHR	Misc-4	0.0	$ -	$ -	$ -	$ -
9219	C	b	Sh1	9219-C-b-Sh1	Load-Cover	USS	Misc-4	0.0	$ -	$ -	$ -	$ -
9019	B	b	Dz1	9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	0.0	$ -	$ -	$ -	$ -
9019	B	b	Dz1	9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	0.0	$ -	$ -	$ -	$ -
9119	B	b	Dz1	9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	0.0	$ -	$ -	$ -	$ -
9219	B	b	Dz1	9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	0.0	$ -	$ -	$ -	$ -

Revegetation Costs

Description:
Includes scarifying (ripping), discing, rangeland drill seeding, mulching, crimping, and daily per diem
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Area (ac)	Fuel Unit Cost ($/ac)	Reveg w/o Fuel Unit Cost ($/ac)	Fuel Direct Cost ($)	Reveg w/o Fuel Direct Cost ($)
9019	D	b	Tk4	9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	0.0	$ -	$ -	$ -	$ -
9119	D	b	Tk4	9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	0.0	$ -	$ -	$ -	$ -
9219	D	b	Tk4	9219-D-b-Tk4	Haul-Cover	USS	Misc-4	0.0	$ -	$ -	$ -	$ -
3004	A	d	Mg1	3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3004	P	a	Comb1	3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3004	J	e	U2a	3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	18.5	$ 5.03	$ 1,158.15	$ 93	$ 21,422
3004	M	e	U24	3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3005	E	a	Rp1	3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
9020	C	b	Sh1	9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	0.0	$ -	$ -	$ -	$ -
9120	C	b	Sh1	9120-C-b-Sh1	Load-Cover	CHR	Misc-5	0.0	$ -	$ -	$ -	$ -
9220	C	b	Sh1	9220-C-b-Sh1	Load-Cover	USS	Misc-5	0.0	$ -	$ -	$ -	$ -
9020	B	b	Dz1	9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	0.0	$ -	$ -	$ -	$ -
9020	B	b	Dz1	9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	0.0	$ -	$ -	$ -	$ -
9120	B	b	Dz1	9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	0.0	$ -	$ -	$ -	$ -
9220	B	b	Dz1	9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	0.0	$ -	$ -	$ -	$ -
9020	D	b	Tk4	9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	0.0	$ -	$ -	$ -	$ -
9120	D	b	Tk4	9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	0.0	$ -	$ -	$ -	$ -
9220	D	b	Tk4	9220-D-b-Tk4	Haul-Cover	USS	Misc-5	0.0	$ -	$ -	$ -	$ -
3005	A	d	Mg1	3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3005	P	a	Comb1	3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3005	J	e	U2a	3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	2.8	$ 5.03	$ 1,158.15	$ 14	$ 3,196
3005	M	e	U24	3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3007	E	a	Rp1	3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
9021	C	b	Sh1	9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	0.0	$ -	$ -	$ -	$ -
9121	C	b	Sh1	9121-C-b-Sh1	Load-Cover	CHR	Misc-7	0.0	$ -	$ -	$ -	$ -
9221	C	b	Sh1	9221-C-b-Sh1	Load-Cover	USS	Misc-7	0.0	$ -	$ -	$ -	$ -
9021	B	b	Dz1	9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	0.0	$ -	$ -	$ -	$ -
9021	B	b	Dz1	9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	0.0	$ -	$ -	$ -	$ -
9121	B	b	Dz1	9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	0.0	$ -	$ -	$ -	$ -
9221	B	b	Dz1	9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	0.0	$ -	$ -	$ -	$ -
9021	D	b	Tk4	9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	0.0	$ -	$ -	$ -	$ -
9121	D	b	Tk4	9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	0.0	$ -	$ -	$ -	$ -
9221	D	b	Tk4	9221-D-b-Tk4	Haul-Cover	USS	Misc-7	0.0	$ -	$ -	$ -	$ -
3007	A	d	Mg1	3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3007	P	a	Comb1	3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3007	J	e	U2a	3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	50.0	$ 5.03	$ 1,158.15	$ 252	$ 57,907
3007	M	e	U24	3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
3006	N	a	U18	3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	0.0	$ -	$ -	$ -	$ -
							TOTAL	841			$ 4,233	$ 974,221

Other Reclamation Activity Costs

Assumptions:
1 - Cost to construct drain or channel on re-graded stockpile
2 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost ($/unit)	Unit Cost w/o Fuel ($/unit)[1,2]	Fuel Direct Cost ($)	Direct w/o Fuel Cost ($)
1001	E	a	Rp1	1001-E-a-Rp1	Rip-Top -Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1002	C	a	Sh1	1002-C-a-Sh1	Load-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1002	B	a	Dz1	1002-B-a-Dz1	Dozer Assist Scraper Grading-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1002	D	a	Tk4	1002-D-a-Tk4	Haul-SE-UH Excess Cut-Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1003	A	a	Dz1	1003-A-a-Dz1	Grade-3:1 Interbench Outslopes-South-Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1004	A	a	Dz1	1004-A-a-Dz1	Grade-3:1 Interbench Outslopes-Pit-Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1005	A	a	Dz1	1005-A-a-Dz1	Grade-2.5:1 Interbench Outslope - UH-Existing Ground	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
9000	C	b	Sh1	9000-C-b-Sh1	Load-Cover	EWRF	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9100	C	b	Sh1	9100-C-b-Sh1	Load-Cover	CHR	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9200	C	b	Sh1	9200-C-b-Sh1	Load-Cover	USS	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9000	B	b	Dz1	9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9000	B	b	Dz1	9000-B-b-Dz1	Dozer Assist-Cover	EWRF	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9100	B	b	Dz1	9100-B-b-Dz1	Dozer Assist-Cover	CHR	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9200	B	b	Dz1	9200-B-b-Dz1	Dozer Assist-Cover	USS	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9000	D	b	Tk4	9000-D-b-Tk4	Haul-Cover	EWRF	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9100	D	b	Tk4	9100-D-b-Tk4	Haul-Cover	CHR	SWRDF-0	-	-	$ -	$ -	$ -	$ -
9200	D	b	Tk4	9200-D-b-Tk4	Haul-Cover	USS	SWRDF-0	-	-	$ -	$ -	$ -	$ -
1000	A	d	Mg1	1000-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	South Waste Rock Disposal Facility	-	-	-	$ -	$ -	$ -	$ -
1000	F	e	U3	1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	73,035	ft	$ 0.48	$ 1.88	$ 34,760.69	$ 136,984
1000	Hb	e	U8b	1000-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	73,035	ft	$ 0.15	$ 0.57	$ 10,821.46	$ 41,411
1000	G	e	U6	1000-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	4,200	ft	$ -	$ 389.79	$ -	$ 1,637,122
1000	Gb	e	U7	1000-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	4	ea	$ -	$ 16,045.45	$ -	$ 64,182
1000	P	b	Comb1	1000-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	South Waste Rock Disposal Facility	-	-	$ -	$ -	$ -	$ -
1000	J	e	U2a	1000-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1000	M	e	U24	1000-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	South Waste Rock Disposal Facility	-	-	-	$ -	$ 392.50	$ -	$ -
1101	E	a	Rp1	1101-E-a-Rp1	Rip-Top-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1103	C	a	Sh1	1103-C-a-Sh1	Load-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1103	D	a	Tk4	1103-D-a-Tk4	Haul-Move Rita Stockpile-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1104	C	a	Sh1	1104-C-a-Sh1	Load-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1104	D	a	Tk4	1104-D-a-Tk4	Haul-Move Cover Source Waste-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1101	A	a	Dz1	1101-A-a-Dz1	Grade-Top-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1102	A	a	Dz1	1102-A-a-Dz1	Grade-3:1Interbench Outslope-Existing Ground	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
9101	C	b	Sh1	9101-C-b-Sh1	Load-Cover	CHR	EWRF-0	-	-	$ -	$ -	$ -	$ -
9201	C	b	Sh1	9201-C-b-Sh1	Load-Cover	USS	EWRF-0	-	-	$ -	$ -	$ -	$ -
9101	B	b	Dz1	9101-B-b-Dz1	Dozer Assist-Cover	CHR	EWRF-0	-	-	$ -	$ -	$ -	$ -
9201	B	b	Dz1	9201-B-b-Dz1	Dozer Assist-Cover	USS	EWRF-0	-	-	$ -	$ -	$ -	$ -
9101	D	b	Tk4	9101-D-b-Tk4	Haul-Cover	CHR	EWRF-0	-	-	$ -	$ -	$ -	$ -
9201	D	b	Tk4	9201-D-b-Tk4	Haul-Cover	USS	EWRF-0	-	-	$ -	$ -	$ -	$ -
1100	A	d	Mg1	1100-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	East Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1100	F	e	U3	1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	East Waste Rock Facility	-	36,518	ft	$ 0.48	$ 1.88	$ 17,380.34	$ 68,492
1100	Hb	e	U8b	1100-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	East Waste Rock Facility	-	36,518	ft	$ 0.15	$ 0.57	$ 5,410.73	$ 20,705
1100	G	e	U6	1100-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	East Waste Rock Facility	-	2,100	ft	$ -	$ 389.79	$ -	$ 818,561
1100	Gb	e	U7	1100-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	East Waste Rock Facility	-	2	ea	$ -	$ 16,045.45	$ -	$ 32,091
1100	P	b	Comb1	1100-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	East Waste Rock Facility	-	-	$ -	$ -	$ -	$ -
1100	J	e	U2a	1100-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1100	M	e	U24	1100-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	East Waste Rock Facility	-	-	-	$ -	$ 392.50	$ -	$ -
1201	E	a	Rp1	1201-E-a-Rp1	Rip-Top -Existing Ground	Magnetite Tailings	-	-	-	$ -	$ -	$ -	$ -
1201	A	a	Mg1	1201-A-a-Mg1	Grade-Top -Existing Ground	Magnetite Tailings	-	-	-	$ -	$ -	$ -	$ -
1202	A	a	Dz1	1202-A-a-Dz1	Grade-Dam Outslope-Existing Ground	Magnetite Tailings	-	-	-	$ -	$ -	$ -	$ -
9002	C	b	Sh1	9002-C-b-Sh1	Load-Cover	EWRF	MGTI-0	-	-	$ -	$ -	$ -	$ -
9102	C	b	Sh1	9102-C-b-Sh1	Load-Cover	CHR	MGTI-0	-	-	$ -	$ -	$ -	$ -
9202	C	b	Sh1	9202-C-b-Sh1	Load-Cover	USS	MGTI-0	-	-	$ -	$ -	$ -	$ -
9002	B	b	Dz1	9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	-	-	$ -	$ -	$ -	$ -
9002	B	b	Dz1	9002-B-b-Dz1	Dozer Assist-Cover	EWRF	MGTI-0	-	-	$ -	$ -	$ -	$ -
9102	B	b	Dz1	9102-B-b-Dz1	Dozer Assist-Cover	CHR	MGTI-0	-	-	$ -	$ -	$ -	$ -
9202	B	b	Dz1	9202-B-b-Dz1	Dozer Assist-Cover	USS	MGTI-0	-	-	$ -	$ -	$ -	$ -
9002	D	b	Tk4	9002-D-b-Tk4	Haul-Cover	EWRF	MGTI-0	-	-	$ -	$ -	$ -	$ -
9102	D	b	Tk4	9102-D-b-Tk4	Haul-Cover	CHR	MGTI-0	-	-	$ -	$ -	$ -	$ -
9202	D	b	Tk4	9202-D-b-Tk4	Haul-Cover	USS	MGTI-0	-	-	$ -	$ -	$ -	$ -
1201	A	d	Mg1	1201-A-d-Mg1	Grade-Top -Placed Cover	Magnetite Tailings	-	-	-	$ -	$ -	$ -	$ -
1202	A	d	Mg1	1202-A-d-Mg1	Grade-Dam Outslope-Placed Cover	Magnetite Tailings	-	-	-	$ -	$ -	$ -	$ -
1202	G	e	U6	1202-G-e-U6	Construct Downdrains-Dam Outslope-Final Grade	Magnetite Tailings	-	220	ft	$ -	$ 389.79	$ -	$ 85,754
1202	Gb	e	U7	1202-Gb-e-U7	Construct Downdrain Dissipators-Dam Outslope-Final Grade	Magnetite Tailings	-	1	ea	$ -	$ 16,045.45	$ -	$ 16,045
1200	P	b	Comb1	1200-P-b-Comb1	Road Maintenance-Entire Impoundment	EWRF	Magnetite Tailings	-	-	$ -	$ -	$ -	$ -
1200	J	e	U2a	1200-J-e-U2a	Revegetate-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1200	M	e	U24	1200-M-e-U24	Post-Closure O&M-Entire Impoundment-Final Grade	Magnetite Tailings	-	-	-	$ -	$ 392.50	$ -	$ -
1301	E	a	Rp1	1301-E-a-Rp1	Rip-Top-Existing Ground	North OB Stockpie Top	-	-	-	$ -	$ -	$ -	$ -
9003	C	b	Sh1	9003-C-b-Sh1	Load-Cover	EWRF	NOB-0	-	-	$ -	$ -	$ -	$ -
9103	C	b	Sh1	9103-C-b-Sh1	Load-Cover	CHR	NOB-0	-	-	$ -	$ -	$ -	$ -
9203	C	b	Sh1	9203-C-b-Sh1	Load-Cover	USS	NOB-0	-	-	$ -	$ -	$ -	$ -
9003	B	b	Dz1	9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	-	-	$ -	$ -	$ -	$ -

Other Reclamation Activity Costs

Assumptions:
1 - Cost to construct drain or channel on re-graded stockpile
2 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost ($/unit)	Unit Cost w/o Fuel ($/unit)[1,2]	Fuel Direct Cost ($)	Direct w/o Fuel Cost ($)
9003	B	b	Dz1	9003-B-b-Dz1	Dozer Assist-Cover	EWRF	NOB-0	-	-	$ -	$ -	$ -	$ -
9103	B	b	Dz1	9103-B-b-Dz1	Dozer Assist-Cover	CHR	NOB-0	-	-	$ -	$ -	$ -	$ -
9203	B	b	Dz1	9203-B-b-Dz1	Dozer Assist-Cover	USS	NOB-0	-	-	$ -	$ -	$ -	$ -
9003	D	b	Tk4	9003-D-b-Tk4	Haul-Cover	EWRF	NOB-0	-	-	$ -	$ -	$ -	$ -
9103	D	b	Tk4	9103-D-b-Tk4	Haul-Cover	CHR	NOB-0	-	-	$ -	$ -	$ -	$ -
9203	D	b	Tk4	9203-D-b-Tk4	Haul-Cover	USS	NOB-0	-	-	$ -	$ -	$ -	$ -
1300	A	d	Mg1	1300-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	North OB Stockpile	-	-	-	$ -	$ -	$ -	$ -
1300	F	e	U3	1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	North OB Stockpile	-	-	ft	$ 0.48	$ 1.88	$ -	$ -
1300	G	e	U6	1300-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	North OB Stockpile	-	-	ft	$ -	$ 389.79	$ -	$ -
1300	P	b	Comb1	1300-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	North OB Stockpile	-	-	$ -	$ -	$ -	$ -
1300	J	e	U2a	1300-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1300	M	e	U24	1300-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	North OB Stockpile	-	-	-	$ -	$ 392.50	$ -	$ -
1401	E	a	Rp1	1401-E-a-Rp1	Rip-Top, including swale-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1406	C	a	Sh1	1406-C-a-Sh1	Load-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1406	D	a	Tk4	1406-D-a-Tk4	Haul-Reclaim Pond Outlet Channel-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1405	E	c	Mg1	1405-E-c-Mg1	Rip-Reclaim Pond-Rough Graded Material	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1402	A	a	Dz1	1402-A-a-Dz1	Grade-Filter Dike-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1403	A	a	Dz1	1403-A-a-Dz1	Grade-Main Dam-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1404	A	a	Dz1	1404-A-a-Dz1	Grade-East-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1405	A	a	Dz1	1405-A-a-Dz1	Grade-Reclaim Pond-Existing Ground	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
9104	C	b	Sh1	9104-C-b-Sh1	Load-Cover	CHR	MTI-0	-	-	$ -	$ -	$ -	$ -
9204	C	b	Sh1	9204-C-b-Sh1	Load-Cover	USS	MTI-0	-	-	$ -	$ -	$ -	$ -
9104	B	b	Dz1	9104-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-0	-	-	$ -	$ -	$ -	$ -
9204	B	b	Dz1	9204-B-b-Dz1	Dozer Assist-Cover	USS	MTI-0	-	-	$ -	$ -	$ -	$ -
9104	D	b	Tk4	9104-D-b-Tk4	Haul-Cover	CHR	MTI-0	-	-	$ -	$ -	$ -	$ -
9204	D	b	Tk4	9204-D-b-Tk4	Haul-Cover	USS	MTI-0	-	-	$ -	$ -	$ -	$ -
1400	A	d	Mg1	1400-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Main Tailings Impoundment	-	-	-	$ -	$ -	$ -	$ -
1400	F	e	U3	1400-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	9,964	ft	$ 0.48	$ 1.88	$ 4,742.32	$ 18,688
1400	Hb	e	U8b	1400-Hb-e-U8b	Construct Channels w/o Riprap-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	9,964	ft	$ 0.15	$ 0.57	$ 1,476.35	$ 5,650
1400	G	e	U6	1400-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	575	ft	$ -	$ 389.79	$ -	$ 224,130
1400	Gb	e	U7	1400-Gb-e-U7	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	1	ea	$ -	$ 16,045.45	$ -	$ 16,045
1400	P	b	Comb1	1400-P-b-Comb1	Road Maintenance-Entire Stockpile	EWRF	Main Tailings Impoundment	-	-	$ -	$ -	$ -	$ -
1400	J	e	U2a	1400-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1400	M	e	U24	1400-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Main Tailings Impoundment	-	-	-	$ -	$ 392.50	$ -	$ -
1500	E	a	Rp1	1500-E-a-Rp1	Rip-Entire Road-Existing Ground	Cobre Haul Road	-	-	-	$ -	$ -	$ -	$ -
1503	A	a	Dz1	1503-A-a-Dz1	Grade-West HC Outslope-pushdown-Existing Ground	Cobre Haul Road	-	-	-	$ -	$ -	$ -	$ -
9007	C	b	Sh1	9007-C-b-Sh1	Load-Cover	EWRF	CHR-0	-	-	$ -	$ -	$ -	$ -
9107	C	b	Sh1	9107-C-b-Sh1	Load-Cover	CHR	MTI-3	-	-	$ -	$ -	$ -	$ -
9207	C	b	Sh1	9207-C-b-Sh1	Load-Cover	USS	MTI-3	-	-	$ -	$ -	$ -	$ -
9007	B	b	Dz1	9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	-	-	$ -	$ -	$ -	$ -
9007	B	b	Dz1	9007-B-b-Dz1	Dozer Assist-Cover	EWRF	CHR-0	-	-	$ -	$ -	$ -	$ -
9107	B	b	Dz1	9107-B-b-Dz1	Dozer Assist-Cover	CHR	MTI-3	-	-	$ -	$ -	$ -	$ -
9207	B	b	Dz1	9207-B-b-Dz1	Dozer Assist-Cover	USS	MTI-3	-	-	$ -	$ -	$ -	$ -
9007	D	b	Tk4	9007-D-b-Tk4	Haul-Cover	EWRF	CHR-0	-	-	$ -	$ -	$ -	$ -
9107	D	b	Tk4	9107-D-b-Tk4	Haul-Cover	CHR	MTI-3	-	-	$ -	$ -	$ -	$ -
9207	D	b	Tk4	9207-D-b-Tk4	Haul-Cover	USS	MTI-3	-	-	$ -	$ -	$ -	$ -
1500	A	d	Mg1	1500-A-d-Mg1	Grade-Entire Road-Placed Cover	Cobre Haul Road	-	-	-	$ -	$ -	$ -	$ -
1500	F	e	U3	1500-F-e-U3	Grade Benches-Entire Road-Final Grade	Cobre Haul Road	-	-	ft	$ 0.48	$ 1.88	$ -	$ -
1500	G	e	U6	1500-G-e-U6	Construct Downdrains-Entire Road-Final Grade	Cobre Haul Road	-	-	ft	$ -	$ 389.79	$ -	$ -
1500	P	b	Comb1	1500-P-b-Comb1	Road Maintenance-Entire Road	EWRF	Cobre Haul Road	-	-	$ -	$ -	$ -	$ -
1500	J	e	U2a	1500-J-e-U2a	Revegetate-Entire Road-Final Grade	Cobre Haul Road	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1500	M	e	U24	1500-M-e-U24	Post-Closure O&M-Entire Road-Final Grade	Cobre Haul Road	-	-	-	$ -	$ 392.50	$ -	$ -
1602	E	a	Rp1	1602-E-a-Rp1	Rip-Accessible Flat Areas-Existing Ground	Hanover Mountain Pit	-	-	-	$ -	$ -	$ -	$ -
9005	C	b	Sh1	9005-C-b-Sh1	Load-Cover	EWRF	HM-2	-	-	$ -	$ -	$ -	$ -
9105	C	b	Sh1	9105-C-b-Sh1	Load-Cover	CHR	HM-2	-	-	$ -	$ -	$ -	$ -
9205	C	b	Sh1	9205-C-b-Sh1	Load-Cover	USS	HM-2	-	-	$ -	$ -	$ -	$ -
9005	B	b	Dz1	9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	-	-	$ -	$ -	$ -	$ -
9005	B	b	Dz1	9005-B-b-Dz1	Dozer Assist-Cover	EWRF	HM-2	-	-	$ -	$ -	$ -	$ -
9105	B	b	Dz1	9105-B-b-Dz1	Dozer Assist-Cover	CHR	HM-2	-	-	$ -	$ -	$ -	$ -
9205	B	b	Dz1	9205-B-b-Dz1	Dozer Assist-Cover	USS	HM-2	-	-	$ -	$ -	$ -	$ -
9005	D	b	Tk4	9005-D-b-Tk4	Haul-Cover	EWRF	HM-2	-	-	$ -	$ -	$ -	$ -
9105	D	b	Tk4	9105-D-b-Tk4	Haul-Cover	CHR	HM-2	-	-	$ -	$ -	$ -	$ -
9205	D	b	Tk4	9205-D-b-Tk4	Haul-Cover	USS	HM-2	-	-	$ -	$ -	$ -	$ -
1602	A	d	Mg1	1602-A-d-Mg1	Grade-Accessible Flat Areas-Placed Cover	Hanover Mountain Pit	-	-	-	$ -	$ -	$ -	$ -
1602	F	e	U3	1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	ft	$ 0.48	$ 1.88	$ -	$ -
1602	F	e	U3	1602-F-e-U3	Grade Benches-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	ft	$ 0.48	$ 1.88	$ -	$ -
1602	G	e	U6	1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	ft	$ -	$ 389.79	$ -	$ -
1602	G	e	U6	1602-G-e-U6	Construct Downdrains-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	ft	$ -	$ 389.79	$ -	$ -
1602	P	a	Comb1	1602-P-a-Comb1	Road Maintenance-Accessible Flat Areas	Hanover Mountain Pit	-	-	-	$ -	$ -	$ -	$ -
1602	J	e	U2a	1602-J-e-U2a	Revegetate-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1602	M	e	U24	1602-M-e-U24	Post-Closure O&M-Accessible Flat Areas-Final Grade	Hanover Mountain Pit	-	-	-	$ -	$ 392.50	$ -	$ -

Other Reclamation Activity Costs

Assumptions:
1 - Cost to construct drain or channel on re-graded stockpile
2 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost ($/unit)	Unit Cost w/o Fuel ($/unit)[1,2]	Fuel Direct Cost ($)	Direct w/o Fuel Cost ($)
1601	R	e	U27	1601-R-e-U27	Construct Berms-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	6,232	ft	$ -	$ 0.39	$ -	$ 2,454
1601	Sb	e	U28	1601-Sb-e-U28	Livestock Fence-Hanover Mountain Perimeter-Final Grade	Hanover Mountain Pit	-	-	ft	$ -	$ 184.99	$ -	$ -
1701	R	e	U27	1701-R-e-U27	Construct Berms-Perimeter-Final Grade	Continental Pit	-	6,635	ft	$ -	$ 0.39	$ -	$ 2,613
1701	Sb	e	U28	1701-Sb-e-U28	Livestock Fence-Perimeter-Final Grade	Continental Pit	-	-	ft	$ -	$ 184.99	$ -	$ -
1801	E	a	Rp1	1801-E-a-Rp1	Rip-Top -Existing Ground	Low Grade Ore Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1802	A	a	Dz1	1802-A-a-Dz1	Grade-Outslopes-Existing Ground	Low Grade Ore Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
9006	C	b	Sh1	9006-C-b-Sh1	Load-Cover	EWRF	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9106	C	b	Sh1	9106-C-b-Sh1	Load-Cover	CHR	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9206	C	b	Sh1	9206-C-b-Sh1	Load-Cover	USS	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9006	B	b	Dz1	9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9006	B	b	Dz1	9006-B-b-Dz1	Dozer Assist-Cover	EWRF	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9106	B	b	Dz1	9106-B-b-Dz1	Dozer Assist-Cover	CHR	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9206	B	b	Dz1	9206-B-b-Dz1	Dozer Assist-Cover	USS	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9006	D	b	Tk4	9006-D-b-Tk4	Haul-Cover	EWRF	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9106	D	b	Tk4	9106-D-b-Tk4	Haul-Cover	CHR	LGWRF-0	-	-	$ -	$ -	$ -	$ -
9206	D	b	Tk4	9206-D-b-Tk4	Haul-Cover	USS	LGWRF-0	-	-	$ -	$ -	$ -	$ -
1800	A	d	Mg1	1800-A-d-Mg1	Grade-Entire Stockpile-Placed Cover	Low Grade Ore Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1800	F	e	U3	1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	2,004	ft	$ 0.48	$ 1.88	$ 953.79	$ 3,759
1800	F	e	U3	1800-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	2,004	ft	$ 0.48	$ 1.88	$ 953.79	$ 3,759
1800	G	e	U6	1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	398	ft	$ -	$ 389.79	$ -	$ 155,137
1800	G	e	U6	1800-G-e-U6	Construct Downdrains-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	398	ft	$ -	$ 389.79	$ -	$ 155,137
1800	P	a	Comb1	1800-P-a-Comb1	Road Maintenance-Entire Stockpile	Low Grade Ore Waste Rock Facility	-	-	-	$ -	$ -	$ -	$ -
1800	J	e	U2a	1800-J-e-U2a	Revegetate-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
1800	M	e	U24	1800-M-e-U24	Post-Closure O&M-Entire Stockpile-Final Grade	Low Grade Ore Waste Rock Facility	-	-	-	$ -	$ 392.50	$ -	$ -
2001	K	a	Ex1	2001-K-a-Ex1	Perforate Liner-Blackman's Seep (Pond #2) -Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2002	K	a	Ex1	2002-K-a-Ex1	Perforate Liner-Decant Pond #4-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2003	K	a	Ex1	2003-K-a-Ex1	Perforate Liner-East WRF Containment-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2004	K	a	Ex1	2004-K-a-Ex1	Perforate Liner-Grape Gulch Pond #3-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2005	K	a	Ex1	2005-K-a-Ex1	Perforate Liner-Magnetite Seepage Pond-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2006	K	a	Ex1	2006-K-a-Ex1	Perforate Liner-North Tailings Decant Pond-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2007	K	a	Ex1	2007-K-a-Ex1	Perforate Liner-SWRF Dam 1-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2008	K	a	Ex1	2008-K-a-Ex1	Perforate Liner-SWRF Dam 2-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2009	K	a	Ex1	2009-K-a-Ex1	Perforate Liner-SWRF Dam 3-Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
2010	K	a	Ex1	2010-K-a-Ex1	Perforate Liner-Upper Creek Containment Pond 1 -Existing Ground	Containments	-	-	-	$ -	$ -	$ -	$ -
9008	C	b	Sh1	9008-C-b-Sh1	Load-Cover	EWRF	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9009	C	b	Sh1	9009-C-b-Sh1	Load-Cover	EWRF	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9010	C	b	Sh1	9010-C-b-Sh1	Load-Cover	EWRF	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9011	C	b	Sh1	9011-C-b-Sh1	Load-Cover	EWRF	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9012	C	b	Sh1	9012-C-b-Sh1	Load-Cover	EWRF	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9013	C	b	Sh1	9013-C-b-Sh1	Load-Cover	EWRF	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9014	C	b	Sh1	9014-C-b-Sh1	Load-Cover	EWRF	Cntmnt-7	-	-	$ -	$ -	$ -	$ -
9015	C	b	Sh1	9015-C-b-Sh1	Load-Cover	EWRF	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9016	C	b	Sh1	9016-C-b-Sh1	Load-Cover	EWRF	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9017	C	b	Sh1	9017-C-b-Sh1	Load-Cover	EWRF	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
9008	B	b	Dz1	9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9009	B	b	Dz1	9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9010	B	b	Dz1	9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9011	B	b	Dz1	9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9012	B	b	Dz1	9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9013	B	b	Dz1	9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9014	B	b	Dz1	9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	-	-	$ -	$ -	$ -	$ -
9015	B	b	Dz1	9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9016	B	b	Dz1	9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9017	B	b	Dz1	9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
9008	B	b	Dz1	9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9009	B	b	Dz1	9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9010	B	b	Dz1	9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9011	B	b	Dz1	9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9012	B	b	Dz1	9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9013	B	b	Dz1	9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9014	B	b	Dz1	9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	-	-	$ -	$ -	$ -	$ -
9015	B	b	Dz1	9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9016	B	b	Dz1	9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9017	B	b	Dz1	9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
9008	D	b	Tk4	9008-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9009	D	b	Tk4	9009-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9010	D	b	Tk4	9010-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9011	D	b	Tk4	9011-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9012	D	b	Tk4	9012-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9013	D	b	Tk4	9013-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9014	D	b	Tk4	9014-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-7	-	-	$ -	$ -	$ -	$ -

Other Reclamation Activity Costs

Assumptions:
1 - Cost to construct drain or channel on re-graded stockpile
2 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost ($/unit)	Unit Cost w/o Fuel ($/unit)[1,2]	Fuel Direct Cost ($)	Direct w/o Fuel Cost ($)
9015	D	b	Tk4	9015-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9016	D	b	Tk4	9016-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9017	D	b	Tk4	9017-D-b-Tk4	Haul-Cover	EWRF	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
9108	C	b	Sh1	9108-C-b-Sh1	Load-Cover	CHR	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9109	C	b	Sh1	9109-C-b-Sh1	Load-Cover	CHR	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9110	C	b	Sh1	9110-C-b-Sh1	Load-Cover	CHR	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9111	C	b	Sh1	9111-C-b-Sh1	Load-Cover	CHR	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9112	C	b	Sh1	9112-C-b-Sh1	Load-Cover	CHR	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9113	C	b	Sh1	9113-C-b-Sh1	Load-Cover	CHR	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9114	C	b	Sh1	9114-C-b-Sh1	Load-Cover	CHR	Cntmnt-7	-	-	$ -	$ -	$ -	$ -
9115	C	b	Sh1	9115-C-b-Sh1	Load-Cover	CHR	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9116	C	b	Sh1	9116-C-b-Sh1	Load-Cover	CHR	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9117	C	b	Sh1	9117-C-b-Sh1	Load-Cover	CHR	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
9008	B	b	Dz1	9008-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9009	B	b	Dz1	9009-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9010	B	b	Dz1	9010-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9011	B	b	Dz1	9011-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9012	B	b	Dz1	9012-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9013	B	b	Dz1	9013-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9014	B	b	Dz1	9014-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-7	-	-	$ -	$ -	$ -	$ -
9015	B	b	Dz1	9015-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9016	B	b	Dz1	9016-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9017	B	b	Dz1	9017-B-b-Dz1	Dozer Assist-Cover	EWRF	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
9108	D	b	Tk4	9108-D-b-Tk4	Haul-Cover	CHR	Cntmnt-1	-	-	$ -	$ -	$ -	$ -
9109	D	b	Tk4	9109-D-b-Tk4	Haul-Cover	CHR	Cntmnt-2	-	-	$ -	$ -	$ -	$ -
9110	D	b	Tk4	9110-D-b-Tk4	Haul-Cover	CHR	Cntmnt-3	-	-	$ -	$ -	$ -	$ -
9111	D	b	Tk4	9111-D-b-Tk4	Haul-Cover	CHR	Cntmnt-4	-	-	$ -	$ -	$ -	$ -
9112	D	b	Tk4	9112-D-b-Tk4	Haul-Cover	CHR	Cntmnt-5	-	-	$ -	$ -	$ -	$ -
9113	D	b	Tk4	9113-D-b-Tk4	Haul-Cover	CHR	Cntmnt-6	-	-	$ -	$ -	$ -	$ -
9114	D	b	Tk4	9114-D-b-Tk4	Haul-Cover	CHR	Cntmnt-7	-	-	$ -	$ -	$ -	$ -
9115	D	b	Tk4	9115-D-b-Tk4	Haul-Cover	CHR	Cntmnt-8	-	-	$ -	$ -	$ -	$ -
9116	D	b	Tk4	9116-D-b-Tk4	Haul-Cover	CHR	Cntmnt-9	-	-	$ -	$ -	$ -	$ -
9117	D	b	Tk4	9117-D-b-Tk4	Haul-Cover	CHR	Cntmnt-10	-	-	$ -	$ -	$ -	$ -
2000	A	d	Mg1	2000-A-d-Mg1	Grade-All Containments-Placed Cover	Containments	-	-	-	$ -	$ -	$ -	$ -
2000	P	a	Comb1	2000-P-a-Comb1	Road Maintenance-All Containments	Containments	-	-	-	$ -	$ -	$ -	$ -
2000	J	e	U2a	2000-J-e-U2a	Revegetate-All Containments-Final Grade	Containments	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
3002	E	a	Rp1	3002-E-a-Rp1	Rip-Taillings Pipeline Corridor-Existing Ground	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
9018	C	b	Sh1	9018-C-b-Sh1	Load-Cover	EWRF	Misc-2	-	-	$ -	$ -	$ -	$ -
9118	C	b	Sh1	9118-C-b-Sh1	Load-Cover	CHR	Misc-2	-	-	$ -	$ -	$ -	$ -
9218	C	b	Sh1	9218-C-b-Sh1	Load-Cover	USS	Misc-2	-	-	$ -	$ -	$ -	$ -
9018	B	b	Dz1	9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	-	-	$ -	$ -	$ -	$ -
9018	B	b	Dz1	9018-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-2	-	-	$ -	$ -	$ -	$ -
9118	B	b	Dz1	9118-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-2	-	-	$ -	$ -	$ -	$ -
9218	B	b	Dz1	9218-B-b-Dz1	Dozer Assist-Cover	USS	Misc-2	-	-	$ -	$ -	$ -	$ -
9018	D	b	Tk4	9018-D-b-Tk4	Haul-Cover	EWRF	Misc-2	-	-	$ -	$ -	$ -	$ -
9118	D	b	Tk4	9118-D-b-Tk4	Haul-Cover	CHR	Misc-2	-	-	$ -	$ -	$ -	$ -
9218	D	b	Tk4	9218-D-b-Tk4	Haul-Cover	USS	Misc-2	-	-	$ -	$ -	$ -	$ -
3002	A	d	Mg1	3002-A-d-Mg1	Grade-Taillings Pipeline Corridor-Placed Cover	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3002	P	a	Comb1	3002-P-a-Comb1	Road Maintenance-Taillings Pipeline Corridor	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3002	J	e	U2a	3002-J-e-U2a	Revegetate-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
3002	M	e	U24	3002-M-e-U24	Post-Closure O&M-Taillings Pipeline Corridor-Final Grade	Miscellaneous	-	-	-	$ -	$ 392.50	$ -	$ -
3003	E	a	Rp1	3003-E-a-Rp1	Rip-Exploration Roads-Existing Ground	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3003	P	b	Comb1	3003-P-b-Comb1	Road Maintenance-Exploration Roads	USS	Misc-3	-	-	$ -	$ -	$ -	$ -
3003	J	e	U2a	3003-J-e-U2a	Revegetate-Exploration Roads-Final Grade	Miscellaneous	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
3003	M	e	U24	3003-M-e-U24	Post-Closure O&M-Exploration Roads-Final Grade	Miscellaneous	-	-	-	$ -	$ 392.50	$ -	$ -
3004	E	a	Rp1	3004-E-a-Rp1	Rip-Internal Haul Roads-Existing Ground	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
9019	C	b	Sh1	9019-C-b-Sh1	Load-Cover	EWRF	Misc-3	-	-	$ -	$ -	$ -	$ -
9119	C	b	Sh1	9119-C-b-Sh1	Load-Cover	CHR	Misc-4	-	-	$ -	$ -	$ -	$ -
9219	C	b	Sh1	9219-C-b-Sh1	Load-Cover	USS	Misc-4	-	-	$ -	$ -	$ -	$ -
9019	B	b	Dz1	9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	-	-	$ -	$ -	$ -	$ -
9019	B	b	Dz1	9019-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-3	-	-	$ -	$ -	$ -	$ -
9119	B	b	Dz1	9119-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-4	-	-	$ -	$ -	$ -	$ -
9219	B	b	Dz1	9219-B-b-Dz1	Dozer Assist-Cover	USS	Misc-4	-	-	$ -	$ -	$ -	$ -
9019	D	b	Tk4	9019-D-b-Tk4	Haul-Cover	EWRF	Misc-3	-	-	$ -	$ -	$ -	$ -
9119	D	b	Tk4	9119-D-b-Tk4	Haul-Cover	CHR	Misc-4	-	-	$ -	$ -	$ -	$ -
9219	D	b	Tk4	9219-D-b-Tk4	Haul-Cover	USS	Misc-4	-	-	$ -	$ -	$ -	$ -
3004	A	d	Mg1	3004-A-d-Mg1	Grade-Internal Haul Roads-Placed Cover	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3004	P	a	Comb1	3004-P-a-Comb1	Road Maintenance-Internal Haul Roads	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3004	J	e	U2a	3004-J-e-U2a	Revegetate-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
3004	M	e	U24	3004-M-e-U24	Post-Closure O&M-Internal Haul Roads-Final Grade	Miscellaneous	-	-	-	$ -	$ 392.50	$ -	$ -
3005	E	a	Rp1	3005-E-a-Rp1	Rip-High Grade Ore Remaining Area-Existing Ground	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -

Other Reclamation Activity Costs

Assumptions:
1 - Cost to construct drain or channel on re-graded stockpile
2 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel
May filter on equipement (D14) to show pertinent rows

Item	Activity	Material	Eq	ID	Description	Source Location 1	Destination Location 2	Quantity	Unit	Fuel Unit Cost ($/unit)	Unit Cost w/o Fuel ($/unit)[1,2]	Fuel Direct Cost ($)	Direct w/o Fuel Cost ($)
9020	C	b	Sh1	9020-C-b-Sh1	Load-Cover	EWRF	Misc-5	-	-	$ -	$ -	$ -	$ -
9120	C	b	Sh1	9120-C-b-Sh1	Load-Cover	CHR	Misc-5	-	-	$ -	$ -	$ -	$ -
9220	C	b	Sh1	9220-C-b-Sh1	Load-Cover	USS	Misc-5	-	-	$ -	$ -	$ -	$ -
9020	B	b	Dz1	9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	-	-	$ -	$ -	$ -	$ -
9020	B	b	Dz1	9020-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-5	-	-	$ -	$ -	$ -	$ -
9120	B	b	Dz1	9120-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-5	-	-	$ -	$ -	$ -	$ -
9220	B	b	Dz1	9220-B-b-Dz1	Dozer Assist-Cover	USS	Misc-5	-	-	$ -	$ -	$ -	$ -
9020	D	b	Tk4	9020-D-b-Tk4	Haul-Cover	EWRF	Misc-5	-	-	$ -	$ -	$ -	$ -
9120	D	b	Tk4	9120-D-b-Tk4	Haul-Cover	CHR	Misc-5	-	-	$ -	$ -	$ -	$ -
9220	D	b	Tk4	9220-D-b-Tk4	Haul-Cover	USS	Misc-5	-	-	$ -	$ -	$ -	$ -
3005	A	d	Mg1	3005-A-d-Mg1	Grade-High Grade Ore Remaining Area-Placed Cover	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3005	P	a	Comb1	3005-P-a-Comb1	Road Maintenance-High Grade Ore Remaining Area	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3005	J	e	U2a	3005-J-e-U2a	Revegetate-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
3005	M	e	U24	3005-M-e-U24	Post-Closure O&M-High Grade Ore Remaining Area-Final Grade	Miscellaneous	-	-	-	$ -	$ 392.50	$ -	$ -
3007	E	a	Rp1	3007-E-a-Rp1	Rip-Unplanned Disturbance Area-Existing Ground	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
9021	C	b	Sh1	9021-C-b-Sh1	Load-Cover	EWRF	Misc-7	-	-	$ -	$ -	$ -	$ -
9121	C	b	Sh1	9121-C-b-Sh1	Load-Cover	CHR	Misc-7	-	-	$ -	$ -	$ -	$ -
9221	C	b	Sh1	9221-C-b-Sh1	Load-Cover	USS	Misc-7	-	-	$ -	$ -	$ -	$ -
9021	B	b	Dz1	9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	-	-	$ -	$ -	$ -	$ -
9021	B	b	Dz1	9021-B-b-Dz1	Dozer Assist-Cover	EWRF	Misc-7	-	-	$ -	$ -	$ -	$ -
9121	B	b	Dz1	9121-B-b-Dz1	Dozer Assist-Cover	CHR	Misc-7	-	-	$ -	$ -	$ -	$ -
9221	B	b	Dz1	9221-B-b-Dz1	Dozer Assist-Cover	USS	Misc-7	-	-	$ -	$ -	$ -	$ -
9021	D	b	Tk4	9021-D-b-Tk4	Haul-Cover	EWRF	Misc-7	-	-	$ -	$ -	$ -	$ -
9121	D	b	Tk4	9121-D-b-Tk4	Haul-Cover	CHR	Misc-7	-	-	$ -	$ -	$ -	$ -
9221	D	b	Tk4	9221-D-b-Tk4	Haul-Cover	USS	Misc-7	-	-	$ -	$ -	$ -	$ -
3007	A	d	Mg1	3007-A-d-Mg1	Grade-Unplanned Disturbance Area-Placed Cover	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3007	P	a	Comb1	3007-P-a-Comb1	Road Maintenance-Unplanned Disturbance Area	Miscellaneous	-	-	-	$ -	$ -	$ -	$ -
3007	J	e	U2a	3007-J-e-U2a	Revegetate-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	$ 5.03	$ 1,158.15	$ -	$ -
3007	M	e	U24	3007-M-e-U24	Post-Closure O&M-Unplanned Disturbance Area-Final Grade	Miscellaneous	-	-	-	$ -	$ 392.50	$ -	$ -
3006	N	a	U18	3006-N-a-U18	Plug and Abandon Well-P&A Wells-Existing Ground	Miscellaneous	-	4,300	ft	$ -	$ 20.84	$ -	$ 89,619
											TOTAL	$ 76,499	$ 3,598,338

Continental Mine

Reclamation Summary Stockpiles, Haul Roads, Reservoirs, and Disturbed Areas

			Current Value
DIRECT COSTS	Facility and Structure Removal		$2,622,501
	Earthmoving		$11,457,907
	Revegetation		$978,454
	Other		$3,674,837
	Subtotal, Direct Costs		**$18,733,699**
INDIRECT COSTS	**Subtotal, Indirect Costs**	**30.0%**	**$5,620,110**
TOTAL COST			**$24,353,808**

Notes:

Indirect costs are based on 2019 agreement between FMI and agencies

Indirect costs include but are not limited to mobilization and demobilization, engineering redesign fee, contingencies, contractor profit and overhead, project management fee, and state procurement cost