



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

Sherry Burt-Kested, Manager
Environmental Services
Telephone: 575-912-5927
e-mail: sburtkes@fmi.com

April 8, 2020

Via E-Mail
Receipt Requested

Mr. Fernando Martinez, Director
Energy, Minerals and Natural Resources Department
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Via E-Mail
Receipt Requested

Ms. Rebecca Roose, Director
New Mexico Environment Department
Water Protection Division
P.O. Box 5469
Santa Fe, New Mexico 87502

Dear Mr. Martinez and Ms. Pruitt:

Re: Freeport-McMoRan Chino Mines Company
Closure / Closeout Plan and Reclamation Cost Estimate

This letter transmits Freeport-McMoRan Chino Mines Company's ("Chino") final updates to its Closure/Closeout Plan and Reclamation Cost Estimate as part of its pending applications to revise Permit GR009RE and to renew and modify DP-1340. Chino requests that the New Mexico Department of Energy, Minerals and Natural Resources Mining and Minerals Division (MMD) and the New Mexico Environment Department (NMED) review and approve this submittal which is a component of Chino's Closure/Closeout Plan.

Chino's proposal for updates to the required financial assurance for Chino's operations, as outlined in the January 8, 2020, Joint Agency Response regarding the Final Net Present Value Calculation and Framework for Adjustment of Financial Assurance Instruments, along with Chino's comments in its letter dated January 23, 2020, will be forthcoming.

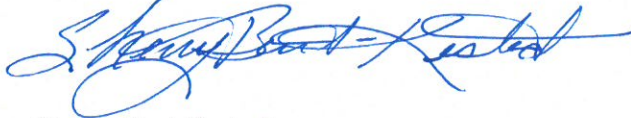
Revised Reclamation Cost Estimate (RCE)

Transmitted by a letter dated March 20, 2019, Chino submitted an updated detailed cost estimate for closure/closeout of the Chino Mine. Chino also received a letter dated January 21, 2020, with final resolution and direction from the State Agencies on required adjustments to the Chino CCP Cost Estimate. Since the changes required by the January 21, 2020 letter are minor, Chino is providing errata sheets showing the changes with a list of replacement pages for the Earthwork Cost Estimate Summary Report dated March 2019, Telesto Solutions, Inc. (see Attachment 1 to this letter) and the Chino Mine Closure/Closeout Plan Update Basis

of Cost Estimate for Water Management and Treatment dated March 2019, Golder Associates Inc. (see Attachment 2 to this letter).

Thank you for your attention to these matters and please call me if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sherry Burt-Kested". The signature is fluid and cursive, with the first name "Sherry" being the most prominent.

Sherry Burt-Kested
Manager, Environmental

SBK:pk
Enclosures
20200408-001

cc (via e-mail): Kurt Volbrecht, Manager NMED
Holland Shepherd, Manager MMD
Brad Reid, NMED
DJ Ennis, MMD

Attachment 1

Earthworks Reclamation Cost Estimate Errata Sheet

The following pages were changed and require replacement in the Earthwork Cost Estimate Summary Report, dated March 2019, Telesto Solutions Inc. to comply with the January 21, 2020 Joint Agency Letter.

Telesto Report Section	Page/Tab	Title of Page (if applicable)
Main Report Section 2	Pg 19 (Telesto), Pg 27 of 791 (Chino PDF Submittal)	Table 7 Miscellaneous Unit Costs
Main Report Section 4	Pg 26-27 (Telesto), Pg 34-35 (Chino)	NA
Appendix B.5.C	Replace Pages 322-330 (Chino, 3 well abandonment quotes) with 2 pages Layne, Granite Construction inc quote	Email Correspondence between Fred Charles of Telesto and Audie Medhurst of Granite Construction, Inc. – Well Abandonment Quote dated July 9, 2019
Appendix E	Pg 466 of 791 (Chino); “Unit Rates” Tab	Unit Rates
Appendix E	Pg 467 of 791 (Chino); “1 General” Tab	General Information
Appendix E	Pg 498 of 791 (Chino) “15 Other” Tab	Other Reclamation Activity Costs
Appendix E	Pg 499 of 791 (Chino); “16 Sum” Tab	Chino Mine – cost summary by major reclamation activity
Appendix E	Pgs 500-501 (Chino); “17b Facility Characteristics” Tab, 2 pages	Facility Characteristics
Appendix E	Pg 514 of 791 (Chino); “Cash Flow” Tab	Cashflow Sheet
Appendix F	Pg F-3 (Telesto), Pg 526 of 791 (Chino)	Chino Closure/Closeout Facility Characteristics Form, West Stockpile

Table 7 Miscellaneous Unit Costs

Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
Fuel	\$2.34	-	gal	N/A	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 at \$2.34/gal.
Revegetation	\$820.12	\$3.85	ac	N/A	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.
Revegetation - Seed Only	\$210.00	-	ac	N/A	Rocky Mountain Reclamation, April 2018
Revegetation - Mulch Only	\$490.00	-	ac	N/A	Rocky Mountain Reclamation, April 2018: \$245 per ton applied at 2 tons per acre
Bench Grading Stockpile	\$1.52	\$0.37	ft	N/A	See unit rates calculations
Bench Grading Tailings Pond	\$1.52	\$0.37	ft	N/A	See unit rates calculations
Downdrain Construction	\$374.38	-	ft	N/A	See unit rates calculations
Downdrain Dissipater	\$14,556.48	-	ea	N/A	See unit rates calculations
Bench Channel Construction	\$4.39	\$0.94	ft	N/A	See unit rates calculations
Top Channel Construction	\$2.04	\$0.44	ft	N/A	See unit rates calculations
Erosion Control	\$2,923.36	\$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)
Structure Demolition	\$0.25	-	cf	Means Line Item 024116.13 0100	Building demolition, large urban projects, mixture of types, excludes foundation demolition, dump fees
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
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
Power Line Demolition	\$0.63	-	ft	Means Line Item 260505.10 0370	Electrical Demolition - Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead powerlines.
Power Pole Demolition	\$216.24	-	ea	Means Line Item 024113.80 0200	Selective Demolition - wood utility poles 35-45 ft high
Sludge/Water Removal from Pipelines	\$0.13	-	ft	Means Line Item 026510.30 0320	Removal of underground storage tanks, petroleum storage tanks, non-leaking, remove sludge, water and remaining product from bottom of tank w/vacuum truck, 9,000-12,000 gal tank (\$306.69/each); unit cost calculated assuming 1/3 of 18-inch pipe filled with sludge/water
Well Plug & Abandon	\$18.17	-	ft	N/A	Unit cost of \$18.17/ft is based on a 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
Well Replacement	\$66.43	-	ft	N/A	Wilcox Professional Services, 8/2011, est. cost for 5 1/2 in bore, \$173,500 for 3000 ft total (\$57.83/ft). Escalated 2% 2011-2018= \$66.43/ft
Reinforced Concrete Wall Demolition	\$199.20	-	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.
Cover Haul Road Construction	\$29.88	\$7.38	ft	UC Haul Road Sheet	Assume dozer construction, 1:1 original slope, 120 ft wide
Disc Harrow Attachment, for Tractor	\$616.33	-	month	Means Line Item 015433.20 1500	Equipment rental costs
Cast-in-Place Concrete	\$254.97	-	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	\$335.20	-	ton	Means Line Item 028120.10 1120/1130	Solid pickup; average of minimum and maximum
Transport of Wastes Requiring Special Handling	\$4.78	-	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	\$4,945.96	\$1,240.32	month		Road maintenance for O&M - includes one 14M motor grader and one 6,000-gal water truck
Groundwater Monitoring	\$2,282.94	-	day		Groundwater monitoring for O&M - includes 1 foreman, 1 laborers, rental equipment, misc. field equipment, and aqueous chemistry

Means data are obtained from RS Means online (2019) for Las Cruces.

4.0 RESULTS

The total current dollar cost for earthwork reclamation is estimated to be \$176,917,000 plus \$8,546,000 O&M for a total of \$185,462,000. A summary of the cost estimate is provided in Table 8. Facility Characteristics Forms and estimated costs, by location, are presented in Appendix F. The costs presented in this RCE are current (2019) dollar costs.

Table 8 Earthwork Cost Estimate Summary

Item	Direct Cost	Indirect Cost	Total Estimated Cost
Facility		30% of Direct	
Triangle Stockpile	\$2,302,946	\$690,884	\$2,993,830
South Stockpile	\$32,235,067	\$9,670,520	\$41,905,588
West Stockpile	\$20,125,045	\$6,037,513	\$26,162,558
Lambright Stockpile	\$37,892,017	\$11,367,605	\$49,259,621
Southwest Lambright	\$1,705,486	\$511,646	\$2,217,132
South and East In-Pit Stockpiles	\$480,759	\$144,228	\$624,987
Northwest Stockpile	\$75,797	\$22,739	\$98,535
Lee Hill Stockpile	\$224,370	\$67,311	\$291,682
Northeast Stockpile	\$140,266	\$42,080	\$182,346
North Stockpile	\$73,516	\$22,055	\$95,570
STS2	\$164,831	\$49,449	\$214,281
Upper South Stockpile	\$408,741	\$122,622	\$531,363
9 Waste Rock	\$1,485,534	\$445,660	\$1,931,194
Ground Hog #5	\$6,249	\$1,875	\$8,124
Stockpile Subtotal	\$97,320,624	\$29,196,187	\$126,516,811
Miscellaneous NMA	\$497,178	\$149,153	\$646,332
Miscellaneous SMA	\$478,356	\$143,507	\$621,863
200-Acre Unplanned Future Disturbance	\$1,303,973	\$391,192	\$1,695,164
Upper South & White House (to Lambright)	\$675,875	\$202,763	\$878,638
Miscellaneous Subtotal	\$2,955,382	\$886,615	\$3,841,996
Demolition	\$4,591,210	\$1,377,363	\$5,968,573
Demolition Subtotal	\$4,591,210	\$1,377,363	\$5,968,573
Dams and Reservoirs	\$152,819	\$45,846	\$198,665

Item	Direct Cost	Indirect Cost	Total Estimated Cost
Dams & Reservoirs Subtotal	\$152,819	\$45,846	\$198,665
Axiflo	\$1,072,368	\$321,710	\$1,394,078
Tailing Pond 6	\$4,026,681	\$1,208,004	\$5,234,685
Tailing Pond 7	\$25,065,046	\$7,519,514	\$32,584,560
Tailing Pond Subtotal	\$30,164,095	\$9,049,228	\$39,213,323
White House	\$59,145	\$17,743	\$76,888
Borrow Area F	\$46,946	\$14,084	\$61,030
North of Borrow Area F	\$64,238	\$19,271	\$83,509
Borrow Area E	\$104,052	\$31,215	\$135,267
Borrow Area H	\$156,271	\$46,881	\$203,152
West of Borrow E&H	\$475,028	\$142,508	\$617,537
Borrow Area Subtotal	\$905,679	\$271,704	\$1,177,383
Closure Costs Total	\$136,089,810	\$40,826,943	\$176,916,753
O&M		17.5% of Direct	
Full Site O&M Costs Total	\$7,273,158	\$1,272,803	\$8,545,960
Total Cost (Closure + O&M)	\$143,362,967	\$42,099,745	\$185,462,713

5.0 REFERENCES

Caterpillar, Inc. (1998). *Caterpillar Performance Handbook, Edition 29*. Peoria, Illinois: Caterpillar, Inc.

Caterpillar, Inc. (2004). *Caterpillar Performance Handbook, Edition 35*. Peoria, Illinois: Caterpillar, Inc.

Caterpillar, Inc. (2011). *Caterpillar Performance Handbook, Edition 41*. Peoria, Illinois: Caterpillar, Inc.

Caterpillar, Inc. (2014). *Caterpillar Performance Handbook, Edition 44*. Peoria, Illinois: Caterpillar, Inc.

Caterpillar, Inc. (2017). *Caterpillar Performance Handbook, Edition 47*. Peoria, Illinois: Caterpillar, Inc.

Fred Charles

From: Medhurst, Audie <Audie.Medhurst@gcinc.com>
Sent: Tuesday, July 9, 2019 1:38 PM
To: Fred Charles
Subject: RE: request for cost information - well/exploratory borehole abandonment

Hi Fred
The information as written in the mail below is correct
Thank you
Audie

Audie Medhurst

General Manager
Mineral Services Division

12030 E Riggs Road
Chandler AZ 85249

Direct: 602-824-0934|**Cell:** 602-359-3010

Email: Audie.Medhurst@gcinc.com

www.graniteconstruction.com

From: Fred Charles <fcharles@telesto-inc.com>
Sent: Tuesday, July 9, 2019 11:12 AM
To: Medhurst, Audie <Audie.Medhurst@gcinc.com>
Subject: request for cost information - well/exploratory borehole abandonment

Hi Audie (with Layne, A Granite Company – formerly Layne Christensen Company). Thanks for the updated cost information you provided for abandonment of wells and boreholes. Please confirm the following is correct in an email reply to me. We will include this email in documentation we provide to the State for the reclamation cost estimate.

Estimate 7000.00 per day rig time- estimate 300 days to complete. \$2,100,000.00

Estimate 6.00 per foot abandonment material costs. \$ 1,035,786.00

Mob 15,000.00

Demob 15,000.00

As I communicated with you, the estimated costs reflect requirements for the work which include:

1. All work done in conformance with New Mexico requirements/guidance
2. Costs include mobilization/demobilization (site is in Grant County, NM), which includes moving between wells assumed at 1,000 ft apart
3. Costs include labor, equipment, and materials
4. Wells/boreholes will be plugged and abandoned from bottom of hole to the surface – total well lengths and diameters are combined for monitoring wells and exploration boreholes, as follows:
 - 2-inch diameter PVC – 431 ft total well length
 - 4-inch diameter PVC – 102,876 ft total well length
 - 5.5-inch diameter PVC – 63,240 ft total well length

- 6-inch diameter PVC – 6,084 ft total well length

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



www.telesto-inc.com

Unit Rates

Code	Activity	Base Per Unit Cost	Fuel Per Unit Cost	Units	Source	Reference
U1	Fuel	\$ 2.34	-	gal	-	Diesel fuel cost is estimated based on a predictive equation developed by correlating U.S. No. 2 diesel retail prices (U.S. Energy Information Administration) and FMI local fuel quotes, as agreed upon in November 2018 discussions with the agencies. The correlation is based on a dataset for the period from 1995-2018. Fuel cost includes direct and indirect costs at \$2.34/gal.
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, crimping, seed, and mulch.
U2-1	Revegetation - Seed Only	\$ 210.00	-	ac	Quote	Rocky Mountain Reclamation, April 2018
U2-2	Revegetation - Mulch Only	\$ 490.00	-	ac	Quote	Rocky Mountain Reclamation, April 2018: \$245 per ton applied at 2 tons per acre
U3	Bench Grading Stockpile	\$ 1.52	\$ 0.37	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
U4	Bench Grading Tailings Pond	\$ 1.52	\$ 0.37	ft	Bench Grading Unit Cost Sheet	See unit rates calculations
U5	Downdrain Construction	\$ 374.38	-	ft	Downdrain Unit Cost Sheet	See unit rates calculations
U6	Downdrain Dissipater	\$ 14,556.48	-	ea	Downdrain Unit Cost Sheet	See unit rates calculations
U7	Bench Channel Construction	\$ 4.39	\$ 0.94	ft	Bench Channel Unit Cost Sheet	See unit rates calculations
U8	Top Channel Construction	\$ 2.04	\$ 0.44	ft	Top Channel Unit Cost Sheet	See unit rates calculations
U9	Erosion Control	\$ 2,923.36	\$ 382.26	day	Modified Crew B-13A/ Full Site O&M Sheet	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)
U10	Structure Demolition	\$ 0.25	-	cf	Means Line Item 024116.13 0100	Building demolition, large urban projects, mixture of types, excludes foundation demolition, dump fees
U11	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
U12	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
U13	Power Line Demolition	\$ 0.63	-	ft	Means Line Item 260505.10 0370	Electrical Demolition - Nonmetallic sheathed cable 3 wire; assume similar enough in cost to overhead powerlines
U14	Power Pole Demolition	\$ 216.24	-	ea	Means Line Item 024113.80 0200	Selective Demolition - wood utility poles 35-45 ft high
U15	Sludge removal	\$ 306.69	-	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
U16	Well Plug & Abandon	\$ 18.17	-	ft	N/A	Unit cost of \$18.17/ft is based on a 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
U17	Well Replacement	\$ 66.43	-	ft	Quote	Wilcox Professional Services, 8/2011, est. cost for 5 1/2 in bore, \$173,500 for 3000 ft total (\$57.83/ft). Escalated 2% 2011-2018= \$66.43/ft
U18	Reinforced Concrete Wall Demolition	\$ 199.20	-	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.
U19	Cover Haul Road Construction	\$ 29.88	\$ 7.38	ft	Haul Road Unit Cost Sheet	Assume dozer construction, 1:1 original slope, 120 ft wide
U20	Disc harrow attachment, for tractor	\$ 616.33	-	month	Means Line Item 015433.20 1500	Equipment rental costs
U21	Cast-in-Place Concrete	\$ 254.97	-	cy	Means Line Item 033053.40 6200	Structural concrete, in place, gravity retaining wall (3000 psi), includes forms and reinforcement
U22	Hazardous Waste Cleanup & Disposal	\$ 335.20	-	ton	Means Line Item 028120.10 1120/1130	Solid pickup; average of minimum and maximum
U23	Hazardous Waste Transportation	\$ 4.78	-	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
U24	Road Maintenance	\$ 4,945.96	\$ 1,240.32	month	Full Site O&M Sheet	Road maintenance for O&M - includes one 14M motor grader and one 6,000-gal water truck
U25	Groundwater Monitoring	\$ 2,282.94	-	day	Full Site O&M Sheet	Groundwater monitoring for O&M - includes 1 foreman, 1 laborers, rental equipment, misc. field equipment, and aqueous chemistry

Location adjustment: New Mexico Las Cruces 85.4%

[1] Applied to RSM derived costs only. EquipmentWatch items and items based on local quotes adjusted at base rate
RS Means Online, 2019 (bare costs, without O&P- overhead and profit)

General Information

Applicant Chino Mines Company
Hurley, New Mexico 88043

Disturbed Surface Area (acres) 5,660

Type of Operation Existing/Surface/Copper

*Current value of earthwork and
O&M before escalation and
discounting* **\$185,462,713**

Based on Golder 2018 Closure/Closeout Plan

**Stockpiles, Tailing,
Reservoirs, Haul Roads
and Disturbed Areas**

Other Reclamation Activity Costs

Assumptions:

- 1 - Downdrain lengths and bench channel lengths based on Golder Take-Offs 1401129-004-MTO-RevG_07_Chino_MTOs_05SEP18.xlsx
- 2 - Bench grading lengths equal to bench channel lengths
- 3 - Top channels constructed at 9 WRS
- 4 - Cost to construct drain or channel on re-graded stockpile
- 5 - The downdrain, ACB, well plug & abandon, and well replacement costs include fuel

ID	Description	Source Location 1	Destination Location 2	Quantity ^{1, 2}	Unit	Fuel Unit Cost (\$/unit)	Unit Cost w/o Fuel (\$/unit) ⁴	Fuel Direct Cost (\$/unit) ⁵	Direct w/o Fuel Cost (\$)
1000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Triangle Stockpile	-	13,831	ft	\$ 0.37	\$ 1.52	\$ 5,123.1	\$ 20,989
1100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	South Stockpile	-	95,487	ft	\$ 0.37	\$ 1.52	\$ 35,369.1	\$ 144,902
1200-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	West Stockpile	-	108,831	ft	\$ 0.37	\$ 1.52	\$ 40,311.7	\$ 165,151
1300-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Lambright Stockpile	-	157,574	ft	\$ 0.37	\$ 1.52	\$ 58,366.4	\$ 239,118
2000-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	STS2	-	6,218	ft	\$ 0.37	\$ 1.52	\$ 2,303.2	\$ 9,436
2100-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	Upper South	-	5,348	ft	\$ 0.37	\$ 1.52	\$ 1,980.9	\$ 8,116
2200-F-e-U3	Grade Benches-Entire Stockpile-Final Grade	9 Waste Rock	-	14,085	ft	\$ 0.37	\$ 1.52	\$ 5,217.2	\$ 21,374
3000-F-e-U4	Grade Benches-Entire Impoundment-Final Grade	Axiflo	-	3,380	ft	\$ 0.37	\$ 1.52	\$ 1,252.0	\$ 5,129
3100-F-e-U4	Grade Benches-Entire Impoundment-Final Grade	Tailings Pond 6	-	6,497	ft	\$ 0.37	\$ 1.52	\$ 2,406.6	\$ 9,859
3200-F-e-U4	Grade Benches-Entire Impoundment-Final Grade	Tailings Pond 7	-	42,224	ft	\$ 0.37	\$ 1.52	\$ 15,639.9	\$ 64,074
1100-G-e-U5	Construct Downdrains-Entire Stockpile-Final Grade	South Stockpile	-	6,474	ft	-	\$ 374.38	\$ -	\$ 2,423,818
1200-G-e-U5	Construct Downdrains-Entire Stockpile-Final Grade	West Stockpile	-	4,493	ft	-	\$ 374.38	\$ -	\$ 1,682,090
1300-G-e-U5	Construct Downdrains-Entire Stockpile-Final Grade	Lambright Stockpile	-	9,299	ft	-	\$ 374.38	\$ -	\$ 3,481,362
2200-G-e-U5	Construct Downdrains-Entire Stockpile-Final Grade	9 Waste Rock	-	1,067	ft	-	\$ 374.38	\$ -	\$ 399,464
3100-G-e-U5	Construct Downdrains-Entire Impoundment-Final Grade	Tailings Pond 6	-	319	ft	-	\$ 374.38	\$ -	\$ 119,515
3200-G-e-U5	Construct Downdrains-Entire Impoundment-Final Grade	Tailings Pond 7	-	2,280	ft	-	\$ 374.38	\$ -	\$ 853,712
1100-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	South Stockpile	-	2	ea	-	\$ 14,556.48	\$ -	\$ 29,113
1200-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	West Stockpile	-	4	ea	-	\$ 14,556.48	\$ -	\$ 58,226
1300-Gb-e-U6	Construct Downdrain Dissipators-Entire Stockpile-Final Grade	Lambright Stockpile	-	4	ea	-	\$ 14,556.48	\$ -	\$ 58,226
1000-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	Triangle Stockpile	-	13,831	ft	\$ 0.94	\$ 4.39	\$ 13,067.8	\$ 60,732
1100-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	South Stockpile	-	95,487	ft	\$ 0.94	\$ 4.39	\$ 90,218.4	\$ 419,283
1200-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	West Stockpile	-	108,831	ft	\$ 0.94	\$ 4.39	\$ 102,825.8	\$ 477,875
1300-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	Lambright Stockpile	-	157,574	ft	\$ 0.94	\$ 4.39	\$ 148,879.2	\$ 691,904
2000-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	STS2	-	6,218	ft	\$ 0.94	\$ 4.39	\$ 5,874.9	\$ 27,303
2100-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	Upper South	-	5,348	ft	\$ 0.94	\$ 4.39	\$ 5,052.9	\$ 23,483
2200-H-e-U7	Construct Bench Channels-Entire Stockpile-Final Grade	9 Waste Rock	-	14,085	ft	\$ 0.94	\$ 4.39	\$ 13,307.8	\$ 61,847
2514-H-e-U7	Construct Bench Channels-Highway to Heaven Haul Road-Final Grade	Miscellaneous NMA Highway to Heaven Haul Road	-	1,995	ft	\$ 0.94	\$ 4.39	\$ 1,884.9	\$ 8,760
3000-H-e-U7	Construct Bench Channels-Entire Impoundment-Final Grade	Axiflo	-	3,380	ft	\$ 0.94	\$ 4.39	\$ 3,193.5	\$ 14,842
3100-H-e-U7	Construct Bench Channels-Entire Impoundment-Final Grade	Tailings Pond 6	-	6,497	ft	\$ 0.94	\$ 4.39	\$ 6,138.7	\$ 28,529
3200-H-e-U7	Construct Bench Channels-Entire Impoundment-Final Grade	Tailings Pond 7	-	42,224	ft	\$ 0.94	\$ 4.39	\$ 39,893.7	\$ 185,403
2200-I-e-U8	Construct Top Channels-Entire Stockpile-Final Grade	9 Waste Rock	-	6,767	ft	\$ 0.44	\$ 2.04	\$ 3,000.6	\$ 13,789
1200-N-e-U16	Plug and Abandon Well-Entire Stockpile-Final Grade	West Stockpile	-	1,700	ft	-	\$ 18.17	\$ -	\$ 30,889
1200-O-e-U17	Replace Well-Entire Stockpile-Final Grade	West Stockpile	-	1,700	ft	-	\$ 66.43	\$ -	\$ 112,935
5005-Q-c-U19	Construct Haul Road-Haul Road	Upper South & White House	-	17,438	ft	\$ 7.38	\$ 29.88	\$ 128,709.53	\$ 521,110
TOTAL								\$ 730,018	\$ 12,472,357

Chino Mine

Reclamation Summary Stockpiles, Haul Roads, Reservoirs, and Disturbed Areas
 Based on Golder 2018 Closure/Closeout Plan

		Current Value
DIRECT COSTS	Facility and Structure Removal	\$4,591,210
	Earthmoving	\$113,337,695
	Revegetation	\$4,958,530
	Other	\$13,202,374
	Subtotal, Direct Costs	\$136,089,810
INDIRECT COSTS	Subtotal, Indirect Costs	30.0% \$40,826,943
TOTAL COST		\$176,916,753
	Seventeen Year Annual Expenditure	\$10,406,868

Notes:

Indirect costs are based on 2019 agreement between FMI and agencies

Indirect costs include mobilization and demobilization, engineering redesign fee, contingencies, contractor profit and overhead, project management fee, and state procurement cost

Facility Characteristics

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

Facility	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
	Triangle Stockpile	South Stockpile	West Stockpile	Lambright Stockpile	Southwest Lambright	South and East In-Pit Stockpiles	Northwest Stockpile	LeeHill Stockpile	Northeast Stockpile	North Stockpile	STS2	Upper South	9 Waste Rock	Dams and Reservoirs
Reclaimed Acres⁶	81.53	584.60	626.43	785.37	94.30	46.00	8.22	25.41	12.25	6.91	83.78	142.66	161.20	15.64
Item	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost
Direct Costs														
Cover Material Excav, Haul, Grade ¹	\$356,732	\$2,885,955	\$4,621,914	\$6,954,185	\$801,195	\$437,234	\$66,625	\$199,126	\$128,097	\$66,651	\$0	\$0	\$779,568	\$110,835
Top/Outslope Adjustment Grading ²	\$1,779,123	\$25,724,715	\$12,316,669	\$25,612,852	\$826,593	\$5,622	\$2,400	\$4,311	\$2,078	\$1,172	\$50,884	\$252,561	\$55,143	\$28,487
Scarify, Seed & Mulch, Reveg ³	\$67,181	\$481,693	\$516,159	\$647,123	\$77,698	\$37,903	\$6,772	\$20,934	\$10,091	\$5,692	\$69,030	\$117,547	\$132,824	\$13,497
Channels & Benches ⁴	\$99,911	\$3,142,704	\$2,526,479	\$4,677,856	\$0	\$0	\$0	\$0	\$0	\$0	\$44,917	\$38,632	\$517,999	\$0
Demolition	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other ⁵	\$0	\$0	\$143,824	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Capital Cost Totals	\$2,302,946	\$32,235,067	\$20,125,045	\$37,892,017	\$1,705,486	\$480,759	\$75,797	\$224,370	\$140,266	\$73,516	\$164,831	\$408,741	\$1,485,534	\$152,819
Capital Cost/Acre	\$28,245	\$55,140	\$32,127	\$48,247	\$18,086	\$10,451	\$9,222	\$8,831	\$11,453	\$10,641	\$1,967	\$2,865	\$9,215	\$9,771
Indirect Costs														
Cover Material Excav, Haul, Grade ¹	\$107,020	\$865,787	\$1,386,574	\$2,086,256	\$240,358	\$131,170	\$19,987	\$59,738	\$38,429	\$19,995	\$0	\$0	\$233,871	\$33,251
Top/Outslope Adjustment Grading ²	\$533,737	\$7,717,415	\$3,695,001	\$7,683,856	\$247,978	\$1,687	\$720	\$1,293	\$623	\$352	\$15,265	\$75,768	\$16,543	\$8,546
Scarify, Seed & Mulch, Reveg ³	\$20,154	\$144,508	\$154,848	\$194,137	\$23,309	\$11,371	\$2,032	\$6,280	\$3,027	\$1,708	\$20,709	\$35,264	\$39,847	\$4,049
Channels & Benches ⁴	\$29,973	\$942,811	\$757,944	\$1,403,357	\$0	\$0	\$0	\$0	\$0	\$0	\$13,475	\$11,590	\$155,400	\$0
Demolition	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other ⁵	\$0	\$0	\$43,147	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Indirect Cost Totals	\$690,884	\$9,670,520	\$6,037,513	\$11,367,605	\$511,646	\$144,228	\$22,739	\$67,311	\$42,080	\$22,055	\$49,449	\$122,622	\$445,660	\$45,846
Indirect Cost/Acre	\$8,474	\$16,542	\$9,638	\$14,474	\$5,426	\$3,135	\$2,767	\$2,649	\$3,436	\$3,192	\$590	\$860	\$2,765	\$2,931
Total Cost	\$2,993,830	\$41,905,588	\$26,162,558	\$49,259,621	\$2,217,132	\$624,987	\$98,535	\$291,682	\$182,346	\$95,570	\$214,281	\$531,363	\$1,931,194	\$198,665
Total Cost Cover	\$463,751	\$3,751,742	\$6,008,488	\$9,040,441	\$1,041,553	\$568,404	\$86,612	\$258,863	\$166,526	\$86,646	\$0	\$0	\$1,013,439	\$144,086
Total Cost Top/Outslope Adjustment	\$2,312,859	\$33,442,130	\$16,011,670	\$33,296,708	\$1,074,571	\$7,309	\$3,119	\$5,604	\$2,702	\$1,524	\$66,150	\$328,329	\$71,685	\$37,034
Total Cost Earthwork	\$2,776,611	\$37,193,871	\$22,020,157	\$42,337,149	\$2,116,125	\$575,714	\$89,731	\$264,468	\$169,228	\$88,170	\$66,150	\$328,329	\$1,085,124	\$181,119
Capital Cost Re-Veg	\$87,335	\$626,201	\$671,007	\$841,260	\$101,008	\$49,273	\$8,804	\$27,214	\$13,118	\$7,400	\$89,739	\$152,811	\$172,671	\$17,546
Capital Cost Other ⁵	\$0	\$0	\$186,971	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Cost/Acre	\$36,719	\$71,682	\$41,764	\$62,721	\$23,512	\$13,587	\$11,988	\$11,481	\$14,890	\$13,834	\$2,558	\$3,725	\$11,980	\$12,702
Total Cost/Acre Cover	5,688	6,418	9,592	11,511	11,045	12,357	10,538	10,189	13,598	12,542	0	0	6,287	9,213
Total Cost/Acre Top/Outslope Adjustment	28,367	57,205	25,560	42,396	11,396	159	380	221	221	790	2,301	445	2,368	
Total Cost/Acre Earthwork	\$34,055	\$63,623	\$35,152	\$53,907	\$22,441	\$12,516	\$10,917	\$10,410	\$13,818	\$12,763	\$790	\$2,301	\$6,732	\$11,581
Capital Cost/Acre Re-Veg	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,071	1,122
Capital Cost/Acre Other ⁵	\$0	\$0	\$298	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

1 Cover Material includes dozer assist, load, haul, grade cover, and water truck and motor grader for road maintenance and dust control during reclamation

2 Top/Outslope Adjustment Grading includes rough grading and ripping before placing cover

3 Revegetation includes scarifying, discing, drill speeding, mulching, crimping, per diem, mobilization, seeding, and mulching

4 Channels & Benches includes bench channels, downdrains, benches

5 Other includes well installation/closure, and seepage collection/interceptor trench installation

6 Total area does not include 599 previously reclaimed acres

Facility Characteristics

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

Facility	2400	2500	2600	3000	3100	3200	3300	5001	5105	5106	5107	5108	5109	Haul Road		Total
	Ground Hog #5	Miscellaneous NMA	Unplanned Disturbed Area	Axiflo	Tailings Pond 6	Tailings Pond 7	Miscellaneous SMA	White House	Borrow Area F	North of Borrow Area F	Borrow Area E	Borrow Area H	West of Borrow E&H	Upper South & White House	5005	
Reclaimed Acres⁶	2.00	61.19	200.00	97.10	261.66	1660.48	60.26	62.51	49.62	67.89	109.97	165.16	502.04		27.54	6001.71
Direct Costs																
Item	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost	Capital Cost
Cover Material Excav, Haul, Grade ¹	\$4,601	\$417,462	\$1,105,051	\$951,854	\$3,601,520	\$22,264,535	\$421,745	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,174,884
Top/Outslope Adjustment Grading ²	\$0	\$5,928	\$34,128	\$16,092	\$43,114	\$273,602	\$6,975	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,366
Scarify, Seed & Mulch, Reveg ³	\$1,648	\$63,143	\$164,794	\$80,005	\$215,598	\$1,368,187	\$49,636	\$59,145	\$46,946	\$64,238	\$104,052	\$156,271	\$475,028	\$22,690	\$0	\$5,075,524
Channels & Benches ⁴	\$0	\$10,645	\$0	\$24,416	\$166,449	\$1,158,722	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,408,731
Demolition	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,591,210
Other ⁵	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$649,820	\$793,644
Capital Cost Totals	\$6,249	\$497,178	\$1,303,973	\$1,072,368	\$4,026,681	\$25,065,046	\$478,356	\$59,145	\$46,946	\$64,238	\$104,052	\$156,271	\$475,028	\$22,690	\$0	\$675,875
Capital Cost/Acre	\$3,125	\$8,125	\$6,520	\$11,044	\$15,389	\$15,095	\$7,938	\$946	\$946	\$946	\$946	\$946	\$946	\$946	\$24,544	\$136,089,810
Indirect Costs																
Cover Material Excav, Haul, Grade ¹	\$1,380	\$125,239	\$331,515	\$285,556	\$1,080,456	\$6,679,360	\$126,524	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,852,465
Top/Outslope Adjustment Grading ²	\$0	\$1,778	\$10,238	\$4,828	\$12,934	\$82,081	\$2,092	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,010
Scarify, Seed & Mulch, Reveg ³	\$494	\$18,943	\$49,438	\$24,002	\$64,679	\$410,456	\$14,891	\$17,743	\$14,084	\$19,271	\$31,215	\$46,881	\$142,508	\$6,807	\$0	\$1,522,657
Channels & Benches ⁴	\$0	\$3,193	\$0	\$7,325	\$49,935	\$347,617	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,722,619
Demolition	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,377,363
Other ⁵	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$194,946	\$238,093
Indirect Cost Totals	\$1,875	\$149,153	\$391,192	\$321,710	\$1,208,004	\$7,519,514	\$143,507	\$17,743	\$14,084	\$19,271	\$31,215	\$46,881	\$142,508	\$6,807	\$0	\$40,826,943
Indirect Cost/Acre	\$937	\$2,437	\$1,956	\$3,313	\$4,617	\$4,529	\$2,381	\$284	\$284	\$284	\$284	\$284	\$284	\$284	\$7,363	\$6,803
Total Cost	\$8,124	\$646,332	\$1,695,164	\$1,394,078	\$5,234,685	\$32,584,560	\$621,863	\$76,888	\$61,030	\$83,509	\$135,267	\$203,152	\$617,537	\$22,690	\$0	\$176,916,753
Total Cost Cover	\$5,982	\$542,700	\$1,436,566	\$1,237,411	\$4,681,975	\$28,943,895	\$548,269	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$60,027,350
Total Cost Top/Outslope Adjustment	\$0	\$7,707	\$44,367	\$20,920	\$56,048	\$355,683	\$9,067	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,376
Total Cost Earthwork	\$5,982	\$550,407	\$1,480,933	\$1,258,331	\$4,738,024	\$29,299,578	\$557,336	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$147,186,912
Capital Cost Re-Veg	\$2,142	\$82,086	\$214,232	\$104,007	\$280,277	\$1,778,643	\$64,527	\$76,888	\$61,030	\$83,509	\$135,267	\$203,152	\$617,537	\$29,497	\$0	\$6,598,181
Capital Cost Other ⁵	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$844,766	\$1,031,737
Total Cost/Acre	\$4,062	\$10,562	\$8,476	\$14,358	\$20,006	\$19,624	\$10,319	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$1,230	\$31,907
Total Cost/Acre Cover	2,991	8,869	7,183	12,744	17,893	17,431	9,098	0	0	0	0	0	0	0	0	\$10,002
Total Cost/Acre Top/Outslope Adjustment	0	126	222	215	214	214	150	0	0	0	0	0	0	0	159	\$14,522
Total Cost/Acre Earthwork	\$2,991	\$8,995	\$7,405	\$12,959	\$18,108	\$17,645	\$9,248	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,524
Capital Cost/Acre Re-Veg	1,071	1,341	1,071	1,071	1,071	1,071	1,071	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,071	\$1,099
Capital Cost/Acre Other ⁵	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,677	\$172

1 Cover Material includes dozer assist, load, haul, c
2 Top/Outslope Adjustment Grading includes rough
3 Revegetation includes scarifying, discing, drill spe
4 Channels & Benches includes bench channels, c
5 Other includes well installation/closure, and seep
6 Total area does not include 599 previously reclaim

Component	Current Cost
Earthwork & Demo	\$176,916,753
Other O&M	\$7,282,578
Veg O&M	\$1,263,382
Total	\$185,462,713

Year	Earthwork			Total Earthwork Current Cost
	Earthwork Current Cost	Vegetation Maint. Current Cost	O&M Current Cost	
1	1,000,000	15,000	33,305	1,048,305
2	4,000,000	15,000	33,305	4,048,305
3	9,936,280	15,000	51,090	10,002,369
4	9,936,280	15,000	51,090	10,002,369
5	9,936,280	15,000	51,090	10,002,369
6	9,936,280	45,707	81,064	10,063,051
7	9,936,280	45,707	95,242	10,077,228
8	9,936,280	45,707	95,242	10,077,228
9	9,936,280	45,707	95,242	10,077,228
10	9,936,280	45,707	95,242	10,077,228
11	9,936,280	45,707	95,242	10,077,228
12	9,936,280	45,707	95,242	10,077,228
13	9,936,280	45,707	107,497	10,089,484
14	9,936,280	45,707	119,332	10,101,319
15	9,936,280	45,707	121,566	10,103,552
16	9,936,280	45,707	121,566	10,103,552
17	9,936,280	45,707	121,566	10,103,552
18	9,936,280	45,707	121,566	10,103,552
19	9,936,280	45,707	121,566	10,103,552
20	3,000,000	45,707	121,566	3,167,273
21	-	45,707	86,973	132,680
22	-	45,707	86,973	132,680
23	-	45,707	86,973	132,680
24	-	45,707	86,973	132,680
25	-	45,707	86,973	132,680
26	-	45,707	86,973	132,680
27	-	45,707	86,973	132,680
28	-	45,707	86,973	132,680
29	-	45,707	86,973	132,680
30	-	45,707	86,973	132,680
31	-	45,707	86,973	132,680
32	-	-	86,973	86,973
33	-	-	86,973	86,973
34	-	-	86,973	86,973
35	-	-	86,973	86,973
36	-	-	86,973	86,973
37	-	-	86,973	86,973
38	-	-	86,973	86,973
39	-	-	86,973	86,973
40	-	-	86,973	86,973
41	-	-	61,908	61,908
42	-	-	61,908	61,908
43	-	-	61,908	61,908
44	-	-	61,908	61,908
45	-	-	61,908	61,908
46	-	-	61,908	61,908
47	-	-	61,908	61,908
48	-	-	61,908	61,908
49	-	-	61,908	61,908
50	-	-	61,908	61,908
51	-	-	61,908	61,908
52	-	-	61,908	61,908
53	-	-	61,908	61,908
54	-	-	61,908	61,908
55	-	-	61,908	61,908
56	-	-	61,908	61,908
57	-	-	61,908	61,908
58	-	-	61,908	61,908
59	-	-	61,908	61,908
60	-	-	61,908	61,908
61	-	-	61,908	61,908
62	-	-	61,908	61,908
63	-	-	61,908	61,908
64	-	-	61,908	61,908
65	-	-	61,908	61,908
66	-	-	61,908	61,908
67	-	-	61,908	61,908
68	-	-	61,908	61,908
69	-	-	61,908	61,908
70	-	-	61,908	61,908
71	-	-	61,908	61,908
72	-	-	61,908	61,908
73	-	-	61,908	61,908
74	-	-	61,908	61,908
75	-	-	61,908	61,908
76	-	-	61,908	61,908
77	-	-	61,908	61,908
78	-	-	61,908	61,908
79	-	-	61,908	61,908
80	-	-	61,908	61,908
81	-	-	61,908	61,908
82	-	-	61,908	61,908
83	-	-	61,908	61,908
84	-	-	61,908	61,908
85	-	-	61,908	61,908
86	-	-	61,908	61,908
87	-	-	61,908	61,908
88	-	-	61,908	61,908
89	-	-	61,908	61,908
90	-	-	61,908	61,908
91	-	-	61,908	61,908
92	-	-	61,908	61,908
93	-	-	61,908	61,908
94	-	-	61,908	61,908
95	-	-	61,908	61,908
96	-	-	61,908	61,908
97	-	-	61,908	61,908
98	-	-	61,908	61,908
99	-	-	61,908	61,908
100	-	-	61,908	61,908
Total	176,916,753	1,263,382	7,282,578	185,462,713

**Chino Closure/Closeout
Facility Characteristics Form**

West Stockpile

Function	Ore stockpile/Waste rock stockpile
Location Characteristics	West of Main Pit No upstream issues Pre-existing downstream drainage into Hanover and former Santa Rita Creeks Regional depth to groundwater is less than 75 feet, direction of flow is to Hanover Creek and Main Pit Medium upwind fetch, medium downwind fetch
Construction Method	End dumped
Physical Characteristics	Range in size from very fine (silt and clay) to very large boulders High saturated hydraulic conductivity
Leach Status	Eastern portion leach, western portion non-leach
Existing Engineering Measures	PLS and stormwater collection system, toe control systems Interceptor wells, all top surfaces bermed

**Matrix of Costs
Capital Cost/Facility**

Reclaimed Acres	626.43
Item	Capital Cost
Cover Material Excav, Haul, Grade¹	\$4,621,914
Top/Outslope Adjustment Grading²	\$12,316,669
Rip, Seed & Mulch, Reveg³	\$516,159
Channels & Benches⁴	\$2,526,479
Other⁵	\$143,824
Capital Cost Totals	\$20,125,045
Capital Cost/Acre	\$32,127

All costs based on Telesto reclamation cost estimate (March 2019).

- 1 Cover Material includes dozer assist, load, haul, grade cover, and water truck and motor grader for road maintenance and dust control during reclamation
- 2 Top/Outslope Adjustment Grading includes rough grading and ripping before placing cover
- 3 Revegetation includes ripping, scarifying, discing, drill speeding, mulching, crimping, per diem, mobilization, seeding, and mulching
- 4 Channels & Benches includes bench channels, downdrains, benches
- 5 Other includes well installation/closure, and seepage collection/interceptor trench installation

Attachment 2

Water Management/Treatment Cost Estimate Errata Sheet

The following pages were changed and require replacement in the CHINO MINE CLOSURE/CLOSEOUT PLAN UPDATE BASIS OF COST ESTIMATE FOR WATER MANAGEMENT AND TREATMENT dated March 18, 2019, Golder Associates, Inc. to comply with the January 21, 2020 Joint Agency Letter.

Golder Report Section	Page/Tab	Title of Page (if applicable)
Attachment B	First page after Attachment B fly sheet (48 of 204 in pdf of Golder Report, 599 of 791 – Chino Submittal)	Summary by System
Attachment B	Second page after Attachment B fly sheet (49 and 50 of 204 in pdf of Golder Report, 600 and 601 of 791 – Chino Submittal)	Summary Cash Flow in Current Costs
Attachment B	9 th Table in Attachment B, (63-65 of 204 in pdf of Golder Report, 614 - 616 of 791 – Chino Submittal)	STS Direct Cost Cash Flow by Year in Current Cost Dollars



Date: March 5 2020
Project No.: 113-01153
Subject: Capital and O&M Cost Summary Table
Project Short Title: Chino Mine Closure Closeout Plan

SUMMARY BY SYSTEM

Indirect	Inputs
Capital Cost	30.0%
O&M Cost (commodities, labor routine maint, replacement)	17.5%
Capital Cost Elements	2018 Chino CCP Update
Short-Term Evaporative Treatment System (ETS)	\$ 1,908,800
Long-Term ETS	\$ 429,833
South Mine Area Water Treatment System (STS)	\$ 7,585,047
Water Collection/Conveyance for STS	\$ 1,564,227
Sludge Disposal Facility for STS	\$ 138,682
Salt Disposal Facility for ETS	\$ 534,816
Subtotal, Capital	\$ 12,161,405
<i>Indirect Costs, Capital</i>	\$ 3,648,421
Total, Capital	\$ 15,809,826
O&M Costs - Commodities (Reagents, Analytical, Power)	
Short-Term ETS	\$ 12,236,266
Long-Term ETS	\$ 840,074
South Mine Area Water Treatment System (STS)	\$ 68,520,568
Water Collection/Conveyance for STS	\$ 11,028,494
Sludge Disposal Facility for STS	\$ -
Salt Disposal Facility for ETS	\$ -
Subtotal, O&M Commodities	\$ 92,625,402
<i>Indirect Costs, O&M Commodities</i>	\$ 16,209,445
Total, O&M Commodities	\$ 108,834,847
O&M Costs - Replacement O&M, Routine Maintenance, Labor	
Short-Term ETS	\$ 940,654
Long-Term ETS	\$ 4,966,038
South Mine Area Water Treatment System (STS)	\$ 68,698,749
Water Collection/Conveyance for STS	\$ 14,119,680
Sludge Disposal Facility for STS	\$ 7,549,128
Salt Disposal Facility for ETS	\$ 6,090,454
Subtotal, O&M Labor, Routine Maintenance	\$ 102,364,702
<i>Indirect Costs, O&M Labor, Routine Maintenance</i>	\$ 17,913,823
Total, O&M Labor, Routine Maintenance	\$ 120,278,525
Total, O&M	\$ 229,113,373
Total, Capital and O&M in Current Costs	\$ 244,923,199



Date: March 5 2020
Project No.: 113-01153

Subject: Summary Cash Flow in Current Costs
Project Short Title: Chino Mine Closure Closeout Plan

Indirect	Inputs
Capital Cost	30.0%
O&M Cost (power, reagents, analytical)	17.5%
O&M Cost (replacement O&M, labor, routine maintenance)	17.5%

Year	Short-Term ETS			Long-Term ETS			STS		Water Conveyance		Sludge Disposal Facility		Salt Disposal Facility		Total							
	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital	Reagents, Analytical, Power	Replacement O&M, Routine Maintenance, Labor	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital Subtotal	Capital Cost Indirects	O&M Cost Subtotal (Reagents, Analytical, Power)	O&M Subtotal (Reagents, Analytical, Power) Indirects	O&M Subtotal (Replacement O&M, Routine Maintenance, Labor)	O&M Subtotal (Replacement O&M, Routine Maintenance, Labor) Indirects	Total Cost
0	\$ 1,908,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,908,800	\$ 572,640	\$ -	\$ -	\$ -	\$ -	\$ 2,481,440
1	\$ -	\$ 2,721,415	\$ 156,776	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,734,311	\$ 478,504	\$ 156,776	\$ 27,436	\$ 3,397,026
2	\$ -	\$ 2,862,639	\$ 156,776	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,875,535	\$ 503,219	\$ 156,776	\$ 27,436	\$ 3,562,966
3	\$ -	\$ 2,380,133	\$ 156,776	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,393,029	\$ 418,780	\$ 156,776	\$ 27,436	\$ 2,996,020
4	\$ -	\$ 1,900,349	\$ 156,776	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,913,245	\$ 334,818	\$ 156,776	\$ 27,436	\$ 2,432,274
5	\$ -	\$ 1,423,161	\$ 156,776	\$ -	\$ -	\$ -	\$ 7,585,047	\$ 12,896	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,585,047	\$ 2,275,514	\$ 1,436,057	\$ 251,310	\$ 156,776	\$ 27,436	\$ 11,732,139
6	\$ -	\$ 948,570	\$ 156,776	\$ -	\$ -	\$ -	\$ -	\$ 1,765,017	\$ 1,150,851	\$ 1,564,227	\$ 156,051	\$ 148,628	\$ 138,682	\$ 213,757	\$ -	\$ 1,702,909	\$ 510,873	\$ 2,869,637	\$ 502,187	\$ 1,670,012	\$ 292,252	\$ 7,547,869
7	\$ -	\$ -	\$ -	\$ 429,833	\$ 46,134	\$ 54,997	\$ -	\$ 1,606,306	\$ 1,150,851	\$ -	\$ 157,284	\$ 148,628	\$ -	\$ 195,617	\$ 534,816	\$ 964,649	\$ 289,395	\$ 1,809,724	\$ 316,702	\$ 1,772,097	\$ 310,117	\$ 5,462,683
8	\$ -	\$ -	\$ -	\$ -	\$ 46,134	\$ 54,997	\$ -	\$ 1,614,124	\$ 1,150,851	\$ -	\$ 157,284	\$ 148,628	\$ -	\$ 195,993	\$ -	\$ -	\$ -	\$ 1,817,542	\$ 318,070	\$ 1,772,473	\$ 310,183	\$ 4,218,268
9	\$ -	\$ -	\$ -	\$ -	\$ 46,134	\$ 54,997	\$ -	\$ 1,620,590	\$ 1,150,851	\$ -	\$ 157,284	\$ 148,628	\$ -	\$ 196,267	\$ -	\$ -	\$ -	\$ 1,824,008	\$ 319,201	\$ 1,772,747	\$ 310,231	\$ 4,226,188
10	\$ -	\$ -	\$ -	\$ -	\$ 46,134	\$ 54,997	\$ -	\$ 1,627,078	\$ 1,150,851	\$ -	\$ 157,284	\$ 148,628	\$ -	\$ 196,432	\$ -	\$ -	\$ -	\$ 1,830,496	\$ 320,337	\$ 1,772,912	\$ 310,260	\$ 4,234,005
11	\$ -	\$ -	\$ -	\$ -	\$ 46,134	\$ 54,997	\$ -	\$ 1,506,110	\$ 1,150,851	\$ -	\$ 157,284	\$ 148,628	\$ -	\$ 180,595	\$ -	\$ -	\$ -	\$ 1,709,528	\$ 299,167	\$ 1,757,075	\$ 307,488	\$ 4,073,258
12	\$ -	\$ -	\$ -	\$ -	\$ 46,134	\$ 54,997	\$ -	\$ 1,402,101	\$ 1,150,851	\$ -	\$ 157,284	\$ 148,628	\$ -	\$ 166,308	\$ -	\$ -	\$ -	\$ 1,605,519	\$ 280,966	\$ 1,742,788	\$ 304,988	\$ 3,973,261
13	\$ -	\$ -	\$ -	\$ -	\$ 26,321	\$ 54,997	\$ -	\$ 1,189,732	\$ 1,150,851	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 142,017	\$ -	\$ -	\$ -	\$ 1,348,578	\$ 236,001	\$ 1,708,379	\$ 298,966	\$ 3,591,925
14	\$ -	\$ -	\$ -	\$ -	\$ 26,088	\$ 54,997	\$ -	\$ 1,088,373	\$ 1,150,851	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 128,125	\$ -	\$ -	\$ -	\$ 1,246,987	\$ 218,223	\$ 1,685,117	\$ 294,896	\$ 3,445,223
15	\$ -	\$ -	\$ -	\$ -	\$ 25,855	\$ 54,997	\$ -	\$ 967,998	\$ 1,150,851	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 110,719	\$ -	\$ -	\$ -	\$ 1,126,379	\$ 197,116	\$ 1,658,340	\$ 290,209	\$ 3,272,045
16	\$ -	\$ -	\$ -	\$ -	\$ 25,623	\$ 54,997	\$ -	\$ 944,829	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 107,564	\$ -	\$ -	\$ -	\$ 1,102,978	\$ 193,021	\$ 1,167,790	\$ 204,363	\$ 2,668,152
17	\$ -	\$ -	\$ -	\$ -	\$ 25,390	\$ 54,997	\$ -	\$ 922,037	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 104,484	\$ -	\$ -	\$ -	\$ 1,079,952	\$ 188,992	\$ 1,155,339	\$ 202,184	\$ 2,626,467
18	\$ -	\$ -	\$ -	\$ -	\$ 24,587	\$ 54,997	\$ -	\$ 899,614	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 101,475	\$ -	\$ -	\$ -	\$ 1,056,727	\$ 184,927	\$ 1,142,959	\$ 200,018	\$ 2,584,631
19	\$ -	\$ -	\$ -	\$ -	\$ 23,215	\$ 54,997	\$ -	\$ 877,555	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 98,536	\$ -	\$ -	\$ -	\$ 1,033,296	\$ 180,827	\$ 1,130,649	\$ 197,864	\$ 2,542,635
20	\$ -	\$ -	\$ -	\$ -	\$ 21,748	\$ 54,997	\$ -	\$ 855,855	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 95,664	\$ -	\$ -	\$ -	\$ 1,010,128	\$ 176,772	\$ 1,118,406	\$ 195,721	\$ 2,501,028
21	\$ -	\$ -	\$ -	\$ -	\$ 20,281	\$ 54,997	\$ -	\$ 834,508	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 92,856	\$ -	\$ -	\$ -	\$ 987,314	\$ 172,780	\$ 1,106,228	\$ 193,590	\$ 2,459,912
22	\$ -	\$ -	\$ -	\$ -	\$ 18,908	\$ 54,997	\$ -	\$ 813,715	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 90,168	\$ -	\$ -	\$ -	\$ 965,149	\$ 168,901	\$ 1,094,168	\$ 191,479	\$ 2,419,698
23	\$ -	\$ -	\$ -	\$ -	\$ 17,441	\$ 54,997	\$ -	\$ 797,798	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 88,216	\$ -	\$ -	\$ -	\$ 947,764	\$ 165,859	\$ 1,082,846	\$ 189,498	\$ 2,385,967
24	\$ -	\$ -	\$ -	\$ -	\$ 15,974	\$ 54,997	\$ -	\$ 781,894	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 86,277	\$ -	\$ -	\$ -	\$ 930,393	\$ 162,819	\$ 1,071,536	\$ 187,519	\$ 2,352,266
25	\$ -	\$ -	\$ -	\$ -	\$ 14,601	\$ 54,997	\$ -	\$ 757,752	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 83,041	\$ -	\$ -	\$ -	\$ 904,879	\$ 158,354	\$ 1,058,929	\$ 185,313	\$ 2,307,475
26	\$ -	\$ -	\$ -	\$ -	\$ 13,134	\$ 54,997	\$ -	\$ 740,928	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 80,979	\$ -	\$ -	\$ -	\$ 886,587	\$ 155,153	\$ 1,047,496	\$ 183,312	\$ 2,272,548
27	\$ -	\$ -	\$ -	\$ -	\$ 11,762	\$ 52,245	\$ -	\$ 724,353	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 78,942	\$ -	\$ -	\$ -	\$ 868,640	\$ 152,012	\$ 1,033,336	\$ 180,834	\$ 2,234,821
28	\$ -	\$ -	\$ -	\$ -	\$ 10,294	\$ 52,245	\$ -	\$ 708,024	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 76,930	\$ -	\$ -	\$ -	\$ 850,844	\$ 148,898	\$ 1,021,953	\$ 178,842	\$ 2,200,536
29	\$ -	\$ -	\$ -	\$ -	\$ 8,922	\$ 52,245	\$ -	\$ 691,942	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 74,944	\$ -	\$ -	\$ -	\$ 833,390	\$ 145,843	\$ 1,010,597	\$ 176,854	\$ 2,166,684
30	\$ -	\$ -	\$ -	\$ -	\$ 7,455	\$ 52,245	\$ -	\$ 676,106	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 72,984	\$ -	\$ -	\$ -	\$ 816,086	\$ 142,815	\$ 999,265	\$ 174,871	\$ 2,133,038
31	\$ -	\$ -	\$ -	\$ -	\$ 6,082	\$ 52,245	\$ -	\$ 660,514	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 71,049	\$ -	\$ -	\$ -	\$ 799,122	\$ 139,846	\$ 987,960	\$ 172,893	\$ 2,099,821
32	\$ -	\$ -	\$ -	\$ -	\$ 4,615	\$ 52,245	\$ -	\$ 645,167	\$ 672,826	\$ -	\$ 132,525	\$ 148,628	\$ -	\$ 69,140	\$ -	\$ -	\$ -	\$ 782,308	\$ 136,904	\$ 976,680	\$ 170,919	\$ 2,066,810
33	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 631,635	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 68,449	\$ -	\$ -	\$ -	\$ 741,829	\$ 129,820	\$ 975,989	\$ 170,798	\$ 2,018,437
34	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 626,796	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 67,778	\$ -	\$ -	\$ -	\$ 736,990	\$ 128,973	\$ 975,317	\$ 170,681	\$ 2,011,961
35	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 621,816	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 67,097	\$ -	\$ -	\$ -	\$ 732,010	\$ 128,102	\$ 974,636	\$ 170,561	\$ 2,005,309
36	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 616,843	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 66,415	\$ -	\$ -	\$ -	\$ 727,037	\$ 127,231	\$ 973,955	\$ 170,442	\$ 1,998,666
37	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 611,877	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 65,734	\$ -	\$ -	\$ -	\$ 722,071	\$ 126,362	\$ 973,274	\$ 170,323	\$ 1,992,030
38	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 606,917	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 65,053	\$ -	\$ -	\$ -	\$ 717,111	\$ 125,494	\$ 972,593	\$ 170,204	\$ 1,985,402
39	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 601,965	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 64,372	\$ -	\$ -	\$ -	\$ 712,159	\$ 124,628	\$ 971,912	\$ 170,085	\$ 1,978,783
40	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
41	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
42	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
43	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
44	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
45	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
46	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
47	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
48	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
49	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
50	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
51	\$ -	\$ -	\$ -</																			



Date: March 5 2020
Project No.: 113-01153

Subject: Summary Cash Flow in Current Costs
Project Short Title: Chino Mine Closure Closeout Plan

Indirect	Inputs
Capital Cost	30.0%
O&M Cost (power, reagents, analytical)	17.5%
O&M Cost (replacement O&M, labor, routine maintenance)	17.5%

Year	Short-Term ETS			Long-Term ETS			STS			Water Conveyance		Sludge Disposal Facility		Salt Disposal Facility		Total							
	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital	Reagents, Analytical, Power	Replacement O&M, Routine Maintenance, Labor	Capital	Power	Replacement O&M, Routine Maintenance, Labor	Capital	Replacement O&M, Routine Maintenance, Labor	Capital	Replacement O&M, Routine Maintenance, Labor	Capital Cost Subtotal	Capital Cost Indirects	O&M Cost Subtotal (Reagents, Analytical, Power)	O&M Subtotal (Reagents, Analytical, Power) Indirects	O&M Subtotal (Replacement O&M, Routine Maintenance, Labor)	O&M Subtotal (Replacement O&M, Routine Maintenance, Labor) Indirects	Total Cost
71	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
72	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
73	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
74	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
75	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
76	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
77	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
78	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
79	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
80	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
81	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
82	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
83	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
84	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
85	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
86	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
87	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
88	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
89	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
90	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
91	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
92	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
93	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
94	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
95	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
96	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
97	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
98	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
99	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
100	\$ -	\$ -	\$ -	\$ -	\$ 3,161	\$ 52,245	\$ -	\$ 597,020	\$ 672,826	\$ -	\$ 107,033	\$ 148,628	\$ -	\$ 63,691	\$ -	\$ 33,841	\$ -	\$ -	\$ 707,214	\$ 123,762	\$ 971,231	\$ 169,965	\$ 1,972,173
Total	\$ 1,908,800	\$ 12,236,266	\$ 940,654	\$ 429,833	\$ 840,074	\$ 4,966,038	\$ 7,585,047	\$ 68,520,568	\$ 68,698,749	\$ 1,564,227	\$ 11,028,494	\$ 14,119,680	\$ 138,682	\$ 7,549,128	\$ 534,816	\$ 6,090,454	\$ 12,161,405	\$ 3,648,421	\$ 92,625,402	\$ 16,209,445	\$ 102,364,702	\$ 17,913,823	\$ 244,923,199



Date: March 5 2020
Project No.: 113-01153
Subject: STS Direct Cost Cash Flow by Year in Current Cost Dollars
Project Short Title: Chino Mine Closure Closeout Plan

Inputs
 New Cost \$ 7,585,047
 Replacement O&M Percentage 1.5%
 Routine Maintenance Percentage 1.5%
 Avg (\$/kWh) Year 1 through 6 \$ 0.044
 Avg (\$/kWh) Year 7 through 100 \$ 0.045

Year	Capital	Labor	Replacement O&M	Routine Maintenance	Reagents				Membrane Chemicals	Analytical	Power	Total Annual Cost
					Lime (CaO)	Flocculent	Acid (35% HCl)					
1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ 12,896
2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ 12,896
3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ 12,896
4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ 12,896
5	\$ 7,585,047	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,896	\$ -	\$ 7,597,943
6	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,373,365	\$ 92,947	\$ 8,577	\$ 154,231	\$ 46,748	\$ 89,148	\$ 2,915,868	
7	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,242,759	\$ 82,606	\$ 7,896	\$ 143,249	\$ 46,748	\$ 83,048	\$ 2,757,156	
8	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,259,625	\$ 81,841	\$ 7,629	\$ 138,019	\$ 46,748	\$ 80,262	\$ 2,764,975	
9	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,274,945	\$ 80,985	\$ 7,371	\$ 132,978	\$ 46,748	\$ 77,564	\$ 2,771,441	
10	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,289,928	\$ 80,132	\$ 7,122	\$ 128,165	\$ 46,748	\$ 74,983	\$ 2,777,929	
11	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,182,095	\$ 78,386	\$ 6,898	\$ 123,055	\$ 43,524	\$ 72,152	\$ 2,656,960	
12	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 1,086,256	\$ 77,342	\$ 6,712	\$ 118,555	\$ 43,524	\$ 69,712	\$ 2,552,952	
13	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 910,906	\$ 70,255	\$ 6,277	\$ 110,777	\$ 26,598	\$ 64,919	\$ 2,340,583	
14	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 818,044	\$ 68,758	\$ 6,086	\$ 106,396	\$ 26,598	\$ 62,492	\$ 2,239,224	
15	\$ -	\$ 923,300	\$ 113,776	\$ 113,776	\$ 721,701	\$ 67,000	\$ 5,438	\$ 92,265	\$ 26,598	\$ 54,997	\$ 2,118,849	
16	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 704,173	\$ 66,287	\$ 5,286	\$ 89,167	\$ 26,598	\$ 53,318	\$ 1,617,656	
17	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 686,801	\$ 65,580	\$ 5,141	\$ 86,206	\$ 26,598	\$ 51,711	\$ 1,594,863	
18	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 669,588	\$ 64,878	\$ 5,002	\$ 83,376	\$ 26,598	\$ 50,172	\$ 1,572,440	
19	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 652,539	\$ 64,181	\$ 4,869	\$ 80,671	\$ 26,598	\$ 48,697	\$ 1,550,381	
20	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 635,658	\$ 63,489	\$ 4,741	\$ 78,084	\$ 26,598	\$ 47,285	\$ 1,528,681	
21	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 618,951	\$ 62,802	\$ 4,619	\$ 75,608	\$ 26,598	\$ 45,930	\$ 1,507,334	
22	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 602,372	\$ 62,111	\$ 4,509	\$ 73,408	\$ 26,598	\$ 44,718	\$ 1,486,542	
23	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 587,692	\$ 61,498	\$ 4,486	\$ 73,056	\$ 26,598	\$ 44,469	\$ 1,470,624	
24	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 573,047	\$ 60,874	\$ 4,462	\$ 72,697	\$ 26,598	\$ 44,215	\$ 1,454,720	
25	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 555,717	\$ 60,156	\$ 4,275	\$ 68,855	\$ 26,598	\$ 42,151	\$ 1,430,579	
26	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 540,171	\$ 59,523	\$ 4,251	\$ 68,491	\$ 26,598	\$ 41,894	\$ 1,413,754	
27	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 524,869	\$ 58,891	\$ 4,228	\$ 68,129	\$ 26,598	\$ 41,638	\$ 1,397,179	
28	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 509,811	\$ 58,262	\$ 4,204	\$ 67,767	\$ 26,598	\$ 41,382	\$ 1,380,850	
29	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 494,995	\$ 57,634	\$ 4,180	\$ 67,406	\$ 26,598	\$ 41,127	\$ 1,364,768	
30	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 480,422	\$ 57,009	\$ 4,157	\$ 67,047	\$ 26,598	\$ 40,873	\$ 1,348,932	
31	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 466,090	\$ 56,385	\$ 4,133	\$ 66,689	\$ 26,598	\$ 40,620	\$ 1,333,341	
32	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 451,998	\$ 55,763	\$ 4,110	\$ 66,331	\$ 26,598	\$ 40,368	\$ 1,317,993	
33	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 447,029	\$ 55,712	\$ 4,110	\$ 66,302	\$ 18,135	\$ 40,347	\$ 1,304,461	
34	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 442,269	\$ 55,672	\$ 4,110	\$ 66,279	\$ 18,135	\$ 40,331	\$ 1,299,622	
35	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 437,387	\$ 55,622	\$ 4,110	\$ 66,250	\$ 18,135	\$ 40,310	\$ 1,294,642	
36	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 432,513	\$ 55,573	\$ 4,110	\$ 66,222	\$ 18,135	\$ 40,290	\$ 1,289,669	
37	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 427,646	\$ 55,523	\$ 4,110	\$ 66,193	\$ 18,135	\$ 40,270	\$ 1,284,703	
38	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 422,785	\$ 55,473	\$ 4,110	\$ 66,165	\$ 18,135	\$ 40,250	\$ 1,279,743	
39	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 417,931	\$ 55,423	\$ 4,110	\$ 66,136	\$ 18,135	\$ 40,230	\$ 1,274,791	
40	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846	
41	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846	
42	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846	



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Inputs
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 Routine Maintenance Percentage 1.5%
 Avg (\$/kWh) Year 1 through 6 \$ 0.044
 Avg (\$/kWh) Year 7 through 100 \$ 0.045

Year	Capital	Labor	Replacement O&M	Routine Maintenance	Reagents			Membrane Chemicals	Analytical	Power	Total Annual Cost
					Lime (CaO)	Flocculent	Acid (35% HCl)				
43	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
44	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
45	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
46	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
47	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
48	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
49	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
50	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
51	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
52	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
53	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
54	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
55	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
56	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
57	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
58	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
59	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
60	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
61	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
62	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
63	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
64	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
65	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
66	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
67	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
68	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
69	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
70	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
71	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
72	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
73	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
74	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
75	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
76	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
77	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
78	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
79	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
80	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
81	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
82	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
83	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
84	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846



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Inputs

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Avg (\$/kWh) Year 1 through 6	\$ 0.044
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Year	Capital	Labor	Replacement O&M	Routine Maintenance	Reagents			Membrane Chemicals	Analytical	Power	Total Annual Cost
					Lime (CaO)	Flocculent	Acid (35% HCl)				
85	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
86	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
87	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
88	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
89	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
90	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
91	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
92	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
93	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
94	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
95	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
96	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
97	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
98	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
99	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
100	\$ -	\$ 445,275	\$ 113,776	\$ 113,776	\$ 413,085	\$ 55,373	\$ 4,110	\$ 66,107	\$ 18,135	\$ 40,209	\$ 1,269,846
Total	\$ 7,585,047	\$ 47,081,367	\$ 10,808,691	\$ 10,808,691	\$ 49,140,252	\$ 5,582,351	\$ 426,137	\$ 6,996,777	\$ 2,150,408	\$ 4,224,642	\$ 144,804,364