



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

Henderson Mine (Permit No. M-1977-342)
Amendment No. 7
Henderson Mine Reclamation Cost Estimate Update

Gentlemen:

After reviewing the provided reclamation cost information from the Climax Molybdenum Company for the Henderson Mine (Henderson), I have performed a reclamation cost estimate for the above mentioned mining operation. The total value of this estimate is \$170,478,669.00 (see attached reclamation cost estimate summary). With Henderson's proposed liability increase of \$115,051,722.00, the Division will hold a performance bond in the amount of \$171,125,253.00 for the Henderson Mine. The proposed amount is **\$646,584.00** more than the Division's estimate to complete reclamation work at the Henderson Mine should the work have to be performed by the Division, including the cost of constructing, operating and maintaining water treatment facilities up to 10 years.

Additionally, the following table provided is a reference to compare tasks provided by Henderson to the task designation in CIRCES created by the Division. A full reclamation task sheet will be provided shortly once it has been compiled. If you have any questions, feel free to contact me.

Sincerely,

Zach Trujillo
Environmental Protection Specialist
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Henderson Reclamation Cost Estimate Memo

January 7, 2020



Henderson Reclamation Task Sheet	
Henderson	CIRCES
Mine Site Demo	Task A
Mill Site Demo	Task A
Vent Shaft	Task B
Mine Site Gen Rec	Task C
Portal Area	Task D
Conveyor Access Road	Task E
Mill Yard and Access Road	Task F
EB HS UC Reservoirs	Task G
Tailings Deposition Area	Task H
Main Gravel Pit Below 1-Dam	Task I
Laydown Yard at Rectifier 6	Task J
Williams Fork Pump System	Task K
Tailings Line and Power Line	Task L
Tailings Facility Structures	Task M
Mill Water Return Pipe Line	Task N
Topsoil Stockpiles and Roads	Task O
PC3 Overland Surface Conveyor	Task P
Water Treatment Capex O&M (10yr)	Task Q
Mobilize-Demobilize	Task R

COST SUMMARY WORK

Task description: Reclaim the Henderson Mine

Site: Henderson Mine

Permit Action: 2019 RCE

Permit/Job#: M1977342

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 12/17/2019

County: Clear Creek

Filename: M342-000

User: ZTT

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
A01	Demo Mine Site	DEMOLISH	1	160.00	\$504,411
A02	Demo Mill Site	DEMOLISH	1	200.00	\$10,058,279
A03	Rip Mine Site Asphalt	RIPPER	1	22.91	\$5,640
A04	Rip Mill Site Asphalt	RIPPER	1	50.40	\$12,409
B01	Hydroseed Vent Shaft	REVEGE	1	0.50	\$2,419
B02	Maintenance	REVEGE	1	0.50	\$70
C01	Backfill and Grade Pond 1	TRUCK1	1	22.29	\$14,494
C02	Backfill and Grade Pond 1.1	TRUCK1	1	7.93	\$5,157
C03	Backfill and Grade Pond 1.2	TRUCK1	1	27.86	\$18,113
C04	Haul and Spread Cap on Pond 1.2	TRUCK1	1	12.42	\$8,071
C05	Rip Roads at Mine	RIPPER	1	38.18	\$9,400
C06	Finish Grade Mine Site	GRADER	1	72.75	\$7,010
C07	Mix Sludge and Chips	DOZER	1	497.10	\$113,022
C08	Drill Seed Mine Site	REVEGE	1	30.00	\$53,229
C09	Hydroseed Mine Site	REVEGE	1	22.00	\$106,414
C10	Shrub/Tree Plant Mine Site	REVEGE	1	50.00	\$41,500
C11	Maintenance Fertilization	REVEGE	1	50.00	\$6,965
C12	Clear Creek Culvert Removal	DEMOLISH	1	8.00	\$73,467
C13	Excavate Clear Creek Channel	TRUCK1	1	488.05	\$284,888
C14	Place Hazard Signs at Glory Hole	SITEMAINT ENANCE	1	1.00	\$36
C15	Plug Vent Shafts #1, 3, and 4	MINESEAL	1	120.00	\$450,000
D01	Rip Portal Area	DOZER	1	598.98	\$142,429
D02	Backfill and Regrade Portal Area	DOZER	1	83.48	\$18,981
D03	Reestablish Williams Fork Drainage	GRADER	1	941.40	\$90,704
D04	Drill Seed Portal Area	REVEGE	1	10.50	\$18,630
D05	Shrub/Tree Plant Portal Area	REVEGE	1	10.50	\$8,715
D06	Maintenance Fertilization	REVEGE	1	12.50	\$1,741
E01	Surface Railroad	DOZER	1	662.48	\$150,623
E02	Reestablish Williams Fork Drainage	GRADER	1	66.93	\$6,449
E03	Seed Mix - Drill Seeding	REVEGE	1	18.00	\$31,937
E04	Shrub/Tree Plant Conveyor Access Road	REVEGE	1	18.00	\$14,940
E05	Maintenance Fertilization	REVEGE	1	12.50	\$1,741
F01	Backfill and Grade Mill Site	DOZER	1	1,250.91	\$284,409
F02	Reclaim Mill Access Road	DOZER	1	230.46	\$52,397
F03	Drill Seed Mill Yard and Access Road	REVEGE	1	61.50	\$109,119
F04	Shrub/Tree Plant Mill Yard and Access Road	REVEGE	1	61.50	\$51,045
F05	Maintenance Fertilization	REVEGE	1	61.50	\$8,567

G01	Excavate/Haul Sediment from EB Reservoir	TRUCK1	1	54.28	\$22,949
G02	Drill Seed Foot Print and Access Roads to UB HS UC Reservoir	REVEGE	1	2.00	\$3,637
G03	Shrub/Tree Plant EB HS UC Res. and Access Roads	REVEGE	1	2.00	\$1,701
G04	Maintenance Fertilization	REVEGE	1	2.50	\$348
H01	Cover Soil - Bone Yard to Dams	TRUCK1	1	11,513.70	\$11,832,973
H02	Spread Cover on Dams and Dry Beach	DOZER	1	6,353.44	\$1,444,532
H03	Cover Soil - N + E Stockpiles to Pond and Dry Beach	TRUCK1	1	4,953.24	\$5,090,593
H04	Spread Cover on Pond, Wet Beach	DOZER	1	6,155.41	\$1,399,507
H05	Haul Rock Armor from West Portal	TRUCK1	1	1,469.66	\$1,510,412
H06	Spread Rock Armor	DOZER	1	2,256.00	\$512,928
H07	Finish Grade Soil Borrow Area	GRADER	1	145.50	\$14,019
H08	Grade Ultimate Canal	DOZER	1	385.78	\$87,712
H09	Rip Haul Roads	DOZER	1	514.48	\$122,337
H10	Hydroseed TDA	REVEGE	1	637.00	\$3,081,179
H11	Hydroseed Spillway	REVEGE	1	17.00	\$82,229
H12	Shrub/Tree Planting	REVEGE	1	1.00	\$830
H13	Reshape and Fill Buttress 1 and 2	DOZER	1	1,038.15	\$278,813
H14	Wet Beach Cover Support	SITEMAINT ENANCE	1	100.00	\$11,148,940
H15	TDA Diversion	POSTMININ G	1	7,887.98	\$2,864,223
H16	Spillway to Ranger Gulch	DOZER	1	12,931.86	\$3,473,073
H17	Armor Spillway to Ranger Gulch	SITEMAINT ENANCE	1	2,699.00	\$1,230,848
H18	Haul Sacrificial Fill in Former Pond	TRUCK1	1	2,284.86	\$2,348,220
H19	Spillway Inlet, Barge Relocation, Embankment Cover and Bench	SITEMAINT ENANCE	1	320.00	\$5,615,000
I01	Gravel Pit Regrade	DOZER	1	431.68	\$98,148
I02	Topsoil to Gravel Pit	TRUCK1	1	49.99	\$32,498
I03	Drill Seed Gravel Pit	REVEGE	1	17.50	\$31,050
I04	Shrub/Tree Plant Gravel Pit	REVEGE	1	17.50	\$14,525
I05	Maintenance Fertilization Gravel Pit	REVEGE	1	20.00	\$2,786
J01	Regrade Rectifier 6 Laydown Yard	DOZER	1	205.56	\$46,736
J02	Drill Seed Rectifier 6 Laydown Yard	REVEGE	1	2.50	\$4,436
J03	Shrub/Tree Planting Rectifier 6 Laydown Yard	REVEGE	1	2.50	\$2,075
J04	Maintenance Fertilization Rectifier 6 Laydown Yard	REVEGE	1	2.50	\$348
K01	Regrade Williams Form Pumphouse	DOZER	1	33.30	\$7,570
K02	Drill Seed Williams Fork Pump House	REVEGE	1	0.50	\$887
K03	Maintenance Fertilization Williams Fork Pump House	REVEGE	1	4.00	\$557
L01	Regrade Tailings Line and Power Lines	DOZER	1	422.73	\$96,112
L02	Drill Seed Tailings and Power Line	REVEGE	1	5.00	\$8,871
L03	Shrub/Tree Planting Tailings and Power Line	REVEGE	1	5.00	\$4,150
L04	Maintenance Fertilization Tailings and Power Line	REVEGE	1	24.50	\$3,413
M01	Regrade Pond Shop and Road Area	DOZER	1	394.54	\$89,705
M02	Drill Seed Tailings Facility Area	REVEGE	1	7.00	\$12,420
M03	Shrub/Tree Plant Tailings Facility Area	REVEGE	1	7.00	\$5,810
M04	Maintenance Fertilization Tailings Facility Area	REVEGE	1	7.00	\$975
N01	Regrade Mill Water Return Pipe Line	DOZER	1	140.67	\$31,982
N02	Rip Mill Water Return Pipe Line Access Road	DOZER	1	241.91	\$57,522
N03	Drill Seed Mill Water Return Pipe Line	REVEGE	1	8.50	\$15,081

N04	Shrub/Tree Plant Mill Water Return Line	REVEGE	1	8.50	\$7,055
N05	Maintenance Fertilization	REVEGE	1	15.50	\$2,159
O01	Rip Topsoil Roads and Area	DOZER	1	1,209.51	\$287,607
O02	Drill Seed Topsoil Roads and Area	REVEGE	1	25.00	\$44,357
O03	Shrub/Tree Plant Topsoil Roads and Area	REVEGE	1	25.00	\$20,750
O04	Maintenance Fertilization Topsoil Roads and Area	REVEGE	1	25.00	\$3,483
P01	Cover Soil - Bone Yard to Dams	TRUCK1	1	2.36	\$905
P02	Hydroseed PC3 Conveyor Area	REVEGE	1	26.50	\$128,181
P03	Shrub/Tree Plant PC3 Conveyor Area	REVEGE	1	31.00	\$25,730
Q01	Water Treatment Capex O&M (10 yr)	NA	1	0.00	\$76,215,765
R01	Mobilization Year 1	MOBILIZE	1	24.30	\$225,348
R02	Mobilization Year 2	MOBILIZE	1	24.30	\$225,348
R03	Mobilization Year 3	MOBILIZE	1	24.30	\$225,348
<u>SUBTOTALS:</u>				71200.52	\$142,914,117

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$2,886,865
Performance bond:	1.05	Total =	\$1,500,598
Job superintendent:	35,600.26	Total =	\$2,470,302
Profit:	10.00	Total =	\$14,291,412
		TOTAL O & P =	\$21,149,177
		CONTRACT AMOUNT (direct + O & P) =	\$164,063,294

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	2.00	Total =	\$3,281,266
Reclamation management and/or administration:	1.91		\$3,133,609

CONTINGENCY:	0.00	Total =	\$0
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TOTAL INDIRECT COST =	\$27,564,552
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TOTAL BOND AMOUNT (direct + indirect) =	\$170,478,669
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