STATE OF COLORADO

Reilley - DNR, Robin <robin.reilley@state.co.us>

Trapper Mine PR12 Cost Summary Request for Assistance

1 message

Reilley - DNR, Robin <robin.reilley@state.co.us> Tue, Mar 25, 2025 at 10:32 AM
To: Amy Yeldell - DNR <amy.yeldell@state.co.us>, Robin Reilley - DNR <robin.reilley@state.co.us>
Cc: "Ebert - DNR, Jared" <jared.ebert@state.co.us>, Travis Marshall - DNR <travis.marshall@state.co.us>, Zach Trujillo - DNR <zach.trujillo@state.co.us>

Dear Colleagues,

Thank you for considering my request for assistance on understanding the cost updates to CIRCES in relation to Trapper Mines's PR12 RCE. I have attached the PR12 cost summary of tasks, Mr. Roberts's letter and questions.

I have made changes to all the dozer tasks(PR12_F), wrt certain inputs and am working on the truck loader tasks to optimize the loading of spoil.

Thank you for your help and insights.

Robin Reilley, M.S. GISP
Environmental Protection Specialist II

image.png

P 303.866.3567|
F 303.832.8106
Physical Address: 1313 Sherman Street St., Suite 215, Denver, CO 80203
Mailing Address: DRMS Room 215, 1001 E 62nd Ave, Denver, CO 80216
robin.reilley@state.co.us | http://mining.state.co.us

3 attachments

Cost estimating teamRequest.pdf
87K

PR-12 Bond Relative Percentage Change.pdf
389K

CostSummary_PR12_Feb2025.pdf
200K

TRAPPER MINING INC.

P.O. Box 187 Craig, Colorado 81626 (970) 824-4401

March 14, 2025

Ms. Robin Reilley
Environmental Protection Specialist
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

Re: Trapper Mining Inc., Permit No. C-1981-010

Permit Revision PR-12, Response to Division CIRCES Bond Estimate Review No. 1

Dear Ms. Reilley:

Trapper Mine submitted PR-12 in October of 2024. During the final review period, the Division initiated a review of the CIRCES bond estimate. This estimate was an update on the bond estimate generated for PR-11 in November of 2022. Trapper assumes CIRCES unit costs were updated in July of 2023 and 2024, with the new estimate including these costs plus two technical revisions and their corresponding increases in bond liability. The new estimate is substantially higher than anticipated and warrants further review.

Upon a thorough review of the updated costs there appears to be a significant increase in several of the unit costs embedded within CIRCES. Trapper fully understands a customary cost increase accompanies these updated bond estimates; however, this cost increase is beyond the normal rate of inflation and historic cost increases experienced with other such actions. When directly comparing identical tasks and their sum within PR-11 to PR-12, the summary costs have risen nearly 19%. This exceeds the inflation rates of the past two years. Embedded within this rise there are several specific unit costs that appear to be driving the greatest increases in overall cost.

Trapper has highlighted some of the greatest increases and have presented them in a table (attached) representing increases between PR9 to PR-11 to PR12 of directly comparable unit cost. Some of the greatest costs are realized in the operating costs of dozers with a 50% increase in two years for D11's. There is also a corresponding increase of 36% for D10 dozers. Due to these large increases in dozer costs, fleet task unit costs are also affected at an increased inflation rate when compared to prior estimates. Trapper also found excessive cost increases in seeding, and demolition tasks with a 32 to 93% increase in costs associated with these varied tasks. Specific items are highlighted in the attached table.

Trapper respectfully requests these unit costs be re-evaluated for any errors or discrepancies, as they are not consistent with past increases of the same or similar tasks and equipment selections. These inconsistences also call into question the validity of past CIRCES price updates and prior bond calculations. If these costs are correct within the bond-estimating tool, may we have a review of the accuracy of the data used to derive these costs?

Trapper also reviewed each CIRCES task and generated a list (attached) of specific input parameters that may be in error, or otherwise negatively affect task calculations resulting in a higher cost. Some of these items include visibility factors, slope and push distances in the efficiency correction factors. Other items noted are bucket and haulage equipment loading factors that may negatively affect volumes and efficiency in some truck/loader tasks.

Trapper understands a customary cost increase generally tied to typical inflationary rates from year to year. This has been realized in past CIRCES re-calculations and most task seem to exhibit this assumed increase. However, the overall increase of more than $10,000,000 in this estimate is unexpectedly high and warrants review as it puts an undue hardship on the operator when assuming and budgeting for bond liability premium costs. Trapper also requests this estimate satisfy the required upcoming mid-term review and subsequent bond re-calculation for the site.

We look forward to continuing to review and rectify this issue with the Division. Please get back to us with any questions, comments or concerns.

Sincerely,

Graham Roberts
Environmental Supervisor
Trapper Mining Inc.

c PR-12 binder

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

To: DRMS Cost Estimating Team
From: R. Reilley

24 March 2025

Colleagues,

I would like to request assistance with understanding the CIRCES cost increases on behalf of Trapper Mine. Due to unit cost increases that appear to be higher than inflation Trapper Mine respectfully requests a review of certain elements of the CIRCES software The specific items requested for your research follow:

1. Operating costs for D10 and D11 Dozers
2. Seeding costs
3. Demolition Tasks

Trapper Mine would appreciate any data sets substantiating the above mentioned costs to provide insight on where the costs come from and how they are calculated. Also, Trapper has an extensive seed list for their reclamation and uses a local seed company that appears to be significantly more economical than the options presented in CIRCES. Could we possibly utilize this company and their seed costs in the CIRCES software?

The decision date for the Trapper Mine PR12 permitting action is currently 18 April 2025. Should you require additional time for your analysis the operator could extend the decision date.

I have attached a copy of the cost summary for your reference as well as Specific questions from Graham Roberts at Trapper Mine.

Sincerely,

Robin Reilley M.S. GISP
Environmental Protection Specialist II
Robin.reilley@state.co.us

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COST SUMMARY WORK

Task description: **PR 12 Reclamation Cost Estimate**

Site: **Trapper Mine** Permit Action: PR12 Permit/Job#: C1981010

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 2/6/2025 County: Moffat Filename: C010-000
User: RAR

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Ash Disposal Pit Regrade (NW section)	DOZER	2	11.75	$20,213
001B	Load/Haul Section E1,423,800	TRUCK1	1	40.89	$295,196
002	Ash Disposal Pit Regrade (Section 1)	DOZER	2	25.26	$43,472
002B	Ash Disposal Pit Regrade (Section 2)	DOZER	2	32.20	$55,407
003	Ash Disposal Pit Regrade (Section 3-1)	DOZER	2	2.27	$3,907
003B	Ash Disposal Pit Regrade (Section 3-2)	DOZER	2	77.54	$133,424
004	Regrade Johnson Coal Stockpile	DOZER	1	13.37	$11,503
004A	D/E Pit Regrade (Spoil Side East)	DOZER	8	91.64	$630,752
005A	D/E Pit Regrade (West)	DOZER	6	117.26	$605,313
030	Regrade BC Road	DOZER	4	72.55	$143,032
031	Regrade D-Main Road	DOZER	4	53.06	$104,620
032	Regrade East and West Ash Roads	DOZER	4	87.61	$172,730
033	Regrade LOM Roads	DOZER	4	158.24	$311,985
034	Regrade A Roads (Middle A and North A N pit)	DOZER	4	58.27	$114,879
035	Regrade N Pit Roads (old LOM, cross-over, ash pit)	DOZER	4	21.12	$72,671
036	Regrade C Pit Haul Road	DOZER	4	59.52	$117,360
039	Regrade East A Haul Roads (East A and East ASplit, BridgeRd)	DOZER	4	56.52	$111,429
040	Regrade I/J Roads (I/J Spoil, I Mid, I West)	DOZER	4	26.16	$51,598
041	Regrade K Pit Haul Roads (K1 EPRL K3)	DOZER	4	64.71	$127,584
042	Regrade Mine Access Road	DOZER	4	23.58	$46,481
044	Regrade No Name Access Roads #2, #4, 5R	DOZER	4	10.79	$21,268
045	Regrade Potable Water Well Access Road	DOZER	4	1.79	$3,522
046	Regrade West Pyeatt Access Road (1 and 2)	DOZER	4	7.14	$14,085
047	Regrade Middle Pyeatt Access Road (1, 2 and 3)	DOZER	4	6.61	$13,028
048	Regrade East Pyeatt Access Road (1, 2 and 3)	DOZER	4	9.23	$18,205
049	Regrade Grouse Access Road	DOZER	4	4.57	$9,015
050	Regrade West Flume Access Road	DOZER	4	2.68	$5,282
051	Regrade East Flume Access Road	DOZER	4	2.68	$5,282
052	Regrade Deal Access Road	DOZER	4	2.68	$5,282
053	Regrade Horse Access Roads (Horse and Horse1)	DOZER	4	6.07	$11,973
054	Regrade West Horse Access Road	DOZER	4	2.68	$5,282
055	Regrade Middle Flume Access Roads (1 and 3)	DOZER	4	4.60	$9,068
056	Regrade Oak Access Roads	DOZER	4	3.65	$7,197
057	Regrade Sage Access Roads	DOZER	4	4.46	$8,803
058	Regrade Johnson Access Road	DOZER	4	11.07	$21,832
063	Rip BC Walk Road	RIPPER	4	2.24	$4,755
064	Rip D-main Pit Haul Roads	RIPPER	4	8.40	$17,814

065	Rip West Ash Haulroads (West Ash, West Ash1 and West Ash 2)	RIPPER	4	5.98	$12,679
066	Rip LOM Haul Roads (F2 and F2-G5)	RIPPER	4	8.76	$18,575
067	Rip A Pit Haul Roads (Middle A and North A)	RIPPER	4	6.43	$13,630
068	Rip N Pit Haul Roads	RIPPER	4	5.38	$11,411
072	Rip East A Haul Roads (East A and East A Split)	RIPPER	4	2.96	$6,276
074	Rip Access Road (Tasks 042-059)	RIPPER	4	3.11	$6,593
075	Rip K Pit Haul Roads (KMain, K1, K2 , K3)	RIPPER	4	2.12	$4,501
077	Rip I/J Roads (I/J Spoil, I Mid, I West)	RIPPER	4	4.55	$9,655
078	Regrade Coyote Impoundment	DOZER	2	288.69	$284,597
079	Regrade Middle Pyeatt Impoundments Impoundment (1,2, 3)	DOZER	1	68.98	$33,999
080	Regrade Far East Buzzard Impoundment	DOZER	1	0.56	$278
081	Regrade Sage Impoundments (1 and 2)	DOZER	1	18.91	$9,322
082	Regrade West Horse Impoundment	DOZER	1	3.52	$1,733
083	Regrade Impoundment H	DOZER	1	7.29	$3,591
084	Regrade Industrial Waste Pond	DOZER	1	7.47	$3,682
085	Regrade Deal 1 and 2	DOZER	1	9.83	$5,148
086	Regrade Deacon 1,2 and Jeffway 1,2 impoundments	DOZER	1	94.72	$49,616
087	Regrade W. Buzzard #4 Impoundment	DOZER	1	6.00	$3,145
088	Regrade E. Buzzard #3 Impoundment	DOZER	1	7.04	$3,687
089	Regrade Diversions	DOZER	1	61.42	$20,891
089MR228	Regrade Diversions	DOZER	1	1.18	$400
090	Replace Topsoil on Ash Pits (ASH1)	SCRAPER1	1	5.20	$32,014
090A	Replace Topsoil on Ash Pits (ASH2)	SCRAPER1	1	12.78	$78,627
090B	Replace Topsoil on Ash Pits (A92-4 to Pit)	TRUCK1	1	107.16	$307,455
091	Replace Topsoil on D/E Pits (Truck/Excavator)	TRUCK1	1	416.57	$1,038,052
091A	Replace Topsoil on D/E Pits (D97-1)	SCRAPER1	1	14.75	$85,470
091ATR	Replace Topsoil at L Pit K Knob L23-1 to K Knob	SCRAPER1	1	1.69	$10,421
091B	Replace Topsoil on D/E Pits (D1-07)	SCRAPER1	1	1.99	$11,545
091TR135	Replace Topsoil JPE 1 to J East	SCRAPER1	1	24.80	$152,663
092ATR	Replace Topsoil at C Pit Future TS Pile TR134	SCRAPER1	1	36.50	$224,660
096	Replace Topsoil at West Panel, BC rd, Shop (Scraper)	SCRAPER1	1	13.22	$81,383
096A	Replace Topsoil at West Panel, BC rd, Shop (Truck/Excavator)	TRUCK1	1	147.14	$366,648
097	Replace Topsoil at East Panel Ponds, A road (Scraper)	SCRAPER1	1	20.64	$127,032
097A	Replace Topsoil at East Panel Ponds, A Rd (Truck/Excavator)	TRUCK1	1	209.29	$521,528
098	Re-topsoil Johnson Coal Stockpile	SCRAPER1	1	4.14	$25,488
098MR229	Re-topsoil aJ23-1 to J Pit	SCRAPER1	1	8.24	$50,713
099	Replace Topsoil at Dragline Walk Road (ASH4)	TRUCK1	1	8.17	$17,280
099A	Replace Topsoil at Dragline Walk Road (ASH1)	TRUCK1	1	33.14	$70,092
100	Facilities Area	REVEGE	1	75.00	$31,802
100A	Seed D Pit Range A-B	REVEGE	1	319.30	$345,775
101	Roads (including BC road) below 6700'	REVEGE	1	196.00	$83,236
102	Finish Grading I/J Pit	GRADER	2	21.73	$14,205
103	Ponds below 6700' (Coyote, Sage, E Buzzard)	REVEGE	1	26.00	$11,025

104	Johnson Coal Stockpile	REVEGE	1	12.00	$5,343
105	topsoil piles below 6700'	REVEGE	1	27.00	$11,491
107	Roads: >6700 ft.-Rangeland with Shrubs	REVEGE	1	54.00	$58,694
108	Ash pit.-Rangeland with Shrubs	REVEGE	1	115.00	$125,185
109	Seed D/E Pit Range B	REVEGE	1	15.00	$12,288
111	Ponds above 6700'(Deal, Deacon, Jeffways, West Horse)	REVEGE	1	19.00	$20,261
112	topsoil piles above 6700'	REVEGE	1	5.00	$5,523
113	Shrub Transplants as per operator	NA	1	40.00	$155,204
120	Seal Land Slide Monitoring Stations	BOREHOLE	1	4.00	$8,143
121	Plug and Seal Exploration Drill Holes	BOREHOLE	1	80.00	$38,730
122	Plug and Seal Monitoring Wells	BOREHOLE	1	185.00	$168,156
128	Reveg for 20 x .3 acres drillholes	REVEGE	1	6.00	$6,497
129	Regrade .3acres x 20 drill pads	DOZER	1	60.58	$20,606
130	Demolish structures, remove materials and debris	DEMOLISH	1	100.00	$1,040,527
131	Culvert Removal and Disposal	DEMOLISH	1	60.00	$176,564
132	Mobilize and Demobilize from Hayden, CO	MOBILIZE	1	5.34	$88,152
133	Drill and Blast L Pit 1,776,482 BCY	NA	3	407.00	$640,555
134	Drill and Blast Ash Pit 106,474 BCY	NA	3	37.75	$43,232
135	Drill and Blast J Pit 513,911 BCY	NA	3	142.00	$193,985
91ATR	Replace Topsoil at L Pit K Knob L23-1 to K Knob	SCRAPER1	1	1.69	$10,421
EC	Erosion Control Ditches 3 Acres TR134	NA	1	1.00	$931
L01	Regrade L Pit X-sec:407,200	DOZER	4	38.19	$131,442
L02	Regrade L Pit X-sec:406,700	DOZER	4	96.29	$331,380
L03	Regrade L Pit X-sec:406,200	DOZER	4	54.48	$187,472
L04	Regrade L Pit X-sec:405700	DOZER	4	71.33	$245,480
L05	Regrade L Pit X-sec:405,200	DOZER	4	386.09	$1,328,715
L06	Regrade L Pit X-sec:404,700	DOZER	4	428.34	$1,474,086
L07	Regrade L Pit X-sec:404,200	DOZER	4	269.44	$927,267
L08	Regrade L Pit X-sec:403,700	DOZER	4	58.40	$200,995
L09	Regrade L Pit X-sec:403,200	DOZER	4	58.60	$201,653
L10	Regrade L Pit X-sec:402,700	DOZER	4	178.08	$612,863
L11	Regrade L Pit X-sec:402,200	DOZER	4	339.20	$1,167,317
L12	Regrade L Pit X-sec:401,700	DOZER	4	88.07	$303,099
L13	Regrade L Pit X-sec:401,200	DOZER	4	62.00	$213,376
L14	Regrade L Pit X-secs:400,700 and 400,200	DOZER	4	47.12	$162,147
L15	Regrade L PIt (Truck/Excavator)	TRUCK1	1	459.83	$1,607,039
L15ATR	Regrade Jennings Pit (Truck/Excavator)	TRUCK1	4	99.33	$1,051,696
L15TR135	Regrade L PIt K Knob (Truck/Excavator)	TRUCK1	4	474.59	$5,024,826
L16	Seed L Pit: Rangeland with Shrubs	REVEGE	1	804.00	$870,556
L16MR228	Seed L Pit diversion: Rangeland with Shrubs	REVEGE	1	2.30	$2,491
L17	Regrade L Pit North Haul road.6.5 ac X 9 ft th.	DOZER	2	32.35	$55,647
L18	Replace Topsoil on L Pit (Scrapper)	SCRAPER1	1	166.47	$1,024,555
L19	Replace Topsoil on L Pit (Truck/Excavator)	TRUCK1	1	708.38	$2,032,367
LN20	Site Maintenance; Rill and Gully Repair and Pond Cleaning	SITEMAINTENANCE	1	600.00	$446,278
LN20ATR	Site Maintenance; Drainage Stabilization	SITEMAINTENANCE	1	600.00	$54,364
N01	Regrade N Pit	DOZER	2	1,071.15	$1,843,131
N02	Backfill and Grading N Pit	TRUCK1	1	604.84	$2,421,638

N02A	Backfill and Grading I Pit	TRUCK1	1	156.39	$546,565
N02B	Backfill and Grading J Pit	DOZER	2	450.41	$775,023
N13	Replace Topsoil on C Pit	SCRAPER1	1	90.64	$557,880
N14	Replace Topsoil on N Pit (Scraper)	SCRAPER1	1	169.86	$1,045,426
N14A	Replace Topsoil on N Pit (Truck/Excavator)	TRUCK1	1	147.82	$365,087
N15	Replace Topsoil in I Pit	SCRAPER1	1	13.46	$82,869
N16	Replace Topsoil on J Pit (Truck/Excavator)	TRUCK1	1	103.22	$254,944
N16A	Replace Topsoil in J Pit (Scraper)	SCRAPER1	1	3.87	$23,813
N16A ATR	Replace Topsoil on J Pit ASH-1 to J Pit	TRUCK1	1	38.09	$94,066
N16A TR	Replace Topsoil on J Pit A91-8 to J Pit	TRUCK1	1	22.95	$56,683
N16T R135	Seed L Pit, K Nob: >6700 ft.-Rangeland with Shrubs	REVEGE	1	3.50	$5,306
N17	Replace Topsoil on I/J Pit	TRUCK1	1	54.31	$113,660
n18	Seed N PitRangeland w/o shrubs (<6700 ft.)	REVEGE	1	44.00	$18,699
N18A	Seed N Pit: >6700 ft.-Rangeland with Shrubs	REVEGE	1	244.00	$264,664
N19	Seed J Pit without shrubs (Range C)	REVEGE	1	66.00	$27,901
N19T R134	Seed J Pit without shrubs (Range C)	REVEGE	1	66.00	$14,714
N20	Seed I Pit without Shrubs	REVEGE	1	35.00	$14,904
N21	Seed I/J Pits no shrubs (Range C)	REVEGE	1	31.00	$13,047
N21A MR	Seed J Pits no shrubs (Range C) MR229	REVEGE	1	31.00	$5,193
N22	Seed C Pit No Shrubs	REVEGE	1	189.00	$79,673
RCN BR	Reclamation Not Bond Released	NA	1	305.04	$213,391
		SUBTOTALS:		**14945**	**$38,871,648**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$785,207
Performance bond:	1.05	Total =	$408,152
Job superintendent:	540.76	Total =	$42,866
Profit:	10.00	Total =	$3,887,165
		TOTAL O & P =	$5,123,390
		CONTRACT AMOUNT (direct + O & P) =	$43,995,038

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	$0	Total =	$0
Engineering work and/or contract/bid preparation:	4.25	Total =	$1,869,789
Reclamation management and/or administration:	2.50		$1,099,876
CONTINGENCY:	0.00	Total =	$0
		TOTAL INDIRECT COST =	$8,093,056
		TOTAL BOND AMOUNT (direct + indirect) =	**$46,964,704**

Trapper also reviewed each CIRCES task and generated a list (attached) of specific input parameters that may be in error, or otherwise negatively affect task calculations resulting in a higher cost. Some of these items include visibility factors, slope and push distances in the efficiency correction factors. Other items noted are bucket and haulage equipment loading factors that may negatively affect volumes and efficiency in some truck/loader tasks.

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We look forward to continuing to review and rectify this issue with the Division. Please get back to us with any questions, comments or concerns.

Sincerely,

Graham Roberts
Environmental Supervisor
Trapper Mining Inc.

c PR-12 binder

Trapper PR-12 CIRCES Estimate Evaluation

Equipment Unit Costs

Unit costs taken from PR-11 DRMS Circes Estimate dated 11/30/2022 VS PR-12 dated 2/6/2025, PR-9 dated August 2020

	Dozers Equip	Ownership Cost/Hour	Oper. Cost Cost/Hour	Attachments	Operator	Total	PR-PR Percent change
PR-9		$ -	$ -	$ -	$ -	$ -	
PR-11	D-11T-11U	$ 257.09	$ 273.21	$ -	$ 41.55	$ 571.85	
PR-12	D-11T-11U	$ 496.62	$ 324.90	$ -	$ 38.84	$ 860.36	50%
PR-9	D-10T-10SU	$ 170.04	$ 153.03		$ 41.55	$ 364.62	
PR-11	D-10T-10SU	$ 153.67	$ 166.94		$ 41.30	$ 361.91	-1%
PR-12	D-10T-10SU	$ 257.39	$ 196.93		$ 38.59	$ 492.91	36%
PR-9	D7	$ 141.95				$ 141.95	
PR-11	D-8	$ 124.85	$ 97.63	$ 3.65	$ 41.30	$ 267.43	88%
PR-12	D-8	$ 173.32	$ 109.71	$ 14.53	$ 38.59	$ 336.15	26%

CRG
DRMS

Overall bond increase when comparing direct and simil

PR-11	32479942	
PR-12	38601363	19%

Fleet Cost - Regrading Pits/Topsoil Haul

	Truck/Trackhoe Equipment	Units Required	Ownership Cost/Hour	Oper. Cost Cost/Hour	Operator ($/hr)	Ripper Ownership ($/hr)	Ripper Operating ($/hr)	Cost ea. ($/hr)	Total Cost ($/hr)	Fleet Utilization %	PR-PR Percent Change
PR-9	CAT 6090	1	$ 23.07	$ 930.15	$ 37.32			$ 990.54	$ 990.54	100%	
	Komatsu 830E	1	$ 197.30	$ 220.67	$ 34.42			$ 452.39	$ 452.39	100%	
	Motor Grader (Cat 16M)	1	$ 55.79	$ 15.02	$ 28.56			$ 99.37	$ 99.37	25%	
	Support (Load Area) Cat D10T-10SU	1	$ 170.04	$ 38.26	$ 41.30		1.81	$ 251.41	$ 251.41	25%	
	Support (Dump Area) Cat D10T-10SU	1	$ 170.04	$ 38.26	$ 41.30		0	$ 249.60	$ 249.60	25%	
	Water Truck- Water Tanker, 10000 Gal.	1	$ 73.77	$ 27.25	$ 21.12			$ 122.14	$ 122.14	25%	
	Total		$ 690.01	$ 1,269.61	$ 204.02	$ -	$ 1.81	$ 2,165.45	$ 2,165.45		
PR-11	CAT 6090	1	$ 23.07	$ 930.15	$ 37.32			$ 990.54	$ 990.54	100%	0%
	Komatsu 830E	1	$ 179.05	$ 247.93	$ 34.42			$ 461.40	$ 461.40	100%	2%
	Motor Grader (Cat 16M)	1	$ 163.86	$ 27.47	$ 28.56			$ 219.89	$ 219.89	25%	121%
	Support (Load Area) Cat D10T-10SU	1	$ 153.67	$ 41.74	$ 41.30		1.81	$ 238.52	$ 238.52	25%	-5%
	Support (Dump Area) Cat D10T-10SU	1	$ 153.67	$ 41.74	$ 41.30		0	$ 236.71	$ 236.71	25%	-5%
	Water Truck- Water Tanker, 14000 Gal.	1	$ 105.66	$ 38.37	$ -			$ 144.03	$ 144.03	25%	18%
	Total		$ 778.98	$ 1,327.40	$ 182.90	$ -	$ 1.81	$ 2,291.09	$ 2,291.09		6%
PR-12	CAT 6090	1	$ 302.35	$ 501.45	$ 33.87			$ 837.67	$ 837.67	100%	-15%
	Komatsu 830E	1	$ 209.47	$ 274.17	$ 25.24			$ 508.88	$ 508.88	100%	10%
	Motor Grader (Cat 16M)	1	$ 179.39	$ 29.91	$ 27.76			$ 237.06	$ 237.06	25%	8%
	Support (Load Area) Cat D10T-10SU	1	$ 257.39	$ 49.23	$ 38.59		1.9	$ 347.11	$ 347.11	25%	46%
	Support (Dump Area) Cat D10T-10SU	1	$ 257.00	$ 49.23	$ 38.59		0	$ 344.82	$ 344.82	25%	46%
	Water Truck- Water Tanker, 14000 Gal.	1	$ 130.32	$ 70.88	$ -			$ 201.20	$ 201.20	25%	40%
	Total		$ 1,335.92	$ 974.87	$ 164.05	$ -	$ 1.90	$ 2,476.74	$ 2,476.74		8%
PR-11	CAT 385D L 18'-1" Stick	1	$ 195.53	$ 148.85	$ 37.32			$ 381.70	$ 381.70	100%	
	CAT 777F	1	$ 156.75	$ 133.38	$ 33.71			$ 323.84	$ 323.84	100%	
	Motor Grader (Cat 16M)	1	$ 163.86	$ 27.47	$ 28.56			$ 219.89	$ 219.89	25%	
	Support (Load Area) Cat Dl0T-10SU	1	$ 153.67	$ 41.74	$ 41.30		1.81	$ 238.52	$ 238.52	25%	
	Support (Dump Area) Cat D10T -10SU	1	$ 153.67	$ 41.74	$ 41.30		0	$ 236.71	$ 236.71	25%	
	Water Truck- Water Tanker, 2500 Gal.	1	$ 10.28	$ 10.16	$ 27.68			$ 48.12	$ 48.12	50%	
	Total		$ 833.76	$ 403.34	$ 209.87	$ -	$ 1.81	$ 1,448.78	$ 1,448.78		

PR-12	**CAT 385D L 18'-1" Stick**	1	$	220.92	$	131.31	$	33.87			$	386.10	$	386.10	100%	1%
	CAT 777F	1	$	199.47	$	152.44	$	25.24			$	377.15	$	377.15	100%	16%
	Motor Grader (Cat 16M)	1	$	179.39	$	29.91	$	27.76			$	237.06	$	237.06	25%	8%
	Support (Load Area) Cat Dl0T-10SU	1	$	257.39	$	49.23	$	38.59		1.9	$	347.11	$	347.11	25%	46%
	Support (Dump Area) Cat D10T -10SU	1	$	257.00	$	49.23	$	38.59		0	$	344.82	$	344.82	25%	46%
	Water Truck- Water Tanker, 2500 Gal.	1	$	11.65	$	11.23	$	22.88			$	45.76	$	45.76	50%	-5%
	Total		$	1,125.82	$	423.35	$	186.93	$	-	$	1,738.00	$	1,738.00		20%

	Scrapers														
	Equipment	**Units Required**	**Ownership Cost/Hour**		**Oper. Cost Cost/Hour**		**Operator ($/hr)**		**Cost ea. ($/hr)**		**Total Cost ($/hr)**		**Fleet Utilization %**	**PR-PR Percent Change**
PR-9	Cat 637 G w/push-pull	1	$	181.30	$	203.87	$	30.90	$	416.07	$	416.07	100	
	Motor Grader	1	$	55.79	$	60.08	$	28.56	$	144.43	$	144.43	100	
	Support (Load Area) Cat D10T -10SU	1	$	170.04	$	153.03	$	41.30	$	364.37	$	364.37	100	
	Support (Dump Area) Cat D10T -10SU	1	$	170.04	$	153.03	$	41.30	$	364.37	$	364.37	100	
	Water Truck	1	$	10.06	$	9.39	$	21.12	$	40.57	$	40.57	50	
	Total		$	587.23	$	579.40	$	163.18	$	1,329.81	$	1,329.81		
PR-11	Cat 637 G w/push-pull	1	$	287.19	$	277.83	$	30.90	$	595.92	$	595.92	100	43%
	Motor Grader	1	$	163.86	$	54.93	$	28.56	$	247.35	$	247.35	50	71%
	Support (Load Area) Cat D10T -10SU	1	$	153.67	$	83.47	$	41.30	$	278.44	$	278.44	50	-24%
	Support (Dump Area) Cat D10T -10SU	1	$	153.67	$	83.47	$	41.30	$	278.44	$	278.44	50	-24%
	Water Truck	1	$	10.28	$	12.19	$	21.12	$	43.59	$	43.59	60	7%
	Total		$	768.67	$	511.89	$	163.18	$	1,443.74	$	1,443.74		9%
PR-12	Cat 637 G w/push-pull	1	$	281.32	$	319.35	$	30.90	$	631.57	$	631.57	100	6%
	Motor Grader	1	$	179.39	$	59.82	$	27.76	$	266.97	$	266.97	50	8%
	Support (Load Area) Cat D10T -10SU	1	$	257.39	$	98.47	$	38.59	$	394.45	$	394.45	50	42%
	Support (Dump Area) Cat D10T -10SU	1	$	257.39	$	98.47	$	38.59	$	394.45	$	394.45	50	42%
	Water Truck	1	$	11.65	$	13.47	$	21.12	$	46.24	$	46.24	60	6%
	Total		$	987.14	$	589.58	$	156.96	$	1,733.68	$	1,733.68		20%

Table A-2.7 **Revegetation Unit Costs**

PR-9	**Rangeland with Shrubs: (Above 6700')**			
	Total Tilling Cost/Acre	$	98.63	
	Total Seed Mix Cost/Acre	$	354.70	
	Total Seed Application Cost/Acre	$	232.00	
	Total	$	685.33	
	Rangeland without Shrubs: (below 6700')			
	Total Tilling Cost/Acre	$	94.63	
	Total Seed Mix Cost/Acre	$	86.15	
	Total Seed Application Cost/Acre	$	232.00	
	Total	$	412.78	

PR-11	**Rangeland with Shrubs: (Above 6700')**			
	Total Tilling Cost/Acre	$	-	-100%
	Total Seed Mix Cost/Acre	$	354.70	0%
	Total Seed Application Cost/Acre	$	232.00	0%
	Total	$	586.70	-14%
	Rangeland without Shrubs: (below 6700')			
	Total Tilling Cost/Acre	$	-	-100%
	Total Seed Mix Cost/Acre	$	86.15	0%
	Total Seed Application Cost/Acre	$	232.00	0%
	Total	$	318.15	-23%

PR-12	**Rangeland with Shrubs: (Above 6700')**			
	Total Tilling Cost/Acre	**$**	**-**	#DIV/0!
	Total Seed Mix Cost/Acre	**$**	**684.99**	93%
	Total Seed Application Cost/Acre	**$**	**236.64**	2%
	Total	**$**	**921.63**	57%
	Rangeland without Shrubs: (below 6700')			
	Total Tilling Cost/Acre	**$**	**-**	#DIV/0!
	Total Seed Mix Cost/Acre	**$**	**124.23**	44%
	Total Seed Application Cost/Acre	**$**	**236.64**	2%
	Total	**$**	**360.87**	13%

	Maintanence Ponds, Drainages	**Unit Cost/hr**	**Percent Change**
PR-9	CAT324D L	192.69	
PR-11	CAT324D L	179.56	-7%
PR-12	CAT324D L	517.75	188%

	Seal Monitoring Wells	**Cost/LF**	**Percent Change**
PR-9	2-Dia	5.29	
	4-Dia	5.55	
	4.5-Dia	6.32	
	6-Dia	6.32	
	Task 122 Total (For Comparison)	103741	
PR-11	2-Dia	5.29	0%
	4-Dia	5.55	0%
	4.5-Dia	6.32	0%
	6-Dia	6.32	0%
	Task 122 Total (For Comparison)	108065	4%
PR-12	2-Dia	8.57	62%
	4-Dia	8.71	57%
	4.5-Dia	9.68	53%
	6-Dia	9.68	53%
	Task 122 Total (For Comparison)	168156	56%
	Demolition Task Removal Comparison	**Total Task**	**Percent Change**
PR-9	Task 130, Demolish Structures, remove mater, etc	717959	
	Task 131, Culvert Removal	122583	
PR-11	Task 130, Demolish Structures, remove mater, etc	788371	10%
	Task 131, Culvert Removal	127840	4%
PR-12	Task 130, Demolish Structures, remove mater, etc	1040527	32%
	Task 131, Culvert Removal	176564	38%