Memorandum

TO: Mine Operators, Lignite Energy Council, and Other Interested Parties

FROM: Jonathan Emmer, Director – Reclamation Division
Brandon Myran, Environmental Engineer – Reclamation Division

DATE: October 19, 2026

SUBJECT: Annual update of Variable Costs contained in Policy Memorandum No. 16 to Mine Operators - Reclamation Cost Estimating Guidelines

Attached is the July 2026 variable cost update to the Reclamation Division's Reclamation Cost Estimating Guidelines used for calculating worst-case bond amounts for mining permits. This annual update contains the variable costs as of July 1, 2026. Several of the variable cost items changed with this update, and the average hourly rates for equipment used at the large mines increased by an average of 3.90% over the July 1, 2025, rates. The attachment includes a breakdown of the hourly equipment rates for 2026. A comparison of the 2025 and 2026 hourly equipment rates is also attached for your convenience.

Mining companies will not be required to update all current worst-case reclamation cost estimates using the July 2026 rate. However, for any new or pending revision applications that propose a new or revised worst-case reclamation scenario, mining companies will need to include the revised 2026 variable costs.

For small mines, the per cubic yard earth-moving cost increased from $3.18 per cubic yard to $5.65 per cubic yard. Mines are considered small if the amount of suitable plant growth material, overburden, and spoil to be moved is 500,000 cubic yards or less. Small mines must submit revision applications to update reclamation cost estimates by March 1, 2027, for each active permit area and/or consolidated bond area that contains active permit areas using the 2026 variable costs. This can be done with the submittal of a new permit revision or in a pending permit revision application. If you believe the worst-case reclamation condition described in the current reclamation cost estimate has passed, please contact the Reclamation Division, and we will review that cost estimate to determine if any changes are needed.

The equipment list prices, suggested residual values, overhaul/repair costs, undercarriage costs, and maintenance and lube costs were obtained from Butler Machinery. The fuel cost, an average weekly cost over the past 12 months, was obtained from Fleet Services with the North Dakota Department of Transportation. Tire prices are based on information received from Pomp's Tire Service and Lignite Tire Service. Seed prices are based on information received from Chesak Seed House and Agassiz Seed. Custom work farm rates are based on the most updated 2024 average

rates published by the NDSU Extension Service. The fertilizer price is determined by averaging the rates from three local suppliers within the large mine area.

Attachments

memo industry\2026\Pmemo16_var_cost_update_memo_10-19-26

APPENDIX

VARIABLE COSTS

Of

POLICY MEMORANDUM NO. 16 TO MINE OPERATORS

RECLAMATION COST ESTIMATING GUIDELINES

July 1, 2026, Data

Per Cubic Yard Earth-Moving Cost for Small Mines

Costs for backfilling, grading, and suitable plant growth material respread where the total quantity to be moved is 500,000 cubic yards or less, will be calculated at a rate of $5.65 per cubic yard. (This rate will be reviewed and updated on July 1 of each year.)

Equipment Prices

The following equipment prices were furnished on July 29, 2026, by Tyler Freuer of Butler Machinery as the current list price delivered as commonly equipped for reclamation work. These prices include a 5% discount and no taxes.

Item	List Price Discounted ($)
D11 Tractor w/ U Dozer & Ripper	3,078,000
D10 Tractor w/ U Dozer & Ripper	2,121,000
D9 Tractor w/ U Dozer & Ripper	1,481,000
657 Scraper w/ Push-Pull	2,350,000
637 Scraper w/ Push-Pull	1,790,000
16 Motor Grader w/ Ripper	1,505,000
993 Wheel Loader w/ 19 CY Bucket	4,187,000
777 End Dump Truck	1,905,000

Replacement Tire Prices

The following tire prices are the average cost based on information provided by Pomp's Tire Service on July 15, 2026, and Lignite Tire Service on October 16, 2026. Lignite Tire Service did not provide a quote for a 37.25 R35(E-3) tire.

Equipment	Tire Size	Price Each ($)
657 Scraper	40.5/75 R39 (E-3)	18,762
637 Scraper	37.25 R35 (E-3)	19,669
16 Motor Grader	23.5 R25 (E-4)	5,415
993 Wheel Loader	50/65 R51 (L-5)	70,258
777 End Dump Truck	27.00 R49 (E-4)	14,299

Residual Values for Reclamation Equipment

The following are residual percentages and values to be used for determining the cost per hour of reclamation equipment. Values shown were obtained from Butler Machinery.

Item	Percentage of Original Cost	Residual Value ($)
D11 Tractor w/ U Dozer & Ripper	36	1,100,000
D10 Tractor w/ U Dozer & Ripper	46	970,000
D9 Tractor w/ U Dozer & Ripper	44	650,000
657 Scraper w/ Push-Pull	40	950,000
637 Scraper w/ Push-Pull	41	735,000
16 Motor Grader w/ Ripper	48	725,000
993 Wheel Loader w/ 19 CY Bucket	35	1,450,000
777 End Dump Truck	58	1,100,000

Prime Interest Rate

The prime interest rate to be used for the calculation of interest on reclamation equipment under this update is 6.75% for July 1, 2026, to June 30, 2027. The total interest rate to be used for calculations is 8.75% as determined according to item III(A) of this guideline.

Fuel Cost

The cost of fuel for reclamation equipment from July 1, 2026, to June 30, 2027, is based on the average retail price from June 1, 2025, to June 30, 2026, obtained from the Fleet Services Division of the North Dakota Department of Transportation is $2.820 per gallon. Federal and state taxes are excluded from this price.

Wages and Benefits

Wage rates effective May 1, 2026, through April 30, 2027, were obtained from the International Union of Operating Engineers Local 49. Rates for workers compensation, unemployment benefits, and social security were obtained from the applicable North Dakota state agencies.

Hourly Rate for Labor - Group 3 Heavy Industrial	41.20
Pension, Health, Welfare, & Apprenticeship/Hour - Group 3	26.65
Insurance - Assumed 1% of Hourly Rate	0.41
Social Security - 7.65% of Hourly Rate	3.15
*Workers Compensation – 0.679% of Hourly Rate [$433.38 / ($41.20 x 2080 hrs x 0.75)] = 0.00674 or 0.674%	0.28
*Unemployment – 7.01% of Hr. Labor [(0.0967 x $46,600) / ($41.20 x 2080 hrs x 0.75)] = 0.0701 or 7.01%	2.89
Total Hourly Operator Cost (*based on 40-hour week, 9 months per year)	74.58

Custom Farm Work Rates

The following custom farm rates are taken from the publication "2024 North Dakota Custom Rates Part I – Early Season Operations" (August 2024) published by the NDSU Extension Service.

Item	Rate/Acre ($)
Chisel Plowing	15.03
Small Grain Seeding	18.26
Application of Dry Fertilizer	9.22

Fertilizer

The cost of 11-52-0 fertilizer for reclamation use is $917 per ton. This price is based on the average of rates provided by Dakota Agronomy Partners (Washburn, ND), TriGen Ag Partners (Max, ND), and Central Dakota Cooperative (Beulah, ND) on August 4, 2026.

Trees

The cost of planting trees and shrubs on reclaimed land is based on rates obtained from the Mercer County Soil Conservation District, Beulah, ND. Price includes planting.

Trees:	$50/100 feet
Weed Fabric Barrier:	$90/100 feet

Seed

The following seed prices are the average cost based on information provided by Chesak Seed House on July 6, 2026, and Agassiz Seed and Supply on July 10, 2026. Seed prices are highly variable and may not reflect prices of seed later this year or next spring.

Native Variety	$/lb (PLS)	Introduced Variety	$/lb (PLS)
Big bluestem	5.68	Crested wheatgrass	5.23
Blue grama	27.25	Intermediate wheatgrass	4.52
Canada wildrye	11.35	Pubescent wheatgrass	4.94
Green needlegrass	3.88	Reed canarygrass	6.28
Indiangrass	7.00	Russian wildrye	7.40
Little bluestem	23.50	Smooth bromegrass	3.33
Prairie sandreed	14.30	Tall wheatgrass	4.38
Sand bluestem	31.30	Legumes	
Sideoats grama	21.60	Alfalfa	3.33
Slender wheatgrass	3.00	Sweetclover (yellow)	3.25
Switchgrass	5.84	Sweetclover (white)	5.55
Buffalo grass	28.50		
Thickspike wheatgrass	6.63		
Western wheatgrass	5.93		
Prairie junegrass	63.30		

Hourly Cost Estimation 2026 - Large Mine Fleet

Estimated Ownership yrs =	7	Insurance rate =	0.0075	Fuel Cost/gal $ =	2.82	
Annual Use hrs =	3,000	Sales Tax rate =	0.05	Union Labor - Group 3 base =	41.20	
Total Life hrs/yrs =	20,000	Unemploymt constructn rate	0.0967	Union Labor - Group 3 total =	74.58	
Interest rate =	0.088	Unemploymt salary cap =	46,600	WSI Premium Charge =	433.38	

Equipment Type	Dozers			Scrapers		Grader	Water wagon	Loader	Truck	
	D11	D10	D9	657	637	16		993	777	
Ownership Costs:										
Delivered Price $	3,078,000	2,121,000	1,481,000	2,350,000	1,790,000	1,505,000	1,505,000	4,187,000	1,905,000	disc 5%
Tire Replacement $	0	0	0	75,049	78,675	32,492	32,492	281,030	85,793	
Adjusted Price $	3,078,000	2,121,000	1,481,000	2,274,951	1,711,325	1,472,508	1,472,508	3,905,970	1,819,207	
Residual Value $	1,100,000	970,000	650,000	950,000	735,000	725,000	725,000	1,450,000	1,100,000	
Residual Value %	36	46	44	40	41	48	48	35	58	
Value to be recovered $	1,978,000	1,151,000	831,000	1,324,951	976,325	747,508	747,508	2,455,970	719,207	
Equipment Cost per hour $	98.90	57.55	41.55	66.25	48.82	37.38	37.38	122.80	35.96	
Interest Cost $/hr	51.30	35.35	24.68	39.17	29.83	25.08	25.08	69.78	31.75	
Insurance Cost $/hr	4.40	3.03	2.12	3.36	2.56	2.15	2.15	5.98	2.72	
Sales Tax Cost $/hr	7.70	5.30	3.70	5.88	4.48	3.76	3.76	10.47	4.76	
Hourly ownership cost	*162.29*	*101.23*	*72.05*	*114.65*	*85.68*	*68.37*	*68.37*	*209.03*	*75.19*	
Operating Costs:										
Fuel Consumption (gal/hr)	22.8	16.3	11.7	26.1	23.6	4.7	4.7	23.1	12.1	
Fuel Cost ($/hr)	64.30	45.97	32.99	73.60	66.55	13.25	13.25	65.14	34.12	
Tire Life (hrs)	0	0	0	5,000	5,000	10,000	10,000	10,000	10,000	
Tire Cost ($/hr)	0.00	0.00	0.00	15.01	15.74	3.25	3.25	28.10	8.58	
Overhaul/Repair/Undercarriage ($/hr)	92.05	58.28	39.34	70.29	64.31	25.92	25.92	60.35	40.87	
Maintenance & Lube ($/hr)	12.33	9.64	7.46	10.41	10.08	11.54	11.54	30.49	11.52	
Wear Items, G.E.T. ($/hr)	17.90	10.96	8.60	3.39	2.24	1.04	1.04	5.78	0.00	
Hourly operating cost	*186.58*	*124.85*	*88.39*	*172.70*	*158.92*	*55.00*	*55.00*	*189.87*	*95.09*	
Operators hourly wage ($)	81.32	81.32	81.32	81.32	81.32	81.32	81.32	81.32	81.32	
Total Hourly Rate	430.19	307.40	241.77	368.67	325.92	204.69	204.69	480.22	251.61	
Overhead and Profit @15%	64.53	46.11	36.26	55.30	48.89	30.70	30.70	72.03	37.74	
Total Estimated Hourly Cost:	**494.72**	**353.51**	**278.03**	**423.97**	**374.81**	**235.40**	**235.40**	**552.25**	**289.35**	

2025 - 2026 Variable Costs: Summary of Changes

	Dozers			Scrapers		Grader	Water	Loader	Truck
	D11	**D10**	**D9**	**657**	**637**	**16**	**Wagon**	**993**	**777**
Total Estimated Hourly Cost ($)									
2025	480.20	337.54	268.06	406.32	357.80	225.80	225.80	520.71	289.41
2026	494.72	353.51	278.03	423.97	374.81	235.40	235.40	552.25	289.35
Change ($)	14.52	15.97	9.97	17.65	17.01	9.60	9.60	31.54	-0.06
Change (%)	3.0	4.7	3.7	4.3	4.8	4.3	4.3	6.1	0.0

Total Average Change 2025 - 2026 (%)	3.90

PSC Reclamation Division Worksheet: 2026 Residual Values for Equipment

The following table gives estimated heavy equipment values (Caterpillar or equivalent) that are 7 years old with approximately 20,000 hours of operation. Equipment is assumed to have been maintained on a regular schedule and is in working condition. No allowance has been made for inflation, as used equipment values can fluctuate considerably due to condition, location, and market.

Year	*2024*			*2025*			*2026*		
MODEL	**COST 5% Discount No Taxes**	**%**	**RESIDUAL VALUE**	**COST 5% Discount No Taxes**	**%**	**RESIDUAL VALUE**	**COST 5% Discount No Taxes**	**%**	**RESIDUAL VALUE**
DOZERS									
D11	$3,017,000	44	$1,327,500	$3,032,000	36	$1,090,000	$3,078,000	36	$1,100,000
D10	$1,838,000	52	$950,000	$2,026,000	47	$950,000	$2,121,000	46	$970,000
D9	$1,486,000	47	$700,000	$1,455,000	45	$650,000	$1,481,000	44	$650,000
SCRAPERS									
657	$2,376,000	42	$1,000,000	$2,300,000	43	$1,000,000	$2,350,000	40	$950,000
637	$1,725,000	48	$825,000	$1,760,000	43	$750,000	$1,790,000	41	$735,000
MOTOR GRADER									
16	$1,416,000	58	$816,000	$1,458,000	51	$750,000	$1,505,000	48	$725,000
LOADER									
993	$3,965,000	39	$1,550,000	$3,834,000	36	$1,380,200	$4,187,000	35	$1,450,000
END DUMP									
777	$2,148,000	44	$950,000	$1,988,000	56	$1,113,300	$1,905,000	58	$1,100,000