



Public Service Commission

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Memorandum

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

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

DATE: September 18, 2025

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

Attached is the July 2025 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, 2025. Several of the variable cost items changed with this update and the average hourly rates for equipment used at the large mines increased an average of 0.54% over the July 1, 2024 rates. The attachment includes a breakdown of the hourly equipment rates for 2025. A comparison of the 2024 and 2025 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 2025 rates. However, for new and pending permit and revision applications that propose a new or revised worst-case reclamation scenario, these applications should use the updated variable costs attached to this memo.

The equipment list prices, suggested residual values, overhaul/repair costs, undercarriage costs, maintenance costs, 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. Custom work farm rates are based on the most updated 2024 average rates published by the NDSU Extension Service. The fertilizer price was determined by averaging the rates from three local suppliers within the large mine area.

For small mines, the rate will be \$3.18 per cubic yard based on the bids received by the Commission's AML Division this year. No updates to the worst-case reclamation cost estimates will be required this year for small mines.

Attachments

memo industry\2025\Pmemo16_var_cost_update_memo_9-18-25

APPENDIX

VARIABLE COSTS

Of

POLICY MEMORANDUM NO. 16 TO MINE OPERATORS

RECLAMATION COST ESTIMATING GUIDELINES

July 1, 2025 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 \$3.18 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 August 28, 2025 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.

| <u>Item</u> | <u>List Price Discounted (\$)</u> |
|----------------------------------|--|
| D11 Tractor w/ U Dozer & Ripper | 3,032,000 |
| D10 Tractor w/ U Dozer & Ripper | 2,026,000 |
| D9 Tractor w/ U Dozer & Ripper | 1,455,000 |
| 657 Scraper w/ Push-Pull | 2,300,000 |
| 637 Scraper w/ Push-Pull | 1,760,000 |
| 993 Wheel Loader w/ 19 CY Bucket | 3,834,000 |
| 777 End Dump Truck | 1,988,000 |
| 16 Motor Grader w/ Ripper | 1,458,000 |

Replacement Tire Prices

The following tire prices are the average cost based on information provided by Lignite Tire Service on July 29, 2025 and Pomp's Tire Service on August 6, 2025. Lignite Tire Service did not provide a quote for a 37.25 R35(E-3) tire.

| <u>Equipment</u> | <u>Tire Size</u> | <u>Price Each (\$)</u> |
|-------------------------|-------------------------|-------------------------------|
| 657 Scraper | 40.5/75 R39 (E-3) | 23,105 |
| 637 Scraper | 37.25 R35 (E-3) | 19,096 |
| 16 Motor Grader | 23.5 R25 (E-4) | 5,258 |
| 993 Wheel Loader | 50/65 R51 (L-5) | 83,308 |
| 777 End Dump Truck | 27.00 R49 (E-4) | 17,820 |

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.

| <u>Item</u> | <u>Percentage of Original Cost</u> | <u>Residual Value (\$)</u> |
|----------------------------------|---|-----------------------------------|
| D11 Tractor w/ U Dozer & Ripper | 36 | 1,090,000 |
| D10 Tractor w/ U Dozer & Ripper | 47 | 950,000 |
| D9 Tractor w/ U Dozer & Ripper | 45 | 650,000 |
| 657 Scraper w/ Push-Pull | 43 | 1,000,000 |
| 637 Scraper w/ Push-Pull | 43 | 750,000 |
| 16 Motor Grader w/ Ripper | 51 | 750,000 |
| 993 Wheel Loader w/ 19 CY Bucket | 36 | 1,380,200 |
| 777 End Dump Truck | 56 | 1,113,300 |

Prime Interest Rate

The prime interest rate to be used for the calculation of interest on reclamation equipment under this update is 7.50% for July 1, 2025 to June 30, 2026. The total interest rate to be used for calculations is 9.50% as determined according to item III(A) of this guideline.

Fuel Cost

The cost of fuel for reclamation equipment from July 1, 2025 to June 30, 2026 is based on the average retail price from June 1, 2024 to June 30, 2025 obtained from the Fleet Services Division of the North Dakota Department of Transportation is \$2.402 per gallon. Federal and state taxes are excluded from this price.

Wages and Benefits

Wage rates effective May 1, 2025 through April 30, 2026 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 | 39.60 |
| Pension, Health, Welfare, & Apprenticeship/Hour - Group 3 | 25.25 |
| Insurance - Assumed 1% of Hourly Rate | 0.40 |
| Social Security - 7.65% of Hourly Rate | 3.03 |
| *Workers Compensation – 0.679% of Hourly Rate | 0.27 |
| [$\$419.43 / (\$39.60 \times 2080 \text{ hrs} \times 0.75)$] = 0.00679 or 0.679% | |
| *Unemployment – 7.07% of Hr. Labor | 2.80 |
| [($0.0969 \times \$45,100$) / ($\$39.60 \times 2080 \text{ hrs} \times 0.75$)] = 0.0707 or 7.07% | |
| Total Hourly Operator Cost (*based on 40-hour week, 9 months per year) | 71.35 |

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.

| <u>Item</u> | <u>Rate/Acre (\$)</u> |
|-------------------------------|------------------------------|
| 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 \$925 per ton. This price is based on the average of rates provided by Dakota Agronomy Partners (Washburn, ND) and TriGen Ag Partners (Max, ND) on September 11, 2025, and Farmers Union Oil Agronomy (Beulah, ND) on September 15, 2025.

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

All seed prices were submitted by Chesak Seed House on August 12, 2025. Seed prices are highly variable and may not reflect prices of seed later this year or next spring.

| <u>Native Variety</u> | <u>\$/lb (PLS)</u> | <u>Introduced Variety</u> | <u>\$/lb (PLS)</u> |
|-----------------------|--------------------|---------------------------|--------------------|
| Big bluestem | 5.60 | Crested wheatgrass | 2.93 |
| Blue grama | 21.60 | Intermediate wheatgrass | 2.85 |
| Canada wildrye | 13.00 | Pubescent wheatgrass | 3.00 |
| Green needlegrass | 3.75 | Reed canarygrass | 5.95 |
| Indiangrass | 7.00 | Russian wildrye | 7.50 |
| Little bluestem | 15.60 | Smooth brome grass | 2.78 |
| Prairie sandreed | 18.00 | Tall wheatgrass | 2.78 |
| Sand bluestem | 23.40 | <u>Legumes</u> | |
| Sideoats grama | 21.60 | Alfalfa | 2.94 |
| Slender wheatgrass | 2.52 | Sweetclover (yellow) | 3.30 |
| Switchgrass | 4.20 | Sweetclover (white) | 5.55 |
| Buffalo grass | 26.40 | | |
| Thickspike wheatgrass | 5.95 | | |
| Western wheatgrass | 6.75 | | |
| Prairie junegrass | 60.00 | | |

Hourly Cost Estimation 2025 - Large Mine Fleet

| | | | | | |
|---------------------------|--------|----------------------------|--------|-------------------------------|--------|
| Estimated Ownership yrs = | 7 | Insurance rate = | 0.0075 | Fuel Cost/gal \$ = | 2.40 |
| Annual Use hrs = | 3,000 | Sales Tax rate = | 0.05 | Union Labor - Group 3 base = | 39.60 |
| Total Life hrs/hrs = | 20,000 | Unemploymt constructn rate | 0.0969 | Union Labor - Group 3 total = | 71.35 |
| Interest rate = | 0.095 | Unemploymt salary cap = | 45,100 | WSI Premium Charge = | 419.43 |

| Equipment Type | Dozers | | | Scrapers | | Grader | Water wagon | Loader | Truck |
|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| | D11 | D10 | D9 | 657 | 637 | 16 | | 993 | 777 |
| Ownership Costs: | | | | | | | | | |
| Delivered price \$ | 3,032,000 | 2,026,000 | 1,455,000 | 2,300,000 | 1,760,000 | 1,458,000 | 1,458,000 | 3,834,000 | 1,988,000 disc 5% |
| Tire replacement \$ | 0 | 0 | 0 | 92,421 | 76,383 | 31,545 | 31,545 | 333,230 | 106,919 |
| Adjusted price \$ | 3,032,000 | 2,026,000 | 1,455,000 | 2,207,579 | 1,683,617 | 1,426,455 | 1,426,455 | 3,500,770 | 1,881,081 |
| Residual Value \$ | 1,090,000 | 950,000 | 650,000 | 1,000,000 | 750,000 | 750,000 | 750,000 | 1,380,200 | 1,113,300 |
| Residual Value % | 36 | 47 | 45 | 43 | 43 | 51 | 51 | 36 | 56 |
| Value to be recovered \$ | 1,942,000 | 1,076,000 | 805,000 | 1,207,579 | 933,617 | 676,455 | 676,455 | 2,120,570 | 767,781 |
| Equipment cost per hour \$ | 97.10 | 53.80 | 40.25 | 60.38 | 46.68 | 33.82 | 33.82 | 106.03 | 38.39 |
| Interest cost \$/hr | 54.86 | 36.66 | 26.33 | 41.62 | 31.85 | 26.38 | 26.38 | 69.38 | 35.97 |
| Insurance cost \$/hr | 4.33 | 2.89 | 2.08 | 3.29 | 2.51 | 2.08 | 2.08 | 5.48 | 2.84 |
| Sales tax cost \$/hr | 7.58 | 5.07 | 3.64 | 5.75 | 4.40 | 3.65 | 3.65 | 9.59 | 4.97 |
| Hourly ownership cost | 163.88 | 98.42 | 72.29 | 111.03 | 85.44 | 65.93 | 65.93 | 190.47 | 82.17 |
| 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) | 54.77 | 39.15 | 28.10 | 62.69 | 56.69 | 11.29 | 11.29 | 55.49 | 29.06 |
| 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 | 18.48 | 15.28 | 3.15 | 3.15 | 33.32 | 10.69 |
| Overhaul/Repair/Undercarriage (\$/hr) | 91.14 | 57.70 | 38.95 | 69.59 | 63.67 | 25.66 | 25.66 | 59.75 | 40.47 |
| Maintenance & Lube (\$/hr) | 12.21 | 9.54 | 7.39 | 10.31 | 9.98 | 11.43 | 11.43 | 30.19 | 11.41 |
| Wear items, GET (\$/hr) | 17.72 | 10.85 | 8.51 | 3.36 | 2.22 | 1.03 | 1.03 | 5.72 | 0.00 |
| Hourly operating cost | 175.84 | 117.24 | 82.95 | 164.44 | 147.83 | 52.56 | 52.56 | 184.47 | 91.64 |
| Operators hourly wage (\$) | 77.85 | 77.85 | 77.85 | 77.85 | 77.85 | 77.85 | 77.85 | 77.85 | 77.85 |
| Total hourly rate | 417.56 | 293.51 | 233.10 | 353.32 | 311.13 | 196.35 | 196.35 | 452.79 | 251.66 |
| Overhead and profit @15% | 62.63 | 44.03 | 34.96 | 53.00 | 46.67 | 29.45 | 29.45 | 67.92 | 37.75 |
| Total Estimated Hourly Cost: | 480.20 | 337.54 | 268.06 | 406.32 | 357.80 | 225.80 | 225.80 | 520.71 | 289.41 |

2024 - 2025 Variable Costs: Summary of Changes

| | | | | | | | | | |
|--------------------------------------|--------|--------|--------|----------|--------|--------|--------|--------|--------|
| | Dozers | | | Scrapers | | Grader | Water | Loader | Truck |
| | D11 | D10 | D9 | 657 | 637 | 16 | Wagon | 993 | 777 |
| Total Estimated Hourly Cost (\$) | | | | | | | | | |
| 2024 | 506.07 | 323.08 | 267.05 | 402.15 | 343.28 | 217.53 | 217.53 | 507.08 | 323.05 |
| 2025 | 480.20 | 337.54 | 268.06 | 406.32 | 357.80 | 225.80 | 225.80 | 520.71 | 289.41 |
| Change (\$) | -25.87 | 14.46 | 1.01 | 4.17 | 14.52 | 8.27 | 8.27 | 13.63 | -33.64 |
| Change (%) | -5.1 | 4.5 | 0.4 | 1.0 | 4.2 | 3.8 | 3.8 | 2.7 | -10.4 |
| Total Average Change 2024 - 2025 (%) | | | | | | | | | |
| | 0.54 | | | | | | | | |

PSC Reclamation Division Worksheet: 2025 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.

| <i>Year</i> | <i>2023</i> | | | <i>2024</i> | | | <i>2025</i> | | |
|---------------------|--|----------|---------------------------|--|----------|---------------------------|--|----------|---------------------------|
| MODEL | COST 5% Discount No Taxes | % | RESIDUAL VALUE | COST 5% Discount No Taxes | % | RESIDUAL VALUE | COST 5% Discount No Taxes | % | RESIDUAL VALUE |
| DOZERS | | | | | | | | | |
| D11 | \$3,230,000 | 40 | \$1,292,000 | \$3,017,000 | 44 | \$1,327,500 | \$3,032,000 | 36 | \$1,090,000 |
| D10 | \$2,100,000 | 50 | \$1,050,000 | \$1,838,000 | 52 | \$950,000 | \$2,026,000 | 47 | \$950,000 |
| D9 | \$1,530,000 | 50 | \$765,000 | \$1,486,000 | 47 | \$700,000 | \$1,455,000 | 45 | \$650,000 |
| SCRAPERS | | | | | | | | | |
| 657 | \$2,320,000 | 40 | \$928,000 | \$2,376,000 | 42 | \$1,000,000 | \$2,300,000 | 43 | \$1,000,000 |
| 637 | \$1,650,000 | 50 | \$825,000 | \$1,725,000 | 48 | \$825,000 | \$1,760,000 | 43 | \$750,000 |
| MOTOR GRADER | | | | | | | | | |
| 16 | \$1,360,000 | 60 | \$816,000 | \$1,416,000 | 58 | \$816,000 | \$1,458,000 | 51 | \$750,000 |
| LOADER | | | | | | | | | |
| 993 | \$3,850,000 | 40 | \$1,540,000 | \$3,965,000 | 39 | \$1,550,000 | \$3,834,000 | 36 | \$1,380,200 |
| END DUMP | | | | | | | | | |
| 777 | \$2,250,000 | 50 | \$1,125,000 | \$2,148,000 | 44 | \$950,000 | \$1,988,000 | 56 | \$1,113,300 |