



GARY R. HERBERT
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SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

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TO: *The Board of Oil Gas and Mining*

THROUGH: Dana Dean, Associate Director – Mining

THROUGH: Paul B. Baker, Minerals Program Manager

FROM: Wayne Western
Peter Brinton

SUBJECT: Proposed 2018 Per-Acre Reclamation Surety Amounts for Exploration Projects and Small Mining Operations

Title 40 Chapter 8 Section 14 1(c) of the Utah Mined Land Reclamation Act requires that the Division determine the amount of surety required for notices of intention using cost data from current large mining sureties. Rules R647-2-111.3 and R647-111.3 require the Minerals Regulatory Program to determine small mine and exploration project reclamation surety amounts based on site-specific reclamation cost calculations, or from estimates of average costs per acre for reclamation of similar operations, as determined by the Division, based upon approved surety amounts for current large mining operations. These average costs must be approved by the Board of Oil, Gas and Mining. This memorandum details the amounts recommended to the Board for the average costs to be used for small mines and exploration projects.

Small mine sites are areas with ten or fewer acres of disturbance in unincorporated areas or five or fewer acres in incorporated areas. For the purpose of calculating the cost per acre, the Division assumes there are no structures, that earthwork and revegetation will be required for each site, and earthwork and revegetation will be conducted at the same time, not in separate operations. If revegetation is not done concurrently then an additional \$1,000 mob/demob will be added and the revegetation rate will be \$1,000 per acre.

If a site has structures, including vent shafts or portals, the cost of structure removal will be calculated as a line item using costs from the Abandoned Mine Reclamation Program. Sites with unusual features, such as large underground openings, are calculated based on information from vendors and other sources, such as the Abandoned Mine Reclamation Program.

For mine sites with five or fewer acres, the Division assumes that all reclamation work can be accomplished with an excavator and a pickup truck for support. For sites



larger than five acres but smaller than ten acres, the Division assumes reclamation will require an excavator and a bulldozer with a pickup truck for support.

For sites where the earthwork portion of the reclamation surety has been released, the Division assumes that surface preparation will be needed.

The reclamation cost estimates are escalated three or five years into the future for small mines. The escalation factor is averaged using five years of national average index values from R.S. Means' Historical Cost Index. Costs for exploration projects are escalated one year into the future and re-evaluated if an operator requests an extension for the project.

In the past the Division assumed a 150-mile mobilization/demobilization cost. Beginning in 2014, the Division has allowed the mob/demob cost to be decreased to a minimum of 50 miles if there are at least three contractors that could conduct reclamation based within 50 miles of the site. The mob/demob costs should be increased as shown in the tables if the haul distance is greater than 50 miles.

Additional mobilization for a dozer is added for small mines with over five acres of disturbance.

Exploration Projects

Project Size / Features	2018 Standard Surety Requirements	Comments
	1-year escalation (thru 2019)	
1 Acre (or less)	\$7,400 / acre	Minimum amount required; Includes \$2,500 mob / demob
Additional Acres	\$4,900 / acre (for projects under 5 acres) Projects over 5 acres may need more surety.	Partial acres rounded to next acre (e.g. 1.2 acres = 2 acres)
Additional Mob / Demob	< 50 miles (one way) - no additional surety 51 - 100 miles (one way) - add \$1,100 101 - 150 miles (one way) - add \$2,500 151 - 200 miles (one way) - add \$3,500	In addition to surety for surface disturbance reclamation
Drilling (dry)	\$1,000 mob / demob, plus \$210 / hole (surface plug)	In addition to surety for surface disturbance reclamation
Drilling (wet) < 7-inch diameter < 2,500 feet depth	For holes less than 800 feet deep, \$8,000 mob / demob, plus \$5.00 / ft (subsurface plug)	In addition to surety for surface disturbance reclamation
	For holes 800 - 1,600 feet deep, \$12,000 mob / demob, plus \$5.50 / ft (subsurface plug)	
	For holes 1,600 - 2,500 feet deep, \$16,000 mob / demob, plus \$6.00 / ft (subsurface plug)	
Drilling > 7-inch diameter > 2,500 feet depth Unusual conditions (e.g. oil- and/or gas-bearing units)	A third-party estimate may be needed.	In addition to surety for surface disturbance reclamation
Portals 36 sq. ft. area max	\$2,000 / portal	In addition to above surety
Shafts 6 ft. diameter max	\$3,000 / shaft	In addition to above surety
Large Portals / Shafts Structures	Site-specific	In addition to above surety

Small Mining Operations – Five or Fewer Acres (Excavator)

Mine Size / Features	2018 Standard Surety Requirements		Comments
	3-year escalation (thru 2021)	5-year escalation (thru 2023)	
1 Acre (or less)	\$7,700 (3-year escalation)	\$8,000 (5-year escalation)	Minimum amount required; Includes \$2,500 mob / demob
Additional Acres (5 total acres max)	\$5,100 / acre (3-year escalation)	\$5,300 / acre (5-year escalation)	Partial acres rounded to next acre (e.g. 1.2 acres = 2 acres)
Cumulative Amount (5 acres)	\$28,100 (3-year escalation)	\$29,200 (5-year escalation)	\$1,100 difference between 3 and 5 year escalation
Additional Mob / Demob	3-year escalation: < 50 miles (one way) - no additional surety 51 - 100 miles (one way) - add \$1,200 101 - 150 miles (one way) - add \$2,600 151 - 200 miles (one way) - add \$3,500 5-year escalation: < 50 miles (one way) - no additional surety 51 - 100 miles (one way) - add \$1,200 101 - 150 miles (one way) - add \$2,700 151 - 200 miles (one way) - add \$3,700		In addition to surety for surface disturbance reclamation
Portals, 36 sq. ft. area max	\$2,000 / portal		In addition to above surety
Shafts, 6 ft. diameter max	\$3,000 / shaft		In addition to above surety
Large Portals / Shafts, Structures	Site-specific		In addition to above surety

Small Mining Operations – Five to Ten Acres (Excavator & Dozer)

Mine Size / Features	2018 Standard Surety Requirements		Comments
	3-year escalation (thru 2021)	5-year escalation (thru 2023)	
6 Acres	\$37,100 (3-year escalation) \$38,500 (5-year escalation)		Minimum amount required; Includes \$5,500 mob / demob
Additional Acres (10 total acres max)	\$5,800 / acre (3-year escalation) \$6,000 / acre (5-year escalation)		Partial acres rounded to next acre (e.g. 5.2 acres = 6 acres)
Cumulative Amount (10 acres)	\$60,300 (3-year escalation) \$62,500 (5-year escalation)		\$2,200 difference between 3 and 5 year escalation
Additional Mob / Demob	3-year escalation: < 50 miles (one way) - no additional surety 51 - 100 miles (one way) - add \$1,800 101 - 150 miles (one way) - add \$3,400 151 - 200 miles (one way) - add \$5,100 5-year escalation: < 50 miles (one way) - no additional surety 51 - 100 miles (one way) - add \$1,800 101 - 150 miles (one way) - add \$3,500 151 - 200 miles (one way) - add \$5,200		In addition to surety for surface disturbance reclamation
Portals, 36 sq. ft. area max	\$2,000 / portal		In addition to above surety
Shafts, 6 ft. diameter max	\$3,000 / shaft		In addition to above surety
Large Portals / Shafts, Structures	Site-specific		In addition to above surety