A major goal of the New Mexico Mining Act is to ensure the adequate reclamation of all areas disturbed by exploration and mining operations. The primary mechanism for accomplishing this is a permitting and enforcement process that requires the posting of financial assurance (“FA”) sufficient to ensure completion of a reclamation plan. The FA serves as a guarantee that reclamation will be completed and, in the event of FA forfeiture, monies will be used by the regulatory authority to contract for the necessary reclamation work.

The Mining Act Reclamation Program Rules require that an applicant for an exploration or mining permit provide “an estimate of the proposed financial assurance required by 19.10.12 NMAC”. The purpose of this guidance is to provide an expedited approach for calculating the costs associated with reclaiming a simple exploration site and/or a simple surface mining operation. The applicant’s calculated cost estimate for the post-exploration or post-mining site reclamation will be considered by the Director for determining the amount of FA the applicant is required to post prior to receiving approval for any operations.

This cost estimation guidance is based upon the costs of a third party to perform the reclamation. Following this simplified process will aid in expediting the review process.

COST ESTIMATION COMPONENTS

This approach for estimating the costs to reclaim a simple exploration or mining site involves adding together the component costs of; (1) drill hole abandonment, (2) reclaiming and reseeding all surface disturbances.

DRILL HOLE ABANDONMENT

Each drill hole shall be plugged from total depth to within 2 feet of the original ground surface or the collar of the hole, whichever is lower, with a column of cement, high-density bentonite clay or other materials specified in the permit. If the approved plugging material is not cement, then the top ten feet of the column of plugging material must be a cement plug, the top of which must be placed at 2 feet below ground surface. The remaining top 2 feet of the drill hole shall then be backfilled with topdressing or top soil from the top of the cement plug to the original ground surface elevation. The hole shall be plugged as soon as practicable and satisfy the requirements of the New Mexico Office of the State Engineer, and the New Mexico Environment Department, for proper plugging of such holes.

Estimated costs for abandoning boreholes using bentonite-cement grout ranges from approximately $14.00 to $25.00 per foot. For the purposes of estimating a simplified cost of abandoning boreholes, the MMD cost is $14.00/foot. The FA cost estimate could be higher or lower based on site-specific characteristics.
Wet drill holes must be sealed pursuant to the Office of the State Engineer’s Rules and Regulations (19.27.4.36 NMAC) which states, “Any person drilling a mine drill hole that encounters a water bearing stratum shall plug that hole in accordance with Subsection C of 19.27.4.30 NMAC or Subsection K of 19.27.4.31 NMAC.”

All wet drill holes must be plugged and abandoned by displacing neat cement slurry, cement grout mix, or other pre-approved plugging mud through a tremie pipe placed bottom upwards to ten feet from the ground surface. Twenty-four hours after displacement of the plugging mud plugs will be “felt for” to insure that they have been properly seated. The top 10 feet should be neat cement slurry, bentonite based plugging material, or other sealant approved by the state engineer. If artesian, the entire hole needs to be plugged with a neat cement slurry and the well plugging witnessed by the state engineer.

Shallow, dry drill holes could potentially be filled with hydrated bentonite chips to 12 feet below ground surface, pending authorization by MMD in the applicant’s permit. The top 12 feet should be a cement plug followed by 2 feet of soil or topdressing, unless otherwise approved by MMD and the state engineer.

RECLAIMING AND RESEEDING ALL SURFACE DISTURBANCES
Costs associated with a third party to backfill and grade, scarify and/or rip, and re-seed all disturbances. (This component includes drying out the mud pit prior to regrading.)

Sum the total amount of all acreage expected to be disturbed during exploration or mining operations. For exploration and mining sites, consideration must be given to the site specific conditions such as dimensions of all anticipated drill pits, access roads, borrow areas, drainage crossings, culvert removals and compacted overland routes. Additional costs will be considered on a site-specific basis dependent upon the need to control runoff, inhibit fugitive dust, and contain and dispose of all wastes associated with the exploration and mine reclamation activities. After adding up all the anticipated disturbances in units of acres apply the following cost per acre:

- $8,900 for the first acre
- $4,900 per acre for each additional acre

Note: The per acre cost includes a 40% add-on to cover the indirect costs. Additionally, assistance from the Mining and Minerals Division, the Natural Resources Conservation Service, other agencies, universities, and revegetation contractors can be consulted for local conditions, best plant species, planting times, fertilizers, and revegetation costs.

COST SUMMARY
Required financial assurance can now be determined by adding together the drill hole abandonment and the reclamation and reseeding costs as described above.

In the event the operator feels that a lesser amount of financial assurance is justified than what this guidance suggests, they must justify their position by providing MMD with a complete and detailed financial assurance worksheet.
Escalation rates for mining operations, only, shall be applied to the financial assurance calculation for a minimum of five years. This is to cover the cost of future reclamation. The escalation rate is based on the Consumer Price Index (CPI), averaged over the last 20 years. In 2013 the 20 year average for the CPI is 2.5%.

An example of an exploration scenario and resulting financial assurance amount follows.

**Post-Exploration Reclamation Cost Estimating – Example**

Proposal to drill 7 drill holes to 220 feet each and disturb a total of 3.13 acres:

- Cost of abandoning 7 drill holes;
  \[(7 \times 220 \text{ feet}) \times \$14.00/\text{feet} = \$21,560.00\]

- Cost of reclaiming 3.13 acres of disturbance;
  \$8,900 (first acre) + (2.13 (additional acres) \times \$4,900) = \$19,337.00

- Total FA required;
  \$21,560.00 + \$19,337.00 = \$40,897.00

**Mining Reclamation Cost Estimating – Example**

Cost of reclaiming 10 acres of disturbance:

- \$8,900 (first acre) + (9 (additional acres) \times \$4,900) = \$53,000.00

- Total FA required with escalation over 5 years;
  \$53,000 \times (1 + 2.5\%)^5 = \$59,964.63