Reclamation Cost Model for Notice-Level Operations

This Reclamation Cost Model (model) is provided as an example of an optional method to simplify the reclamation cost estimate requirements for Notice-Level operations. Use of a reclamation model/schedule is not required nor is it always appropriate. This model is not all inclusive, but is intended to serve as guide in developing a reclamation cost model using an Excel Spread sheet once the input costs have been determined. The BLM Nevada State Office in collaboration with the Nevada Division of Environmental Protection developed this model. The cost inputs used were derived from actual Nevada reclamation costs reported in 2001 and 2002. It is the responsibility of the appropriate BLM office to develop a reclamation cost model with the appropriate input costs. The input costs and the method by which they are derived must be defendable and documented in each case file.

The following is an explanation of the Nevada Reclamation Cost Model (Attachment 4).

Operation Inputs - The user of the model would need to enter information about the proposed exploration operation. Where applicable to the proposed operation, linear feet of road (with side slope >30< and <30<) and acres of non-road disturbance that will need to be reclaimed, and number of feet of open drill hole to be plugged (anticipated to intercept groundwater and not expected to intercept groundwater) will need to be entered into the spreadsheet.

Cost Inputs and Assumptions - The model's cost inputs include mobilization and demobilization costs, labor, equipment and material costs for earthwork, revegetation and hole plugging, and administrative costs. The operating and maintenance costs are shaded light gray in the spreadsheet.

For road reclamation, the cost figures used in the model are based on the use of an excavator as the primary equipment involved in recontouring. The model's cost information for road reclamation assumes an average road width of 14 feet. Pad, sump, trench and other non-road disturbances assume the use of a dozer as the primary heavy equipment for recontouring those features.

The revegetation costs for disturbed areas assume a seed mix that will result in a diverse plant community that includes grasses, forbs, shrubs and/or trees. Such a seed mix may exceed state or local revegetation standards, and/or may not be appropriate for all sites. The application of the seed mix assumes two passes over the disturbed area. The first pass is to harrow (rip or disc) the surface and then and a second pass to spread the seed.

Since drill holes are often plugged immediately after testing, the model is set up to cover the maximum number of feet of drill hole that will be left open at any point in time. This approach may not cover all holes that will be drilled. The user of the model should consult the State Office to ensure this approach is consistent with local policy on financial guarantee requirements for exploration drill holes.

For drill hole plugging, a critical variable is whether the drill hole intercepts groundwater. Plugging a wet drill hole, one that intercepts groundwater, it is assumed drilling equipment will be required to properly plug the hole. The cost estimates for plugging wet holes assumes filling the wet horizon with concrete grout, filling the dry horizon with bentonite and capping the hole with a 10-foot concrete plug.

For plugging dry holes, those that do not intercept groundwater, it is assumed no specialized equipment will be necessary. The assumption used in estimating the cost for plugging dry holes is each hole will be filled with bentonite.

The user should keep in mind that the requirements for drilling bore holes and reclamation, may differ from state to state. For example, the Arizona Department of Water Resources regulates all drilling operations and operators involving drill holes exceeding 100 feet or less, if water is expected to be encountered.

The mobilization/demobilization costs in Appendix 4-3 are based on the site being 150 miles from the equipment vendor. The average mobilization costs for reclaiming surface disturbances, including roads, pads, sumps and trenches, is $750 per piece of equipment. Mobilization costs for plugging open drill holes that are anticipated to intercept groundwater is estimated to be $1,350. Average mobilization costs for plugging open dry drill holes that are not expected to intercept groundwater is $600. The model is set to only use the 'wet hole' mobilization cost should the user add values to both wet and dry drill holes entries. The user of the model should be aware that these mobilization costs might vary significantly depending on the actual distance from the site to the source of the required equipment.

Reclamation Cost Model
For Notice-Level
Operations

Linear Feet of Road	**Linear Feet**		**Cost/Linear Foot**	**Road Reclamation**
Side Slope <30%	0	Recontouring Cost <30%	$1.50	$0
Side Slope >30%	0	Recontouring Cost >30%	$2.40	$0
		Revegetation Cost	$0.20	$0
Acres of Non-Road Disturbance including, Pads, Sumps & Trenches	**Acres**		**Cost/Acre**	**Pad, Sump & Trench Reclamation**
	0	Recontouring Cost	$2,600.00	$0
		Revegetation Cost	$600.00	$0
		Mobilization Cost	$750.00	$0
Drill Holes Open	**#/Feet**		**Cost/Foot**	**Drill Hole Plugging**
Feet of Open Holes - Wet	0	Plugging Cost - Wet	$12.00	$0
Feet of Open Holes - Dry	0	Plugging Cost - Dry	$4.70	$0
		Mobilization Cost - Wet	$1,350.00	$0
		Mobilization Cost - Dry	$600.00	$0
				Total Reclamation Cost $0
Administration Costs		*Insurance	1.5% Labor Cost	$0
		*Bond Maintenance	3% Rec. Cost	$0
		Contractor Profit	10% Rec. Cost	$0
		Contract Admin.	18% Rec. Cost	$0
		Contingency	10% Rec. Cost	$0
		Indirect Costs	17.8% Rec. Cost	$0
				Total Administration Cost $0
Total Bond Amount			**Bond Amount**	**$0**

* Only Administered if Estimated Contract Costs over $100,000.

ATTACHMENT 4-3