

OTTER CREEK MINE

17.24.313 RECLAMATION PLAN

17.24.313(1)

Each reclamation plan contains a description of the reclamation operations proposed, including the following information:

17.24.313(1)(a)

The proposed postmining land use pursuant to ARM 17.24.762 is addressed in detail in Exhibit 313A – Post Mining Land Use.

17.24.313(1)(b)

Due to the concurrent nature of mining and reclamation operations, a detailed timetable for the estimated completion of each major step in the reclamation plan is generalized. The major steps in the mining and reclamation process are:

- Initial soil salvage and storage; construction of facilities: Years 1-3
- Box cut soil salvage: Years 3-4
- Initial box cut development – drilling, blasting, movement of overburden to temporary storage: Years 3-4
- Initiation of coal blasting and mining: Year 4
- Initiation of backfilling: Year 4
- Soil salvage for initial dragline pits: Year 4
- Box cut completion: Year 5
- Dragline stripping: Years 5 – X (Year X projected to be year 21 based on 18 years of mining in Tract 2, but may vary due to contract commitments and shipping schedules.)
- Pit and ramp backfilling: Years 4-X+3
- Soil redistribution and revegetation: Years 7 – X+4
- Haul road reclamation: Years X+3 – X+4
- Excavated ponds reclamation to Western Alkaline sediment control sizing: Years X+3 – X+4
- Facilities removal and final closure reclamation: Years Y+1 – Y+3 (Year Y is completion of mining on all tracts, projected to be year 53- 57.)

Once mining has progressed to a point where the graded area is available for reclamation, soil placement and revegetation will be initiated, and will continue concurrently with mining through the life of the mine plan. When mining is concluded at the final pit, it is anticipated that final pit closure backfilling and grading, soil placement and revegetation will take at least three to four years due to the volume of material that will have to be moved to attain the Post-Mining Topography (PMT).

17.24.313(1)(c)

Exhibit 313B – Bond Calculation is a detailed estimate of the cost of reclamation of the proposed operations that will be covered by a performance bond with supporting calculations for the estimate.

17.24.313(1)(d)

The plan for backfilling, stabilization, compacting, and grading of the proposed permit area is included as Exhibit 313C – Backfilling and Grading which addresses the requirements of ARM 17.24.501, 502, 503, 504, 505, 515, 519 and 520 as appropriate. Included are:

- (i) A description of the final location of all overburden and parting materials in the fill. Diagrams are included as necessary.
- (ii) A narrative and cross-sections showing the plan final pit closure, including highwall backfilling, reduction, or an alternative thereof as appropriate, including the limits of buffer zone consistent with the performance standards listed above.
- (iii) A narrative description of the derivation of the bulking factor (swell) used in calculation of spoil volumes and generation of postmining contour maps. Calculations used in the derivation are included.
- (iv) A map showing the proposed postmining topography is included as Map 12 – Post-Mining Topography. This map has been prepared to reflect the performance standards.
- (v) A demonstration that the proposed postmining topography can be achieved. This demonstration includes modeled volumetrics to depict the removal of overburden and mineral and the replacement of the swelled spoil.

17.24.313(1)(e)

A description of postmining drainage basin reclamation is included as Exhibit 313D – Reclamation of Drainage Basins. This plan ensures protection of the hydrologic balance, achievement of postmining land use performance standards, and prevention of material damage to the hydrologic balance in adjacent areas, including:

(i) A comparison of premining and postmining drainage basin size, drainage density, and drainage profiles as necessary to identify characteristics not distinguishable on the premining and postmining topographic maps.

(ii) A discussion of how, within drainage basins:

(A) The plan meets each performance standard in ARM 17.24.634.

(B) The requirements of 82-4-231(10)(k), MCA, and ARM 17.24.314 will be met where the postmining topography differs from the premining as allowed by ARM 17.24.301(13)(c).

17.24.313(1)(f)

Exhibit 313D – Reclamation of Drainage Basins includes drainage channel designs that are appropriate for preventing material damage to the hydrologic balance in the adjacent area and meet the performance standards of ARM 17.24.634, including:

(i) Detailed drainage designs for channels that contain critical hydrologic, ecologic or land use functions not already addressed in this rule such as alluvial valley floors, wetlands, steep erosive upland drainages, drainages named on USGS topographic maps, or intermittent or perennial streams. Detailed drainage designs include fluvial and geomorphic characteristics pertinent to the specific drainages being addressed.

(ii) For all other channels, typical designs and discussions of general fluvial and geomorphic habit, pattern, and other relevant functional characteristics.

17.24.313(1)(g)

Plans for removal, storage, and redistribution of soil in accordance with ARM 17.24.701 through 17.24.703 are described in detail in Exhibit 313E – Soil Handling. Handling of overburden, spoils, and other material in accordance with ARM 17.24.501, 17.24.502, 17.24.503, 17.24.504, 17.24.505, 17.24.507, 17.24.510, 17.24.514, 17.24.515, 17.24.516, 17.24.517, 17.24.518,

17.24.519, 17.24.520, 17.24.521, and 17.24.522 is addressed in Exhibit 313C – Backfilling and Grading.

(i) These plans reference Baseline Report 304L – Soils and Baseline Report 304H – Overburden Analysis and Suitability documenting how the information on the characteristics of the overburden and coal and soils was utilized in developing the plans.

(ii) Exhibit 313E – Soil Handling uses the soil survey information to propose estimated salvage depths for each lift of each soil component (series or phase) of each soil mapping unit.

(iii) Exhibit 313E – Soil Handling also includes supporting calculations showing:

(A) total acreages and volumes of salvageable soil of each lift from each soil component of each soil mapping unit; and

(B) the anticipated thickness(es) of soil redistribution for each lift, and in total, on the area of land affected after grading;

(iv) Exhibit 313F – Soil Testing includes plans for monitoring of soils, overburden, spoils, or other materials.

17.24.313(1)(h)

Exhibit 313G – Revegetation Plan includes a narrative of the method for revegetation including as appropriate discussion of:

(i) revegetation types, including acreage of each;

(ii) the schedule of revegetation;

(iii) species and amounts per acre of seeds and seedlings to be used, calculated as pure live seed;

(iv) introduced species to be used, if any, and documentation of the desirability and necessity of using the introduced species to achieve the approved postmining land use;

(v) methods to be used in planting and seeding;

(vi) approximate, normal, annual seeding and planting dates;

(vii) the use of nurse or cover crop and mulching techniques;

(viii) soil tillage, amendments or other management techniques to assist in vegetative establishment;

- (ix) vegetation monitoring to be implemented to identify conditions during the period of liability;
- (x) measures to be used to determine the success of revegetation, including the use of technical standards in relation to the revegetation types;
- (xi) plans for determining quality, fertility, and thickness of redistributed soil and for determining quality of graded spoil are described in Exhibit 313F – Soil Testing. The purpose of these plans is to evaluate the results of the handling of soils, overburden, wastes, and other materials and to evaluate reclamation procedures related to revegetation; and
- (xii) the types of major equipment to be used in the above operations.

17.24.313(1)(i)

Exhibit 313H – Management of Bore Holes includes a description of the measures to be used plug, case, or manage prospecting holes, other bore holes, wells, and other openings within the proposed permit area in accordance with ARM 17.24.1005.

17.24.313(1)(j)

Exhibit 308C – Mine Facilities includes a narrative explaining reclamation of facilities and sites identified under ARM 17.24.308(2).