

# OPERATOR NOTIFICATION OF GRADING PROBLEMS

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## 1.0 PURPOSE

Pursuant to Administrative Rules of Montana (ARM) 17.24.313(1)(d), a permittee must submit a postmine topography (PMT) map and a demonstration that the proposed PMT can be achieved. ARM 17.24.501(7) requires the operator to notify the Department of Environmental Quality (DEQ), in writing, upon detection of grading problems that would result in topography not consistent with the approved PMT. There is no allowance for inconsistency without written notification. The intent of this guideline is to further define what a “grading problem” is and whether an inconsistency with an approved PMT requires a revision to the permit or a less extensive form of notification and consultation may be utilized.

The Department of Environmental Quality recognizes that strict adherence to the PMT map is not always operationally feasible, can be problematic, and in some cases, is not preferred. This point does not negate ARM 17.24.313(1)(d) as a permit application requirement and ARM 17.24.501(7) as a performance requirement. These requirements secure a commitment to performance standards associated with approximate original contour [ARM 17.24.501(4)].

The following guidelines apply to standard reclamation with a postmine land use of wildlife habitat, forestry, grazing land, pastureland, cropland, and recreation land. These guidelines are developed around the establishment of like-functioning topography, as well as primary and tributary drainage basins. Please note, the guideline addresses drainage basins as they relate to the PMT plan; drainage channels, pursuant to ARM 17.24.313 and 634, are not addressed in this guideline.

## 2.0 GENERAL DEFINITIONS AND GUIDANCE REQUIREMENTS

Primary Drainages - Primary drainages include, but are not limited to, those drainages which outlet outside the area disturbed by mining and which are typically identified during the permitting process in response to ARM 17.24.313(1)(e)(i). The primary drainage has a defined size and a defined area as depicted on the PMT map where flows would concentrate. This area of concentration must flow in the same general direction and have a similar grade and bearing as that depicted on the PMT map. The drainage must connect up gradient, when applicable, and outlet in the location depicted on the PMT map.

Tributary Drainages - Tributary drainages are those drainages which outlet within the primary drainage. The term tributary drainage, as defined in these guidelines, includes only those areas where surface water could concentrate and flow. These drainages do not need to be established in the locations depicted on the PMT map; however, there must be approximately the same cumulative length of tributaries (longitudinal profile) as that depicted on the PMT map. The cumulative length will be evaluated within the basis of the primary drainage basin.

Drainage Basin Geometry and Function - There is a relationship between valley width, depth, length, and aspect and hydrologic/ecologic function. The side slopes of primary and tributary drainages must be geomorphically similar, in size and function, to that depicted on the PMT map. The intent of emphasizing similar drainage basin topography is to assure the re-establishment of the hydrologic and ecologic functions provided by the valley floor and side slopes.

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## 3.0 DETERMINING WHEN A REVISION TO THE PERMIT IS NOT REQUIRED

Section 3.0 describes when a deviation (grading problem) from the PMT is not substantial enough to require a revision to the permit pursuant to ARM 17.24.415.

### A. Primary Drainages

(1) Landforms which create drainage divides (ridges or hills) for a primary drainage basin shall be re-established in the general location of that shown on the approved PMT map. A drainage divide is considered to be in the general location of that shown on the approved PMT map if its location does not change the size of any primary drainage basin by more than 10% or does not affect water rights. Calculation of the percent change includes only that part of the drainage basin disturbed by mining.

(a) Reclaimed upland landforms must provide a similar amount of like-function topography as that approved on the PMT map and must complement the postmine drainage plan.

(b) Reclaimed upland landforms do not have to be constructed to the elevation depicted on the approved PMT map but must conform to the requirements and intent of these guidelines.

(2) To be considered consistent with the approved PMT map the area of concentrated flow depicted must:

(a) Provide flow in the same general direction as that depicted on the PMT map;

(b) Outlet at the approved location;

(c) Contain similar lengths (longitudinal profile) of similar gradients to that approved and exhibit an overall concave longitudinal profile;

(d) When applicable, connect up-gradient to a native drainage; and

(e) Provide a smooth transition between graded and native areas and between graded areas with different completion dates.

### B. Tributary Drainages

(1) The operator must establish, within each individual primary drainage basin area, at least as many tributary drainages as committed to on the approved PMT map.

(2) Within the primary drainage basin, the cumulative length of the tributary drainages must be at least 90% of that committed to in the permit, on the PMT map, or as otherwise determined in consultation with DEQ.

(3) Each tributary drainage must be reclaimed to the geomorphic characteristics of that shown on the PMT map or otherwise committed to in the permit.

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(4) The area of concentrated flow, depicted on the PMT map, must exhibit an overall concave longitudinal profile and provide a smooth transition into native and between graded areas with different completion dates [ARM 17.24.634(1)(g) and ARM 17.24.634(1)(i)].

- C. Operators may deviate from the approved PMT map, 3.0(A) and 3.0(B), if the alteration more closely resembles the premining topography and does not adversely affect the approved postmine land use, primary drainage size, or point of discharge from that approved in the permit. Following consultation with DEQ, the PMT map may need to be updated depending on the magnitude of the deviation.
- D. All upland topography must have a smooth transition into native and between graded areas with different completion dates.
- E. Increased topographic diversity should result in better standard reclamation. The creation of additional features not depicted on the PMT map is encouraged within the guidelines of 3.0(A) and 3.0(B), if these features do not adversely affect the approved postmine land use or revegetation and wildlife enhancement plans. These features include, but are not limited to, upland tributaries, cairns, knobs, hills capped with rock, and small depressions. Small depressions must comply with ARM 17.24.503(1).

## 4.0 NOTIFICATION

- A. A deviation from the approved PMT map that is not consistent with Section 3.0 requires the submittal and approval of a revision to the permit, ARM 17.24.415.
- (1) The revision to the permit must be approved prior to soil laydown, ARM 17.24.415(2).
- (2) DEQ review of the revision application will be directed in accordance with 82-4-221(3), MCA and ARM 17.24.415 (major and minor revisions).
- B. A deviation from the approved PMT map, that is consistent with Section 3.0, does not require submittal and approval of a revision to the permit; however, consultation with DEQ is recommended.
- (1) Consultation can take place during a mine inspection, through phone conversations or whatever means is applicable.
- (2) Documentation through DEQ's mine inspection report or by the permittee is recommended. At a minimum, written documentation will include a description of the final graded topography or additional feature alterations.
- (3) If, after consultation, it is determined that a divergence from the approved PMT plan is not consistent with Section 3.0, the permittee will be notified that a revision to the permit is necessary prior to proceeding with reclamation.