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2.10 Wetlands

In accordance with:

- Section 69-05.2-08-04, North Dakota Administrative Code (NDAC);
- Section 69-05.2-08-07, NDAC;
- Section 69-05.2-08-08, NDAC; and
- Section 69-05.2-13-08, NDAC.

2.10.1 Pre-mining Wetlands

Pre-mining wetland conditions within the Permit Area including information for reclamation/mitigation planning are described in Appendix 2.10-1.

2.10.2 Post-mining Wetlands

Wetland reclamation is described in Chapter 4.0. A comparison of the pre-mining and post-mining wetlands within the Disturbance Area is presented in Table 4.1-3 by water regime for each landowner. Wetlands to be disturbed are primarily located along the West Tributary between sections 15 and 17. Temporary, seasonal, saturated and semi-permanent wetlands along the West Tributary will be reclaimed as shown on Figure 4.1-7B. Temporary wetlands in sections 15, 16, 21, 23, 27 and 28, seasonal wetlands in sections 17 and 27, and saturated wetlands in section 16 will also be reclaimed. Post-mining reclamation plans described in Chapter 4.0 include the creation of a greater percentage of seasonal, saturated, and semi-permanent wetlands. No net loss of wetland acreage disturbed by mining is planned and minor differences between pre and post-mining wetlands are based on landowner preference statements, pre-mining land use, and other factors described in Chapter 4.0.

Sampling methods and success standards for wetlands are described in Section 4.3.6. Procedures for wetland reclamation are described below.

Wetland reclamation will begin with stripping of pre-mine wetland soils. The location of the pre-mine wetlands are depicted on Exhibit 1 of Section 2.10.1. The location and volume of all salvageable wetland topsoil will be identified in the Suitable Plant Growth Material (SPGM) removal plan as described in Section 4.1. Wetland topsoil will be removed to the depths indicated on Figure 2.4.2-A, Figure 2.4.2B and Figure 2.4.2-C. These materials will be stockpiled separately and used as top dressing for the reclaimed wetlands. The reason for these separate handling techniques is to enhance re-vegetation efforts by the preservation of wetland species propagules (e.g., seeds, rhizomes, etc.).

Following wetland stripping, and subsequent to Public Service Commission (PSC) approval, the area will be mined. Following mining and backfilling, the wetlands designated for mitigation will be established as shown on Figure 4.1-7B.

Conceptual designs proposed in Section 4.1 show the proposed reclamation of stream channels (permanent diversions), permanent impoundments and depressional wetlands. Permanent diversion designs will create a stable channel that can naturally evolve over time as vegetation matures in the watershed and within new riparian areas. Prior to implementation of the reclamation plan for each stream, final design will be required to provide design and construction details, and account for plan revisions and changes. Similarities and differences between post- and pre-mine valley and channels are described in Section 4.1.

For wetlands that are constructed during mine reclamation, wetland soil will be respread following final grading according to the approved plans. Prior to placement of topsoil, site preparation for the wetland/riparian creation zones will include ripping of the parent material within the depressional wetlands and around pond margins to alleviate compaction and promote root penetration. Thickness of wetland topsoil respread will be determined based on the volume available in the wetland topsoil inventory balanced over the portion of the wetland area scheduled to receive wetland topsoil. The total amount of SPGM to be redistributed in a given reclaimed wetland basin will be based on regraded spoil quality, in accordance with NDAC 69-05.2-15. If there is insufficient wetland topsoil available to meet the requirements of NDAC 69-05.2-15, then the total SPGM thickness will be augmented with subsoil obtained from upland salvage areas. No special efforts will be made to further compact the wetland topsoil once it is respread. The main emphasis of wetland topsoil special handling program is to preserve the native seed bank contained in the salvaged topsoil and thus enhance the subsequent wetland revegetation efforts.

Maintenance of the wetland areas will take place in the summer months following initial planting and will be most aggressive in the first year of native plant establishment. Invasive exotic vegetation will be controlled by a combination of methods including, cutting, pulling, and herbicide application to prevent their establishment. The method chosen will depend on the species attempting to be established. Watering of plantings will occur as needed during the first two summers following their installation should soils dry and plants appear stressed. Other measures to augment wetland water supply may include the construction of snow entrapment features such as the use of snow fences.

Experience at other mines indicates that the emergent vegetation associated with permanent impoundments will be reestablished. This self-revegetation process is facilitated by a combination of water drawdown late in the growing season (late July/early August), followed by the subsequent propagation of wetland species contained in the damp, respread topsoil.

APPENDICES

APPENDIX 2.10-1

PRE-MINING WETLAND REPORT