APPENDIX D-6

HYDROLOGY

GROUNDWATER

Setting

The amendment area lies on the western side of the Big Horn Mountains, on the eastern "shoulder" of the Big Horn Basin, approximately 6 miles northwest of Ten Sleep, Wyoming. This "shoulder' is a platform of anticlines and synclines that encircle the basin. This zone is between 5 and 10 miles wide and forms a bench between the main mountain masses and the deep trough of the Big Horn Basin.[1] Regional groundwater recharge is from the east, in the mountains.

An unnamed ephemeral tributary of Big Cottonwood Creek trends northwest, along the eastern edge of the amendment area in Sections 12 and 13, T.47N., R.90W.

Aquifers

Numerous development drill holes drilled to a maximum depth of 35 feet have not encountered any groundwater. Due to the shallow mining depths (35 feet) on the amendment area, and the geology of the area, aquifers and groundwater will not be intercepted or affected in conjunction with the mining operation.

A records search conducted by the Wyoming State Engineer's Office indicated that there were no adjudicated groundwater rights on or within one-half mile of the amendment area. Table D6-1is a listing, from the State Engineers Office, of all water wells within three miles of the

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[1]Roadside Geology of Wyoming, Lageson, David R. And Darwin R. Spearing, 1988, page 165.

amendment area boundary.

SURFACE WATERS

Map No. D6-1 is a topographic map illustrating the amendment area and the surrounding topography and drainage area within three miles of the amendment area.

There are no live streams or reservoirs within the amendment area. Three surface water rights within one-half mile of the amendment area are illustrated on Map No. D6- 1. However, non of these reservoirs lie down stream from the amendment area. The surface water rights for lands within three miles of the amendment area are listed on Table D6-2. No surface waters will be affected by the mining operations on the amendment area.

Examination of the National Wetlands Inventory Maps prepared by the United States Department of the Interior, Fish and Wildlife Service, indicates that no wetlands are present on the lands within the proposed amendment area.