

within the coal itself. As discussed in the PHC, the estimated volume of water removed in this manner is 22 acre-feet per year.

The affects of subsidence in the permit area, on regional or local groundwater flow, are expected to be minor and of short duration. Localized diversions or interceptions of short duration only are expected due to the plastic flow of shaley units and to both development and tightening of existing fractures which occur due to unbalanced compressive-tensile forces associated with subsidence. The reclamation plan proposes to control post-mining subsidence which is expected to be a maximum of 5.5 feet assuming all three seams are mined, with no subsidence to occur in a varying 100 to 200 ft wide corridor from outcrop areas and permit boundary areas, as well as under escarpments.

In the portion of Federal Lease U-024316 to be permitted, mining will take place in the Tank Seam only, which will limit any subsidence to a maximum of 1.9 feet. In the event mining reaches far enough North to mine at an elevation below Bear Creek, an adequate barrier will be left to completely prevent any impact on Bear Creek. This barrier is shown on [Plate 5-3](#) and described in [Appendix 5-C](#).

## **Quality**

The potential impacts to water quality include contamination of water due to rock dust usage, abandoned equipment, the usage of hydrocarbons, and contamination from road salting. These potential water quality impacts are discussed in detail in [Appendix 7-J, Section 9.0 \(PHC\)](#) and [Appendix 7-P](#).