



The State
of Wyoming



Department of Environmental Quality

Dave Freudenthal, Governor

250 Lincoln Street • Lander, Wyoming 82520 • Fax (307) 332-7726

ABANDONED MINES
(307) 332-5085

AIR QUALITY
(307) 332-6755

LAND QUALITY
(307) 332-3047

SOLID & HAZARDOUS WASTE
(307) 332-6924

WATER QUALITY
(307) 332-3144

Email followed by U.S. Mail

March 30, 2005

Mr. Gary Janosko, Branch Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Re: Pathfinder Mines January 11, 2005, Response to NRC Request for Additional Information (RAI),
November 1, 2004
Pathfinder Mines, Alternate Concentration Limits Application (ACL)
Shirley Basin Site, Wyoming
NRC Docket No. 40-6622, License No. SUA-442 (TAC No. L51931)

Dear Mr. Janosko:

The Wyoming Department of Environmental Quality (DEQ) has reviewed Pathfinder Mines Corp.'s (PMC) response to your request for additional information as referenced above. PMC provided us a copy of the response, which we received on January 14, 2005. This submittal addresses several concerns the WQD had with previous responses from PMC concerning the ACL, which we had provided to the NRC (September 20, 2004 WQD letter to NRC). The NRC in turn, asked PMC to provide additional information to address our concerns.

Item 1 addressed the concern about groundwater contamination flowing beneath and adjacent to Spring Creek. Groundwater monitoring wells on the north east side of the creek contain uranium above what is thought to be back ground levels. PMC provided a detailed evaluation of the hydrologic conditions in this area, including cross sectional potentiometric figures and contaminant concentration graphs. They included an evaluation of four potential sources for this contamination, including seepage from mine tailings, windblown contamination from mill and mining activities, historic surface water discharge to the creek from mine activities, and infiltration recharge from the Area 7 overburden and sediment pond northeast of the creek. Based on the data presented, PMC concluded that the contamination found on the north east side of the creek is discernibly different than the tailings seepage. The most likely scenario is that the contamination is coming from the Area 7 overburden and sediment pond. The Land Quality Division is overseeing this area, and will be provided information on this potential contamination source for follow up.

The second concern in Item 1, the contamination adjacent to Spring Creek, was also addressed. Several wells have been installed and a detailed evaluation of contaminant transport and hydrology of the area adjacent to the creek was provided. It was pointed out that the location of the diversion of Spring Creek has created an effective barrier for groundwater transport sub-parallel to the creek. It appears that the creek is a gaining reach in the area where the contamination is anticipated to migrate from the tailings impoundment, therefore allowing most of the contamination to flow directly towards the stream instead of parallel to it.

Item 2 discussed our request to add more monitoring wells along the north east side of Spring Creek. As mentioned in the above discussion, it appears that the uranium identified in the wells along the northeast side of the creek are most likely from a source other than the mill tailings. If groundwater contamination from the tailings appears to be migrating into and possibly under the creek, PMC proposes the installation of additional wells, located in select locations, at that time.

The third item in our comments requested that the existing corrective action system be kept in place and in good operating order in case the groundwater contaminant concentration modeling does not correctly represent the actual contaminant concentrations. PMC plans on keeping the systems in place and operational until they are "... confident that further corrective action will not be needed."

Our final comment, which the NRC passed along to PMC, concerned the potential for impacts to surface water and the need to monitor both surface water chemistry and aquatic organisms in the area creeks. PMC's response provided a detailed explanation of how they anticipate the contamination to affect the creeks, based on groundwater modeling. Many conservative factors were considered in their conceptual model. We do not necessarily agree with this approach, however, we are taking the position that a complete monitoring program will hopefully note any differences between the modeled groundwater plume movement and the actual movement. This will allow additional corrective action to be implemented to protect the potentially impacted resources. We are currently reviewing the 2004 Spring Creek Aquatic Study, and will be addressing that submittal in a separate upcoming review. Please note however, that we will require periodic chemical, physical and biological monitoring of the surface water at the site in order to thoroughly monitor any impacts to the creeks.

Thank you for the opportunity to review and comment on the draft Alternate Concentration Limit application and related submittals. Please contact me at 307/332-3144 or at the address above if you have any questions concerning this letter or our comments.

Sincerely,



Mark Thiesse
West District Supervisor
GPC Program, Water Quality Division

cc: Mr. John Lusher, Mail Stop T8-A33, 11545 Rockville Pike, Rockville, MD 20852-2738.
Mr. Tom Hardgrove, Pathfinder Mines, P.O. Box 730, Mills, WY 82644
Kevin Frederick, DEQ/WQD
Roberta Hoy, DEQ/LQD
File (2) Pathfinder Shirley Basin / Chronologic