

October 10, 2006

Mr. T.W. Hardgrove  
Manager, Reclamation Operations  
Pathfinder Mines Corporation  
935 Pendell Boulevard  
Mills, WY 82644

SUBJECT: AUGUST 2006 SEMIANNUAL GROUND WATER MONITORING REPORT,  
PATHFINDER MINES CORPORATION, SHIRLEY BASIN SITE, SOURCE  
MATERIALS LICENSE SUA-442 (TAC L60477)

Dear Mr. Hardgrove:

By letter dated August 29, 2006, Pathfinder Mines Corporation (PMC) submitted, to the U.S. Nuclear Regulatory Commission (NRC) staff, a semiannual ground water monitoring report for its Shirley Basin site. This report is the second in a series of ground water reports required by License Condition 47.2 of Source Materials License SUA-442. NRC staff has reviewed the report and has observed the following.

A review of the analytical data from well P-6 indicates that total dissolved solids, sulfate, chloride, and uranium concentrations have dramatically increased since deactivation of the corrective action program (CAP) ground water remediation system. Such increases may conflict with ground water flow and contaminant transport models included with PMC's ACL license amendment application. NRC staff, therefore, requests an explanation for the substantial increases in aforementioned constituents, and an assessment of the risk posed to public health and safety.

In addition, uranium concentrations in well RPI-20A increased from 0.0196 (March 2006) to 0.069 (May 2006). This well is upgradient of Spring Creek near its confluence with Mine Creek. Please provide NRC staff with an assessment of the geochemical conditions at this well location and the risk posed to Spring Creek.

NRC staff requests the above information within 30 days of receipt of this letter. If you have any questions, please contact me at 301-415-7182, or by e-mail, to [sjc7@nrc.gov](mailto:sjc7@nrc.gov).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at: <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

**/RA/**

Stephen J. Cohen, Project Manager  
Uranium Recovery Branch  
Decommissioning and Uranium Recovery  
Licensing Directorate  
Division of Waste Management and  
Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

Docket No.: 40-6622  
License No.: SUA-442

cc: Donna Wichers  
Mark Thiesse

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Sincerely,

**/RA/**

Stephen J. Cohen, Project Manager  
Uranium Recovery Branch  
Decommissioning and Uranium Recovery  
Licensing Directorate  
Division of Waste Management and  
Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

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cc: Donna Wichers  
Mark Thiesse  
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