January 4, 2006

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION, REQUEST TO MODIFY THE GROUND-WATER MONITORING NETWORK, PATHFINDER MINES CORPORATION, LUCKY MC SITE, SUA-672 (TAC-LU0094)

Dear Mr. Hardgrove:

By letter dated June 2, 2005, Pathfinder Mines Corporation (PMC) submitted to U.S. Nuclear Regulatory Commission (NRC) staff a request to amend License Condition 60.A of Source Materials License SUA-672. PMC seeks to eliminate offsite wells AL-8 and AL-9 from the current ground-water monitoring network approved by NRC staff on December 20, 2002, as part of the amendment instituting alternate concentration limits at the Lucky Mc site. NRC staff has reviewed the June 2, 2005, amendment request and subsequent data submitted on October 21, 2005, and we have determined that additional data is required before we can completely evaluate the amendment request. Therefore, enclosed is our request for additional information (RAI).

Please provide a response to this request or a schedule for submitting a response within forty five (45) days of receipt of this letter. If you have any questions, please call me at 301-415-7182 or by e-mail at sjc7@nrc.gov. Please note that TAC LU0094 will be closed, and a new TAC number will be opened upon receipt of your response to this RAI.

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 component of NRC's Agencywide Document 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 Processing Section
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 40-2259
License No.: SUA-672

Enclosure: Request for Additional Information

cc: D. Wichers
M. Thiesse

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M. Thiesse

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PATHFINDER MINES CORPORATION
LUCKY MC SITE, FREMONT COUNTY, WYOMING
REQUEST FOR ADDITIONAL INFORMATION
ELIMINATION OF OFFSITE WELLS AL-8 AND AL-9 FROM MONITORING NETWORK

By letter dated June 2, 2005, Pathfinder Mines Corporation (PMC) submitted to U.S. Nuclear Regulatory Commission (NRC) staff a request to amend License Condition 60.A of Source Materials License SUA-672. PMC seeks to eliminate offsite wells AL-8 and AL-9 from the current ground-water monitoring network approved by NRC staff on December 20, 2002, as part of the amendment instituting alternate concentration limits (ACLs) at the Lucky Mc site. We have completed our review of the June 2, 2005 amendment request and subsequent data submitted on October 21, 2005, and based on our review, NRC staff is issuing this request for additional information (RAI).

Reviewing this license amendment request necessitated a review of the December 20, 2002 ACL license amendment, the associated application, and supporting documents, because offsite monitoring was part of the basis of the ACL licensing action. The technical evaluation report (TER) accompanying that amendment specifically stated that offsite monitoring was considered an essential part of the post-ACL approval ground-water monitoring program. NRC staff concluded, at that time, that because of model uncertainty and current offsite ground-water contamination, offsite ground-water monitoring was necessary to protect human health and the environment. In considering whether or not to eliminate wells AL-8 and AL-9, NRC staff must ensure that the level of protection envisioned in the December 2002 ACL amendment and TER is maintained.

Comment 1. According to the aforementioned TER, the requested ACLs were approved based on the implementation of a ground-water monitoring network and the current aquifer class of use (Class III - Livestock). Wyoming Department of Environmental Quality's (WDEQ's) regulations state that class-of-use is determined by both actual use and ambient water quality (WDEQ, Chapter VIII, Section 4(b)). The regulations also state that WDEQ can change the class of use if additional information warrants such a determination (WDEQ, Chapter VIII, Section 5(f)). Furthermore, WDEQ informed NRC staff that persons could install drinking water wells without testing the water quality. Please explain how removing the subject wells would maintain a level of human health protection similar to the current ground-water monitoring network considering that potential future circumstances could result in a human consumption exposure.

Basis: 10 CFR 40, Appendix A, Criterion 1 states that the general goal or broad objective in siting and design decisions is permanent isolation of tailings and associated contaminants. One of the areas of consideration is hydrologic and other natural conditions as they contribute to continued immobilization and isolation of contaminants from ground-water sources. Although Criterion 1 generally refers to new disposal cells, isolation of waste and associated contamination is still an obvious major goal under the Title II program. During the ACL process, the current NRC-approved ground-water monitoring network was deemed

important to isolate people from tailings waste and associated contamination.

Comment 2. To preclude exposures to hazardous constituents downgradient of a site, NUREG 1620, Rev. 1, Section 4.3.3.2(5), states the following:

> "The applicant for an alternate concentration limit should make every reasonable effort to keep the point of exposure at the long-term care site boundary. If this cannot be achieved, a good-faith effort must be made to acquire the land between the license area boundary and the point of exposure, for ultimate transfer to the long-term custodian. If the land cannot be acquired through a good-faith effort, then institutional controls other than ownership by the long-term custodian may be initiated. These institutional controls must be enforceable, durable, and legally defensible; and will be applied in addition to the numerical limits of the proposed alternate concentration limit."

In a similar situation to PMC, the Commission, in Staff Requirements Memorandum dated December 19, 2002, instructed staff to require a licensee to acquire or provide enforceable, durable, and legally defensible institutional controls to prevent ground-water use under properties that currently or could potentially exhibit ground-water contamination. This position was reinforced in Staff Requirements Memorandum dated November 28, 2005. In this memorandum, the Commission approved a plan, by which a licensee would increase its long-term surveillance fund to account for the potential condemnation of private property that it could not acquire after making good-faith efforts.

Since site-derived contamination is offsite and a potential exists for human health exposure, PMC must make a good faith effort to acquire downgradient the properties that are impacted by site-derived ground-water contamination, per the guidance cited above or provide justification that the acquisition of the properties is not required to prevent ground-water use. As in the above cited case, if, after a good faith effort, the properties cannot be acquired, PMC would be required to obtain an enforceable, durable, and legally defensible institutional control over the use of ground water under affected offsite properties. PMC must also obtain institutional control over the Bureau of Land Management properties between the site and the Burgette property. PMC must include acquired and/or otherwise institutionally controlled properties within the long-term care boundary. If PMC believes that no potential human exposure pathway exists, PMC may provide a basis for this belief and supporting data to NRC staff.

Basis: As stated above, 10 CFR 40, Appendix A, Criterion 1, states that the general goal or broad objective in siting and design decisions is permanent isolation of tailings and associated contaminants. If ground-water class of use could change and persons could install drinking water wells without any regulatory oversight, a human exposure pathway could exist. Therefore, some type of control

over ground-water would be necessary to protect human health from offsite contamination.

Comment 3. Radium-226 & -228 concentrations have exceeded model-predicted point of exposure (POE) concentrations since issuing the December 2002 ACL amendment. This condition was not addressed in PMC's June 2, 2005 amendment request. PMC should provide its assessment of whether or not the proposed ground-water monitoring program can be protective of human health and environment without wells AL-8 and AL-9 in light of the fact that radium has occasionally exceeded predicted POE concentrations.

Basis: 10 CFR 40, Appendix A, Criterion 5D, states if the ground-water protection standards established under paragraph 5B(1) of this criterion are exceeded at a licensed site, a corrective action program must be put into operation. The program must also address removing or treating any hazardous constituents that exceed concentration limits in ground water between the point of compliance and the downgradient facility property boundary. The licensee shall continue corrective action measures to the extent necessary to achieve and maintain compliance with the ground-water standard. Although POE concentrations are not ground-water protection standards, POE concentrations drive risk evaluations.