



Grants Reclamation Project

Homestake Mining Company of California

Thomas Wohlford
Interim Closure Manager

June 13, 2017

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Re: Additional Information Regarding Notice of Violation, Docket No. 040-08903/2016-001, License No. SUA-1471

Dear Sirs:

During an NRC inspection conducted August 24-25, 2016, at the Homestake Mining Company of California (HMC) facility in Grants, New Mexico, the NRC identified a single violation of NRC requirements with three components, *viz.*, that in August 2015, HMC failed to verify through appropriate testing and analysis that radon releases did not exceed 20 picoCuries per meter squared per second ($\text{pCi}/\text{m}^2\text{s}$); failed to ensure that a single set of radon flux measurements were made; and failed to have the required 100 measurements from each mill tailings pile. The NRC determined that this constituted a Severity Level IV violation.

In response to the violation, HMC engaged Environmental Restoration Group (ERG) to estimate the radon flux from both the Large Tailings Pile (LTP) and Small Tailings Pile (STP) using the Radon Attenuation Effectiveness and Cover Optimization with Moisture Effect (RAECOM) code. The ERG modeling results indicate that the radon flux from the LTP will be above 20 $\text{pCi}/\text{m}^2\text{s}$ whether 100 measurements are performed solely from the top of the LTP or including samples collected from the sides (*see* attached ERG memo). Simulated results for the STP indicate that the average of 100 radon flux measurements will also exceed 20 $\text{pCi}/\text{m}^2\text{s}$.

Based on the ERG modeling results, it appears that the only solution to obtain compliance as per the current interpretation of EPA Method 115 is to place significant additional soil cover on top of the LTP and on the eastern side of the STP. Additional soil cover thickness required ranges from about 1.25 to 4.33 feet for the top of the LTP for a total of 360,850 cubic yards. The STP will require lesser amounts of soil cover to be brought into compliance, with about 3.4 feet or 22,700 cubic yards needed on the eastern side slope to reduce the overall average radon flux below 20 $\text{pCi}/\text{m}^2\text{s}$.

Major challenges to placing the additional soil cover on top of the LTP will be as follows;

- finding sufficient soil borrow material with the appropriate characteristics for adequately controlling radon flux in the quantities needed;
- impact of additional soil placement on existing wells and infrastructure—there are a large number of wells (total of 255) on top of the LTP required to maintain effective remediation of the

underlying alluvial aquifer, and placing additional cover on the LTP would necessarily impact the ability to use these wells for remediation; and

- high cost of placing the large amount of soil cover required to obtain compliance.

Based on these preliminary RAECOM (ERG, June 2017) modeling results, the potentially significant remedial efforts to bring the tailings piles into compliance and the challenges associated with those efforts, HMC is respectfully requesting a 90-day extension for submittal of the procedure for demonstrating compliance with the flux standard (see HMC's May 16, 2017 Reply to a Notice of Violation, Docket No. 040-08903/2016-001, License No. SUA-1471). HMC is also requesting a working meeting or conference call with the NRC to discuss the following;

- potential variance for radon gas flux measurement procedures;
- corrective action steps; and
- schedule for obtaining full compliance.

Should you have any questions or comments regarding the attached technical memorandum from ERG, please contact me at twohlford@homestakeminingcoca.com or (505) 290-2187.

Sincerely,



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Interim Closure Manager
Homestake Mining Company, Grants, New Mexico

cc: Dr. R. Evans, NRC, Dallas, Texas (electronic copy)
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