



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 26, 2020

Mr. Brad R. Bingham  
Closure Manager  
Grants Reclamation Project  
Homestake Mining Company of California  
P.O. Box 98  
Grants, NM 87020

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION REVIEW OF HOMESTAKE MINING COMPANY OF CALIFORNIA CORRECTIVE ACTION REPORT FOR THE UNAUTHORIZED DISCHARGE FROM OFF-SITE WELL [WELL 490], MATERIALS LICENSE SUA-1471, DOCKET NUMBER 040-08903

Dear Mr. Bingham:

The Homestake Mining Company of California (HMC) provided, in a letter dated September 16, 2020,<sup>1</sup> the details regarding an unauthorized discharge of extraction water from the off-site collection pipeline through Well 490. The extraction water was being pumped to the HMC zeolite system for treatment and removal of uranium contamination. HMC estimated the discharge was 133,000 gallons, but also calculated that the discharge may have been as high as 216,000 gallons.

HMC calculated an increase in uranium-soil concentration of 0.11 pCi/g due to the discharge from Well 490 based on the higher estimated discharge of 216,000 gallons and a uranium concentration of 0.3 mg/L. Based on that increase in soil concentration, HMC calculated a dose of 0.0066 mrem/yr at t=0 years using the RESRAD computer code. Greater than 70 percent of that dose was projected to be due to external exposure to a receptor who spends 25 percent of their time outdoors. The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the calculation of uranium-soil concentration and the projected RESRAD doses and determined that they are both reasonable. This calculated dose is well below the requirement in Title 10 *Code of the Federal Regulations* (10 CFR) 20.1301 that the total effective dose equivalent to individual members of the public from the licensed operation does not exceed 100 mrem/yr in a year, exclusive of the dose contributions from background radiation.

During a recent NRC inspection,<sup>2</sup> the NRC staff conducted a gamma survey of the discharge area with a Ludlum 19 that showed dose rates of 9-15 microR/hr (the Ludlum 19 survey meter has a sodium iodide detector and is capable of detecting gamma, but not alpha or beta). Subsequently, HMC conducted a Global Positioning System (GPS) based gamma survey on the property where the discharged occurred. The GPS survey showed the discharged area

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML20260H379.

<sup>2</sup> ADAMS Accession No. ML20288A492.

gamma radiation measurements in the vicinity of Well 490 are indistinguishable from background.<sup>3</sup> HMC's results were comparable to the NRC staff measurements. The NRC staff does not have any additional requests for additional information at this time. The NRC staff will review any additional information provided in response to the New Mexico Environment Department request for additional information related to this discharge.<sup>4</sup>

In the September 16, 2020, unauthorized discharge report, HMC indicated that additional corrective actions that HMC will implement include updating standard operating procedures specific to zeolite operation, and additional personnel training. The NRC staff agrees with this approach and would also encourage HMC to review its startup procedures for zeolite system and rate of inspection of the off-site collection areas.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," 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 document system ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

If you have any questions regarding this letter or the enclosures, please contact me at (301) 415-7777 or by email to [Ron.Linton@nrc.gov](mailto:Ron.Linton@nrc.gov).

Sincerely,

Ron C. Linton, Project Manager  
Uranium Recovery and Materials  
Decommissioning Branch  
Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Materials Safety  
and Safeguards

Docket No.: 04008903  
License No.: SUA-1471

Cc via ListServ:  
Mark Purcell (EPA)  
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<sup>3</sup> ADAMS Accession No. ML20297A441.

<sup>4</sup> ADAMS Accession No. ML20295A574.

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DATED: October 26, 2020

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**ADAMS Accession No. ML20287A487****\*via email**

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