



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

January 24, 2019

Thomas Wohlford, Closure Manager  
Grants Reclamation Project  
Homestake Mining Co. of California  
P.O. Box 98/Highway 605  
Grants, NM 87020

SUBJECT: RESPONSE TO THE HOMESTAKE MINING COMPANY OF CALIFORNIA  
LETTER, DATED JULY 26, 2018: PROPOSED ADJUSTMENT IN  
GROUNDWATER MONITORING OF THE SAN ANDRES-GLORIETA AQUIFER  
NEAR THE GRANTS RECLAMATION PROJECT

Dear Mr. Wohlford:

By letter dated July 26, 2018<sup>1</sup>, the Homestake Mining Company of California (HMC) reported to the U.S. Nuclear Regulatory Commission (NRC) that Well 943 was abandoned in July 2018. Well 943 was abandoned as recommended by HMC in a letter dated April 3, 2018<sup>2</sup>. In its July 26, 2018, letter, HMC proposed additional groundwater monitoring of the San Andres-Glorieta aquifer (SAG) at wells near Well 943 in response to NRC letter dated May 10, 2018<sup>3</sup>. Comments regarding the proposed adjustment in groundwater monitoring of the SAG near the Grants Reclamation Project are enclosed to this letter.

Specifically, the NRC staff has determined that additional information is needed to demonstrate that any contamination from Well 943 is not capable of posing a substantial present or potential hazard to human health or the environment. This could be demonstrated by additional monitoring of the SAG downgradient from Well 943 and/or an analysis demonstrating that contamination from Well 943 is not risk significant.

In accordance with 10 CFR 2.390 of the NRC's "Agency 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 Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML18236A552

<sup>2</sup> ADAMS Accession No. ML18117A230

<sup>3</sup> ADAMS Accession No. ML18120A331

If you have any questions, please feel free to contact me at 301-415-7777, or via email at [ron.linton@nrc.gov](mailto:ron.linton@nrc.gov).

Sincerely,

/RA/

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

Docket No.: 040-08903  
License Number: SUA-1471

cc: KVollbrecht (NMED)  
CBurrus (OSE)  
MPurcell (EPA)  
DBarr (DOE)

Enclosure: NRC review of the HMC letter  
dated July 26, 2018

T. Wohlford

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SUBJECT: NUCLEAR REGULATORY COMMISSION STAFF RESPONSE TO THE HOMESTAKE MINING COMPANY OF CALIFORNIA LETTER, DATED JULY 26, 2018: PROPOSED ADJUSTMENT IN GROUNDWATER MONITORING OF THE SAN ANDRES-GLORIETA AQUIFER NEAR THE GRANTS RECLAMATION PROJECT **DATE January 24, 2019**

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**Review of the Homestake Mining Company of California letter dated July 26, 2018:  
Proposed Adjustment in Groundwater Monitoring of the San Andres-Glorieta  
Aquifer near the Grants Reclamation Project**

Background:

By letter dated May 10, 2018<sup>1</sup>, the U.S. Nuclear Regulatory Commission (NRC) staff, in coordination with the New Mexico Environment Department (NMED) and the U.S. Environmental Protection Agency (EPA) staff (collectively “the Agencies”), stated that Well 943 should be plugged and abandoned as recommended in the letter dated April 3, 2018<sup>2</sup>, by Homestake Mining Company of California (HMC). The NRC response on May 10, 2018, in coordination with the Agencies, also stated in part that:

*In the Well 943 Hydrologic Test Report, HMC stated that Well 943 would not have been able to affect the water quality in the SAG when it was being pumped continuously. Specifically, it was noted that contamination could be occurring now that Well 943 is no longer being used as a source for fresh-water supply. However, it is not clear that Well 943 did not impact the water quality of the SAG while in operation as a fresh water supply source in addition to the time period after pumping of Well 943 ceased on May 18, 2017.*

*The well 943 Hydrologic test was conducted at an average of 272 gallons per minute (gpm). As shown in Figure 6.3 in the Hydrologic Test Report, uranium and selenium concentrations did decrease slightly but not to concentrations comparable to those from Well 943M during pumping. Accordingly, it is not clear that a well pumping rate of 272 gpm is sufficient to capture all of the seepage from the overlying aquifer(s). NRC staff reviewed the 2017 Annual Monitoring Report to determine if pumping rates during operation of the fresh water supply system were significantly greater than during the pump test. Section 2.1.8 listed an average total groundwater collection rate from the SAG of 440 gpm for 2017. Section 8.1 of the 2017 Annual Monitoring Report indicates that this fresh water was produced from wells Deep #1R, Deep #2, 951R, and 943 in 2017<sup>3</sup>. As the flowrate from the pump test, which may have been insufficient to capture all of the seepage from the overlying aquifer(s), is similar to the total flowrate from all of the SAG fresh water supply wells, it is not clear to NRC staff that pumping during operations was sufficient to capture all of the seepage from the overlying aquifer(s).*

Accordingly, in coordination with the Agencies, the NRC requested in the May 10, 2018, letter that:

- HMC provide additional supporting information to demonstrate that seepage from the overlying aquifer(s) did not contaminate the San Andres-Glorieta aquifer (SAG);
- If HMC is unable to demonstrate that seepage could not have impacted the SAG, a work plan should be submitted to determine the impact to the SAG from any seepage that may have occurred, and;

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<sup>1</sup> Agencywide Documents Access and Management System (ADAMS) Accession No. ML18120A331.

<sup>2</sup> ADAMS Accession No. ML18117A230.

<sup>3</sup> Deep #1R was used in late 2017. Well 943 was only operated until May 18, 2017.

- HMC provide additional information regarding where the contaminated water from the Well 943 test was disposed.

Discussion:

By letter dated July 26, 2018<sup>4</sup>, HMC discussed that Well 943 was abandoned in July 2018 and proposed additional groundwater monitoring of the SAG at Wells 806R, 949, 955, and 991, in addition to quarterly sampling of SAG Wells Deep #1<sup>5</sup>, Deep #2<sup>6</sup>, 943M, and 951R, based on the contamination observed at Well 943 as documented in the HMC letter dated April 3, 2018. HMC discussed that these wells are located between Well 943 and the closest known major water users. These monitoring wells were proposed to be added to HMC's proposed revision to the groundwater monitoring plan as submitted to the NRC on November 11, 2017<sup>7</sup>.

As discussed in HMC's letter dated July 26, 2018, the groundwater flow in the SAG in the vicinity of Well 943 is to the east-southeast. However, it appears that HMC's proposed additional groundwater monitoring wells are located upgradient from Well 943. Also, Well 943M, which is located only 217 feet upgradient from Well 943, did not show increased levels of contamination as documented in the April 3, 2018 letter. Accordingly, the NRC, in coordination with the Agencies, has determined that the additional proposed monitoring wells are not adequate to monitor contamination from Well 943.

HMC discussed in the letter dated July 26, 2018, that: (1) there are no known wells within numerous miles to the east of the Grants Reclamation Project (GRP), (2) there is an increasing depth to the SAG, and (3) there is declining water quality to the east. However, HMC noted there are several domestic supply wells in the vicinity of the GRP, including two SAG wells located two miles to the northeast of Well 943. Accordingly, it does not appear that water quality or depth to groundwater preclude the use of groundwater from the SAG downgradient from Well 943. HMC also has not demonstrated that contamination from Well 943 could not impact undocumented SAG wells or SAG wells that could be completed in the future that are located downgradient from Well 943.

Path Forward:

The NRC staff, in coordination with the Agencies, has determined that additional information is needed to demonstrate that any contamination from Well 943 is not capable of posing a substantial present or potential hazard to human health or the environment. This could be demonstrated by additional monitoring of the SAG downgradient from Well 943 or an analysis demonstrating that contamination from Well 943 is not risk significant, or both.

Lastly, the NRC staff, in coordination with the Agencies, request that HMC provide additional information regarding where the contaminated water from the Well 943 test was disposed.

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<sup>4</sup> ADAMS Accession No. ML18236A552.

<sup>5</sup> As noted in the July 26, 2018 letter, monitoring will be changed to replacement well when replaced.

<sup>6</sup> As noted in the July 26, 2018 letter, monitoring will be changed to replacement well when replaced.

<sup>7</sup> ADAMS Accession No. ML18018A102.