

JAN 16 1991

URFO:GRK  
Docket No. 40-8903  
SUA-1471, Amendment No. 10  
04008903410E

Homestake Mining Company  
P.O. Box 98  
Grants, New Mexico 87020

Gentlemen:

Our office is in receipt of your October 31, 1990, letter requesting amendment of your license to incorporate Wells M5, S3, and S4 as additional points of compliance. Our recent inspection findings as well as review of your submittal indicate that these wells were drilled on 600-foot centers on a line from Well M5 through Well S1. The well completion data that you have enclosed indicates that each of these wells penetrates the full extent of the alluvial aquifer and are screened over the most permeable portion of the formation.

Your drilling work, completion details, and screened intervals, as well as the locations of the compliance wells, are in accordance with License Condition No. 35(B). With the addition of the recently completed wells, eight point-of-compliance wells exist at the site. These wells are S4, S3, M5, D1, BP, DQ, Y, and X.

You will also note that we have utilized this licensing opportunity to recognize the completion of the evaporation pond. Due to this, portions of License Condition No. 35 pertaining to the pond construction have been deleted.

Therefore, pursuant to Title 10, Code of Federal Regulations, Part 40, Source Material License SUA-1471 is hereby amended by revising License Condition No. 35 to read as follows:

35. The licensee shall implement a compliance monitoring program containing the following:
- A. Implement the monitoring program shown in Table 5-1 of the September 15, 1989, submittal. Additionally, the volumes of water injected and recovered as part of the corrective action program shall be monitored and documented quarterly.

PM: *[Signature]*  
GRKohwinski/db  
1/15/91

PM: URFO  
*[Signature]* JGarcia  
1/15/91

DD: URFO  
*[Signature]* EFHawkins  
1/15/91

D: URFO: RIV  
*[Signature]* REHall  
1/15/91

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- B. Comply with the following ground-water protection standards at brine evaporation pond point-of-compliance Wells D1 and BP, at the inactive tailings impoundment point-of-compliance Wells Y and X, and at the active tailings impoundment point-of-compliance Wells S4, S3, M5, and DQ with background being recognized in Well P:

chromium = 0.06 mg/l, molybdenum = 0.03 mg/l, selenium = 0.10 mg/l,  
vanadium = 0.02 mg/l, uranium = 0.04 mg/l, radium-226 and 228 =  
5.0 pCi/l, and thorium-230 = 0.30 pCi/l.

- C. Implement the corrective action program described in the September 15, 1989, submittal due to exceeding ground-water protection standards, with the objective of returning the concentrations of chromium, molybdenum, selenium, thorium-230, uranium, and vanadium to the concentration limits specified in Subsection (B).
- D. Operate the lined evaporation pond and enhanced evaporation system as described in the June 8 and 28, 1990, submittals.
- E. Submit a semiannual ground-water monitoring report in accordance with the reporting requirements of 10 CFR 40.65. Also, submit, by January 31 of each year, a performance review of the corrective action program that details the progress towards attaining ground-water protection standards.

All other conditions of this license shall remain the same. The effect of this license amendment is to incorporate new point-of-compliance wells into the license as well as recognize construction of the enhanced evaporation pond. The license is being reissued to reflect the above modifications.

The issuance of this amendment was discussed during our December 18, 1990, inspection.

Sincerely,

*Original Signed By:*

**R. E. HALL**

Ramon E. Hall  
Director

Enclosure:  
Source Material License SUA-1471

Case Closed: 04008903410E

Homestake Mining Company

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bcc:

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LFMB

PDR/DCS

URFO r/f

ABBeach, RIV

LLO Branch, LLWM

OB: IMNS: NMSS

GRKonwinski

PJGarcia

BGarcia, RCPD, NM

EMontoya, NM

8903/410E/GRK/91/01/11/L

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93 - 438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

- 1. Homestake Mining Company
- 2. P.O. Box 98  
Grants, New Mexico 87020

3. License number SUA-1471, Amendment No. 10

4. Expiration date February 29, 1976

5. Docket or Reference No. 40-8903

- 6. Byproduct, source, and/or special nuclear material  
Uranium
- 7. Chemical and/or physical form  
Any
- 8. Maximum amount that licensee may possess at any one time  
UNLIMITED

9. Authorized Place of Use: The licensee's uranium mill located in Cibola County, New Mexico, and the licensee's auxiliary ion exchange facility located in McKinley County, New Mexico. The licensee shall for a period of one (1) year, starting on January 1, 1987, monitor for radon daughters at the ion exchange facility on a quarterly frequency.

10. This license authorizes uranium ore processing at a nominal throughput of thirty five hundred (3500) tons per day and uranium recovery from mine water in accordance with the programs listed below.

- A. "ALARA-Radiation Protection Program," submitted on February 28, 1990.
- B. "Quality Assurance Program for Radiological Monitoring," submitted on February 28, 1990.
- C. "Mill Respiratory Protection Program," submitted on February 28, 1990.
- D. "Occupational and Environmental Monitoring and Surveillance Program," submitted on April 6, 1990.
- E. "Emission Control Device Program," submitted on April 13, 1987.
- F. "Uranium Mill Bioassay Program," submitted on June 19, 1987.

Anywhere the word "will" is used, it shall denote a requirement.

11. The licensee shall determine that employees leaving work are not contaminated with radioactive materials. When an employee has showered and changed clothes prior to leaving work, he may be assumed to be free of contamination.

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12. The licensee shall maintain a minimum beach of 50 feet and a minimum freeboard of 5 feet to the centerline of the dam crest. In addition, the licensee shall implement an embankment inspection program as specified in the submittal dated September 21, 1987. The quarterly dam evaluations and annual training of site personnel responsible for dam inspections shall be conducted by a registered professional engineer.
13. The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings and other byproduct wastes generated by the licensee's milling operations.
14. Release of equipment or packages from the restricted area shall be in accordance with the attachment to SUA-1471 entitled, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials," dated September, 1984.
15. The results of all effluent and environmental monitoring required by this license shall be reported in accordance with 10 CFR 40, Section 40.65, with copies of the report sent to the NRC, Uranium Recovery Field Office. Monitoring data shall be reported in the format shown in the attachment to SUA-1471 entitled, "Sample Format for Reporting Monitoring Data." All ground-water monitoring data shall be reported as described in license condition No. 35.
16. Before engaging in any activity not previously assessed by the NRC, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not previously assessed or that is greater than that previously assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval of the NRC in the form of a license amendment.
17. Prior to termination of this license, the licensee shall provide for transfer of title to byproduct material and land, including any interests therein (other than land owned by the United States or the State of New Mexico), which is used for the disposal of such byproduct material or is essential to ensure the long-term stability of such disposal site to the United States or the State of New Mexico, at the State's option.
18. The licensee shall not make any changes to the approved tailings retention system without specific prior approval of the NRC, Uranium Recovery Field Office, in the form of a license amendment.
19. The licensee shall implement an interim stabilization program for all tailings not covered by standing water as specified in the submittal dated February 16, 1989, with the following additional requirements:
  - A. Application of chemical stabilizer shall be performed and the application documented at least annually.

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- B. Detailed quarterly inspections of the effectiveness of measures implemented to control blowing of tailings shall be performed and documented by the Radiation Protection Administrator (RPA).
- C. An annual technical evaluation of the effectiveness of measures implemented to control blowing of tailings shall be performed by a team which includes at a minimum the RPA and the Resident Manager. The evaluation shall specifically address the effectiveness of the erosion control blanket in light of the continuing deposition of windblown material, the need for additional application of chemical stabilizer, and the need for modification of the sprinkler system in response to changes in available beach area. A report documenting the evaluation shall be prepared and a copy submitted to the NRC by October 1 of each year.
- D. An annual soil sampling and gamma survey program shall be performed to verify the effectiveness of measures used to control blowing of tailings. The results of the sampling and survey program as well as proposals for corrective actions for areas exceeding 10.5 pCi/g Ra-226 shall be submitted to the NRC by October 1 of each year. The results of the program shall specifically be considered as part of the evaluation required by 19C. above.
20. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the mill provided that all entrances to the mill are conspicuously posted in accordance with section 20.203(e)(2) and with the words, "Any area within this mill may contain radioactive material."
21. The mill Radiation Protection Administrator (RPA), who is responsible for conducting the mill radiation safety program, shall possess the minimum qualifications as specified in Section 2.4.1 of Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As is Reasonably Achievable."
22. The results of sampling, analyses, surveys and monitoring; the results of calibration of equipment, reports on audits and inspections; all meetings and training courses required by this license and any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in the NRC regulations, all such documentation shall be maintained for a period of at least five (5) years.
23. Standard operating procedures (SOPs) shall be established for all operational process activities involving radioactive materials that are handled, processed, or stored. Standard operating procedures for operational activities shall enumerate pertinent radiation safety practices to be followed. Additionally, written procedures shall be established for nonoperational activities to include in-plant and environmental monitoring, bioassay analyses, and instrument calibrations. An up-to-date copy of each written procedure shall be kept in the mill area to which it applies.

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All written procedures for both operational and nonoperational activities shall be reviewed and approved in writing by the RPA before implementation and whenever a change in procedure is proposed to ensure that proper radiation protection principles are being applied. In addition, the RPA shall perform a documented review of all existing operating procedures at least annually.

24. The licensee shall be required to use a Radiation Work Permit (RWP) for all work or nonroutine maintenance jobs where the potential for significant exposure to radioactive material exists and for which no standard written procedure already exists. The RWP shall be approved by the RPA or his designee, qualified by way of specialized radiation protection training, and shall at least describe the following:
- A. The scope of work to be performed.
  - B. Any precautions necessary to reduce exposure to uranium and its daughters.
  - C. The supplemental radiological monitoring and sampling necessary prior to, during, and following completion of the work.
25. Occupational exposure calculations shall be performed and documented within 1 week of the end of each regulatory compliance period as specified in 10 CFR 20.103(a)(2) and 10 CFR 20.101(b)(2). Routine airborne ore dust and yellowcake samples shall be analyzed in a timely manner to allow exposure calculations to be performed in accordance with this condition. Required nonroutine monitoring for ore dust and yellowcake exposure shall be analyzed and the results reviewed by the RPA within 2 working days after sample collection.
26. Mill tailings, other than small samples for purposes such as research or analysis, shall not be transferred from the site without specific prior approval of the NRC in the form of a license amendment. The licensee shall maintain a permanent record of all transfers made under the provisions of this condition.
27. All liquid effluents from mill process buildings, with the exception of sanitary wastes, shall be discharged to the tailings impoundment.
28. Within 90 days of issuance of this amendment, the licensee shall submit an interim surety instrument acceptable to the NRC, in an amount of no less than \$20,000,000. This surety amount is based on a preliminary cost estimate, and thus may be revised once a Final Reclamation Plan is reviewed and approved by the NRC. The Final Reclamation Plan must be provided by the licensee no later than January 31, 1991. The surety shall be written in favor of the NRC for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, and shall be continuously maintained until a replacement is authorized by the NRC on the basis of approval of the Final Reclamation Plan.
29. The licensee shall submit a detailed decommissioning plan to the NRC at least six (6) months prior to the planned start of decommissioning activities.

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30. The licensee shall implement a program to minimize dispersal of dust from the ore stockpile area(s). This program shall include written operating procedures. The effectiveness of the control method used shall be evaluated weekly by means of a documented inspection.
31. The licensee is authorized to construct and operate a lined brine evaporation pond in accordance with plans, conditions, revisions, and commitments made in conjunction with Ground Water Discharge Plan DP-339, approved by the Ground Water/Hazardous Bureau of the State of New Mexico by a letter dated January 17, 1986, signed by Ernest Rebeck. Such plans, conditions, revisions, and commitments are contained in submittals and correspondence from Homestake Mining Company dated March 22, 1984, April 9, 1984, and April 17, 1986; and includes a commitment by letter dated April 11, 1986, to reclaim the pond area in accordance with applicable reclamation standards after the cessation of operations.
32. The licensee shall comply with the following:
- (a) The quantity of air sampled and the method of analysis shall result in a lower limit of detection (LLD) for all in-plant air sampling of at least 10 percent of the respective maximum permissible concentration for restricted areas.
  - (b) Analysis of urine samples shall be an LLD of at least 5ug/l uranium.
  - (c) A copy of the report documenting the annual ALARA audit shall be submitted to the NRC, Uranium Recovery Field Office, for review within 30 days of completion of the audit.
33. All eating areas and change rooms located in mill process areas shall be spot-checked weekly for removable surface contamination. Areas shall be promptly cleaned if surface contamination levels exceed the values listed in Table 1 of Regulatory Guide 8.30. In addition, all laboratory surfaces used for preparation of bioassay samples shall be spot-checked prior to sample analysis and decontaminated if removable contamination levels exceed 200 dpm alpha/100 cm<sup>2</sup>. The results of all surveys and spot checks shall be documented.
34. DELETED by Amendment No. 4.
35. The licensee shall implement a compliance monitoring program containing the following:
- A. Implement the monitoring program shown in Table 5-1 of the September 15, 1989, submittal. Additionally, the volumes of water injected and recovered as part of the corrective action program shall be monitored and documented quarterly.
  - B. Comply with the following ground-water protection standards at brine evaporation pond point-of-compliance Wells D1 and BP, at the inactive

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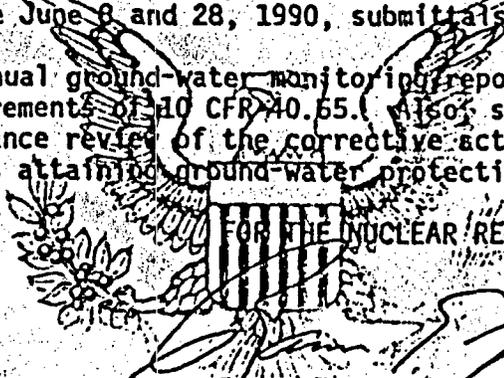
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tailings impoundment point-of-compliance Wells Y and X, and at the active tailings impoundment point-of-compliance Wells S4, S3, M5, and OQ with background being recognized in Well P:

chromium = 0.06 mg/l, molybdenum = 0.03 mg/l, selenium = 0.10 mg/l, vanadium = 0.02 mg/l, uranium = 0.04 mg/l, radium-226 and 228 = 5.0 pCi/l, and thorium-230 = 0.30 pCi/l.

- C. Implement the corrective action program described in the September 15, 1989, submittal due to exceeding ground-water protection standards, with the objective of returning the concentrations of chromium, molybdenum, selenium, thorium-230, uranium, and vanadium to the concentration limits specified in Subsection (B).
- D. Operate the lined evaporation pond and enhanced evaporation system as described in the June 8 and 28, 1990, submittals.
- E. Submit a semiannual ground-water monitoring report in accordance with the reporting requirements of 10 CFR 40.65. Also submit, by January 31 of each year, a performance review of the corrective action program that details the progress towards attaining ground-water protection standards.

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FOR THE NUCLEAR REGULATORY COMMISSION

Date 1-15-91

Ramon E. Hall, Director  
Uranium Recovery Field Office  
Region IV