

## U.S. NUCLEAR REGULATORY COMMISSION

**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and the applicable parts of Title 10, Code of Federal Regulations, Chapter I, Parts 19, 20, 30, 31, 32, 33, 34, 35, 36, 39, 40, 51, 70, and 71, 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 U.S. Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

|                                                                                                                                                                                                                                                                                                                                                                          |                                     |                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------|
| Licensee                                                                                                                                                                                                                                                                                                                                                                 |                                     |                                                                                      |
| 1. Umetco Minerals Corporation                                                                                                                                                                                                                                                                                                                                           |                                     | 3. License Number SUA-648 Amendment No. 65                                           |
| 2. P.O. Box 1029                                                                                                                                                                                                                                                                                                                                                         |                                     | 4. Expiration Date Until terminated                                                  |
| Grand Junction, Colorado 81502                                                                                                                                                                                                                                                                                                                                           |                                     | 5. Docket No. 40-0299<br>Reference No.                                               |
| 6. Byproduct Source, and/or<br>Special Nuclear Material                                                                                                                                                                                                                                                                                                                  | 7. Chemical and/or Physical<br>Form | 8. Maximum amount that Licensee<br>May Possess at Any One Time<br>Under This License |
| Natural Uranium                                                                                                                                                                                                                                                                                                                                                          | Any                                 | Unlimited                                                                            |
| 9. Authorized place of use: The licensee's uranium milling and heap leach facilities located in Natrona County, Wyoming.                                                                                                                                                                                                                                                 |                                     |                                                                                      |
| 10. The licensee shall:                                                                                                                                                                                                                                                                                                                                                  |                                     |                                                                                      |
| A. Issue a Radiation Work Permit (RWP) for non-routine work which may, by the determination of the Radiation Safety Officer (RSO), result in significant exposure to radioactive materials. The RWP shall at a minimum describe the scope of work to be performed, any precautions necessary to reduce exposure, and the necessary supplemental monitoring and sampling. |                                     |                                                                                      |
| B. Provide by a current organizational chart and details of the authority and responsibility of each level of management, noting any changes. This submittal will be included in the ground water monitoring review, due each September 30 <sup>th</sup> .                                                                                                               |                                     |                                                                                      |
| C. DELETED by Amendment No. 60.                                                                                                                                                                                                                                                                                                                                          |                                     |                                                                                      |
| D. Conduct training for site personnel, contractors, and visitors in accordance with the requirements of 10 CFR 19.12 "Instruction to Workers" on the following frequencies.                                                                                                                                                                                             |                                     |                                                                                      |
| 1) Site personnel shall receive radiation and safety training initially and radiation/safety refresher training on an annual basis.                                                                                                                                                                                                                                      |                                     |                                                                                      |
| 2) Visitors are required to register at the office and are not permitted inside the facility restricted area without visitor training unless escorted by trained personnel.                                                                                                                                                                                              |                                     |                                                                                      |
| 3) Contractors having work assignments inside the restricted area are given radiation and safety training prior to performing their duties.                                                                                                                                                                                                                              |                                     |                                                                                      |

- E. Control access to the site restricted area through the use of physical barriers and use of site personnel during scheduled work hours.

[Applicable Amendments: 22, 40, 48, 50, 51, 53]

11. DELETED by Amendment No. 22.

12. DELETED by Amendment No. 22.

13. The licensee is hereby exempted from the requirements of 10 CFR 20.1902(e) for areas within the site, provided that all entrances to the site are conspicuously posted in accordance with Section 20.1902(e) and with the words, "Any area within this site may contain radioactive material."

[Applicable Amendment: 35]

14. The RSO shall meet the minimum qualifications specified in Section 2.4.1 of Regulatory Guide 8.31, Rev. 1, dated May 2002.

[Applicable Amendment: 53]

15. Written procedures shall be established for non-operational activities to include environmental monitoring and instrument calibrations. An up-to-date copy of each written procedure shall be kept in the area to which it applies.

All written procedures shall be maintained on site and shall be reviewed and approved in writing by the RSO before implementation, and whenever a change in procedure is proposed, to ensure that proper radiation protection principles are being applied. In addition, the RSO shall perform a documented review of existing procedures at least annually.

[Applicable Amendments: 22, 40]

16. The licensee shall conduct an annual ALARA audit. A copy of the annual ALARA audit report shall be retained at the site and shall be available for NRC review.

In addition, the licensee shall review the environmental monitoring program annually and provide a report that summarizes environmental monitoring conducted at the site and include the dose assessment for individual members of the public. A copy of the annual environmental monitoring audit report shall be available at the site for NRC review.

[Applicable Amendments: 22, 35, 40]

17. DELETED by Amendment No. 40.

18. DELETED by Amendment No. 22.

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19. DELETED by Amendment No. 35.
20. Calibration of equipment utilized for radiation surveys shall be performed annually. Air sampling equipment shall be calibrated at least quarterly or prior to use if utilized less frequently than on a quarterly basis.
- [Applicable Amendment: 40]
21. DELETED by Amendment No. 40.
22. Release of equipment or packages from the restricted area shall be in accordance with "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct Materials," dated April 1993.
- [Applicable Amendments: 22, 40]
23. Mill tailings other than samples for research 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.
24. DELETED by Amendment No. 22.
25. The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings generated by the licensee's former uranium recovery operations previously authorized under license SUA-648.
- [Applicable Amendment: 43]
26. DELETED by Amendment No. 22.
27. The results of sampling, analyses, surveys and monitoring, the results of calibration of equipment, reports on audits and inspections, and all meetings and training courses required by this license and any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in NRC regulations, all such documentation shall be maintained for a period of at least 5 years.
28. The licensee shall immediately notify the NRC by telephone and facsimile transmission upon discovery in the tailings, heap leach or evaporation pond areas of any failure of structures or earthworks that results in a release of radioactive material and/or any unusual conditions which, if not corrected, could lead to such a failure. This requirement is in addition to the requirements of 10 CFR Part 20.
- [Applicable Amendments: 22, 31]
29. DELETED by Amendment No. 22.

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30. DELETED by Amendment No. 60.
31. Before engaging in any activity not previously evaluated 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 assessed or that is greater than assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval from the NRC in the form of a license amendment.
32. The licensee shall conduct an annual survey of land use (private residences, grazing areas, private and public potable water and agricultural wells, and non-residential structures and uses) in the area within five (5) miles (8 km) of any portion of the restricted area boundary and submit a report of this survey to the NRC. This report shall indicate any differences in land use from that described in the last report.
- [Applicable Amendment: 32]
33. In order to ensure that no disturbance of cultural resources occurs in the future, the licensee shall have an archeological and historical artifact survey of areas of its property, not previously surveyed, performed prior to their disturbance, including borrow areas to be used for reclamation cover. These surveys must be submitted to the NRC and no such disturbance shall occur until the licensee has received authorization from the NRC to proceed.
- In addition, all work in the immediate vicinity of any buried cultural deposits unearthed during the disturbance shall cease until approval to proceed has been granted by the NRC.
- [Applicable Amendment: 40]
34. DELETED by Amendment No. 59.
35. The Alternate Concentration Limits (ACL) for ground water contained in Umetco's application dated May 11 and May 18, 2001, as revised by submittals of July 30, 2001, December 3, 2001, and March 4 and October 2, 2002, and June 17, 2005 have been approved for this site. The licensee shall implement a ground water compliance monitoring program that includes the following.
- A. Conduct monitoring as described in the Ground Water Monitoring Plan (ACL application, Appendix M) in the January 5, 2004, submittal. The validation of ACL exceedance will be in accordance with Section 4 of Appendix M. The licensee shall submit this monitoring data to the NRC by September 30th of each year and include ground water contour maps, contamination iso-concentration maps, and trend graphs.
  - B. Comply with the following ACL in the western flow regime at Point of Compliance (POC) wells MW1 and MW21A: arsenic = 1.8 mg/L, beryllium = 1.64 mg/L, lead-210 = 35.4 pCi/L, nickel = 13.0 mg/L, combined radium-226 and 228 = 250 pCi/L, selenium = 0.161 mg/L, thorium-230 = 57.4 pCi/L, and uranium-natural = 11.9 mg/L.

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- C. Comply with the following ACL in the southwestern flow regime at POC wells GW7 and GW8: arsenic = 1.36 mg/L, beryllium = 1.70 mg/L, lead-210 = 189 pCi/L, nickel = 9.34 mg/L, combined radium-226 and 228 = 353 pCi/L, selenium = 0.53 mg/L, thorium-230 = 44.8 pCi/L, and uranium-natural = 34.1 mg/L.
- D. The licensee shall use, at a minimum, the following lower limits of detection for water quality analysis in mg/l, unless otherwise noted: arsenic = 0.01, beryllium = 0.01, nickel = 0.01, selenium = 0.005, total dissolved solids = 10, sulfate = 1.0, chloride = 1.0, iron = 0.1, pH = 0.1 (standard units), natural uranium = 0.0015, combined radium-226 and 228 = 1.0 pCi/L, thorium-230 = 1.0 pCi/L, lead-210 = 1.0 pCi/L, and gross alpha = 5.0 pCi/L.
- E. The ACL for gross alpha for both flow regimes is based on the sum of its major contributors and not on a measured number. The ACL for gross alpha is considered to be met if the major contributing radionuclides (Th-230, Ra-226 + Ra-228, Pb-210) are all below their ACL.

[Applicable Amendments: 6, 8, 11, 15, 21, 31, 32, 34, 40, 41, 43, 48, 50, 53, 56]

36. DELETED by Amendment No. 53.

37. DELETED by Amendment No. 22.

38. DELETED by Amendment No. 40.

39. The results of all effluent and environmental monitoring required by this license shall be sent annually to the NRC.

[Applicable Amendment: 43]

40. DELETED by Amendment No. 35.

41. DELETED by Amendment No. 22.

42. DELETED by Amendment No. 35.

43. DELETED by Amendment No. 40.

44. DELETED by Amendment No. 1.

45. DELETED by Amendment No. 40.

46. DELETED by Amendment No. 1.

47. DELETED by Amendment No. 1.

48. DELETED by Amendment No. 35.

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49. DELETED by Amendment No. 53.
50. DELETED by Amendment No. 35.
51. DELETED by Amendment No. 35.
52. DELETED by Amendment No. 31.
53. DELETED by Amendment No. 22.
54. DELETED by Amendment No. 60.
55. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination of the mill and mill site, reclamation of any tailings or waste disposal areas, ground water restoration as warranted and the long-term surveillance fee. With submittal of a revised reclamation/decommissioning plan, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the new plan exceed the amount covered in the existing financial surety. The surety shall then be revised to include that amount with the annual surety update.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least 3 months prior to the anniversary date, which is designated as September 13 of each year. If the NRC has not approved a proposed revision to the surety coverage 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement for one year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a 15 percent contingency fee, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The licensee shall also provide the NRC with all surety related correspondence submitted to the State of Wyoming, a copy of the State's surety review and the final approved surety arrangement. The licensee shall also ensure that the surety, where authorized to be held by the State, expressly identifies the NRC portion of the surety and covers the decommissioning and decontamination of the mill and mill site, reclamation of the tailings and waste disposal areas, ground water restoration, as warranted, and the transfer of the long-term surveillance fee to the U.S. General Treasury. The basis for the cost estimate is the NRC-approved reclamation/decommissioning plan or NRC-approved revisions to the plan.

Umetco Gas Hills' currently approved surety instrument, a surety bond held by the State of Wyoming, shall be continuously maintained in an amount no less than \$4,878,787 (NRC portion) for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by both the State and the NRC.

[Applicable Amendments: 1, 2, 13, 19, 20, 26, 27, 28, 33, 36, 39, 44, 46, 49, 52, 54, 55, 57, 61, 62, 63, 64]

56. 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 Wyoming)

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that 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 Wyoming, at the State's option.

57. DELETED by Amendment No. 60.

58. DELETED by Amendment No. 60.

59. DELETED by Amendment No. 60.

60. Notification to NRC under 10 CFR 20.2202, 10 CFR 40.60, and specific license conditions should be made as follows:

Required written notice to NRC under this license should be given to: ATTN: Document Control Desk, Deputy Director, Decommissioning and Uranium Licensing Directorate, Division of Waste Management and Environmental Protection, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Mail Stop T8F5, or by express delivery to 11545 Rockville Pike, Rockville, Maryland 20852. Required telephone notification shall be made to the NRC Operations Center at (301) 816-5100, unless otherwise specified.

[Amendment No. 60]

61. DELETED by Amendment No. 60.

62. DELETED by Amendment No. 50.

63. Licensee is authorized to perform repairs and enhancements to the erosion protection cover in accordance with statements and commitments made in letters dated December 21, 2010; May 10, 2011; June 8, 2011, and July 13, 2011. If any cultural materials are discovered during construction, work in the area shall halt immediately and the licensee shall contact the NRC, the Casper Field Office of the U.S Department of the Interior Bureau of Land Management and the State of Wyoming State Historic Preservation Office and the materials shall be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards.

[Amendment No. 64]

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Dated: August 22, 2011

By: /RA/  
Keith I. McConnell, Deputy Director  
Decommissioning and Uranium Recovery  
Licensing Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs