



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-4005

August 9, 2005

Mr. Curtis O. Sealy  
Umetco Minerals Corporation  
2754 Compass Drive, Suite 280  
Grand Junction, Colorado 81506-8741

SUBJECT: NRC INSPECTION REPORT 040-00299/05-001

Dear Mr. Sealy:

On July 18, 2005, the NRC completed an inspection of your former Gas Hills Uranium Project in Natrona County, Wyoming. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. The inspection findings were presented to members of your staff at the conclusion of the onsite inspection. The enclosed report presents the results of that inspection.

The inspection determined that you have continued to make progress in remediating the site and that activities were conducted in a safe and effective manner in accordance with the NRC approved reclamation plan, the license, and NRC regulations.

No violations or deviations were identified; therefore, no response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) 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).

Should you have any questions concerning this inspection, please contact Ms. Judith Walker at (817) 860-8299 or the undersigned at (817) 860-8197.

Sincerely,

*/RA Roberto Torres for/*

Jack E. Whitten, Chief  
Nuclear Materials Licensing Branch

Docket No.: 040-00299  
License No.: SUA-648

Enclosure:  
NRC Inspection Report  
040-00299/05-001

Umetco Minerals Corporation

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cc w/enclosure:

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RIV Nuclear Materials File - 5th Floor

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**ENCLOSURE**

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No.: 040-00299

License No.: SUA-648

Report No.: 040-00299/05-001

Licensee: Umetco Minerals Corporation

Facility: Former Gas Hills Uranium Project

Location: Gas Hills Mining District  
Natrona County, Wyoming

Inspection Date: July 18, 2005

Inspector: Judith Walker, Health Physicist  
Nuclear Materials Licensing Branch

Approved By: Jack E. Whitten, Chief  
Nuclear Materials Licensing Branch

Attachment: Supplemental Information

## EXECUTIVE SUMMARY

### Former Gas Hills Uranium Project NRC Inspection Report 040-00299/05-001

This inspection included a review of site status, decommissioning activities, management organization and controls, site radiation protection, waste management, environmental monitoring, and groundwater corrective action programs.

#### Site Status and Decommissioning Activities

- The licensee had conducted site activities and decommissioning programs in accordance with the reclamation plan, the license and applicable NRC regulations (Section 1).

#### Management Organization and Controls

The licensee had maintained organization and management controls in accordance with requirements of the license. An appropriate number of staff members had maintained oversight of the reclamation activities (Section 2).

- The licensee had reviewed and maintained site procedures in accordance with the license (Section 2).

#### Radiation Protection

- The licensee had implemented a radiation protection program that met the requirements in 10 CFR Part 20 and the license. The licensee had effectively kept doses at the site as low as is reasonably achievable (ALARA). During calendar year (CY) 2003 and the first half of CY 2004, employee occupational doses were maintained well below regulatory limits (Section 3).
- C Site security and perimeter postings were appropriate. No health or safety hazards were identified by the inspector (Section 3).

#### Environmental Protection and Radioactive Waste Management

- C A review of the licensee's annual report and supporting documents revealed that the facility had not released any radioactive material into the environment that exceeded the limits established in 10 CFR Part 20 (Section 4).
- The licensee had conducted the environmental monitoring, radioactive waste management, and groundwater corrective action program in accordance with license requirements (Section 4).

## Report Details

### **1 Site Status and Decommissioning for Uranium Mill Sites (87654)**

#### 1.1 Inspection Scope

The inspector reviewed the site status and decommissioning activities to determine if the licensee had conducted activities in accordance with the reclamation plan, NRC regulations, and the license.

#### 1.2 Observations and Findings

The Former Gas Hills Uranium Mill operated from 1960 to 1979. Site decommissioning activities conducted by the licensee included demolition of mill buildings, reclamation of three disposal areas and a continuation of the groundwater corrective action program. In 1980, Umetco submitted a reclamation plan for the Above-Grade Tailings Impoundment (AGTI) that incorporated the adjacent experimental heap leach area. Umetco completed regrading of the tailings, constructed the tailings cover, added topsoil, and seeded in 1992. Several years after the construction of the tailings cover was completed, the licensee identified that the tailings cover had eroded along the east toe of the AGTI. In addition, the licensee discovered contamination near the north edge of the AGTI. To correct this erosion problem the licensee added a thicker radon barrier and frost protection cover on both the AGTI and the area connecting to the heap leach impoundment. This activity resulted in the frost protection covering phase being completed. Final rock installation was completed by the licensee in 2001.

Since the previous inspection August 2003, the licensee had completed placement of erosion protection on the A-9 Repository. The licensee plans to complete remediation on the C-18 disposal pit, located at the base of the A-9 Pit, by the end of CY 2005. The Heap Leach Impoundment radon barrier and the erosion protection were completed in late 2001. Since the previous inspection, the licensee began remediating pond GHP-2.

Reclamation activities in progress during this inspection included: (1) maintenance of the tailings impoundments, (2) regrading of the GHP-2 pond, (3) remediation of the C-18 pits (4) diversion channel re-alignment work and (5) radon barrier flux testing.

#### 1.3 Conclusions

The licensee had conducted site activities and decommissioning programs in accordance with the reclamation plan, the license, and applicable NRC regulations.

### **2 Management Organization and Controls (88005)**

#### 2.1 Inspection Scope

The organization structure was reviewed by the inspector to ensure that the licensee had maintained an effective organization with defined responsibilities and functions.

The licensee's standard operating procedures (SOPs) were reviewed, and the implementation of these procedures by the licensee was assessed by the inspector to evaluate the effectiveness of such controls on site activities.

## 2.2 Observations and Findings

The licensee's functional organization since the last inspection was compared with the organization referenced in the license. The licensee's overall organization structure agreed with the conditions of the license and no major changes had occurred in the site organization since the mill was decommissioned, or since the previous inspection. At the time of this inspection, there was a total of 29 workers onsite which included Umetco employees, contract radiation technicians, and construction contractors. Staffing was deemed appropriate for site remediation activities.

License Condition (LC) 15 requires, in part, the establishment of written procedures for non-operational activities, including environmental monitoring and survey instrument calibrations. The inspector reviewed selected site SOPs and determined that the SOPs were sufficient for the program areas referenced in the license. Standard operating procedures had been reviewed annually by the radiation safety officer (RSO), as required. The inspector determined that the licensee's procedures were comprehensive and in accordance with the requirements of the license.

License Condition 27 requires, in part, that the licensee document the results of sampling, analyses, surveys and monitoring, the results of calibrations of equipment, reports on audits and inspections, all meetings and training required by the license, and any subsequent reviews, investigations and corrective actions. The inspector reviewed reports issued by the licensee's RSO that summarized safety findings and training, environmental sampling and inspections, groundwater issues, site status, radiological sampling and surveys, personnel doses, inspections, and other general issues. Additionally, the inspector reviewed the licensee's annual report and corrective action program for groundwater remediation, land use survey, and the annual ALARA audit. These inspector found the reports to be comprehensive and thorough in identifying concerns or issues found and described applicable corrective actions taken by the licensee.

## 2.3 Conclusions

The licensee had maintained organization and management controls in accordance with requirements of the license. An appropriate number of staff members had maintained oversight of the reclamation activities. The licensee had reviewed and maintained site procedures in accordance with the license.

### **3 Radiation Protection (83822)**

#### **3.1 Inspection Scope**

The purpose of this portion of the inspection effort was to determine if, since the last inspection, the licensee's radiation protection program had remained in compliance with requirements established in the license and 10 CFR Part 20.

#### **3.2 Observations and Findings**

##### **a. Site Tour**

The inspector conducted a facility tour to verify that site activities were in accordance with applicable regulations, license conditions, and to ensure that controls were adequate to protect the health and safety of workers and the public. During the site tour, the inspector observed, buildings, fences, gates, and operating equipment. The licensee's site security was maintained by keeping the access gate closed during off hours to prevent unauthorized access to the property. The inspector determined that the licensee had secured licensed material within the site property as required by 10 CFR 20.1801. The inspector also observed that the licensee had posted site fences with radioactive material signs as required by 10 CFR 20.1902 and LC 13. No problem areas or health and safety hazards were identified by the inspector during the site tour. The licensee controlled access to the site in accordance with LC 10(E).

During the tour of the facility, the inspector performed limited independent radiological surveys using an NRC-issued microRoentgen meter (Serial Number 15518, calibration due date of November 10, 2005) that was calibrated to cesium-137. The inspector performed independent radiation surveys of the former evaporation ponds in the GHP-2, A-9, and C-18 pits. The exposure rates ranged from 50 to 60 microRoentgen/hour ( $\mu\text{R/hr}$ ) in the GHP-2, A-9, and C-18 pits.

##### **b. Personnel Doses**

The RSO, as part of the licensee's radiation safety program, issued dosimeters to certain site employees and contractors. Documentation provided by the licensee demonstrated that radiation doses had not exceeded 10 percent of the 10 CFR Part 20 limits. The licensee used a National Voluntary Laboratory Accreditation Program certified dosimetry vendor to provide dosimeters and to perform the analyses. The highest total effective dose equivalent received in CYs 2003 and 2004 was 31 and 55 millirems respectively. The inspector determined that doses received in CYs 2003 and 2004 were consistent with the doses from previous years. In summary, the licensee had effectively kept doses ALARA. During CYs 2003 and 2004, employee occupational doses had remained well below regulatory limits.

c. Radiation Protection License Conditions

License Condition 10(D) outlines, in part, the required training for workers, visitors and contractors that must be completed in accordance with 10 CFR Part 19.12, "Instructions to Workers." Records reviewed by the inspector demonstrated that required training was given, with adequate depth and scope and in accordance with the license and in accordance with the provisions of 10 CFR Part 19.12. Additionally, the licensee had conducted industrial safety training in accordance with the provisions of LC 10(D)(2). The inspector determined that the licensee's personnel training records and training materials met requirements.

License Condition 16 requires, in part, that the licensee conduct an annual ALARA audit. The most recent ALARA audit for CY 2003 was dated September 22, 2004. Additionally, the inspector reviewed the CY 2002 ALARA audit report dated August 19, 2003. The inspector determined that the audits were adequate. No significant safety issues or trends were identified by the licensee or inspector. The ALARA audits were conducted in accordance with LC 16 and 10 CFR 20.1101(c).

License Condition 20 requires, in part, that calibration of equipment utilized for radiation surveys to be performed annually. The inspector's review of equipment currently in use and the supporting instrument records revealed that license had established requirements for instrument calibrations and these requirements were being met. During the site tour, the inspector observed the RSO conduct radiation source checks on three survey instruments.

License Condition 22 requires, in part, that the licensee not release contaminated material above the limits specified in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials." The inspector reviewed contamination survey records from the beginning of CY 2004 to date CY 2005 for equipment and vehicles that the licensee had released for unrestricted use. The inspector's review of these records indicated that the licensee had not released any equipment or vehicles from the site for unrestricted use with removable or fixed contamination in excess of the release limits.

3.3 Conclusions

The licensee had implemented a radiation protection program that met the requirements in 10 CFR Part 20 and the license. The licensee had kept doses at the site ALARA. Site fences and perimeter postings were in good condition. No health or safety hazards were identified.

#### **4 Radioactive Waste Management (88035) and Environmental Protection (88045)**

##### 4.1. Scope

The inspector reviewed the licensee's programs for radioactive waste management, groundwater corrective action and environmental monitoring to determine compliance with applicable requirements specified in the license.

##### 4.2 Observations and Findings

###### c. Annual Land Use Survey

License Condition 32 requires, in part, that the licensee conduct an annual survey of land use in areas within 5 miles of the former mill and submit a report to the NRC each year. The Land Use Survey Report describes any significant land use changes by private residences, nonresidential structures, grazing areas, and potable water and wells. The nearest residence was located 5.5 miles northeast of the mill site. The inspector reviewed the licensee's 2003 and 2004 Land Use Survey Reports and determined that the licensee had not identified any significant changes in land use since the last reporting period. The licensee's CY 2003 and 2004 Land Use Survey Reports were determined to be in compliance with LC 32.

###### d. Annual Reports

License Condition 39 requires, in part, that the results of all effluent and environmental monitoring required by the license, shall be sent annually to the NRC. The inspector reviewed the licensee's 10 CFR 40.65 annual report submitted to the NRC in September 30, 2004, for the period from July 2003 to June 2004.

###### e. Radon Sampling

License Condition 34(B) state in part, that Radon-222 monitoring will be performed at the air particulate monitoring stations. Radon-222 sampling devices were exchanged semi-annually. The licensee had collected radon samples from three locations (Towers 1, 4, and 6). The measurable concentrations were significantly less than the effluent concentration levels listed in 10 CFR Part 20, Appendix B, Table II.

###### f. Environmental Exposure Rates

The licensee measured direct gamma exposure rates at each of the three sample stations (Towers 1, 4 [background location], and 6) using environmental thermoluminescent dosimeters (TLDs). The TLDs were changed out by the licensee on a quarterly basis. Based on the TLD data that the licensee provided for July 2003 to June 2004, ambient background gamma radiation totaled 191 millirem and Tower 1, the onsite TLD location, gamma radiation levels measured 277 millirem for the period July 2003 to June 2004.

Tower 6, TLDs, the licensee's sampling station located nearest to a public residence, measured 148 millirem for the period. The licensee determined that the public dose from gamma monitoring was 86 millirem.

g. Groundwater Monitoring

The licensee's groundwater monitoring data indicated no significant trends in the groundwater quality. No radiochemical or chemical constituents including uranium, radium, thorium, lead, gross alpha, selenium, beryllium and nickel in monitoring wells were above limits specified in LC 35. Effluent and environmental monitoring data from July 2003 to June 2004 indicated that the dose to the nearest resident did not exceed the 100 millirems per year dose limit for the public. However, the inspector noted that groundwater from the site was not being consumed by any member of the public as drinking water.

4.3. Conclusion

A review of the licensee's annual report for the period July 2003 through 2004 revealed that the facility had not released any radioactive material into the environment that exceeded the limits established in 10 CFR Part 20. The licensee had conducted the environmental monitoring, radioactive waste management, and groundwater corrective action program in accordance with license requirements.

**5 Exit Meeting Summary**

The inspector presented the inspection results to licensee representatives at the conclusion of the inspection on July 18, 2005. The licensee representative acknowledged the findings as presented. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

## ATTACHMENT

### **PARTIAL LIST OF PERSONS CONTACTED**

#### Licensee

E. Ley, Site Superintendent  
C. Sealy, UMETCO General Manager  
S. Schierman, Radiation Safety Officer

### **ITEMS OPENED, CLOSED AND DISCUSSED**

#### Opened

None

#### Closed

None

#### Discussed

None

### **INSPECTION PROCEDURES USED**

87654	Decommissioning of Uranium Mills
88005	Management Organization and Controls
83822	Radiation Protection
88035	Radioactive Waste Management
88045	Environmental Monitoring

### **LIST OF ACRONYMS USED**

AGTI	above-grade tailings impoundment
ALARA	as low as is reasonably achievable
CFR	Code of Federal Regulations
CY	calendar year
LC	license condition
RSO	radiation safety officer
SOP	standard operating procedures
TLD	thermoluminescent dosimeter