



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

September 24, 2009

Larry L. Teahon
Manager, Health, Safety and
Environmental Affairs
Crow Butte Resources, Inc.
86 Crow Butte Road
Post Office Box 169
Crawford, Nebraska 69339-0169

SUBJECT: NRC INSPECTION REPORT 040-08943/09-001 AND NOTICE OF VIOLATION

Dear Mr. Teahon:

This refers to the announced, routine inspection conducted on July 14-16, 2009, at the Crow Butte Resources facility in Crawford, Nebraska. The inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. Within these areas, the inspection consisted of selected examinations of procedures and representative records, observations of activities, and interviews with personnel. The preliminary inspection findings were discussed with you at the exit briefing conducted at the conclusion of the onsite inspection, and the final inspection findings were presented to you by telephone on August 26, 2009.

Based on the results of this inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. These violations were evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC, rather than being identified by the licensee.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. For your consideration and convenience, an excerpt from NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," is enclosed. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

Based on the results of this inspection, the NRC has also determined that two additional Severity Level IV violations of NRC requirements occurred. These violations involve your failure to perform water sampling at five locations during the first quarter of 2009, and failure to survey a wellfield operator's vehicle after leaving the restricted area, as stipulated by the license. These non-repetitive, licensee-identified and corrected violations are being treated as Non-Cited Violations (NCVs), consistent with Section VI.A.8 of the Enforcement Policy. The NCVs are described in the subject inspection report. If you contest the violations or significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with

the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region IV, and the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC's Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

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

Sincerely,

/RA Jacqueline D. Cook for/

Jack E. Whitten, Chief
Nuclear Materials Safety Branch B

Docket: 040-08943
License: SUA-1534

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 040-08943/09-001
3. NRC Information Notice 96-28

cc w/enclosures 1&2:
Public Document Room
Upper Niobrara-White Natural Resources District
805 East Third
Chadron, Nebraska 69337

Nebraska Department of Environmental Control
Box 94877 Statehouse Station
301 Centennial Mall South
Lincoln, Nebraska 68509

Nebraska Radiation Control Program Director

bcc w/enclosures 1&2 (via ADAMS e-mail distribution):

- A. Howell, D:DNMS
- C. Cain, DD:DNMS
- J. Whitten, C:NMSB-B
- L. Gersey, NMSB-B
- R. Evans, NMSB-B
- T. Oxenberg, FSME/DWMEP/DURLD
- R. Burrows, FSME/DWMEP/DURLD
- T. Lancaster, FSME/DWMEP/DURLD
- W. VonTill, FSME/DWMEP/DURLD
- Fee Coordinator, DRMA, RIV

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Publicly Avail	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sensitive	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sens. Type Initials	LMG
RIV:DNMS:NMSB-B	FSME:DWMEP	FSME:DWMEP	FSME:DWMEP	C:NMSB-B	
L. Gersey	R. Burrows	T. Oxenberg	T. Lancaster	J. Whitten	
/RA/	/RA/by email	/RA/by email	/RA/by email	/RAJDCook for/	
09/11/2009	09/10/2009	09/09/2009	09/10/2009	09/ /2009	

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NOTICE OF VIOLATION

Crow Butte Resources, Inc.
Crawford, Nebraska

Docket 040-08943
License SUA-1534

During an NRC inspection conducted on July 14 through July 16, 2009, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. 10 CFR 40.42 (h)(1) requires, in part, that licensees shall complete decommissioning of outdoor areas as soon as practicable but no later than 24 months following the initiation of decommissioning.

10 CFR 40.42 (i) states, in part, that the Commission may approve a request for an alternate schedule for completion of decommissioning of outdoor areas, if the Commission determines that the alternative is warranted.

Contrary to the above, the licensee failed to request an alternate decommissioning schedule for restoration of Mine Units 2, 3, 4, and 5, in which lixiviant injections ceased on December 5, 1995, March 24, 1999, March 24, 2003, and July 9, 2007, respectively, and the Mine Units were not decommissioned within 24 months.

This is a Severity Level IV violation (Supplement VI).

- B. 49 CFR 172.702 requires that each hazmat employer shall ensure that each hazmat employee is trained and tested, and that no hazmat employee performs any function subject to the requirements of 49 CFR Parts 171-177 unless trained, in accordance with Subpart H of 49 CFR Part 172. The terms hazmat employer and hazmat employee are defined in 49 CFR 171.8.

Contrary to the above, during the period between July 18, 2008, and July 14, 2009, the licensee did not provide training for four hazmat employees as required by Subpart H to 49 CFR Part 172, and the licensee otherwise meets the definition of hazmat employer in 49 CFR 171.8.

This is a Severity Level IV violation (Supplement V).

Pursuant to the provisions of 10 CFR 2.201 Crow Butte Resources, Inc. is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time. If you contest

this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 24th day of September 2009

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 040-08943

License No.: SUA-1534

Report No.: 040-08943/09-001

Licensee: Crow Butte Resources, Inc.

Facility: Crow Butte Facility

Location: Dawes County, Nebraska

Dates: July 14-16, 2009

Lead Inspector: Linda M. Gersey, Health Physicist
Nuclear Materials Safety Branch B

Accompanied by: Ronald A. Burrows, CHP, RRPT, Senior Health Physicist
Decommissioning and Uranium Recovery Licensing Directorate
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Approved by: Jack E. Whitten, Chief
Nuclear Materials Safety Branch B

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

Crow Butte Resources, Inc.
NRC Inspection Report 040-08943/09-001

This inspection included a review of site status, management organization and controls, site tours, radiation protection, environmental protection, effluent controls, transportation, and radioactive waste management activities. In summary, the licensee was conducting operations in accordance with regulatory and license requirements, with exceptions described below.

Management Organization and Controls

- The organizational structure and staffing levels were sufficient for the work in progress at the facility (Section 1).
- The licensee's four Safety and Environmental Review Panel evaluations for 2009 were conducted in accordance with requirements of the performance-based license (Section 1).
- The licensee conducted the As Low As Reasonably Achievable program review as required by the license (Section 1).

In-Situ Leach Facilities

- Site operations were being conducted in accordance with applicable performance-based license conditions and regulatory requirements, with two exceptions (Section 2).
- One Non-Cited Violation was identified pertaining to the failure to sample five ponds during the first quarter of 2009 (Section 2).
- A violation was identified pertaining to a failure of the licensee to request an alternate decommissioning schedule for wellfield restorations (Section 2).
- The licensee implemented adequate actions to mitigate radiation safety issues found with the new in-line wellfield house filters (Section 2).

Radiation Protection

- The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license, with one exception (Section 3).
- A Non-Cited Violation was identified pertaining to the licensee allowing a vehicle to leave a restricted area without performing a contamination survey (Section 3).
- Occupational exposures were determined to be below the annual regulatory limits (Section 3).

Effluent Control and Environmental Protection and Maintaining Effluents from Materials Facilities As Low As Reasonably Achievable

- The licensee conducted environmental monitoring in accordance with license requirements. The licensee did not release licensed material into the environment in quantities exceeding regulatory limits (Section 4a).
- Monitoring wells were being sampled in accordance with site procedures (Section 4b).

Inspection of Transportation Activities and Radioactive Waste Management

- The licensee was conducting radioactive waste disposal operations in accordance with license and regulatory requirements (Section 5).
- One violation was identified related to the failure to provide Department Of Transportation hazmat training to several employees who perform functions subject to the requirements of 49 CFR Parts 171-177 (Section 5).

Report Details

Site Status

The Crow Butte Resources, Inc. facility started commercial operations in April 1991. At the time of the inspection, the licensee continued to recover uranium through in-situ recovery operations. Uranium processing and drying operations were in progress at the Central Processing Plant (CPP). The current operational status of the facility is as follows:

- Groundwater in Mine Unit 1 has been restored and wells and wellhouses were decommissioned
- Mine Units 2, 3, 4 and 5 were undergoing groundwater restoration
- Mine Units 6, 7, 8, 9 and 10 were in production
- Mine Unit 11 was under development

Based on Nebraska Department of Environmental Quality Permit NEO122611, the licensee can have no more than five mine units in production and no more than five mine units in restoration at any one time. Therefore, production in Mine Unit 11 cannot start until Mine Unit 6 is placed into restoration.

Since the previous inspection, conducted in July 2008, NRC staff has been reviewing the licensee's North Trend expansion amendment, and a hearing has been granted for this particular licensing action. The licensee also submitted a license renewal application which is currently under NRC review. Hearing requests were submitted for the license renewal, and a determination on these petitions is pending.

NRC staff approved license Amendment Number 22 allowing the licensee to add a low-grade recovery circuit to the CPP. The approved license amendment for plant expansion permitted the licensee to increase its flow throughput from 5,000 to 9,000 gallons per minute (gpm). At the time of the inspection, the licensee had installed six downflow ion exchange columns, resin shaker, and transfer tank. The operating flow observed at the time of the inspection was 7,800 gpm. The restoration ion exchange columns formerly located in the CPP were relocated to the research and development building, where a 500 gpm reverse osmosis unit is currently in service.

The licensee stated that they intend to submit an application for a satellite operation at the Three Crow site located south of Crawford, Nebraska, during 2010. The licensee has completed the exploration phase at these sites and is now engaged in developmental drilling. According to the statements made by the licensee, the application for this site is approximately 50% complete. The licensee stated they were also performing exploration drilling at another potential satellite site called Marsland, which is approximately 30 miles southeast of the current facility. Based on estimates made by the licensee, the application for this site will be submitted during 2012.

1 Management Organization and Controls (88005)

1.1 Inspection Scope

Determine if the licensee had established an organization to administer both the technical programs and the programs that are necessary to perform internal reviews, self-assessments, and audits.

1.2 Observations and Findings

The licensee's corporate organizational structure is illustrated in Figure 5.1-1 of the license application. During the inspection, the inspectors reviewed the organizational structure. At the time of the inspection, the licensee had 67 full time employees including a summer intern and several temporary employees. The licensee also employed contractors for all drilling operations and other work, as needed. Since the previous inspection, there has been a turn-over of eight employees, mostly from maintenance and operations staff. The inspectors concluded that the licensee had sufficient staff to implement the conditions of the license.

License Condition 9.4 of the performance-based license requires, in part, that the licensee establish a Safety and Environmental Review Panel (SERP). The inspectors reviewed the licensee's four SERP evaluations that were performed during 2009 (SERP 09-01 through SERP 09-04). The evaluations made by the SERP included a technical review involving the approval of a test in the CPP to assess the effectiveness of removing uranium from the commercial evaporation ponds resulting in the ultimate disposal of the waste water down the licensee's deep disposal well. The inspectors, after reviewing the SERP records, concluded that the evaluations were technically adequate and provided sufficient detail to support the proposed changes. Also, the inspectors determined that the changes resulting from the SERP recommendations did not negatively impact the licensing basis of the site.

License Condition 9.12 and License Application Section 5.4.4 require Annual "As Low As Reasonable Achievable" (ALARA) Program Reviews. The inspectors noted that the annual ALARA audit for 2008 licensed activities was conducted during June 2009 by a third-party contractor. One ALARA item was noted in the report. This ALARA item related to a slight increase in gamma exposure levels in an office area adjacent to the CPP. Upon investigation by the licensee, the increase in exposure appeared to be associated to the condition of the water shielding blocks along the walls in the CPP. The water shielding blocks were reconditioned and the gamma levels returned to previous levels routinely observed in the office area adjacent to the CPP. The independent audits conducted by the third-party contractor did not identify any significant problems. The inspectors determined that the licensee's ALARA audit was a thorough review of licensed activities.

1.3 Conclusions

The organizational structure and staffing levels were sufficient for the work in progress at the facility. The licensee's four SERP evaluations for 2009 were conducted in accordance with requirements of the performance-based license. The licensee conducted the ALARA program review as required by the license.

2 In-Situ Leach Facilities (89001)

2.1 Inspection Scope

Determine if operations were being conducted in accordance with regulatory and license requirements.

2.2 Observations and Findings

Site tours were conducted to observe in-situ recovery operations in progress. Areas toured included the CPP, research and development building, selected wellfields, selected header houses, and the evaporation ponds. The inspectors observed the condition of plant equipment, fences, postings, and gates. Plant operating parameters (flow, pressure) were compared to licensed limits. The inspectors observed the conditions in the yellowcake dryer room. License Condition 10.8.B requires, in part, the monitoring of the pressure differential every four hours during yellowcake drying operations, although the licensee has elected to monitor the pressure differential continuously. In summary, operations were being conducted in accordance with license requirements and established procedures.

The inspectors observed the areas of the plant that had been reconstructed since the last inspection. Six new pressurized downflow columns were added to the CPP. During the site tours, the equipment in use appeared to be functioning as designed.

In late June 2008, the licensee began adding inline filters in the wellfield houses. The filters were being installed to protect downstream components from buildup of calcium carbonate scale. The calcium carbonate scale was negatively impacting functionality of the downstream piping, pressure reducing valves, flow meters, and wells. The installation of the filters caused unanticipated problems for the licensee including the creation of new radiation areas, contamination control during filter changes, access control restrictions to these new radiation areas, and transportation of filter sludges across the site.

The inspectors reviewed the licensee's actions to mitigate the problems encountered with the initial installation of the filters in the wellfield houses. The licensee had progressed by installing filters that could be cleaned by back-flushing instead of opening and handling contaminated filters. The licensee also installed keypad locks on all wellfield houses with in-line filters and posted the wellfield houses as radiation areas. The inspectors determined that the actions taken by the licensee to correct the initial problems with the filters was adequate.

License Condition 11.4 and License Application Section 5.8.8.3 specify, in part, that the licensee must perform and document inspections of its onsite evaporation ponds. The most recent annual pond inspection report provided by the licensee was submitted to the NRC by letter dated November 18, 2008. The inspection of the licensee's onsite evaporation pond was conducted by a third party engineer who stamped and signed the report. According to the engineer's report, data from the monitoring wells indicates that no leaks to the groundwater system have occurred.

During the inspection, the licensee discussed a self-identified violation with the inspectors. In April 2009, a water sampler identified that the three evaporation ponds

and the two reverse osmosis ponds had not been sampled during the first quarter of 2009. This is a violation (NCV 040-08943/0901-01) of License Condition 11.4, which states, in part, that the licensee shall perform and document inspections in accordance with the February 5, 1996, revision to its Evaporation Pond Onsite Inspection Program. However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.8 of the NRC Enforcement Policy. The licensee's corrective measures included placing the pond water sampling on a checklist that must be completed no later than 2 months into the calendar quarter, which the inspectors found to be satisfactory.

The inspectors observed the three commercial ponds (Ponds 1, 3 and 4) to assess the condition of the pond liners, condition of the side slopes, and the manner in which the ponds were being operated. Although the licensee is authorized to construct a total of five ponds, Ponds 2 and 5 were never constructed. The inspectors observed that the licensee was maintaining the proper amount of freeboard. The aforementioned engineer's report also indicated that the proper amount of freeboard has been maintained (5 feet). The inspectors observed that the spray evaporation system was operating satisfactorily.

The liners on all three ponds were in good condition. Expansion ripples were observed in the liner material, although it did not appear to negatively impact the liner. The commercial ponds were in satisfactory condition and were being operated properly.

During the inspection, the inspectors reviewed the licensee's compliance with the decommissioning requirements specified in 10 CFR 40.42, as it relates to wellfields. The licensee had failed to request an alternate decommissioning schedule for wellfields that require greater than 24 months to restore. Mine Units 2, 3, 4 and 5, in which lixiviant injections ceased on December 5, 1995, March 24, 1999, March 24, 2003, and July 9, 2007, respectively, are still being restored and were not decommissioned within 24 months. This is a violation (VIO 040-08943/0901-02) of 10 CFR 40.40(h)(1) and 10 CFR 40.42(i).

2.3 Conclusions

Site operations were being conducted in accordance with applicable performance-based license conditions and regulatory requirements, with two exceptions. One Non-Cited Violation was identified pertaining to the failure to sample five ponds during the first quarter of 2009. A violation was identified pertaining to a failure of the licensee to request an alternate decommissioning schedule for wellfield restorations. The licensee implemented adequate actions to mitigate radiation safety issues found with the new in-line wellfield house filters.

3 Radiation Protection (83822)

3.1 Inspection Scope

Determine if the licensee's radiation protection program was in compliance with the license and 10 CFR Part 20 requirements.

3.2 Observations and Findings

The licensee's occupational dose monitoring program was reviewed to ensure that no worker had exceeded the occupational dose limits specified in 10 CFR 20.1201. In calendar year 2008, 53 employees were monitored for occupational exposure. The licensee's exposure records for 2008 through the first quarter 2009 were reviewed. Occupational doses are a summation of airborne uranium and radon daughters, if applicable, and optical stimulated luminescence dosimetry reported doses. The records indicated that the highest total effective dose equivalent for calendar year 2008 was 567 millirems. The highest total effective dose equivalent for the first quarter of 2009 was 140 millirems. The weekly uranium intake was also being monitored to satisfy 10 CFR 20.1201(e) chemical toxicity requirements. All exposures remained below both the annual limit of 5,000 millirems as specified in 10 CFR 20.1201(a) and the 10 milligrams in a week chemical toxicity limit specified in 10 CFR 20.1201(e).

One fetal monitor was assigned to a declared pregnant woman from August 2008 through February 2009. The total assigned dose to the fetal monitor was 17 millirems deep dose equivalent. The fetal exposure remained below the limit of 500 millirems as specified in 10 CFR 20.1208(a).

In addition to occupational exposure records, the inspectors reviewed the August 2008 through July 2009 records for in-plant radiological surveys, material release surveys, solid waste surveys, radiation work permits, employee training, and instrument calibrations. Based on these records, all program areas met regulatory and license requirements, with one exception.

During the inspection, the licensee discussed with the inspectors a self-identified violation. In April 2009, an operator's vehicle was not surveyed for potential radiological contamination after exiting the restricted area. This is a violation (NCV 040-08943/0901-03) of License Condition 9.8, which states, in part, that the licensee shall release equipment from the restricted area in accordance with NRC guidance. However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VI.A.8 of the NRC Enforcement Policy. The licensee's corrective measures included immediately retrieving the vehicle and performing a contamination survey. A contamination survey by the licensee determined the vehicle was not contaminated. The licensee provided further training to employees on the requirements for release of vehicles from the restricted area. The inspectors reviewed the training and found it to be satisfactory.

During site tours, the inspectors performed independent radiological surveys using an NRC-issued survey meter, a Ludlum Model 19 microRoentgen meter (NRC Number 015544, calibration due date April 10, 2010, calibrated with radium-226). The inspectors did not measure any areas greater than 5 millirems per hour which the licensee had not previously identified and posted as radiation areas. The inspectors determined that the licensee was identifying and posting radiation areas as required in 10 CFR 20.1902.

3.3 Conclusions

The licensee implemented a radiation protection program that met the requirements of 10 CFR Part 20 and the license, with one exception. A Non-Cited Violation was identified pertaining to the licensee allowing a vehicle to leave a restricted area without

performing a contamination survey. Occupational exposures were determined by the inspectors to be below the annual regulatory limit.

4 Effluent Control and Environmental Protection and Maintaining Effluents from Materials Facilities ALARA (88045, 87102)

4.1 Inspection Scope

Determine if the environmental and effluent monitoring programs were effective to monitor the impacts of site activities on the local environment.

4.2 Observations and Findings

a. Environmental Monitoring

The effluent and environmental monitoring program requirements are specified in License Condition 11.3, and the reporting requirements are specified in License Condition 12.1. The two Semi-annual Radiological Effluent and Environmental Monitoring Reports (semi-annual reports) for calendar year 2008 were reviewed during the inspection. The semi-annual reports were submitted to the NRC in a timely manner and provided relevant data for the facility.

The environmental monitoring program consisted of air particulate, radon, surface water, sediment and ambient gamma exposure rate sampling. The licensee has seven monitoring stations at various locations around the licensed property including one background station.

The seven monitoring stations were used to measure natural uranium, radium-226, and lead-210 concentrations in air. Radon-222 was also measured using track-etch detectors. The sample results reported by the licensee were less than the respective effluent concentration limits specified in 10 CFR Part 20, Appendix B, Table 2, for air releases. The perimeter stations sample results were similar to the background station sample results.

The licensee measured ambient gamma radiation levels at the seven sample stations using dosimeters that were exchanged quarterly. The annual ambient gamma radiation levels ranged from 28-50 millirems, and were comparable to background levels.

Surface water was collected quarterly from streams and water impoundments in the wellfield areas. The licensee collected water samples from five streams (unless they were dry) and three impoundments during 2008. The samples were analyzed for natural uranium and radium-226 concentrations. The sample results were less than the effluent concentration limits specified in 10 CFR Part 20 for water.

Stream sediment samples were also collected annually at the eight locations where surface water samples were collected. The samples were analyzed for natural uranium, radium-226, and lead-210 concentrations. No specific limit has been established for sediment samples, but the data is used by the licensee for trending purposes.

The 2008 semi-annual reports also contained water supply well data. Water supply wells located within 1-kilometer of the wellfields were sampled quarterly. A total of 19

wells were sampled in 2008. Results presented in the semi-annual reports are consistent with previously collected data.

Based on the environmental and effluent monitoring sample results, the inspectors concluded that the potential radiation dose to any member of the public from licensed material during 2008 was below the 100 millirems per year annual dose limit specified in 10 CFR 20.1301(a).

b. Wellfield and Excursion Monitoring

License Condition 11.2 specifies, in part, the monitoring well sampling requirements and the criteria for placing a well on excursion status. The licensee's groundwater sampling program requirements include biweekly monitoring well sampling in active mine units, weekly sampling of wells in excursion status, and lower-frequency well sampling in mine units under restoration. The inspectors reviewed groundwater sampling records from August 2008 through July 2009, to determine if the licensee was collecting samples at the required frequency and if excursions were properly identified. The inspectors selected monitoring data at random and examined the reports to confirm the licensee's automated excursion reporting system was functioning properly. Data from known excursions was also reviewed to ensure that the monitoring frequency had been increased according to License Condition 11.2 requirements. The inspectors concluded that the licensee was implementing the groundwater monitoring program in accordance with the license.

The inspectors reviewed the spill records for the past 12 months. According to the licensee's records, 30 spills occurred resulting in a total of 20,236 gallons of unrecovered fluids. Of the total unrecovered volume, 4,290 gallons was production fluid. During the inspection, the inspectors noted fluid leaking from a production well union in wellhouse 50. This potential problem was pointed out to the licensee for correction.

The inspectors reviewed recent mechanical integrity test (MIT) documentation to determine if test results were being appropriately reported and the tests were being properly performed. The inspectors observed a MIT at well CM-3 and verified that the test was performed in accordance with test procedures outlined in Document P-23 of the facility's operating manual. The inspectors determined that the licensee was properly performing and documenting the MITs.

License Condition 10.2 requires, in part, that every injection and production well be retested every five years. The inspectors reviewed the licensee's MIT database and the procedures that were used to maintain testing of each well within the specified five years. The inspectors reviewed a representative sample of MITs that were conducted within five years and the records maintained on each well confirmed that the tests had been conducted within the appropriate timeframe.

4.3 Conclusions

The licensee conducted environmental monitoring in accordance with license requirements. The licensee did not release licensed material into the environment in quantities exceeding regulatory limits. Wells were being sampled in accordance with site procedures.

5 Inspection of Transportation Activities and Radioactive Waste Management (86740, 88035)

5.1 Inspection Scope

Determine if transportation and radioactive waste disposal activities were being conducted in compliance with license requirements.

5.2 Observations and Findings

License Condition 9.7 specifies, in part, that the licensee dispose of 11e.(2) byproduct material at a site licensed to receive such material. The inspectors confirmed that the licensee had a current disposal agreement with Pathfinder Mines, Inc., which expires July 31, 2010. The licensee made three shipments to Pathfinder Mines since July 2008, and the licensee maintained records of these waste disposal shipments. The shipments were consistent with the terms of the agreement. The licensee maintained records of 17 yellowcake shipments that occurred between August 2008 and June 2009. The shipping papers were compared to the requirements of 49 CFR 172 Subpart C. All required information was presented on the shipping papers.

Department of Transportation (DOT) hazmat training records were reviewed and compared to the requirements in 10 CFR 71.5 and 49 CFR 172 Subpart H. Training was current for the three employees that signed and certified the shipping documents. However, there were no current hazmat training records for the three radiation safety technicians who had completed the radiation surveys included in the shipping documents. Hazmat training of the Radiation Safety Officer was last conducted in 2001. Initial hazmat training is to be conducted within 90 days of being assigned and recurring training is required every three years. This finding was identified as a violation (VIO 040-08943/0901-04) of 49 CFR 172.702, which requires, in part, that each hazmat employer shall ensure that each hazmat employee is trained and tested, and that no hazmat employee performs any function subject to the requirements of 49 CFR Parts 171-177 unless trained, in accordance with Subpart H of 49 CFR Part 172. (The terms hazmat employer and hazmat employee are defined in 49 CFR 171.8.) Also, Paragraph 9.3.3 of the licensee's Health Physics Manual states that the licensee's Radiation Safety Officer is responsible for ensuring that the radioactive material shipment is acceptable for shipment and includes the necessary documentation, radiation surveys, and placarding prior to release.

5.3 Conclusions

The licensee was conducting waste disposal operations in accordance with license and regulatory requirements. One violation was identified related to the failure to provide DOT hazmat training to several employees who perform functions subject to the requirements of 49 CFR Parts 171-177.

6 Exit Meeting Summary

The inspectors presented the preliminary inspection results to the licensee's representatives at the conclusion of the onsite inspection on July 16, 2009. A final exit briefing was conducted by telephone with the licensee on August 26, 2009.

Representatives of the licensee acknowledged the findings as presented. During the inspection, the licensee did not identify any information reviewed by the inspectors as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

Partial List of Persons Contacted

Licensee

R. Grantham, Radiation Safety Officer
J. Stokey, Mine Manager
L. Teahon, Manager, Health Safety and Environmental Affairs
D. Paulick, Operations Manager
W. Beins, Senior Geologist

Items Opened, Closed, and Discussed

Open

040-08943/0901-01	NCV	Failure to sample 5 ponds during the first quarter of 2009
040-08943/0901-02	VIO	Failure to request an alternate decommissioning schedule for well-field restorations
040-08943/0901-03	NCV	Failure to survey for release a vehicle leaving the restricted area
040-08943/0901-04	VIO	Failure to provide DOT hazmat training to several employees

Closed

040-08943/0901-01	NCV	Failure to sample 5 ponds during the first quarter of 2009
040-08943/0901-02	NCV	Failure to survey for release a vehicle leaving the restricted area

Discussed

None

Inspection Procedures Used

IP 88005	Management Organization and Controls
IP 89001	In-Situ Leach Facilities
IP 83822	Radiation Protection
IP 88045	Effluent Control and Environmental Protection
IP 87102	Maintaining Effluents from Materials Facilities ALARA
IP 86740	Inspection of Transportation Activities
IP 88035	Radioactive Waste Management

List of Acronyms Used

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CPP	Central Processing Plant
DOT	U.S. Department of Transportation
gpm	gallons per minute
IP	Inspection Procedure
MIT	mechanical integrity test
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
SERP	Safety and Environmental Review Panel
VIO	violation