UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD
ARLINGTON TX 76011-4511

September 26, 2018

Ms. Elaine Lamm, Project Manager
ExxonMobil Environmental Services
25915 South Frontage Road
Channahon IL 60410

SUBJECT: EXXONMOBIL CORPORATION 040-08102 - NRC INSPECTION REPORT 2018-001

Dear Ms. Lamm:

This letter refers to the announced, routine U.S. Nuclear Regulatory Commission's (NRC's) inspection that was conducted on August 31, 2018, at the Highland facility in Converse County, Wyoming. This 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 with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of the facility, independent radiation measurements, and interviews with personnel.

The inspection findings were presented to ExxonMobil Corporation's representative, Ms. Rebecca J. Bilodeau, Worthington Miller Environmental, at the conclusion of the inspection. The enclosed report presents the results of this inspection. Based on the results of this inspection, no violations were identified and no response to this letter is required.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy or proprietary, 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 M. Gersey at 817-200-1299 or the undersigned at 817-200-1151.

Sincerely,

/RA/

Janine F. Katanic, PhD, CHP, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket: 040-08102
License: SUA-1139

Enclosure:
NRC Inspection Report 040-08102/2018-001

cc w/enclosure:
R. Schierman, WY Uranium Recovery Program Manager
D. Shafer, U.S. DOE, Office of Legacy Management
G. Cameron, WY Homeland Security

U.S. NUCLEAR REGULATORY COMMISSION
Region IV

Docket No.:	040-08102
License No.:	SUA-1139
Report:	040-08102/2018-001
Licensee:	ExxonMobil Corporation
Facility:	Highland facility
Location:	Converse County, Wyoming
Inspection Date:	August 31, 2018
Inspector:	Linda M. Gersey, Health Physicist Fuel Cycle and Decommissioning Branch Division of Nuclear Materials Safety
Approved by:	Janine F. Katanic, PhD, CHP, Chief Fuel Cycle and Decommissioning Branch Division of Nuclear Materials Safety
Attachment:	Supplemental Information

Enclosure

EXECUTIVE SUMMARY

ExxonMobil Corporation- Highlands Facility
NRC Inspection Report 040-08102/2018-001

This inspection was a routine, announced inspection of decommissioning activities being conducted at the licensee's Highland facility in Converse County, Wyoming. In summary, the licensee was conducting decommissioning activities in accordance with license and regulatory requirements.

Uranium Mill, In-situ Leach Uranium Recovery, and 11.e(2) Byproduct Material Disposal Site Decommissioning

- The licensee was conducting operations in accordance with license requirements. (Section 1.2)

- The tailings impoundment appeared to be in good condition with no observable degradation. (Section 1.2)

Report Details

Site Status

The former Exxon Minerals Company, now known as ExxonMobil Corporation, operated the Highland uranium facility from 1972-1984. The Highland mill used a conventional acid solvent extraction process to extract uranium ore obtained from nearby surface, subsurface, and solutions mining operations. Approximately 11.3 million tons of ore were processed by the mill. The mill tailings were deposited in an above-grade impoundment formed by damming an ephemeral tributary of Box Creek.

Reclamation work and groundwater corrective actions started in 1984. Most of the surface reclamation work was completed in 1989, with the exception of 20 acres of the tailings basin which required additional action to allow consolidation of the tailings prior to final reclamation. A portion of the remaining 20 acres was also used for evaporation ponds as part of the groundwater corrective action program. The licensee subsequently remediated the remaining portion of the tailings impoundment. In September 2002, the U.S. Nuclear Regulatory Commission (NRC) approved the final remediation of the 200-acre tailing impoundment (Agencywide Documents Access and Management System (ADAMS) Accession No. ML022490336).

On May 12, 2011, the licensee submitted a license amendment application to the NRC to expand the long-term surveillance boundary at the Highland facility, to include the pit lake, and to establish new, and revised, alternate concentration limits (ADAMS Accession No. ML11136A199). In May and June 2012, the NRC requested additional information to support the staff's review of the licensee's request (ADAMS Accession Nos. ML12136A176, ML12136A151, ML12172A126 and ML12172A097). In April 2013, the licensee prepared a partial response to the NRC's request for additional information, along with a work plan that outlined proposed well locations, target geologic units and depths, and data collection activities for new monitoring wells (ADAMS Accession Nos. ML13109A558 and ML13109A557). In February 2014, the NRC concluded that the 2013 work plan was acceptable, with several conditions (ADAMS Accession No. ML14029A152).

Since 2014, the licensee has been conducting the additional sampling and modeling discussed in the 2013 work plan for the Highland facility. On June 15, 2017, the licensee submitted a supplemental response to the NRC's request for additional information and an assessment of the additional hydrogeologic data and modeling for the Highland facility (ADAMS Package Accession No. ML17174A016). On August 8, 2017, the NRC acknowledged the receipt of the supplemental response and began an acceptance review to determine if the licensee's submittal was adequate to begin a detailed technical review (ADAMS Accession No. ML17214A070). In letter dated November 13, 2017, the NRC accepted the licensee's supplemental information for detailed review (ADAMS Accession No. ML17303A538). At the time of the inspection, the license's work plan was still under NRC Headquarters staff review.

The previous NRC inspection was conducted on September 22, 2016 (ADAMS Accession Number ML16294A580). The focus of the September 2016 inspection was to ensure the licensee was implementing the groundwater monitoring program and maintaining the tailings impoundment and site as required by the license. The September 2016 inspection report concluded that the licensee had sufficient staff, implemented a radiation protection program, maintained the site, and implemented the groundwater corrective action monitoring program in accordance with the license and regulatory requirements.

Following the September 2016 inspection, NRC staff determined that routine inspections did not need to be completed in strict accordance with the NRC's Manual Chapter 2801, "Uranium Mill 11e.(2) Byproduct Material Disposal Site and Facility Inspection Program" (found at https://www.nrc.gov/reading-rm/doc-collections/insp-manual/manual-chapter/). This determination was based on the limited future activity of the licensee and the anticipated turn-over to the U.S. Department of Energy (DOE). The DOE has made periodic site visits since 2016 in preparation for long-term surveillance. The most recent DOE site visit occurred in March 2018.

1 Uranium Mill, In-situ Leach Uranium Recovery, and 11.e(2) Byproduct Material Disposal Site Decommissioning (87654)

1.1 Inspection Scope

Determine if the licensee was maintaining the reclaimed site as required by the license and regulatory requirements.

1.2 Observations and Findings

The inspector conducted an on-site inspection on August 31, 2018, accompanied by the licensee's contract Health and Safety Supervisor. Site fences, gates, monitor wells, and the tailings impoundment were observed during the site tour and found to be in good condition. "Caution-Radioactive Material" postings were observed on the fences and entry gates. The inspector also noted that there were no changes to the tailings impoundment or surrounding land area since the previous inspection.

During the site tour, the inspector conducted radiation surveys using a Ludlum Model 19 microRoentgens survey meter calibrated with radium-226 (NRC Number 015530, calibration due date of July 12, 2019). The areas near the covered tailings were found to be approximately 20-30 microRoentgens per hour, which was the same as the background ambient gamma exposure rate.

The licensee's radiation safety program was minimal, consistent with the limited amount of work in progress. As noted in the NRC letter to the licensee dated September 5, 2002 (ADAMS Accession No. ML022490336) surface reclamation at the site has been completed. The only remaining site activity was groundwater monitoring. Accordingly, the radiation safety program was reduced commensurate with the minimal extent of licensed activities in progress at the site, and radiation doses to site workers are not expected to exceed levels public dose limits. Accordingly, the licensee discontinued occupational exposure monitoring as allowed by regulation Title 10 of the *Code of Federal Regulations* 20.1502. However, at the discretion of the Radiation Safety Officer (RSO), the licensee may elect to require certain workers to submit urine samples for bioassay or issue dosimetry to workers or site visitors based on future work activities.

The inspector reviewed the "ExxonMobil Highland Mine Site Procedures Manual," which was provided by the RSO. License Condition (LC) 38 requires, in part, that the licensee establish written procedures that are reviewed annually. The licensee's procedure manual includes procedures for responding to emergencies, general safety measures, groundwater and surface water monitoring, and performing radiological surveys. An updated list of key personnel and emergency contacts are also included in the procedure manual. The RSO performs an annual review of the procedures and ensures the

personnel contact information is current. The inspector concluded that the licensee was implementing LC 38 as required.

The licensee performs groundwater monitoring as required by LC 33 and submits the results to the NRC annually. The inspector did not review the licensee's groundwater monitoring program during the inspection. The groundwater monitoring annual reports are reviewed by the NRC project manager and recorded in separate documentation.

1.3 Conclusions

The licensee was conducting operations in accordance with license requirements. The tailings impoundment appeared to be in good condition with no observable degradation.

2 Exit Meeting Summary

The inspection findings were presented to the licensee's representative, Ms. Rebecca J. Bilodeau, Senior Environmental Scientist/Principal, Worthington Miller Environmental, at the conclusion of the inspection on August 28, 2018. During the inspection, the licensee's representative did not identify any information reviewed by the inspector as proprietary.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

E. Lamm, Project Manager, ExxonMobil Environmental Services
R. Bilodeau, Senior Environmental Scientist/Principal, Worthington Miller Environmental
S. Blakeley, Health and Safety Supervisor, Pronghorn Pump LLC
C. Little, Radiation Safety Officer

Wyoming Department of Environmental Quality

R. Schierman, Wyoming Uranium Recovery Program Manager
S. Ramsay, Wyoming Homeland Security

INSPECTION PROCEDURE (IP) USED

IP 87654	Uranium Mill, In-situ Leach Uranium Recovery, and 11.e(2) Byproduct Material Disposal Site Decommissioning

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
DOE	U.S. Department of Energy
IP	Inspection Procedure
LC	License Condition
NRC	U.S. Nuclear Regulatory Commission
RSO	Radiation Safety Officer

EXXONMOBIL CORPORATION 040-008102 - NRC INSPECTION REPORT 2018-001 – DATED SEPTEMBER 26, 2018

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ADAMS ACCESSION NUMBER: ML18268A041

■ SUNSI Review By: LMG	ADAMS: ■ Yes ☐ No	☐ Sensitive ■ Non-Sensitive	☐ Non-Publicly Available ■Publicly Available	Keyword NRC-002

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DATE	9/25/18	9/26/18		

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