

July 30, 2015

Attn: Document Control Desk
Director
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
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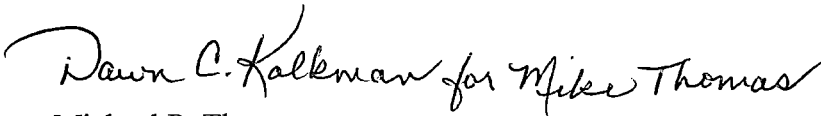
Re: Semi-Annual Report Uranerz Energy Corporation Nichols Ranch ISR Project SUA-1597

Dear Director and Deputy Director,

This letter and attachment serves as the Semi-Annual Report for the Uranerz Energy Corporation Nichols Ranch ISR Project that is required by License Condition 11.1 B and D in SUA-1597.

If you have any questions regarding the provided information, please contact me at 307-265-8900 or by email at mthomas@energyfuels.com.

Sincerely,



Michael P. Thomas
Vice President Regulatory and Public Affairs
Uranerz Energy Corporation

MT/th

Attachments

January-June 2015 Semi-Annual Report

cc: Ron Linton, NRC Project Manager
Mark Rogaczewski, WDEQ-LQD District III Supervisor
Linda Gersey, NRC (email)

N145507

Nichols Ranch ISR Project
License Number SUA-1597
Docket No.40-9067

Semi-Annual Report

January - June 2015

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1.0 INTRODUCTION

Uranerz received Source Material License SUA-1597 on July 19, 2011. In accordance with 10 CFR 40.65 and Source Material License SUA-1597 Uranerz Energy Corporation submits the 2015 Semi-Annual Effluent and Monitoring Report summarizing the operational and environmental activities monitored for the Nichols Ranch and Hank Units. Semi-Annual reporting is performed according to SUA-1597 License Condition 11.1 and includes information for the period of January 1, 2015 through June 30, 2015.

2.0 OPERATIONAL MONITORING

2.1 Activities Summary

Uranerz continued production of the Nichols Ranch Unit Production Area #1 (PA#1) during the report period as summarized in Quarterly Reports submitted to the NRC on April 29, 2015 for first quarter and July 28, 2015 for the second quarter. Production continued in PA #1 in Header Houses 1 through 4 and Header House 6 was brought online. Please refer to the Quarterly Reports for additional information (e.g. production and bleed rates) as it is not going to be reproduced in the Semi-annual report.

The NRC performed a routine inspection during the week of March 16, 2015.

No operational activities occurred at the Hank Unit during the report period. During the preparation of this report, the Environmental Assessment (EA) was approved by the Bureau of Land Management (BLM) for the 280 acres that the BLM manages.

2.2 Excursion Well Status

License Condition 11.1(B) requires a status update of any long term excursion. As reported in the Quarterly reports mentioned above, no wells were on excursion status during the report period.

2.3 Disposal Well Volumes

License Condition 10.11 requires the volume disposed in each disposal well to be reported annually. Uranerz presently has two permitted deep disposal wells permitted through the Wyoming Department of Environmental Quality, Water Quality Division (WDEQ-WQD), (Permit 10-392).

The purpose of the two deep disposal wells is to dispose the wellfield bleed to maintain a hydrologic inward gradient during production. Quarterly and annual reports pertaining to the use of the deep disposal wells are submitted to the WDEQ-WQD. As of the 2nd Quarter 2015 report submitted to WQD, 379,032 barrels (bbls), year to date, have been disposed using the deep wells.

2.4 Flow Rates and Manifold Pressures

Per License Condition 11.1(C), Uranerz is required to record flow rates and manifold pressures daily. A summary of these items was submitted in the above named Quarterly reports. Otherwise, these records are compiled and available to inspectors on site upon their request.

2.5 Summary of Mechanical Integrity Testing (MIT) Data

The number of wells installed and mechanical integrity test (MIT) status, License Condition 11.1(B), is reported in quarterly reports to the NRC. Please refer to quarterly reports submitted April 29, 2015 and July 28, 2015.

2.6 Restoration

No areas are in restoration for the reporting period.

3.0 ENVIRONMENTAL MONITORING

3.1 Ground Water Monitoring

In accordance with License Condition 11.5 monitor wells in the production area (perimeter, overlying and underlying wells) are sampled for excursion parameters. Results of the monitor well samples are provided in Quarterly Reports submitted to the NRC.

License Condition 11.7 requires sampling of domestic and livestock wells to be sampled within 1 km of the production area on an annual basis. Collected samples are analyzed at an offsite laboratory for natural uranium, radium-226, and those constituents, chloride, conductivity, and alkalinity, as listed in Section 5.7.8.9 of the license application. The ground water analysis will be included in the Annual and Semi-Annual Effluent Report submitted in January 2016.

The surficial aquifer well, URNZG-15, located in Production Area #1 was sampled during the report period. In accordance with License Condition 11.3(C) the surficial well will be analyzed for parameters listed in Table D6-6a of the license application. Sampling was attempted; however, no water was available to sample during the report period. The sampling dates for the surficial well are as follows.

Date	Water Level Results
1/21/2015	dry
3/6/2015	dry
4/1/2015	dry
5/1/2015	dry
6/9/2015	dry

3.2 Surface Water Monitoring

In accordance with Section 5.7.7.3.1 of the license application surface water will be collected and analyzed for total uranium, Th-230, Ra-226, and Pb-210. There are two surface water self-samplers located at the Nichols Ranch Unit. The surface water analysis will be included in the Annual and Semi-Annual Effluent Report submitted in January 2016. As per discussion with NRC staff, the Hank Unit is not operational at this time, therefore, surface water monitoring will not occur until production begins in that area. Baseline sampling for the Hank Unit was completed and approved with the issuance of the NRC license.

3.3 Summary of Unplanned Releases

There were no reportable unplanned releases of production solution during the reporting period.

3.4 Sediment and Soil Sampling

In accordance with Section 5.7.7.5 of the license application, sediment samples will be collected annually and analyzed for uranium, radium-226, lead-210 and thorium.

Soil samples are also collected annually in the vicinity of where radon is monitored. The sediment and soil analyses will be included in the Annual and Semi-Annual Effluent Report submitted in January 2016.

3.5 Air Particulate, Radon, and Gamma Radiation Monitoring

Uranerz maintains an environmental air monitoring program at six locations around the licensed Nichols Ranch facility. These stations are used to monitor air particulates, radon, and passive gamma measurements. Uranerz also maintains radon monitors at four locations surrounding the active wellfield and eight surrounding the CPP. These are compared to background for use in calculating annual dose to the public.

The six air station locations are as follow:

- NA-1 monitors the nearest full time resident at Dry Fork Ranch
- NA-2 is at the southern license boundary and monitors the down wind conditions of the north west winds for the CPP.
- NA-3 is at the northern license boundary and monitors the downwind conditions of south west winds for the wellfield and the CPP
- NA-4 is at the easterly license boundary and is the background station being upwind from the wellfield and the CPP.
- NA-5 is located west of the CPP and monitors the down wind conditions of the easterly winds that occur at night.
- NA-6 is located north east of the CPP and monitors the man camp that is the maximally exposed member of the public.

Air Particulate samples are collected weekly and then composited quarterly for analysis by an outside laboratory. Review of the data shows that the concentration of the parameters are less than the 10 CFR 20 Appendix B, Effluent Concentration Limits. Appendix A shows the air particulate data collected from the six air station locations for first quarter 2015. At the time of preparation of this report, the laboratory analysis was pending for the second quarter. The data for the second quarter will be included in the next semi-annual report.

As mentioned above, radon gas is also monitored continuously at the six air particulate stations for public dose assessment. There are also eight additional radon detectors surrounding the CPP which are used for public dose assessments and for personnel dose assessments. There are also four radon monitors surrounding the active wellfield that are used for public as well as personnel dose assessments. Passive outdoor radon detectors are exchanged quarterly for six locations and semi-annually for additional locations and the CPP, as required, and sent to Landauer for analysis. The data is shown in Appendix B. Data is given as raw data without subtracting the background location. These values are then compared to radon daughter effluent releases found in 10 CFR 20 Appendix B values to assess dose to the public.

Passive gamma radiation is monitored continuously at the six air particulate stations and at other monitoring stations located throughout the licensed area. The added locations are additional data points that are intended to be used for determining dose to the public. The monitoring is performed using Optically Stimulated Luminescence (OSL) dosimeters that are exchanged and analyzed by Landauer quarterly. The passive gamma radiation monitoring data is shown in Appendix C. Data is given as raw data without subtracting the control badge.

4.0 SUMMARY OF EMPLOYEE URINALYSIS RESULTS

Bioassay samples are collected on all employees at initial hiring. Monthly samples are collected from plant operators. Analysis is performed by an outside laboratory. The bioassay results are summarized annually, pursuant to 10 CFR Part 20, Subpart M and will be included in the Annual and Semi-Annual Effluent Report submitted in January 2016.

5.0 PUBLIC DOSE

10 CFR 20.1301 requires that each NRC licensee conduct their operations in a manner that the total effective dose equivalent (TEDE) to members of the public does not exceed 100 mrem in a year, and that the dose from external sources in any unrestricted area does not exceed 2 mrem in any hour.

Additionally, 10 CFR 20.1302 requires licensees to show compliance to these dose limits by demonstrating one of the following:

1. Show by actual measurement or calculation that the TEDE to the public does not exceed 100 mrem; or
2. Show that the annual average concentration of radioactive effluent released at the restricted boundary do not exceed the values in Table 2 of Appendix B in 10 CFR 20. Also that the external dose to an individual continuously present in an unrestricted area would not exceed 2 mrem in an hour.

The public dose data is summarized annually and will be included in the annual ALARA review. See section 7.0 for further details.

6.0 SAFETY AND ENVIRONMENTAL REVIEW PANEL (SERP) EVALUATIONS

Per License Condition 9.4E, Uranerz shall furnish, in an annual report to the NRC, a description of such changes, tests, or experiments, including a summary of the evaluations made by the safety and environmental evaluation panel (SERP). A summary of SERPs performed during the annual report period will be included in the Annual and Semi-Annual Effluent Report submitted in January 2016.

7.0 ALARA REVIEW

As required by License condition 11.2, the licensee shall submit the results of the annual review of the radiation protection program content and implementation performed in accordance with 10 CFR 20.1101(c). These results shall include doses to individual members of the public. This submittal will occur once the Nichols Ranch facility has processed licensed material for a calendar year. After the year, an ALARA audit will occur and will be submitted as a standalone document. Due to scheduling constraints with a qualified auditor, the audit was postponed and will be completed as soon as possible.

8.0 SURETY

All activities conducted, to date, at the Nichols Ranch ISR Project are covered in the surety estimate as required by License Condition 9.5. The surety estimate is reviewed annually and is to be submitted to the NRC by December 29. The WDEQ-LQD also requires an annual surety review in December. Uranerz, therefore reviews the surety in December, aligning the NRC and LQD surety reviews for consistency, standardization and reduced redundancy.

Uranerz updated the surety estimate and submitted it to the NRC on December 18, 2014. The LQD approved the latest surety on June 16, 2015. The next annual surety review will occur in December 2015.

Uranerz Energy Corporation

Appendix A

Air Particulate Data

January - June 2015

Sample Location	Sample Period	Radionuclide	Concentration ($\mu\text{Ci/ml}$)	Error $\pm(\mu\text{Ci/ml})$	LLD ($\mu\text{Ci/ml}$)	10CFR 20 APP B Table 2 Values ($\mu\text{Ci/ml}$)	Percent Concentration %
NA-1 Air Station Nearest Resident	1st Quarter 2015	U-Nat	1.3E-16	N/A**	1.0E-16	9.E-14	0.1
		Th-230	ND*	N/A**	1.0E-16	3.E-14	0.0
		Ra-226	1.1E-16	3.2E-17	1.0E-16	9.E-13	0.0
		Pb-210	1.7E-14	1.6E-15	2.0E-15	6.E-13	2.8
		Po-210	3.70E-15	1.0E-15	N/A***	9.E-13	0.4
	2nd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	3rd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	4th Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
NA-2 Air Station Downwind Southern Boundary	1st Quarter 2015	U-Nat	2.5E-16	N/A**	1.0E-16	9.E-14	0.3
		Th-230	ND*	N/A**	1.0E-16	3.E-14	0.0
		Ra-226	4.0E-16	6.6E-17	1.0E-16	9.E-13	0.0
		Pb-210	1.7E-14	1.6E-15	2.0E-15	6.E-13	2.8
		Po-210	2.7E-15	8.9E-16	N/A***	9.E-13	0.3
	2nd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	3rd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	4th Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0

Uranerz Energy Corporation

Appendix A

Air Particulate Data

January - June 2015

Sample Location	Sample Period	Radionuclide	Concentration (μCi/ml)	Error ±(μCi/ml)	LLD (μCi/ml)	10CFR 20 APP B Table 2 Values (μCi/ml)	Percent Concentration %
NA-3							
Air Station							
Downwind							
North Boundary	1st Quarter 2015	U-Nat	2.3E-16	N/A**	1.0E-16	9.E-14	0.3
		Th-230	ND	N/A**	1.0E-16	3.E-14	0.0
		Ra-226	5.5E-16	9.1E-17	1.0E-16	9.E-13	0.0
		Pb-210	1.6E-14	1.5E-15	2.0E-15	6.E-13	2.7
		Po-210	3.5E-15	9.7E-16	N/A***	9.E-13	0.4
	2nd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	3rd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	4th Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
NA-4							
Air Station							
Background Site	1st Quarter 2015	U-Nat	1.8E-16	N/A**	1.0E-16	9.E-14	0.0
		Th-230	1.1E-16	6.4E-17	1.0E-16	3.E-14	0.0
		Ra-226	2.7E-16	6.4E-17	1.0E-16	9.E-13	0.0
		Pb-210	1.8E-14	1.7E-15	2.0E-15	6.E-13	3.0
		Po-210	4.5E-15	1.1E-15	N/A***	9.E-13	0.5
	2nd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	3rd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	4th Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0

Uranerz Energy Corporation

Appendix A

Air Particulate Data

January - June 2015

Sample Location	Sample Period	Radionuclide	Concentration (μCi/ml)	Error ±(μCi/ml)	LLD (μCi/ml)	10CFR 20 APP B Table 2 Values (μCi/ml)	Percent Concentration %
NA-5							
Air Station							
Downwind							
West of CPP	1st Quarter 2015	U-Nat	1.2E-16	N/A**	1.0E-16	9.E-14	0.0
		Th-230	ND*	N/A**	1.0E-16	3.E-14	0.0
		Ra-226	1.5E-16	5.7E-17	1.0E-16	9.E-13	0.0
		Pb-210	1.8E-14	1.5E-15	2.0E-15	6.E-13	0.0
		Po-210	4.5E-15	9.9E-16	N/A***	9.E-13	0.5
	2nd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	3rd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	4th Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
NA-6							
Air Station							
Downwind							
North East of CPP	1st Quarter 2015	U-Nat	1.4E-16	N/A**	1.0E-16	9.E-14	0.0
		Th-230	ND*	N/A**	1.0E-16	3.E-14	0.0
		Ra-226	2.8E-16	6.9E-17	1.0E-16	9.E-13	0.0
		Pb-210	2.1E-14	1.8E-15	2.0E-15	6.E-13	3.5
		Po-210	3.9E-15	1.0E-15	N/A***	9.E-13	0.4
	2nd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	
	3rd Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0
	4th Quarter 2015	U-Nat				9.E-14	0.0
		Th-230				3.E-14	0.0
		Ra-226				9.E-13	0.0
		Pb-210				6.E-13	0.0
		Po-210				9.E-13	0.0

* Non detectable at the LLD as provided from laboratory

** provided as results from laboratory

*** No result provided from laboratory

Uranerz Energy Corporation

Appendix B

Radon Monitoring

January-June 2015


Location	1st Quarter ($\mu\text{Ci/ml}$)	Uncertainty ($\mu\text{Ci/ml}$)	2 nd Quarter ($\mu\text{Ci/ml}$)	Uncertainty ($\mu\text{Ci/ml}$)	3 rd Quarter ($\mu\text{Ci/ml}$)	Uncertainty ($\mu\text{Ci/ml}$)	4th Quarter ($\mu\text{Ci/ml}$)	Uncertainty ($\mu\text{Ci/ml}$)	Location Average ($\mu\text{Ci/ml}$)	10CFR 20 APP B Table 2 Values ($\mu\text{Ci/ml}$)
Nichols Ranch Project										
NR-1 (Nearest Resident)	7.00E-10	5.00E-11	3.00E-10	2.00E-11					5.00E-10	1.00E-10
NR-2 (Southern Boundary Downwind)	7.00E-10	5.00E-11	6.00E-10	4.00E-11					6.50E-10	1.00E-10
NR-3 (North Boundary Downwind)	5.00E-10	4.00E-11	3.00E-10	2.00E-11					4.00E-10	1.00E-10
NR-5 (Background)	7.00E-10	5.00E-11	5.00E-10	4.00E-11					6.00E-10	1.00E-10
NR-6 (West of CPP downwind)	5.00E-10	3.00E-11	3.00E-10	3.00E-11					4.00E-10	1.00E-10
NR-7 (North East of CPP Downwind Maximally Exposed Member of the Public)	6.00E-10	4.00E-11	6.00E-10	4.00E-11					6.00E-10	1.00E-10
NR-1 (Duplicate #1)	4.00E-10	3.00E-11	3.00E-10	2.00E-11					3.50E-10	1.00E-10
NR-1 (Duplicate #2)	5.00E-10	4.00E-11	4.00E-10	3.00E-11					4.50E-10	1.00E-10
Nichols Ranch CPP Locations (9 locations changed semi-annually)										
Man Camp	5.00E-10	3.00E-11							3.00E-10	1.00E-10
CPP Ranch (East Side)	7.00E-10	4.00E-11							7.00E-10	1.00E-10
CPP Fence (SW Corner)	6.00E-10	3.00E-11							6.00E-10	1.00E-10
CPP Fence (South Corner)	4.00E-10	3.00E-11							4.00E-10	1.00E-10
CPP Fence (SE Corner)	7.00E-10	4.00E-11							7.00E-10	1.00E-10
CPP Fence (NW Corner)	6.00E-10	3.00E-11							6.00E-10	1.00E-10
CPP Fence (North Side)	6.00E-10	4.00E-11							6.00E-10	1.00E-10
CPP Fence (NE Side)	7.00E-10	4.00E-11							7.00E-10	1.00E-10
CPP Fence (West Side)	6.00E-11	3.00E-11							6.00E-11	1.00E-10

Uranerz Energy Corporation
Appendix B
Radon Monitoring
January-June 2015

Nichols Ranch Wellfield Locations (4 locations changed semi-annually)										
NCBM-5	4.00E-10	5.00E-11							4.00E-10	1.00E-10
NCBM-6	5.00E-10	5.00E-11							5.00E-10	1.00E-10
Wellfield (Fence)	5.00E-10	3.00E-11							5.00E-10	1.00E-10
NR-4 (North Wellfield Boundary)	6.00E-10	3.00E-11							6.00E-10	1.00E-10

MDA for all samples is 3.00E-10

* Values less than MDA

 Green box indicates no data was collected during that time

Appendix C
Passive Gamma Radiation Monitoring
January - June 2015

Location	1st Quarter (mrem/quarter)	2nd Quarter (mrem/quarter)	3rd Quarter (mrem/quarter)	4th Quarter (mrem/quarter)	Location Average (Net mrem/quarter)
Nichols Ranch Project (2015)					
Control Badge (Nichols Ranch Offices)	48.4	32.8			40.6
NR-1(Nearest Resident)	37.3	42.2			39.8
NR-2 (Southern Boundary Downwind)	40.4	43.1			41.8
NR-3 (North Boundary Downwind)	39.1	38.6			38.9
NR-5 (Background Upwind)	38	38.9			38.5
NR-6 (West of CPP downwind)	36.5	38.7			36.5
NR-7 (North East of CPP Downwind, maximally exposed member of the public)	38.4	42.5			40.5
Quarterly Average	38.3	40.7			39.5

* Indicates lost badge