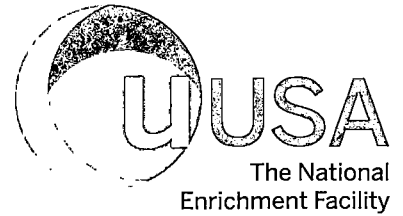


LES-20-00036-NRC

MAR 13 2020

ATTN: Document Control Desk
Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001



Louisiana Energy Services, LLC
NRC Docket No. 70-3103

Subject: Semi-Annual Radiological Effluent Release Report for July 1, 2019
through December 31, 2019

Pursuant to 10 CFR 70.59, Louisiana Energy Services, LLC, also dba URENCO USA, herewith submits the subject report. Enclosure 1 specifies the quantities released of licensed principal radionuclides in liquid or gaseous form, to uncontrolled areas.

Should there be any questions regarding this submittal, please contact Wyatt Padgett, UUSA Licensing & Performance Assessment Manager, at 575-394-5257.

Respectfully,

A handwritten signature in black ink that reads "Stephen R. Cowne".

Stephen R. Cowne
Chief Nuclear Officer and Compliance Manager

Enclosure:

1. Semi-Annual Radiological Effluent Release Report for July 1, 2019
through December 31, 2019

NMSS20
1E48
NMSS

LES-20-00036-NRC

ENCLOSURE 1

**Semi-Annual Radiological Effluent Release Report for
July 1, 2019 through December 31, 2019**

URENCO USA: Report of Radioactivity in Effluents: Liquid & Air: July 2019 – December 2019

There were no releases to the public during the reporting period that exceeded regulatory requirements, and detected isotopic uranium activities were comparable to pre-operational activities. No dose assessment was performed because the maximum potential dose directly at the point of gaseous and liquid effluent discharge points were acceptable. The potential maximum doses directly at the discharge points for both liquid and gaseous effluent were shown to be less than 10% of the radionuclide concentration dose.

In liquid effluent, the concentrations of isotopic uranium were either below the Minimum Detectable Concentration (MDC) or less than 10% of values listed in 10 CFR 20, Appendix B, Table 3, "Releases to Sewers" (Table 1-1).

In gaseous effluent, the gross uranium activity was either below the Minimum Detectable Activity (MDA) or less than 10% of values listed in 10 CFR 20, Appendix B, Table 2, "Effluent Concentrations – Class D Air" for U234, U235, and U238.

The concentrations of isotopic uranium in gaseous effluent was either below the Minimum Detectable Concentration (MDC) or less than 10% of values listed in 10 CFR 20.1301, 10 CFR 20.1302, and 10 CFR 20.1101(d), as described in NRC Regulatory Guide 4.20 "Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees other than Power Reactors" Revision 1 dated April 2012.

LIST OF TABLES

Table No.	Title
1-1	Lift Station 1 Wastewater Effluent - Radionuclides Quarters 3 & 4, 2019
1-2	Separations Building Module-1001 (SBM 1001) Pumped Extract Exhaust Gaseous Effluent Vent System, 1001-562-1MA1 & 1001-562-1MA2 - Gross Alpha & Gross Beta, and Radionuclides Quarters 3 & 4, 2019
1-3	Separations Building Module-1003 (SBM 1003) Pumped Extract Exhaust Gaseous Effluent Vent System, 1003-562-1MA1 & 1003-562-1MA2 - Gross Alpha & Gross Beta, and Radionuclides Quarters 3 & 4, 2019
1-4	Separations Building Module-1005 (SBM 1005) Pumped Extract Exhaust Gaseous Effluent Vent System, 1005-562-1MA1 & 1005-562-1MA2 - Gross Alpha & Gross Beta, and Radionuclides Quarters 3 & 4, 2019
1-5	Cylinder Receipt and Dispatch Building-1100 (CRDB 1100) Local Extract Exhaust Gaseous Effluent Vent System, 1100-562-1MA1 & 1100-562-1MA2 - Gross Alpha & Gross Beta, and Radionuclides Quarters 3 & 4, 2019
1-6	Cylinder Receipt and Dispatch Building-1100 (CRDB 1100) Fume Hood Exhaust Gaseous Effluent Vent System, 1100-562-2MA1 & 1100-562-2MA2 - Gross Alpha & Gross Beta, and Radionuclides Quarters 3 & 4, 2019

TABLE 1-1

Lift Station 1 Wastewater Effluent – Radionuclides, Quarters 3 & 4, 2019 URENCO USA Lea County, New Mexico

URENCO USA Lea County New Mexico								
Lift Station 1 WasteWater Effluent- Radionuclides								
Radionuclide	Sample Date (Date/Time)	Sample Period	Total Time (days)	Results (µCi/ml)	Counting Uncertainty (µCi/ml)	Total Flow* (gal/day)	Quantity Released (Ci)	% of Table 3 of Appendix B to 10 CFR 20 Values-Monthly Average Release to Sewers
Lift Station 1 – July – December 2019								
Uranium - 233/234	10/08/19 0940	07/01/19 - 12/31/19	183	4.06E-10	5.60E-11	13,000	Result Below LLD	Result Below LLD
Uranium - 235/236				0.00E+00	0.00E+00	13,000	Result Below LLD	Result Below LLD
Uranium - 238				2.22E-10	4.10E-11	13,000	Result Below LLD	Result Below LLD
Lift Station 1 Duplicate – July – December 2019								
Uranium - 233/234	10/08/19 0940	07/01/19 - 12/31/19	183	5.22E-10	7.00E-11	13,000	Result Below LLD	Result Below LLD
Uranium - 235/236				0.00E+00	0.00E+00	13,000	Result Below LLD	Result Below LLD
Uranium - 238				3.08E-10	5.40E-11	13,000	Result Below LLD	Result Below LLD

Notes:

- * = Table 3.4-4 'Anticipated Normal Plant Water Consumption' from the Environmental Report, Rev. 19, lists "Total Personnel Water Use" as approximately 13,000 gallons per day.
- µCi/mL = microCuries per milliliter.
- Radionuclides analyzed using method EICHROM AC01 by Cardinal Laboratories of Hobbs, NM.
- Quantity released is calculated if the result equals or exceeds the LLD. Facility-required lower level of detection (LLD) is 3.09E-9 µCi/mL.

TABLE 1-2

Separations Building Module-1001 (SBM 1001): Pumped Extract Exhaust Gaseous Effluent Vent System, 1001-562-1MA1 & 1001-562-1MA2 Gross Alpha & Beta, and Radionuclides: Quarters 3 & 4, 2019 URENCO USA Lea County, New Mexico.

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (µCi/mL)	MDA / MDC (µCi/mL)	Inst. Unc. (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1001-562-1MA1										
10015621MA1 070119	8/1/19	7/1/19 - 8/1/19	Gross Alpha	1.81E-16	5.62E-16	1.89E-07	5.01E+05	<MDA	<MDA	
10015621MA1 080119	9/3/19	8/1/19 - 9/3/19		-6.06E-17	5.52E-16	1.22E-07	5.38E+05	<MDA	<MDA	
10015621MA1 090319	10/1/19	9/3/19 - 10/1/19		-6.80E-17	6.20E-16	1.22E-07	4.61E+05	<MDA	<MDA	
10015621MA1 100119	11/1/19	10/1/19 - 11/1/19		0.00E+00	5.89E-16	9.91E-08	4.96E+05	<MDA	<MDA	
10015621MA1 110119	12/2/19	11/1/19 - 12/2/19		3.16E-16	5.89E-16	1.85E-07	6.83E+05	<MDA	<MDA	
10015621MA1 120219	1/2/20	12/2/19 - 1/2/20		-6.44E-17	5.84E-16	7.21E-08	7.15E+05	<MDA	<MDA	
10015621MA1 070119	8/1/19	7/1/19 - 8/1/19	Gross Beta	4.00E-15	3.87E-15	1.60E-06	5.01E+05	0.00	0.13%	
10015621MA1 080119	9/3/19	8/1/19 - 9/03/19		1.23E-15	3.81E-15	1.40E-06	5.38E+05	<MDA	<MDA	
10015621MA1 090319	10/1/19	9/3/19 - 10/1/19		3.68E-15	4.27E-15	1.54E-06	4.61E+05	<MDA	<MDA	
10015621MA1 100119	11/1/19	10/1/19 - 11/1/19		6.62E-15	3.76E-15	1.74E-06	4.96E+05	0.00	0.221%	
10015621MA1 110119	12/2/19	11/1/19 - 12/2/19		5.21E-15	3.76E-15	1.62E-06	6.83E+05	0.00	0.174%	
10015621MA1 120219	1/2/20	12/2/19 - 1/2/20		6.33E-15	3.72E-15	1.72E-06	7.15E+05	0.00	0.211%	
1001-562-1MA2										
10015621MA2 070119	8/1/19	7/1/19 - 8/1/19	Gross Alpha	0.00E+00	5.48E-16	1.40E-07	4.96E+05	<MDA	<MDA	
10015621MA2 080119	9/3/19	8/1/19 - 9/3/19		0.00E+00	5.09E-16	1.40E-07	5.09E+05	<MDA	<MDA	
10015621MA2 090319	10/1/19	9/3/19 - 10/1/19		6.74E-17	6.14E-16	1.58E-07	4.58E+05	<MDA	<MDA	
10015621MA2 100119	11/1/19	10/1/19 - 11/1/19		6.16E-17	5.59E-16	1.22E-07	5.09E+05	<MDA	<MDA	
10015621MA2 110119	12/2/19	11/1/19 - 12/2/19		0.00E+00	5.59E-16	9.91E-08	5.57E+05	<MDA	<MDA	
10015621MA2 120219	1/2/20	12/2/19 - 1/2/20		5.91E-17	5.36E-16	1.22E-07	5.76E+05	<MDA	<MDA	
10015621MA2 070119	8/1/19	7/1/19 - 8/1/19	Gross Beta	3.90E-16	3.78E-15	1.60E-06	4.96E+05	1.93E-09	0.13%	
10015621MA2 080119	9/3/19	8/1/19 - 9/3/19		4.16E-15	3.51E-15	1.73E-06	5.09E+05	2.11E-09	0.14%	
10015621MA2 090319	10/1/19	9/3/19 - 10/1/19		8.50E-15	4.23E-15	1.93E-06	4.58E+05	3.89E-09	0.28%	
10015621MA2 100119	11/1/19	10/1/19 - 11/1/19		4.49E-15	3.56E-15	1.58E-06	5.09E+05	2.28E-09	0.150%	
10015621MA2 110119	12/2/19	11/1/19 - 12/2/19		5.08E-15	3.56E-15	1.71E-06	5.57E+05	2.83E-09	0.169%	
10015621MA2 120219	1/2/20	12/2/19 - 1/2/20		5.38E-15	3.42E-15	1.68E-06	5.76E+05	3.10E-09	0.179%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (µCi/mL)	2σ TPU (µCi/mL)	1σ TPU (µCi/mL)	MDC (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1001-562-1MA1										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.50E-16	5.81E-17	5.90E-17	2.25E-17	1.50E+06	0.00	0.005%
U- 235/236				1.01E-16	5.35E-17	5.39E-17	3.99E-17		0.00	0.003%
U-238				1.57E-16	6.00E-17	6.10E-17	3.22E-17		0.00	0.005%
U-233/234	4 Qtr.	1/2/2020	10/1/19-1/2/20	1.81E-16	6.43E-17	6.56E-17	3.91E-17	1.89E+06	0.00	0.006%
U- 235/236				7.30E-17	4.60E-17	4.63E-17	4.53E-17		0.00	0.002%
U-238				9.15E-17	4.50E-17	4.55E-17	3.39E-17		0.00	0.003%
1001-562-1MA2										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.62E-16	5.75E-17	5.86E-17	2.85E-17	1.46E+06	0.00	0.005%
U- 235/236				9.47E-17	4.85E-17	4.90E-17	3.51E-17		0.00	0.003%
U-238				1.22E-16	4.88E-17	4.96E-17	2.26E-17		0.00	0.004%
U-233/234	4 Qtr.	1/2/2020	10/1/19-1/2/20	1.61E-16	5.34E-17	5.46E-17	3.05E-17	1.64E+06	0.00	0.005%
U- 235/236				3.55E-17	2.80E-17	2.81E-17	2.97E-17		0.00	0.001%
U-238				1.55E-16	5.18E-17	5.29E-17	2.64E-17		0.00	0.005%

Notes: None



TABLE 1-3

Separations Building Module-1003 (SBM 1003): Pumped Extract Exhaust Gaseous Effluent Vent System, 1003-562-1MA1 & 1003-562-1MA2 Gross Alpha & Beta, and Radionuclides: Quarters 3 & 4, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (µCi/mL)	MDA / MDC (µCi/mL)	Inst. Unc. (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1003-562-1MA1										
10035621MA1 070119	08/01/19	7/1/19 - 8/1/19	Gross Alpha	-1.18E-16	5.52E-16	9.91E-08	4.87E+05	<MDA	<MDA	
10035621MA1 080119	09/03/19	8/1/19 - 9/3/19		0.00E+00	4.87E-16	1.40E-07	5.28E+05	<MDA	<MDA	
10035621MA1 090319	10/01/19	9/3/19 - 10/1/19		-1.30E-16	6.08E-16	9.91E-08	4.42E+05	<MDA	<MDA	
10035621MA1 100119	11/01/19	10/1/19 - 11/1/19		6.16E-17	5.59E-16	1.22E-07	4.90E+05	<MDA	<MDA	
10035621MA1 110119	12/02/19	11/1/19 - 12/2/19		0.00E+00	5.07E-16	9.91E-08	5.12E+05	<MDA	<MDA	
10035621MA1 120219	01/02/20	12/2/19 - 1/2/20		0.00E+00	5.54E-16	9.91E-08	5.04E+05	<MDA	<MDA	
10035621MA1 070119	08/01/19	7/1/19 - 8/1/19	Gross Beta	7.32E-16	5.15E-16	1.57E-06	2.50E+06	1.83E-09	0.024%	
10035621MA1 080119	09/03/19	8/1/19 - 9/3/19		2.62E-15	3.81E-15	1.47E-06	4.87E+05	<MDA	<MDA	
10035621MA1 090319	10/01/19	9/3/19 - 10/1/19		3.27E-15	3.36E-15	1.58E-06	5.28E+05	<MDA	<MDA	
10035621MA1 100119	11/01/19	10/1/19 - 11/1/19		5.53E-15	4.19E-15	1.70E-06	4.42E+05	2.44E-09	0.184%	
10035621MA1 110119	12/02/19	11/1/19 - 12/2/19		6.96E-15	3.56E-15	1.80E-06	4.90E+05	3.41E-09	0.232%	
10035621MA1 120219	01/02/20	12/2/19 - 1/2/20		3.19E-15	3.23E-15	1.56E-06	5.12E+05	<MDA	<MDA	
1003-562-1MA2										
10035621MA2 070119	8/1/19	7/1/19 - 8/1/19	Gross Alpha	-1.13E-16	5.13E-16	1.22E-07	5.33E+05	<MDA	<MDA	
10035621MA2 080119	9/3/19	8/1/19 - 9/3/19		0.00E+00	4.83E-16	1.40E-07	5.71E+05	<MDA	<MDA	
10035621MA2 090319	10/1/19	9/3/19 - 10/1/19		0.00E+00	5.21E-16	1.40E-07	4.82E+05	<MDA	<MDA	
10035621MA2 100119	11/1/19	10/1/19 - 11/1/19		5.77E-17	5.23E-16	1.22E-07	5.25E+05	<MDA	<MDA	
10035621MA2 110119	12/2/19	11/1/19 - 12/2/19		0.00E+00	4.84E-16	9.91E-08	5.41E+05	<MDA	<MDA	
10035621MA2 120219	1/2/19	12/2/19 - 1/2/20		-5.77E-17	5.23E-16	7.21E-08	5.33E+05	<MDA	<MDA	
10035621MA2 070119	8/1/19	7/1/19 - 8/1/19	Gross Beta	4.10E-15	3.54E-15	1.79E-06	5.33E+05	2.19E-09	0.137%	
10035621MA2 080119	9/3/19	8/1/19 - 9/3/19		4.96E-15	3.33E-15	1.76E-06	5.71E+05	2.83E-09	0.165%	
10035621MA2 090319	10/1/19	9/3/19 - 10/1/19		4.94E-15	3.60E-15	1.72E-06	4.82E+05	2.38E-09	0.165%	
10035621MA2 100119	11/1/19	10/1/19 - 11/1/19		3.50E-15	3.34E-15	1.58E-06	5.25E+05	1.84E-09	0.117%	
10035621MA2 110119	12/2/19	11/1/19 - 12/2/19		5.06E-15	3.09E-15	1.70E-06	5.41E+05	2.74E-09	0.169%	
10035621MA2 120219	1/2/19	12/2/19 - 1/2/20		4.83E-15	3.34E-15	1.64E-06	5.33E+05	2.58E-09	0.161%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (µCi/mL)	2σ TPU (µCi/mL)	1σ TPU (µCi/mL)	MDC (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1003-562-1MA1										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.93E-16	7.22E-17	7.35E-17	4.19E-17	1.46E+06	0.00	0.006%
U- 235/236				1.26E-16	6.26E-17	6.32E-17	3.61E-17		0.00	0.004%
U-238				1.81E-16	6.95E-17	7.07E-17	4.01E-17		0.00	0.006%
U-233/234	4 Qtr.	1/2/2020	10/1/19-1/2/20	1.70E-16	5.48E-17	5.61E-17	3.18E-17	1.51E+6	0.00	0.006%
U- 235/236				7.21E-18	1.74E-17	1.74E-17	3.49E-17		<MDC	<MDC
U-238				1.72E-16	5.46E-17	5.59E-17	2.82E-17		0.00	0.006%
1003-562-1MA2										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.40E-16	5.10E-17	5.20E-17	2.94E-17	1.59E+06	0.00	0.005%
U- 235/236				8.37E-17	4.23E-17	4.27E-17	2.21E-17		0.00	0.003%
U-238				1.15E-16	4.58E-17	4.65E-17	2.69E-17		0.00	0.004%
U-233/234	4 Qtr.	1/2/2020	10/1/19-1/2/20	1.99E-16	5.71E-17	5.89E-17	2.25E-17	1.60E+06	0.00	0.007%
U- 235/236				3.31E-17	2.61E-17	2.62E-17	2.77E-17		0.00	0.001%
U-238				1.82E-16	5.39E-17	5.55E-17	1.79E-17		0.00	0.006%

Notes: None



TABLE 1-4

Separations Building Module-1005 (SBM 1005): Pumped Extract Exhaust Gaseous Effluent Vent System, 1005-562-1MA1 & 1005-562-1MA2 Gross Alpha & Beta, and Radionuclides: Quarters 3 & 4, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (µCi/mL)	MDA / MDC (µCi/mL)	Inst. Unc. (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1005-562-1MA1										
10055621MA1 070119	08/1/19	7/1/19 - 8/1/19	Gross Alpha	6.69E-17	6.50E-16	1.76E-07	8.81E+05	<MDA	<MDA	
10055621MA1 080119	9/3/19	8/1/19 - 9/3/19		-6.61E-17	6.03E-16	1.22E-07	9.46E+05	<MDA	<MDA	
10055621MA1 090319	10/1/19	9/3/19 - 10/1/19		-7.68E-17	7.00E-16	1.22E-07	7.93E+05	<MDA	<MDA	
10055621MA1 100119	11/1/19	10/1/19 - 11/1/19		-7.14E-17	6.48E-16	7.21E-08	8.52E+05	<MDA	<MDA	
10055621MA1 110119	12/2/19	11/1/19 - 12/2/19		-7.37E-17	6.29E-16	1.22E-07	9.00E+05	<MDA	<MDA	
10055621MA1 120219	1/2/20	12/2/19 - 1/2/20		0.00E+00	6.23E-16	9.91E-08	1.03E+06	<MDA	<MDA	
10055621MA1 070119	8/1/19	7/1/19 - 8/1/19	Gross Beta	2.38E-15	4.49E-15	1.57E-06	8.81E+05	<MDA	<MDA	
10055621MA1 080119	9/3/19	8/1/19 - 9/3/19		5.01E-15	4.16E-15	1.66E-06	9.46E+05	4.74E-09	0.167%	
10055621MA1 090319	10/1/19	9/3/19 - 10/1/19		4.98E-15	4.82E-15	1.60E-06	7.93E+05	3.95E-09	0.166%	
10055621MA1 100119	11/1/19	10/1/19 - 11/1/19		7.28E-15	4.13E-15	1.74E-06	8.52E+05	6.20E-09	0.243%	
10055621MA1 110119	12/2/19	11/1/19 - 12/2/19		4.91E-15	4.01E-15	1.86E-06	9.00E+05	4.42E-09	0.164%	
10055621MA1 120219	1/2/20	12/2/19 - 1/2/20		5.75E-15	3.97E-15	1.64E-06	1.03E+06	5.90E-09	0.192%	
1005-562-1MA2										
10055621MA2 070119	08/01/19	7/1/19 - 8/1/19	Gross Alpha	-1.53E-16	7.19E-16	9.91E-08	9.00E+05	<MDA	<MDA	
10055621MA2 080119	09/03/19	8/1/19 - 9/3/19		-1.43E-16	6.70E-16	9.91E-08	9.56E+05	<MDA	<MDA	
10055621MA2 090319	10/01/19	9/3/19 - 10/1/19		-1.67E-16	7.83E-16	9.91E-08	8.09E+05	<MDA	<MDA	
10055621MA2 100119	11/01/19	10/1/19 - 11/1/19		1.54E-16	7.19E-16	1.40E-07	8.60E+05	<MDA	<MDA	
10055621MA2 110119	12/02/19	11/1/19 - 12/2/19		1.54E-16	7.17E-16	1.40E-07	1.00E+06	<MDA	<MDA	
10055621MA2 120219	01/02/20	12/2/19 - 1/2/20		-7.85E-17	7.12E-16	7.21E-08	1.03E+06	<MDA	<MDA	
10055621MA2 070119	08/01/19	7/1/19 - 8/1/19	Gross Beta	6.53E-15	4.96E-15	1.70E-06	5.33E+05	3.48E-09	0.218%	
10055621MA2 080119	09/03/19	8/1/19 - 9/3/19		1.86E-15	4.62E-15	1.35E-06	5.71E+05	<MDA	<MDA	
10055621MA2 090319	10/01/19	9/3/19 - 10/1/19		5.88E-15	5.40E-15	1.62E-06	4.82E+05	2.83E-09	0.196%	
10055621MA2 100119	11/01/19	10/1/19 - 11/1/19		7.21E-15	4.58E-15	1.68E-06	5.25E+05	3.78E-09	0.240%	
10055621MA2 110119	12/02/19	11/1/19 - 12/2/19		6.34E-15	4.57E-15	1.62E-06	5.41E+05	3.43E-09	0.211%	
10055621MA2 120219	01/02/20	12/2/19 - 1/2/20		5.72E-15	4.54E-15	1.58E-06	5.33E+05	3.05E-09	0.191%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (µCi/mL)	2σ TPU (µCi/mL)	1σ TPU (µCi/mL)	MDC (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1005-562-1MA1										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.26E-16	5.85E-17	5.92E-17	3.40E-17	2.62E+06	0.00	0.004%
U- 235/236				1.09E-16	5.99E-17	6.04E-17	3.83E-17		0.00	0.004%
U-238				1.17E-16	5.67E-17	5.73E-17	3.87E-17		0.00	0.004%
U-233/234	4 Qtr.	1/2/2020	10/1/19-1/2/20	2.92E-16	7.60E-17	7.88E-17	2.16E-17	2.78E+06	0.00	0.010%
U- 235/236				5.01E-17	3.48E-17	3.50E-17	3.34E-17		0.00	0.002%
U-238				2.60E-16	7.16E-17	7.39E-17	2.69E-17		0.00	0.009%
1005-562-1MA2										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.94E-16	6.82E-17	6.96E-17	3.19E-17	2.67E+06	0.00	0.006%
U- 235/236				1.75E-16	7.17E-17	7.28E-17	4.19E-17		0.00	0.006%
U-238				1.54E-16	6.03E-17	6.13E-17	3.18E-17		0.00	0.005%
U-233/234	4 Qtr.	1/2/2020	10/1/19-1/2/20	1.25E-16	5.54E-17	5.61E-17	2.51E-17	2.89E+06	0.00	0.004%
U- 235/236				4.90E-18	1.50E-17	1.50E-17	3.55E-17		<MDC	<MDC
U-238				1.20E-16	5.50E-17	5.57E-17	3.59E-17		0.00	0.004%

Notes: None



TABLE 1-5

Container Receipt and Dispatch Building-1100 (SBM 1100): Local Extract Exhaust Gaseous Effluent Vent System, 1100-562-1MA1 & 1100-562-1MA2, Gross Alpha & Beta, and Radionuclides: Quarters 3 & 4, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (µCi/mL)	MDA / MDC (µCi/mL)	Inst. Unc. (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-1MA1										
11005621MA1 070119	08/01/19	7/1/19 - 8/1/19	Gross Alpha	-6.16E-17	5.62E-16	1.22E-07	6.11E+05	<MDA	<MDA	
11005621MA1 080119	09/03/19	8/1/19 - 9/3/19		0.00E+00	6.44E-16	1.40E-07	2.13E+05	<MDA	<MDA	
11005621MA1 090319	10/01/19	9/3/19 - 10/1/19		1.52E-16	7.14E-16	1.76E-07	9.94E+04	<MDA	<MDA	
11005621MA1 100119	11/01/19	10/1/19 - 11/1/19		7.85E-17	7.12E-16	1.22E-07	1.37E+05	<MDA	<MDA	
11005621MA1 110119	12/02/19	11/1/19 - 12/2/19		-6.01E-17	5.45E-16	7.21E-08	8.25E+05	<MDA	<MDA	
11005621MA1 120219	01/06/19	12/2/19 - 1/6/20		6.74E-17	6.11E-16	1.22E-07	9.08E+05	<MDA	<MDA	
11005621MA1 070119	08/01/19	7/1/19 - 8/1/19	Gross Beta	2.58E-15	3.87E-15	1.54E-06	6.11E+05	<MDA	<MDA	
11005621MA1 080119	09/03/19	8/1/19 - 9/3/19		5.60E-15	4.44E-15	1.68E-06	2.13E+05	1.19E-09	0.187%	
11005621MA1 090319	10/01/19	9/3/19 - 10/1/19		5.09E-15	4.92E-15	1.60E-06	9.94E+04	5.06E-10	0.170%	
11005621MA1 100119	11/01/19	10/1/19 - 11/1/19		1.00E-14	4.54E-15	1.87E-06	1.37E+05	1.37E-09	0.333%	
11005621MA1 110119	12/02/19	11/1/19 - 12/2/19		5.25E-15	3.48E-15	1.66E-06	8.25E+05	4.33E-09	0.175%	
11005621MA1 120219	01/06/19	12/2/19 - 1/6/20		5.15E-15	3.90E-15	1.60E-06	9.08E+05	4.68E-09	0.172%	
1100-562-1MA2										
11005621MA2 070119	08/01/19	7/1/19 - 8/1/19	Gross Alpha	1.73E-16	8.14E-16	1.76E-07	6.11E+05	<MDA	<MDA	
11005621MA2 080119	09/03/19	8/1/19 - 9/3/19		0.00E+00	7.64E-16	1.40E-07	2.13E+05	<MDA	<MDA	
11005621MA2 090319	10/01/19	9/3/19 - 10/1/19		0.00E+00	8.73E-16	1.40E-07	9.94E+04	<MDA	<MDA	
11005621MA2 100119	11/01/19	10/1/19 - 11/1/19		0.00E+00	7.87E-16	9.91E-08	2.68E+04	<MDA	<MDA	
11005621MA2 110119	12/02/19	11/1/19 - 12/2/19		-3.61E-17	3.27E-16	7.21E-08	8.28E+05	<MDA	<MDA	
11005621MA2 120219	01/06/19	12/2/19 - 1/6/20		-5.42E-17	4.92E-16	7.21E-08	9.08E+05	<MDA	<MDA	
11005621MA2 070119	08/01/19	7/1/19 - 8/1/19	Gross Beta	6.11E-15	5.61E-15	1.62E-06	6.11E+05	3.73E-09	0.204%	
11005621MA2 080119	09/03/19	8/1/19 - 9/3/19		9.06E-15	5.27E-15	1.84E-06	2.13E+05	1.93E-09	0.302%	
11005621MA2 090319	10/01/19	9/3/19 - 10/1/19		3.11E-15	6.02E-15	1.40E-06	9.94E+04	<MDA	<MDA	
11005621MA2 100119	11/01/19	10/1/19 - 11/1/19		9.16E-15	5.02E-15	1.76E-06	2.68E+04	2.45E-10	0.305%	
11005621MA2 110119	12/02/19	11/1/19 - 12/2/19		3.02E-15	2.09E-15	1.64E-06	8.28E+05	2.50E-09	0.101%	
11005621MA2 120219	01/06/19	12/2/19 - 1/6/20		4.47E-15	3.14E-15	1.71E-06	9.08E+05	4.06E-09	0.149%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (µCi/mL)	2σ TPU (µCi/mL)	1σ TPU (µCi/mL)	MDC (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-1MA1										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	1.92E-16	6.41E-17	6.56E-17	2.12E-17	9.23E+5	0.00	0.006%
U- 235/236				1.30E-16	5.77E-17	5.85E-17	3.00E-17		0.00	0.004%
U-238				1.91E-16	6.38E-17	6.53E-17	2.42E-17		0.00	0.006%
U-233/234	4 Qtr.	1/6/2020	10/1/19-1/6/20	2.27E-16	7.46E-17	7.63E-17	3.39E-17	1.87E+6	0.00	0.008%
U- 235/236				2.20E-17	2.79E-17	2.80E-17	4.18E-17		<MDC	<MDC
U-238				1.95E-16	6.82E-17	6.96E-17	2.69E-17		0.00	0.007%
1100-562-1MA2										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	2.40E-16	7.60E-17	7.79E-17	3.52E-17	9.23E+5	0.00	0.008%
U- 235/236				1.06E-16	5.51E-17	5.56E-17	3.89E-17		0.00	0.004%
U-238				2.74E-16	8.11E-17	8.34E-17	3.33E-17		0.00	0.009%
U-233/234	4 Qtr	1/6/2020	10/1/19-1/6/20	1.44E-16	5.10E-17	5.21E-17	2.53E-17	1.76E+6	0.00	0.005%
U- 235/236				1.38E-17	1.79E-17	1.79E-17	2.49E-17		<MDC	<MDC
U-238				1.18E-16	4.60E-17	4.67E-17	2.51E-17		0.00	0.004%

Notes: None



TABLE 1-6

Container Receipt and Dispatch Building-1100 (SBM 1100): Local Extract Exhaust Gaseous Effluent Vent System, 1100-562-2MA1 & 1100-562-2MA2, Gross Alpha & Beta, and Radionuclides: Quarters 3 & 4, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (µCi/mL)	MDA / MDC (µCi/mL)	Inst. Unc. (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-2MA1										
11005622MA1 070119	08/01/19	7/1/19 - 8/1/19	Gross Alpha	1.81E-16	5.62E-16	1.89E-07	3.11E+07	<MDA	<MDA	
11005622MA1 080119	09/03/19	8/1/19 - 9/3/19		-8.83E-17	5.13E-16	1.22E-07	3.32E+07	<MDA	<MDA	
11005622MA1 090319	10/01/19	9/3/19 - 10/1/19		-1.22E-16	5.71E-16	9.91E-08	2.89E+07	<MDA	<MDA	
11005622MA1 100119	11/01/19	10/1/19 - 11/1/19		2.45E-16	5.64E-16	1.71E-07	3.13E+07	<MDA	<MDA	
11005622MA1 110119	12/02/19	11/1/19 - 12/2/19		4.39E-16	5.79E-16	2.12E-07	3.19E+07	<MDA	<MDA	
11005622MA1 120219	01/06/19	12/2/19 - 1/6/20		1.07E-16	4.99E-16	1.40E-07	3.62E+07	<MDA	<MDA	
11005622MA1 070119	08/01/19	7/1/19 - 8/1/19	Gross Beta	7.32E-15	3.87E-15	1.89E-06	3.11E+07	2.28E-07	0.244%	
11005622MA1 080119	09/03/19	8/1/19 - 9/3/19		5.27E-15	3.54E-15	1.88E-06	3.32E+07	1.75E-07	0.176%	
11005622MA1 090319	10/01/19	9/3/19 - 10/1/19		4.29E-15	3.94E-15	1.62E-06	2.89E+07	1.24E-07	0.143%	
11005622MA1 100119	11/01/19	10/1/19 - 11/1/19		4.90E-15	3.59E-15	1.68E-06	3.13E+07	1.53E-07	0.163%	
11005622MA1 110119	12/02/19	11/1/19 - 12/2/19		6.65E-15	3.69E-15	1.82E-06	3.19E+07	2.12E-07	0.222%	
11005622MA1 120219	01/06/19	12/2/19 - 1/6/20		4.01E-15	3.18E-15	1.58E-06	3.62E+07	1.45E-07	0.134%	
1100-562-2MA2										
11005622MA2 070119	08/01/19	7/1/19 - 8/1/19	Gross Alpha	1.22E-16	5.71E-16	1.76E-07	3.27E+07	<MDA	<MDA	
11005622MA2 080119	09/03/19	8/1/19 - 9/3/19		0.00E+00	5.57E-16	1.40E-07	3.48E+07	<MDA	<MDA	
11005622MA2 090319	10/01/19	9/3/19 - 10/1/19		3.49E-16	6.44E-16	2.12E-07	2.97E+07	<MDA	<MDA	
11005622MA2 100119	11/01/19	10/1/19 - 11/1/19		2.76E-16	6.35E-16	1.71E-07	9.75E+06	<MDA	<MDA	
11005622MA2 110119	12/02/19	11/1/19 - 12/2/19		7.63E-16	5.89E-16	2.66E-07	3.37E+07	2.58E-08	0.025%	
11005622MA2 120219	01/06/19	12/2/19 - 1/6/20		2.68E-16	4.99E-16	1.85E-07	3.75E+07	<MDA	<MDA	
11005622MA2 070119	08/01/19	7/1/19 - 8/1/19	Gross Beta	5.87E-15	3.94E-15	1.76E-06	3.27E+07	1.92E-07	0.196%	
11005622MA2 080119	09/03/19	8/1/19 - 9/3/19		4.40E-15	3.84E-15	1.64E-06	3.48E+07	1.53E-07	0.147%	
11005622MA2 090319	10/01/19	9/3/19 - 10/1/19		5.35E-15	4.44E-15	1.66E-06	2.97E+07	1.59E-07	0.178%	
11005622MA2 100119	11/01/19	10/1/19 - 11/1/19		7.90E-15	4.05E-15	1.80E-06	9.75E+06	7.71E-08	0.263%	
11005622MA2 110119	12/02/19	11/1/19 - 12/2/19		9.46E-15	3.76E-15	1.96E-06	3.37E+07	3.19E-07	0.315%	
11005622MA2 120219	01/06/19	12/2/19 - 1/6/20		4.41E-15	3.18E-15	1.62E-06	3.75E+07	1.65E-07	0.147%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (µCi/mL)	2σ TPU (µCi/mL)	1σ TPU (µCi/mL)	MDC (µCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-2MA1										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	2.88E-16	6.89E-17	7.19E-17	2.29E-17	9.23E+07	0.00	0.010%
U- 235/236				1.06E-16	4.42E-17	4.49E-17	2.15E-17		0.00	0.0035%
U-238				2.53E-16	6.41E-17	6.66E-17	2.39E-17		0.00	0.008%
U-233/234	4 Qtr.	1/6/2020	10/1/19-1/6/20	3.01E-16	7.48E-17	7.78E-17	2.80E-17	9.94E+07	0.00	0.010%
U- 235/236				4.35E-17	3.18E-17	3.20E-17	3.45E-17		0.00	0.0015%
U-238				3.25E-16	7.78E-17	8.12E-17	2.56E-17		0.00	0.011%
1100-562-2MA2										
U-233/234	3 Qtr.	10/1/2019	7/1/19-10/1/19	3.18E-16	8.59E-17	8.89E-17	3.23E-17	9.72E+07	0.00	0.011%
U- 235/236				9.07E-17	4.91E-17	4.95E-17	3.57E-17		0.00	0.003%
U-238				2.50E-16	7.51E-17	7.72E-17	3.37E-17		0.00	0.008%
U-233/234	4 Qtr.	1/6/2020	10/1/19-1/6/20	4.79E-16	1.01E-16	1.07E-16	2.34E-17	8.10E+07	0.00	0.016%
U- 235/236				4.67E-17	3.28E-17	3.30E-17	2.89E-17		0.00	0.002%
U-238				3.67E-16	8.65E-17	9.04E-17	2.12E-17		0.00	0.012%



Notes:

1. Ci = Curies
2. $\mu\text{Ci/ml}$ = micro-Curies per milliliter.
3. m^3 = cubic meters.
4. MDA = minimum detectable activity.
5. MDC= minimum detectable concentration.
6. Quantity released is calculated if the result Equals or Exceeds MDA or MDC.
7. Radionuclides analyzed using Procedure EPA 908.0 Modified by Eberline Analytical Corp of Oak Ridge, TN.
8. Gross alpha and beta analyzed by URENCO USA per procedure EN-3-3030-01.