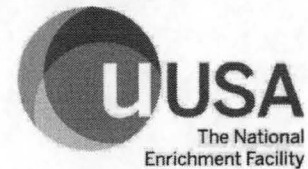


LES-22-046-NRC

2/25/22



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, 2021
through December 31, 2021

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 Barry Love, Licensing Specialist at 575-394-4482.

Respectfully,

Wyatt
Padgett

Wyatt Padgett
Compliance Manager

Digitally signed by
Wyatt Padgett
Date: 2022.02.25
13:27:39 -07'00'

Enclosure:

1. Semi-Annual Radiological Effluent Release Report for July 1, 2021
through December 31, 2021

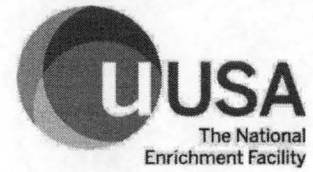
IE48
NMSS20
NMSS

LES-22-046-NRC

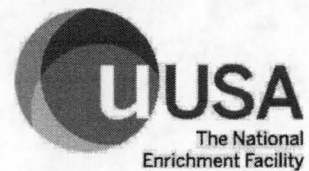
CC:

USNRC Region II
RidsRgn2MailCenter@nrc.gov

Matthew Bartlett, Project Manager - UUSA
U.S. Nuclear Regulatory Commission
Matthew.Bartlett@nrc.gov



LES-22-046-NRC



ENCLOSURE 1

**Semi-Annual Radiological Effluent Release Report for
July 1, 2021 through December 31, 2021**

URENCO USA: Report of Radioactivity in Effluents: Liquid & Air: July 2021 – December 2021

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.

Sampling data was not reported for gross alpha and gross beta for Quarter 3, 2021 due to a software error. The data will be reported on an amended SARERR.

LIST OF TABLES

Table No.	Title
1-1	Lift Station 1 Wastewater Effluent - Radionuclides Quarter 3 & 4, 2021
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, 2021
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, 2021
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, 2021
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, 2021
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, 2021

TABLE 1-1

Lift Station 1 Wastewater Effluent – Radionuclides, Quarters 3 & 4, 2021 URENCO USA Lea County, New Mexico

Lift Station 1 – July – December 2021								
URENCO USA Lea County New Mexico								
Lift Station 1 WasteWater Effluent- Radionuclides								
Radionuclide	Sample Date (Date/Time)	Sample Period	Total Time (days)	Results ($\mu\text{Ci}/\text{ml}$)	Counting Uncertainty ($\mu\text{Ci}/\text{ml}$)	Total Flow* (gal/day)	Quantity Released (Ci)	% of Table 3 of Appendix B to 10 CFR 20 Values-Monthly Average Release to Sewers
Uranium - 233/234	10/11/21 0945	07/01/21 - 12/31/21	183	9.00E-11	2.00E-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				7.00E-11	2.00E-11	13,000	Result Below LLD	Result Below LLD
Lift Station 1 Duplicate – July – December 2021								
Uranium - 233/234	10/11/21 0945	07/01/21 - 12/31/21	183	1.00E-10	2.00E-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				7.00E-11	2.00E-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.
- $\mu\text{Ci}/\text{mL}$ = 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 $3.09\text{E}-9 \mu\text{Ci}/\text{mL}$.

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: Quarter 4, and Radionuclides: Quarters 3 & 4, 2021 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 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	0.00E+00	6.35E-16	1.40E-07	3.72E+05	<MDA	<MDA
10015621MA1 110221	12/07/21	11/2/21 - 12/7/21		0.00E+00	5.36E-16	1.40E-07	4.39E+05	<MDA	<MDA
10015621MA1 120721	01/03/22	12/7/21 - 01/3/22		-7.59E-17	6.88E-16	1.22E-07	3.21E+05	<MDA	<MDA
10015621MA1 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	4.40E-15	5.12E-15	1.90E-06	3.72E+05	<MDA	<MDA
10015621MA1 110221	12/07/21	11/2/21 - 12/7/21		2.57E-15	4.32E-15	1.66E-06	4.39E+05	<MDA	<MDA
10015621MA1 120721	01/03/22	12/7/21 - 01/3/22		3.31E-15	5.55E-15	1.66E-06	3.21E+05	<MDA	<MDA
1001-562-1MA2									
10015621MA2 100120	11/4/20	10/1/20 - 11/4/20	Gross Alpha	-1.30E-16	6.06E-16	9.91E-08	3.54E+05	<MDA	<MDA
10015621MA2 110420	12/01/20	11/4/20 - 12/1/20		-1.20E-16	5.59E-16	9.91E-08	2.44E+05	<MDA	<MDA
10015621MA2 120120	01/04/21	12/1/20 - 1/4/21		2.49E-16	7.68E-16	1.85E-07	3.21 E+05	<MDA	<MDA
10015621MA2 100120	11/4/20	10/1/20 - 11/4/20	Gross Beta	5.33E-15	4.88E-15	1.85E-06	3.54E+05	1.89E-09	0.18%
10015621MA2 110420	12/01/20	11/4/20 - 12/1/20		3.80E-15	4.50E-15	1.76E-06	2.44E+05	<MDA	<MDA
10015621MA2 120120	01/04/21	12/1/20 - 1/4/21		5.85E-15	6.19E-15	1.80E-06	3.21E+05	<MDA	<MDA
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.	10/4/2021	7/1/21-10/4/21	2.03E-16	1.45E-16	1.45E-16	1.26E-16	0.00	0.007%
U- 235/236				5.41E-17	8.28E-17	8.29E-17	1.23E-16	<MDC	<MDC
U-238				9.89E-17	1.07E-16	1.07E-16	1.43E-16	<MDC	<MDC
U-233/234	4 Qtr.	1/3/2022	10/4/21-1/3/22	1.70E-16	1.10E-16	1.10E-16	7.24E-17	0.00	0.006%
U- 235/236				8.19E-17	8.47E-17	8.49E-17	8.93E-17	<MDC	<MDC
U-238				8.34E-17	7.65E-17	7.68E-17	7.20E-17	0.00	0.003%
1001-562-1MA2									
U-233/234	3 Qtr.	10/4/2021	7/1/21-10/4/21	1.42E-16	1.38E-16	1.39E-16	1.71E-16	<MDC	<MDC
U- 235/236				7.02E-17	1.20E-16	1.20E-16	2.10E-16	<MDC	<MDC
U-238				2.83E-16	1.90E-16	1.91E-16	1.70E-16	0.00	0.009%
U-233/234	4 Qtr	1/3/2022	10/4/21-1/3/22	1.11E-16	1.10E-16	1.10E-16	1.30E-16	<MDC	<MDC
U- 235/236				8.10E-17	1.05E-16	1.05E-16	1.46E-16	<MDC	<MDC
U-238				2.21E-16	1.55E-16	1.56E-16	1.47E-16	0.00	0.007%

Notes: Stack filter discrepancy noted on 120721 between 1001-562-1MA1 & 1001-562-1MA2 at ~50%.

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: Quarter 4, and Radionuclides: Quarters 3 & 4, 2021 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 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	-6.50E-17	5.89E-16	1.22E-07	1.54E+07	<MDA	<MDA
10035621MA1 110221	12/07/21	11/2/21 - 12/7/21		-1.02E-16	4.77E-16	9.91E-08	1.90E+07	<MDA	<MDA
10035621MA1 120721	01/03/22	12/7/21 - 1/3/22		1.51E-16	7.04E-16	1.71E-07	1.46E+07	<MDA	<MDA
10035621MA1 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	4.01E-15	4.75E-15	1.76E-06	1.54E+07	<MDA	<MDA
10035621MA1 110221	12/07/21	11/2/21 - 12/7/21		3.25E-15	4.77E-16	1.76E-06	1.90E+07	1.75E-09	0.108%
10035621MA1 120721	01/03/22	12/7/21 - 1/3/22		5.92E-15	5.67E-15	1.83E-06	1.46E+07	2.44E-09	0.20%
1003-562-1MA2									
10035621MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	-6.61E-17	6.00E-16	1.22E-07	4.71E+05	<MDA	<MDA
10035621MA2 110221	12/07/21	11/2/21 - 12/7/21		0.00E+00	4.95E-16	1.40E-07	5.84E+05	<MDA	<MDA
10035621MA2 120721	01/03/22	12/7/21 - 1/3/22		-1.33E-16	6.23E-16	9.91E-08	4.50E+05	<MDA	<MDA
10035621MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	3.61E-15	4.83E-15	1.72E-06	4.71E+05	<MDA	<MDA
10035621MA2 110221	12/07/21	11/2/21 - 12/7/21		4.36E-15	4.95E-16	1.85E-06	5.84E+05	2.55E-09	0.145%
10035621MA2 120721	01/03/22	12/7/21 - 1/3/22		1.74E-15	5.02E-15	1.55E-06	4.50E+05	<MDA	<MDA
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.	10/4/2021	7/1/21-10/4/21	2.00E-16	1.68E-16	1.69E-16	1.94E-16	0.00	0.007%
U- 235/236				1.78E-17	7.41E-17	7.41E-17	1.90E-16	<MDC	<MDC
U-238				1.90E-16	1.56E-16	1.56E-16	1.54E-16	0.00	0.006%
U-233/234	4 Qtr	1/3/2022	10/4/21-1/3/22	1.14E-16	9.55E-17	9.58E-17	8.17E-17	0.00	0.004%
U- 235/236				0.00E+00	6.70E-17	6.70E-17	1.45E-16	<MDC	<MDC
U-238				1.30E-16	1.03E-16	1.03E-16	9.32E-17	0.00	0.004%
1003-562-1MA2									
U-233/234	3 Qtr.	10/4/2021	7/1/21-10/4/21	1.55E-16	1.02E-16	1.03E-16	9.28E-17	0.00	0.005%
U- 235/236				0.00E+00	5.29E-17	5.29E-17	1.14E-16	<MDC	<MDC
U-238				1.21E-16	8.68E-17	8.72E-17	6.43E-17	0.00	0.004%
U-233/234	4 Qtr	1/3/2022	10/4/21-1/3/22	8.20E-17	6.16E-17	6.19E-17	5.74E-17	0.00	0.003%
U- 235/236				4.05E-17	5.31E-17	5.32E-17	8.09E-17	<MDC	<MDC
U-238				5.80E-17	5.32E-17	5.33E-17	6.15E-17	<MDC	<MDC

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: Quarter 4, and Radionuclides: Quarters 3 & 4, 2021 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 100421	01/03/22	10/4/21 - 1/3/22	Gross Alpha	-2.20E-17	2.00E-16	1.22E-07	2.81E+06	<MDA	<MDA	
10055621MA1 100421	01/03/22	10/4/21 - 1/3/22	Gross Beta	1.92E-15	1.61E-15	1.89E-06	2.81E+06	5.40E-09	0.064%	
1005-562-1MA2										
10055621MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	0.00E+00	1.37E-15	1.40E-07	3.94E+05	<MDA	<MDA	
10055621MA2 110221	12/07/21	11/2/21 - 12/7/21		-1.67E-16	5.07E-16	9.91E-08	1.04E+06	<MDA	<MDA	
10055621MA2 120721	01/03/22	12/7/21 - 1/3/22		2.19E-16	6.76E-16	1.85E-07	8.09E+05	<MDA	<MDA	
10055621MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	7.15E-15	1.10E-14	1.68E-06	3.94E+05	<MDA	<MDA	
10055621MA2 110221	12/07/21	11/2/21 - 12/7/21		4.11E-15	4.09E-15	1.95E-06	1.04E+06	4.26E-09	0.137%	
10055621MA2 120721	01/03/22	12/7/21 - 1/3/22		5.96E-15	5.45E-15	1.85E-06	8.09E+05	4.82E-09	0.199%	
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.	10/4/2021	7/1/20-10/4/21	1.53E-16	1.16E-16	1.16E-16	1.07E-16	3.16E+06	0.00	0.005%
U- 235/236				5.04E-17	8.57E-17	8.58E-17	1.51E-16		<MDC	<MDC
U-238				1.96E-16	1.29E-16	1.30E-16	9.72E-17		0.00	0.007%
U-233/234	4 Qtr.	1/3/2022	10/4/21-1/3/22	4.12E-17	4.54E-17	4.55E-17	6.18E-17	2.81E+06	<MDC	<MDC
U- 235/236				2.33E-17	3.56E-17	3.56E-17	5.31E-17		<MDC	<MDC
U-238				4.96E-17	4.54E-17	4.55E-17	4.28E-17		0.00	0.002%
1005-562-1MA2										
U-233/234	3 Qtr.	10/4/2021	7/1/20-10/4/21	7.42E-17	7.99E-17	8.01E-17	1.17E-16	3.02E+06	<MDC	<MDC
U- 235/236				-3.14E-18	3.67E-17	3.67E-17	7.70E-17		<MDC	<MDC
U-238				1.61E-16	9.86E-17	9.93E-17	6.22E-17		0.00	0.005%
U-233/234	4 Qtr	1/3/2022	10/4/21-1/3/22	1.58E-16	1.01E-16	1.02E-16	6.73E-17	2.24E+06	0.00	0.005%
U- 235/236				5.97E-17	7.82E-17	7.83E-17	1.19E-16		<MDC	<MDC
U-238				9.09E-17	7.80E-17	7.82E-17	7.67E-17		0.00	0.003%

Notes: 1005-562-1MA1 filter not pulled in October and November 2021 due to redundant monitor displaying locked in alarm on panel.

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: Quarter 4, and Radionuclides: Quarters 3 & 4, 2021 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 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	-6.93E-17	6.29E-16	1.22E-07	2.44E+07	<MDA	<MDA
11005621MA1 110221	12/07/21	11/2/21 - 12/7/21		6.64E-16	1.03E-15	2.21E-07	1.89E+07	<MDA	<MDA
11005621MA1 120721	01/03/22	12/7/21 - 1/3/22		-1.19E-16	5.54E-16	9.91E-08	3.42E+07	<MDA	<MDA
11005621MA1 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	2.77E-15	6.29E-16	1.64E-06	6.91E+05	1.91E-09	0.092%
11005621MA1 110221	12/07/21	11/2/21 - 12/7/21		1.32E-14	1.03E-15	2.03E-06	5.36E+05	7.05E-09	0.439%
11005621MA1 120721	01/03/22	12/7/21 - 1/3/22		3.55E-15	4.47E-15	1.74E-06	9.70E+05	<MDA	<MDA
1100-562-1MA2									
11005621MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	0.00E+0	6.00E-16	1.40E-07	9.96E+05	<MDA	<MDA
11005621MA2 110221	12/07/21	11/2/21 - 12/7/21		-3.02E-17	4.99E-16	1.40E-07	1.20E+06	<MDA	<MDA
11005621MA2 120721	01/03/22	12/7/21 - 1/3/22		7.07E-17	6.41E-16	1.58E-07	9.11E+05	<MDA	<MDA
11005621MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	6.01E-15	4.83E-15	1.91E-06	9.96E+05	5.99E-09	0.200%
11005621MA2 110221	12/07/21	11/2/21 - 12/7/21		5.79E-15	4.99E-16	2.08E-06	1.20E+06	6.95E-09	0.193%
11005621MA2 120721	01/03/22	12/7/21 - 1/3/22		5.39E-15	5.17E-15	1.83E-06	9.11E+05	4.91E-09	0.180%
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.	10/4/2021	7/1/21-10/4/21	1.02E-16	8.52E-17	8.55E-17	9.90E-17	0.00	0.003%
U- 235/236				1.85E-17	5.15E-17	5.15E-17	1.11E-16	<MDC	<MDC
U-238				1.42E-16	9.46E-17	9.52E-17	7.86E-17	0.00	0.005%
U-233/234	4 Qtr.	1/3/2022	10/4/21-1/3/22	1.83E-16	1.27E-16	1.28E-16	1.01E-16	0.00	0.006%
U- 235/236				2.61E-17	7.25E-17	7.25E-17	1.57E-16	<MDC	<MDC
U-238				1.54E-16	1.19E-16	1.20E-16	1.19E-16	0.00	0.005%
1100-562-1MA2									
U-233/234	3 Qtr.	10/4/2021	7/1/21-10/4/21	1.85E-16	1.26E-16	1.27E-16	8.74E-17	0.00	0.006%
U- 235/236				4.29E-17	7.29E-17	7.29E-17	1.23E-16	<MDC	<MDC
U-238				2.40E-17	5.99E-17	6.00E-17	1.25E-16	<MDC	<MDC
U-233/234	4 Qtr.	1/3/2022	10/4/21-1/3/22	5.06E-17	4.89E-17	4.90E-17	6.07E-17	<MDC	<MDC
U- 235/236				0.00E+00	3.46E-17	3.46E-17	7.49E-17	<MDC	<MDC
U-238				1.21E-16	7.23E-17	7.28E-17	6.04E-17	0.00	0.004%

Notes: Stack volume for 1100-562-1MA1 was not displaying on 090121 sample;

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: Quarter 4, and Radionuclides: Quarters 3 & 4, 2021 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 100421	11/02/21	10/4/21– 11/2/21	Gross Alpha	7.98E-17	2.06E-16	1.58E-07	2.24E+07	<MDA	<MDA	
11005622MA1 110221	12/07/21	11/2/21 - 12/7/21		2.17E-13	4.99E-13	1.98E-07	3.48E+07	<MDA	<MDA	
11005622MA1 120721	01/03/22	12/7/21 - 1/3/22		-2.02E-16	6.11E-16	9.91E-08	2.71E+07	<MDA	<MDA	
11005622MA1 100421	11/02/21	10/4/21– 11/2/21	Gross Beta	4.24E-15	2.06E-16	1.78E-06	2.24E+07	9.50E-08	0.141%	
11005622MA1 110221	12/07/21	11/2/21 - 12/7/21		5.20E-12	4.99E-13	1.92E-06	3.48E+07	1.81E-07	0.173%	
11005622MA1 120721	01/03/22	12/7/21 - 1/3/22		2.99E-15	4.93E-15	1.81E-06	2.71E+07	<MDA	<MDA	
1100-562-2MA2										
11005622MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Alpha	9.86E-17	8.95E-16	1.58E-07	3.03E+07	<MDA	<MDA	
11005622MA2 110221	12/07/21	11/2/21 - 12/7/21		0.00E+00	7.09E-16	1.40E-07	3.64E+07	<MDA	<MDA	
11005622MA2 120721	01/03/22	12/7/21 - 1/3/22		4.06E-17	8.63E-16	1.58E-07	2.81E+07	<MDA	<MDA	
11005622MA2 100421	11/02/21	10/4/21 - 11/2/21	Gross Beta	1.10E-14	7.21E-15	2.07E-06	3.03E+07	3.33E-07	0.367%	
11005622MA2 110221	12/07/21	11/2/21 - 12/7/21		5.68E-15	7.09E-16	1.82E-06	3.64E+07	2.07E-07	0.189%	
11005622MA2 120721	01/03/22	12/7/21 - 1/3/22		1.04E-14	6.95E-15	2.10E-06	2.81E+07	2.91E-07	0.345%	
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.	10/4/2021	7/1/21-10/4/21	1.80E-16	1.10E-16	1.10E-16	1.16E-16	9.26E+07	0.00	0.006%
U- 235/236				4.69E-17	6.73E-17	6.74E-17	1.10E-16		<MDC	<MDC
U-238				8.95E-17	7.65E-17	7.67E-17	9.24E-17		<MDC	<MDC
U-233/234	4 Qtr.	1/3/2022	10/4/21-1/3/22	1.24E-16	9.58E-17	9.62E-17	1.05E-16	8.43E+07	0.00	0.004%
U- 235/236				9.62E-18	4.01E-17	4.01E-17	1.03E-16		<MDC	<MDC
U-238				1.03E-16	8.36E-17	8.39E-17	8.32E-17		0.00	0.003%
1100-562-2MA2										
U-233/234	3 Qtr.	10/4/2021	7/1/21-10/4/21	5.32E-16	2.02E-16	2.06E-16	1.12E-16	9.99E+07	0.00	0.018%
U- 235/236				8.38E-17	8.66E-17	8.68E-17	9.14E-17		<MDC	<MDC
U-238				2.80E-16	1.42E-16	1.43E-16	7.37E-17		0.00	0.009%
U-233/234	4 Qtr.	1/3/2022	10/4/21-1/3/22	3.10E-16	1.52E-16	1.53E-16	7.69E-17	9.48E+07	0.00	0.010%
U- 235/236				6.44E-17	7.78E-17	7.79E-17	9.49E-17		<MDC	<MDC
U-238				2.44E-16	1.37E-16	1.38E-16	1.04E-16		0.00	0.008%

Notes: None

1. Ci = Curies
2. µCi/ml = micro-Curies per milliliter.
3. m³ = 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.