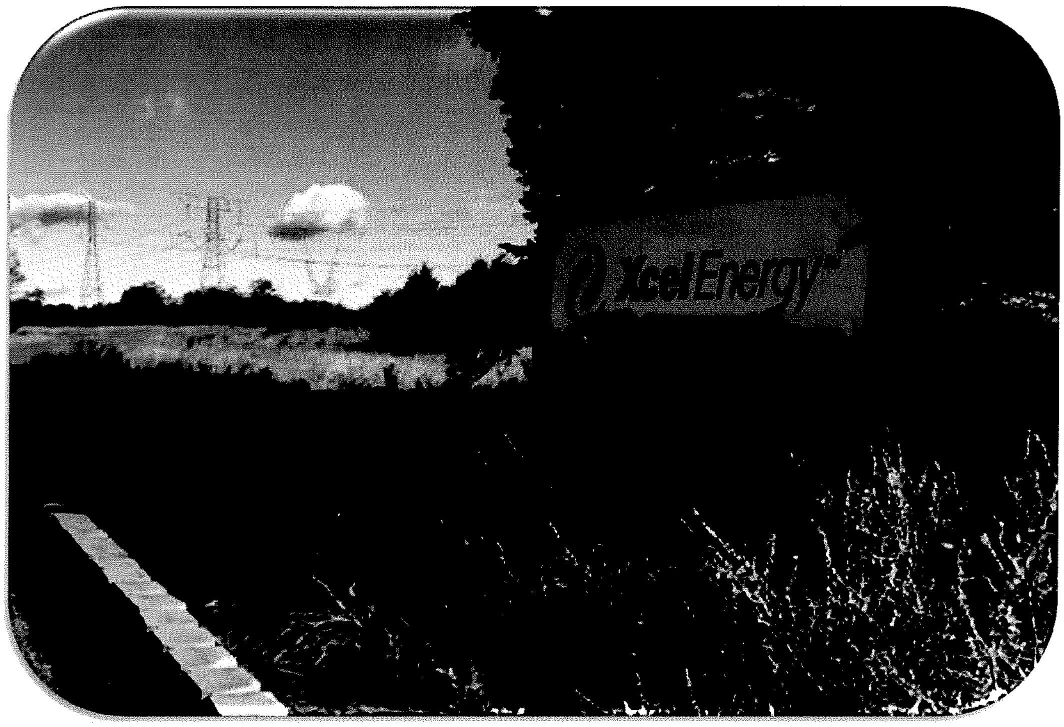
Monticello Nuclear Generating Plant



Annual Radiological Environmental Operating Report 2025

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1.0 LIST OF ACRONYMS AND DEFINITIONS

1. Airborne Activity Sampling: Continuous sampling of air through the collection of particulates and radionuclides on filter media.

2. ARERR: Annual Radioactive Effluent Release Report

3. AREOR: Annual Radiological Environmental Operating Report

4. BWR: Boiling Water Reactor

5. Composite Sample: A series of single collected portions (aliquots) analyzed as one sample. The aliquots making up the sample are collected at time intervals that are very short compared to the composite period.

6. Control: A sampling station in a location not likely to be affected by plant effluents due to its distance and/or direction from the station.

7. Curie (Ci): A measure of radioactivity; equal to 3.7×10^{10} disintegrations per second, or 2.22×10^{12} disintegrations per minute.

8. Direct Radiation Monitoring: The measurement of radiation dose at various distances from the plant is assessed using Thermoluminescent Dosimeters (TLD), Optically Stimulated Luminescence Dosimeters (OSLD) and pressurized ionization chambers.

9. EPA: Environmental Protection Agency

10. GPI: Groundwater Protection Initiative

11. Grab Sample: A single discrete sample drawn at one point in time.

12. Indicator: A sampling location that is likely to be affected by plant effluents due to its proximity and/or direction from the plant.

13. Ingestion Pathway: The ingestion pathway includes milk, fish, drinking water and garden produce. Also sampled (under special circumstances) are other media such as vegetation or animal products when additional information about particular radionuclides is needed.

14. ISFSI: Independent Spent Fuel Storage Installation

15. Lower Limit of Detection (LLD): An *a priori* measure of the detection capability of a radiochemistry measurement based on instrument setup, calibration, background, decay time, and sample volume. An LLD is expressed as an activity concentration. The MDA is used for reporting results. LLD are specified by a regulator, such as the NRC and are typically listed in the ODCM.

16. MDA: Minimum Detectable Activity. For radiochemistry instruments, the MDA is the *a posteriori* minimum concentration that a counting system detects. The smallest concentration or activity of radioactive material in a sample that will yield a net count above instrument background and that is detected with 95% probability, with only 5% probability of falsely concluding that a blank observation represents a true signal.

17. MDC: Minimum Detectable Concentration. Synonymous with MDA for the purposes of radiological monitoring.

18. Mean: The sum of all of the values in a distribution divided by the number of values in the distribution, synonymous with average.

19. Microcurie: 3.7×10^4 disintegrations per second, or 2.22×10^6 disintegrations per minute.

20. N/A: Not Applicable

21. NEI: Nuclear Energy Institute

22. NIST: National Institute of Standards and Technology.

23. NRC: Nuclear Regulatory Commission

24. ODCM: Offsite Dose Calculation Manual

25. OSLD: Optically Stimulated Luminescence Dosimeter

26. pCi/L: picocuries / Liter

27. PWR: Pressurized Water Reactor

28. REMP: Radiological Environmental Monitoring Program

29. TLD: Thermoluminescent Dosimeter

2.0 EXECUTIVE SUMMARY

Monticello Nuclear Generating Plant (MNGP) Radiological Environmental Monitoring Program (REMP) was established prior to the station becoming operational to provide information on background radiation present in the area. The goal of MNGP REMP is to evaluate the impact of the station on the environment. Environmental samples from different media are monitored as part of the program in accordance with specifications detailed in the Offsite Dose Calculation Manual (ODCM), provisions of NRC's NUREG-1302, NRC Generic Letter 79-65 Branch Technical Position, and MNGP Technical Specifications. The program compares data from Indicator locations near the plant, to Control locations farther away from the site to assess operation impacts.

The Annual Radiological Environmental Operating Report (AREOR) provides data obtained through analyses of environmental samples collected at MNGP for the reporting period of January 1st through December 31st, 2025. During that time period 1907 analyses were performed on 818 samples. In assessing all the data gathered for this report and comparing these results with preoperational data and/or 10-year average values, it was concluded that the operation of MNGP did not result in detection of plant related radionuclides in the environment.

2.1 Summary of Conclusions:

No measurable activities above background levels were detected. All values were consistent with historical results which indicate no adverse radiological environmental impacts associated with the operation of MNGP. Naturally occurring radionuclides are present in the Earth's crust and atmosphere and exists in detectable quantities throughout the world. It is common to detect naturally occurring radionuclides in many of the samples collected for REMP. Some examples of naturally occurring radionuclides that are frequently seen in samples are potassium-40, beryllium-7, actinium-228 (present as a decay product of radium-228), and radium-226. Additionally, some relatively long-lived anthropogenic radioisotopes, such as strontium-90 and cesium-137, are also seen in some REMP samples; these radionuclides exist in measurable quantities throughout the world as a result of fallout from historic atmospheric nuclear weapons testing. Naturally occurring beryllium-7 and potassium-40 were detected in sediments as part of MNGP's REMP program. Detailed information on the exposure of the U.S. population to ionizing radiation can be found in NCRP Report No. 160 [1].

3.0 INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) provides data on measurable levels of radiation and radioactive materials in the environment. This program also evaluates the relationship between quantities of radioactive materials released from the plant and resultant doses to individuals from principal pathways of exposure. In this capacity, REMP provides a check on the effluent release program and dispersion modeling to ensure that concentrations in the environment due to radioactive effluents conform to the "As Low As (is) Reasonably Achievable" (ALARA) design objectives of 10 CFR 50, Appendix I [2], and implements the requirements of Section IV.B.2 and IV.B.3 of Appendix I. REMP is designed to conform to the Nuclear Regulatory Commission (NRC) Regulatory Guide 4.1 [3], NUREG 1301/1302 [4] [5], and the 1979 NRC Branch Technical Position [6].

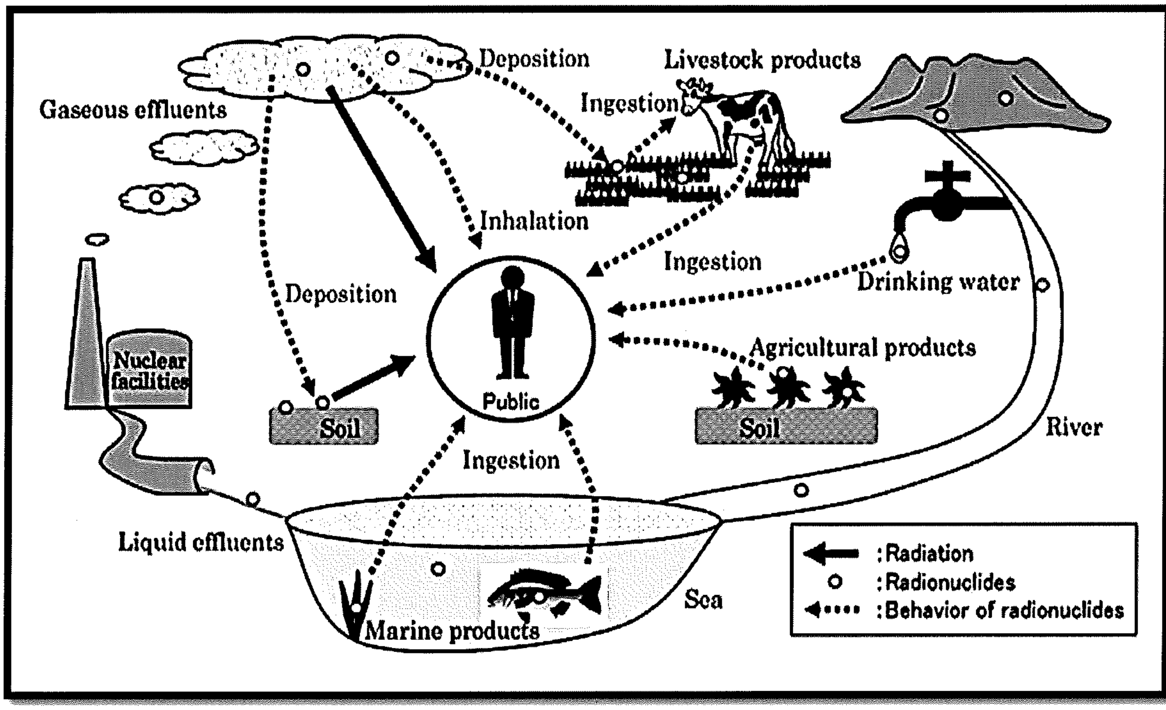

Figure 1, Potential exposure pathways to Members of the Public due to Plant Operations [7]

Quality assurance aspects of the sampling program and TLD/OSLD data collection are conducted in accordance with Regulatory Guides 4.15 [8] and 4.13 [9]. REMP also adheres to the requirements of the State of Minnesota, MNGP Technical Specifications, and Offsite Dose Calculation Manual (ODCM). These governing documents dictate the environmental sampling, sample analysis protocols, data reporting and quality assurance requirements for the environmental monitoring program.

The Annual Radiological Environmental Operating Report provides summaries of the environmental data from exposure pathways, interpretations of the data, and analyses of trends of the results. Routinely monitored pathways include ingestion, inhalation, and direct radiation. Routes of exposure are based on site specific information such as meteorology, receptor locations, and water usage around the plant.

4.0 SITE DESCRIPTION AND SAMPLE LOCATIONS

Monticello Nuclear Generating Plant is a commercial nuclear power plant that achieved initial criticality in 1971. Located in Wright County, Minnesota, MNGP is located along the Mississippi River and is approximately 40 miles northwest of the Twin Cities of Minneapolis and St. Paul. MNGP generates commercial electrical power via a boiling water reactor with a nominal generating capacity of 681 megawatts electric (MWe).

MNGP sampling media are selected based on site specific information such as meteorology, receptor locations, and water usage around the plant. Sampling and analysis frequencies are documented in the Offsite Dose Calculation Manual and site procedures. Required sampling, analysis frequencies and location of sample collected are captured in the following tables and figures:

- Table 1, Radiological Environmental Monitoring Program – Direct Radiation
- Table 2, Radiological Environmental Monitoring Program – Airborne
- Table 3, Radiological Environmental Monitoring Program – Waterborne
- Table 4, Radiological Environmental Monitoring Program – Ingestion
- Table 5, REMP Sampling Locations – Direct Radiation
- Figure 2, REMP Sample Locations (Surface Water, Sediment, Well Water, Air, and Vegetation)
- Figure 3, REMP Sample Locations (5 Mile Ring and Special Interest TLD Locations)
- Figure 4, REMP Sample Locations (Site Boundary TLD Locations)
- Figure 5, REMP Sample Locations (Control Locations)
- Figure 6, REMP Sample Locations (ISFSI TLD Locations)

5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REQUIREMENTS

Table 1, Radiological Environmental Monitoring Program – Direct Radiation

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Direct Radiation 40 Routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, using the 16 meteorological sectors as guidelines, in the general area of the site boundary.[1] An outer ring of stations, one in each compass sector at approximately 5 miles from the site; and Special interest areas, such as population centers, nearby recreation areas, and control stations.[2] Three neutron and gamma dosimeter sets along the OCA fence. Three neutron and gamma dosimeters with special interest and inner ring TLDs and four neutron control dosimeters are stationed with the REMP control TLDs.	See Table 5	Quarterly	Gamma/Neutron dose/Quarterly

[1] Because of inaccessibility, two sectors in the inner ring are not covered.
[2] Three control TLD locations only have one dosimeter.

Table 2, Radiological Environmental Monitoring Program – Airborne

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
<u>Airborne Radioiodine and Particulates</u> Samples from 5 locations: Three locations close to the site boundary in different sectors of the highest calculated annual average ground level D/Q. One sample from the vicinity of a community having the highest calculated annual average D/Q. One sample from a Control Location, approximately 10 to 20 miles away in the least predominant wind direction	**Station M-1c:** 11 miles 307 degrees **Station M-2:** 0.8 miles 140 degrees **Station M-3:** 0.6 miles 104 degrees **Station M-4:** 0.8 miles 147 degrees **Station M-5:** 2.6 miles 134 degrees	Continuous sampler operation with sample collection weekly	Particulate sampler: Analyze for gross beta radioactivity ≥ 24 hours following filter change / Weekly. Perform gamma isotopic analysis on each sample when gross beta activity is > 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite sample (by location)/Quarterly. Radioiodine canister: I-131 analysis/Weekly.

Table 3, Radiological Environmental Monitoring Program – Waterborne

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Surface Water One sample upstream (control) and one sample downstream (indicator)	**Station M-8c:** 1,000 ft upstream of Plant intake **Station M-9:** 1,000 ft downstream of Plant discharge	Monthly composite of weekly samples (water and ice conditions permitting); samples from monthly composites are combined to form quarterly composite samples to be analyzed for H-3.	Gamma isotopic /Monthly, H-3 /Quarterly
Drinking Water One sample of the City of Minneapolis water supply	**Station M-14:** City of Minneapolis 37 miles 132 degrees	Composite sample over 2-week period when I-131 is performed; monthly composite otherwise.	I-131 /on each composite when dose calculated for consumption of the water is >1 mrem/year[3] /Bi-weekly, Gross beta and gamma /Monthly, H-3 /Quarterly
Groundwater One control location greater than 10 miles from the plant and three indicator locations within 5 miles of the plant.	**Station M-43c:** Imholte Farm 12.3 miles 313 degrees **Station M-11:** City of Monticello 3.3 miles 127 degrees **Station M-12:** Plant Well No. 11 0.26 miles 252 degrees **Station M-55:** Hasbrouck Residence 1.60 miles 255 degrees	Grab samples quarterly	Gamma isotopic and H-3 /Quarterly

[3] The dose shall be calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.

Table 3, Radiological Environmental Monitoring Program – Waterborne

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Sediment from Shoreline One sample upstream (control), one sample downstream (indicator), and one sample from the shoreline of the recreational area (indicator).	**Station M-8c:** Upstream of plant within 1,000 ft of plant intake **Station M-9:** Downstream of plant within 1,000 ft of plant discharge **Station M-15:** Montissippi Park 1.27 miles 114 degrees	Semiannual	Gamma isotopic /Semiannually

Table 4, Radiological Environmental Monitoring Program – Ingestion

Requirement	Sample Location Description, Distance, and Direction	Sampling Collection/ Frequency	Type and Frequency of Analyses
Milk: One sample from milking animals in three locations within 3 miles distance having the highest dose potential. If there are none, then one sample from milking animals in each of three areas between 3 to 5 miles distant where doses are calculated to be greater than 1 mrem per yr.[4] One sample from milking animals at a control location 10 to 20 miles distant and in the least prevalent wind direction.	This pathway is currently unavailable at MNGP.	Biweekly when animals are on pasture; monthly at other times	Gamma isotopic and I-131 analysis/ Biweekly when animals are on pasture; monthly at other times
Vegetation:[5] Samples of vegetation grown closest to each of the two offsite locations of highest predicted annual average D/Q if milk sampling is not performed, and one sample from 10 to 20 miles in the least prevalent wind direction	**Station M-41:** Training center near 0.8 miles 151 degrees **Station M-42:**[6] Biology station road near 0.7 miles 136 degrees **Station M-42A:** near 0.7 miles 108 degrees **Station M-43c:** Imholte farm near 12.3 miles 313 degrees	Monthly during growing season	Gamma Isotopic and Iodine-131 analysis/ Each sample

[4] The dose shall be calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.

[5] Actual location for vegetation sampling may vary depending on availability of broad leaf plant species. The nearest available broad leaf specimens to the location should be used.

[6] M-42 is the preferred sampling location; however, M-42A may be used in place of M-42, if samples are not available at the preferred location.

Table 4, Radiological Environmental Monitoring Program – Ingestion

Requirement	**Sample Location Description, Distance, and Direction**	**Sampling Collection/ Frequency**	**Type and Frequency of Analyses**
Fish: One sample of one game species of fish located upstream and downstream of the plant site.	**Station M-8c:** Upstream of plant within 1,000 ft of plant intake. **Station M-9:** Downstream of plant within 1,000 ft of plant discharge.	Semiannually	Gamma isotopic analysis on edible portions/ Each sample
Food Products:[7] One sample of corn and potatoes from any area that is irrigated by water in which liquid plant wastes have been discharged.[8]	This pathway is currently unavailable at MNGP since there are not any crops irrigated from the Mississippi River within 5 miles downstream from MNGP.	At time of harvest	Gamma isotopic analysis of edible portion/ Each sample

[7] Collected only if Plant discharges radioactive effluent into the river, then only from river irrigated fields, as determined by Section 2.1 of the ODCM 07.01.
[8] As determined by methods outlined in Section 2.3 of the ODCM 07.01.

Table 5, REMP Sampling Locations – Direct Radiation

Site #[9]	Location Type	Sector	Distance	Description
M01A	Inner Ring	N	0.75	Sherburne Ave. So.
M02A	Inner Ring	NNE	0.79	Sherburne Ave. So.
M03A	Inner Ring	NE	1.29	Sherburne Ave. So.
M04A	Inner Ring	E	0.5	Biology Station Rd.
M05A	Inner Ring	ESE	0.48	Biology Station Rd.
M06A	Inner Ring	SE	0.54	Biology Station Rd.
M07A	Inner Ring	SSE	0.43	Parking Lot H
M08A	Inner Ring	S	0.45	Parking Lot F
M09A	Inner Ring	SSW	0.38	County Road 75
M10A & ISFSI-15 (neutron)	Inner Ring	SW	0.38	County Road 75
M11A	Inner Ring	WSW	0.4	County Road 75
M12A & ISFSI-14 (neutron)	Inner Ring	W	0.5	County Road 75

[9] Code letters are defined below:
- A = Locations in the general area of the site boundary
- B = Locations about 4 to 5 miles distant from MNGP
- C = Locations of control samples (used for control air sampler and water control sample)
- S = Special interest locations

Table 5, REMP Sampling Locations – Direct Radiation

Site #[9]	Location Type	Sector	Distance	Description
M13A	Inner Ring	NW	0.89	North Boundary Rd.
M14A	Inner Ring	NNW	0.78	North Boundary Rd.
M01B	Outer Ring	N	4.65	117th Street
M02B	Outer Ring	NNE	4.4	County Road 11
M03B	Outer Ring	NE	4.3	County Rd. 73 & 81
M04B	Outer Ring	ENE	4.2	County Rd. 73 (196th Street)
M05B	Outer Ring	E	4.3	City of Big Lake
M06B	Outer Ring	ESE	4.3	County Rd 14 & 196th Street
M07B	Outer Ring	SE	4.3	Monticello Industrial Dr.
M08B	Outer Ring	SSE	4.6	Residence Hwy 25 & Davidson Ave
M09B	Outer Ring	S	4.7	Weinand Farm
M10B	Outer Ring	SSW	4.2	Reisewitz Farm - Acacia Ave
M11B	Outer Ring	SW	4.0	Vanlith Farm - 97th Ave
M12B	Outer Ring	WSW	4.2	Lake Maria St. Park
M13B	Outer Ring	W	4.1	Bridgewater Sta.
M14B	Outer Ring	WNW	4.3	Anderson Res. - Cty Rd 111

Table 5, REMP Sampling Locations – Direct Radiation

Site #[9]	Location Type	Sector	Distance	Description
M15B	Outer Ring	NW	4.3	Barton Ave NW
M16B	Outer Ring	NNW	4.4	University Ave and Hancock St, Becker
M01C & Neutron Control D	Control	NW	11.5	Kirchenbauer Farm
M02C & Neutron Control C	Control	NE	11.2	Cty Rd 4 & 15
M03C & Neutron Control A	Control	SE	11.6	Cty Rd 19 & Jason Ave
M04C & Neutron Control B	Control	SW	10.3	Maple Lake Water Tower
M01S	Special Interest	WSW	0.66	127th Street NE
M02S & ISFSI-16 (neutron)	Special Interest	SW	0.5	Krone Residence
M03S	Special Interest	ESE	1.53	Big Oaks Park
M04S	Special Interest	SE	2.3	Pinewood School
M05S	Special Interest	ESE	3.0	20500 Co. Rd 11, Big Lake
M06S	Special Interest	SE	2.6	Monticello Public Works

Table 5, REMP Sampling Locations – Direct Radiation

Site #[9]	Location Type	Sector	Distance	Description
I-11 & ISFSI-11 (neutron)	Special Interest	SW	0.31	OCA Fence South, on exit road
I-12 & ISFSI-12 (neutron)	Special Interest	SW	0.32	OCA Fence Middle, on exit road
I-13 & ISFSI-13 (neutron)	Special Interest	WSW	0.34	OCA Fence North, on exit road

6.0 MAPS OF COLLECTION SITES

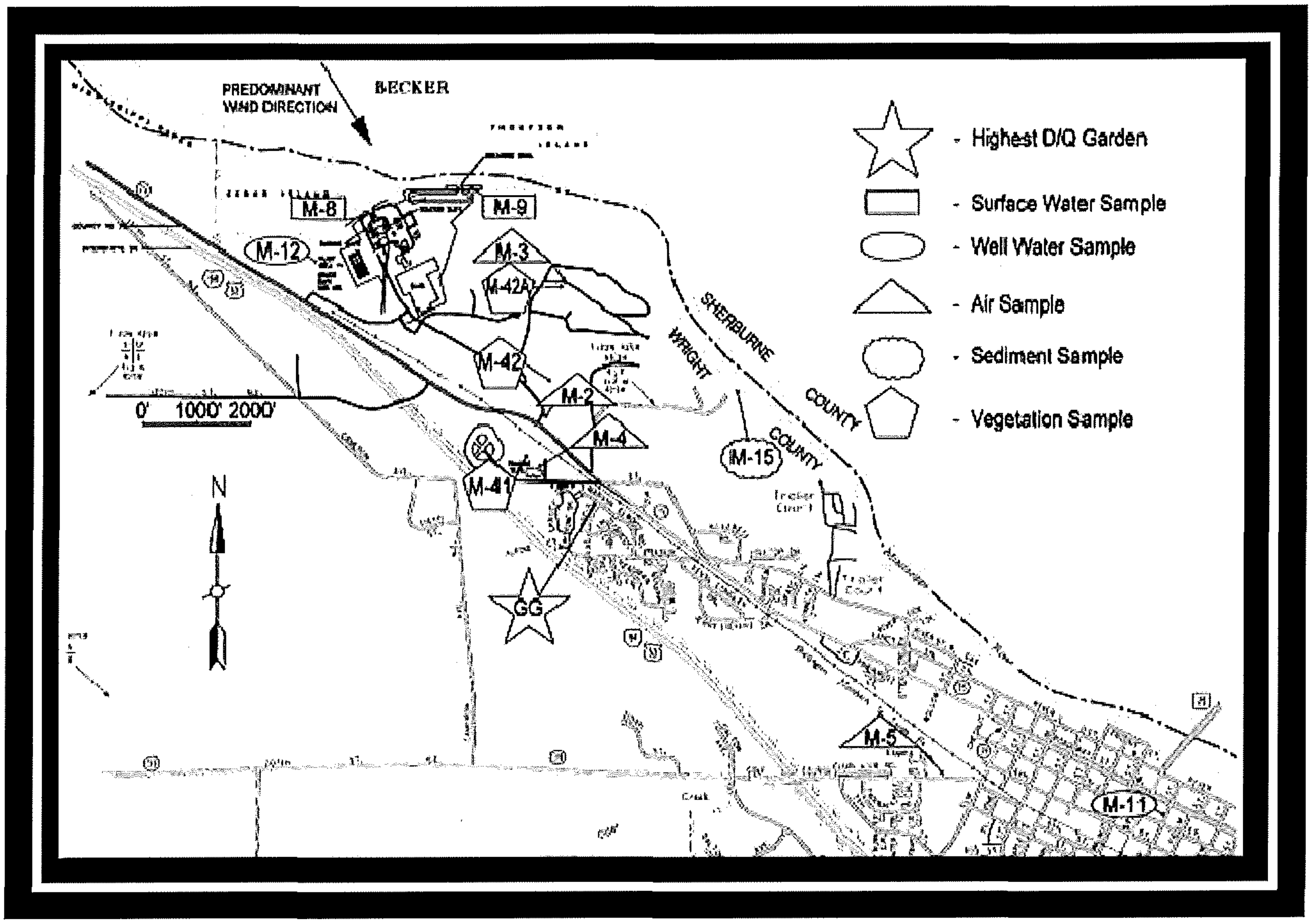

Figure 2, REMP Sample Locations (Surface Water, Sediment, Well Water, Air, and Vegetation)

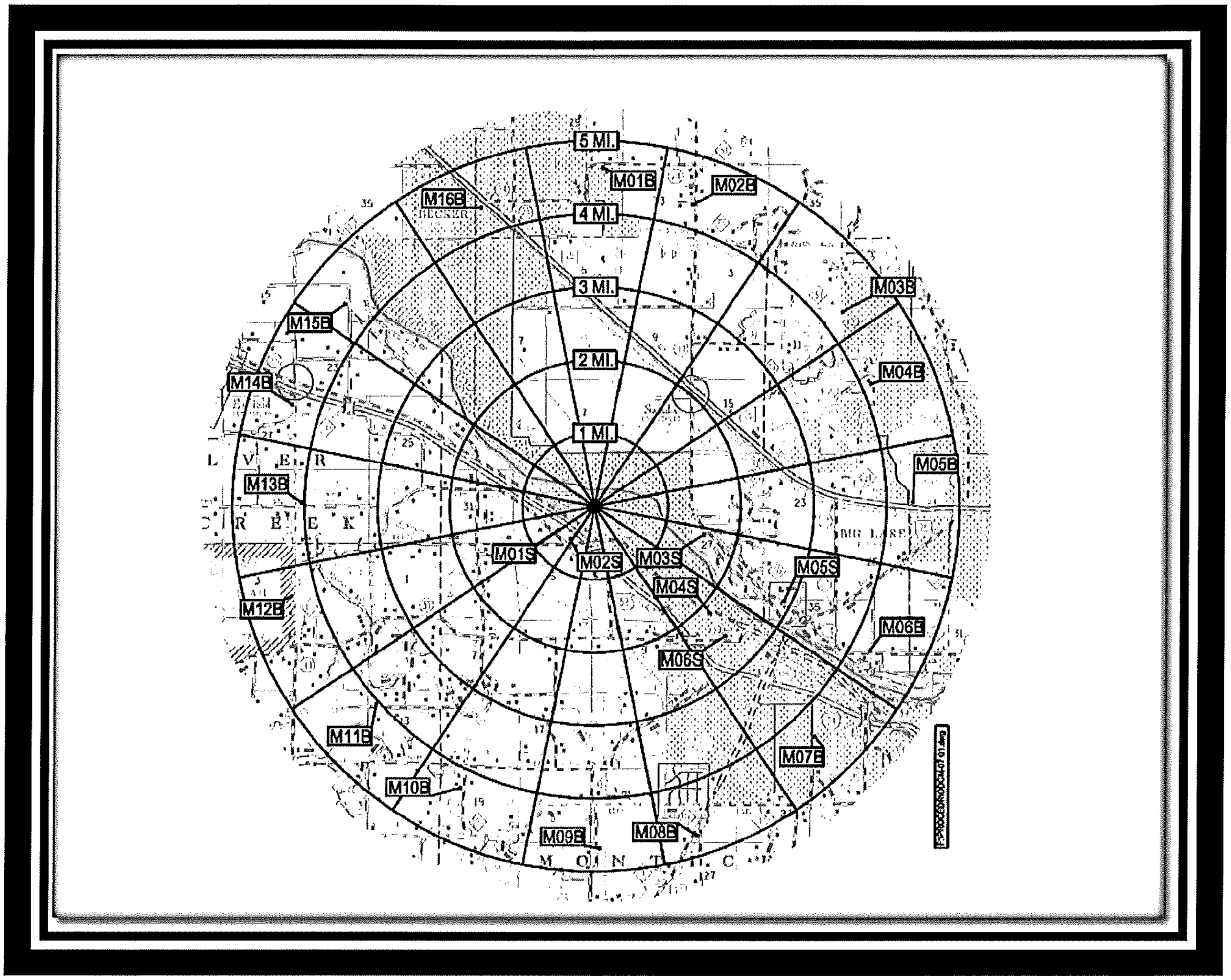

Figure 3, REMP Sample Locations (5 Mile Ring and Special Interest TLD Locations)

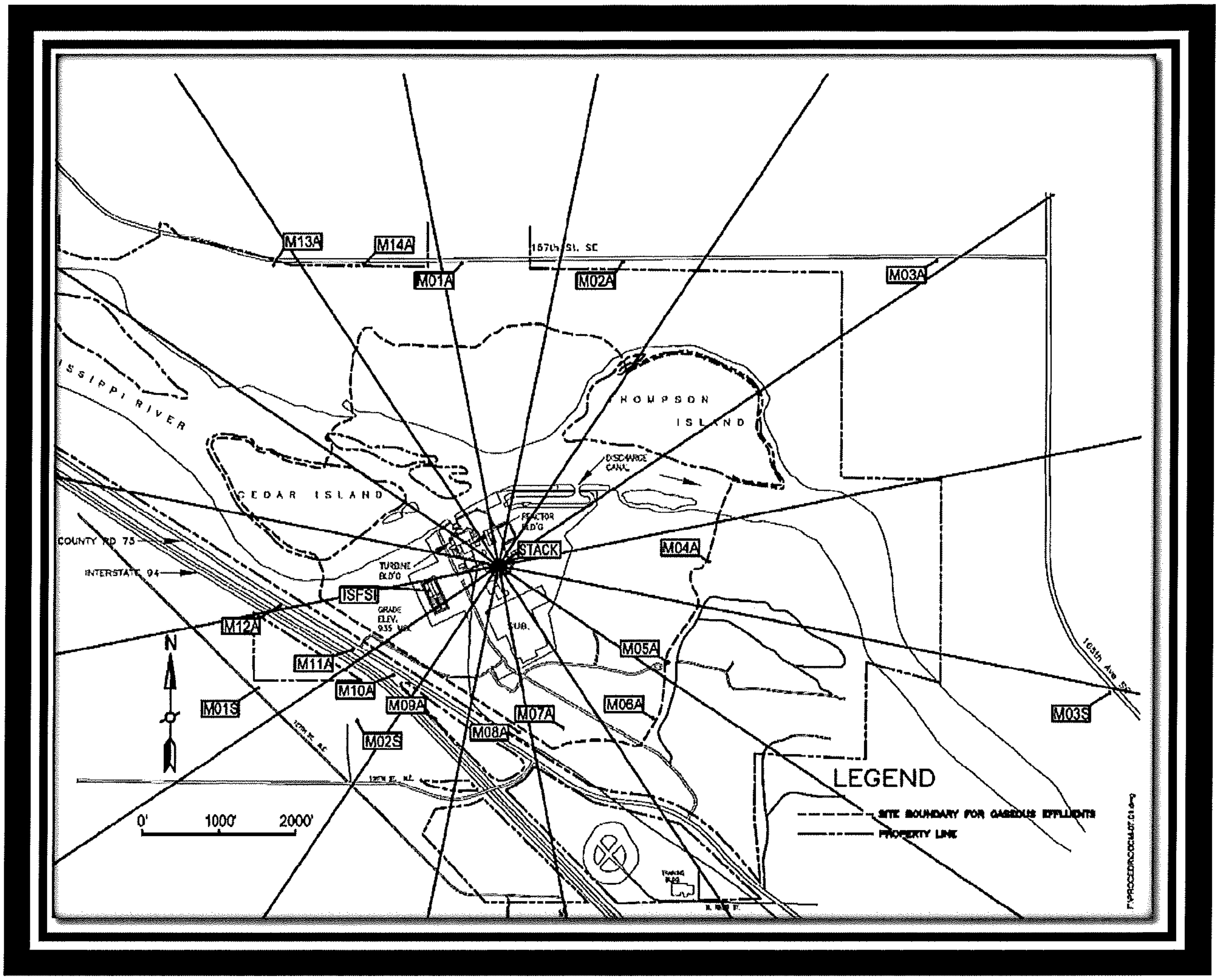

Figure 4, REMP Sample Locations (Site Boundary TLD Locations)

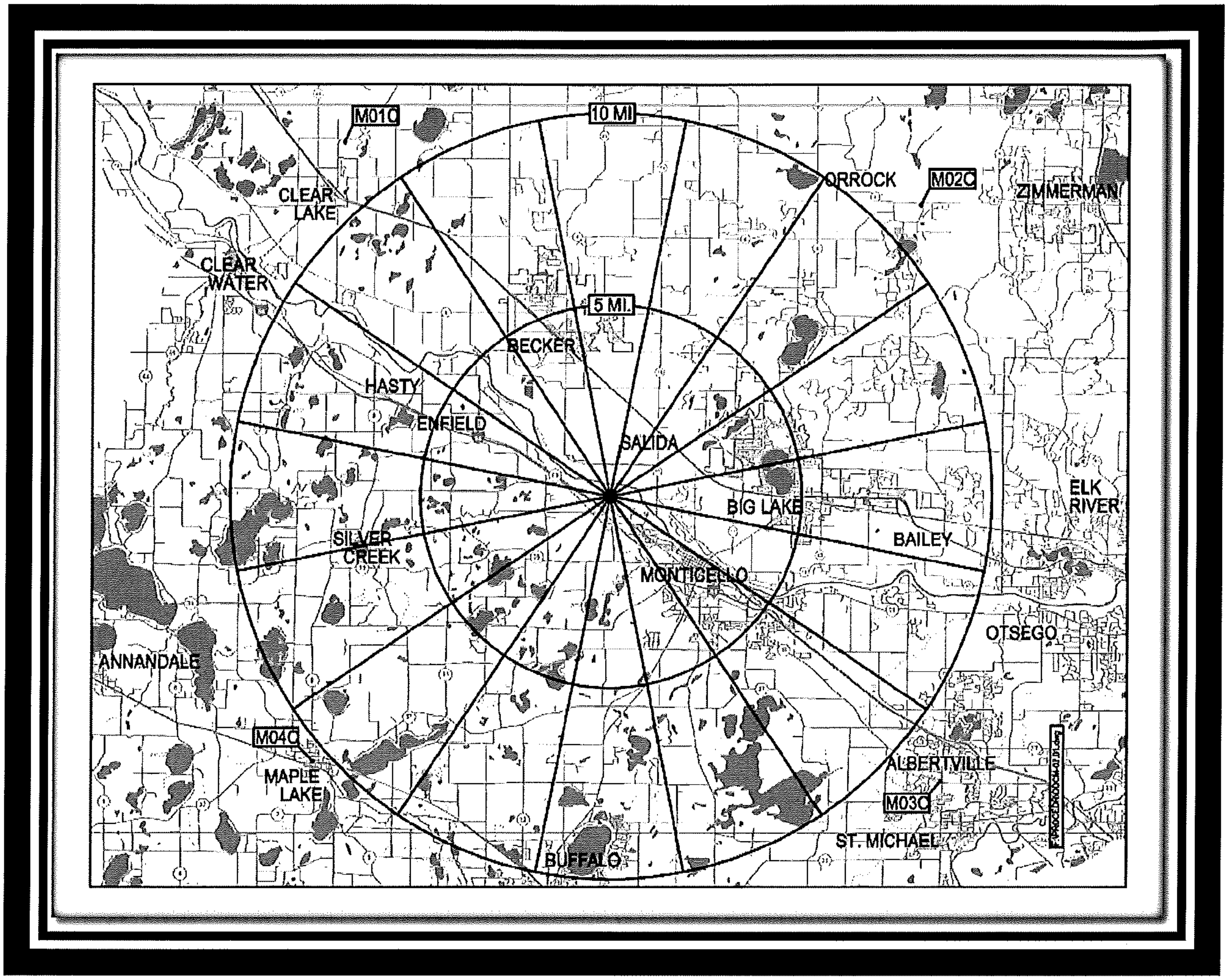

Figure 5, REMP Sample Locations (Control Locations)

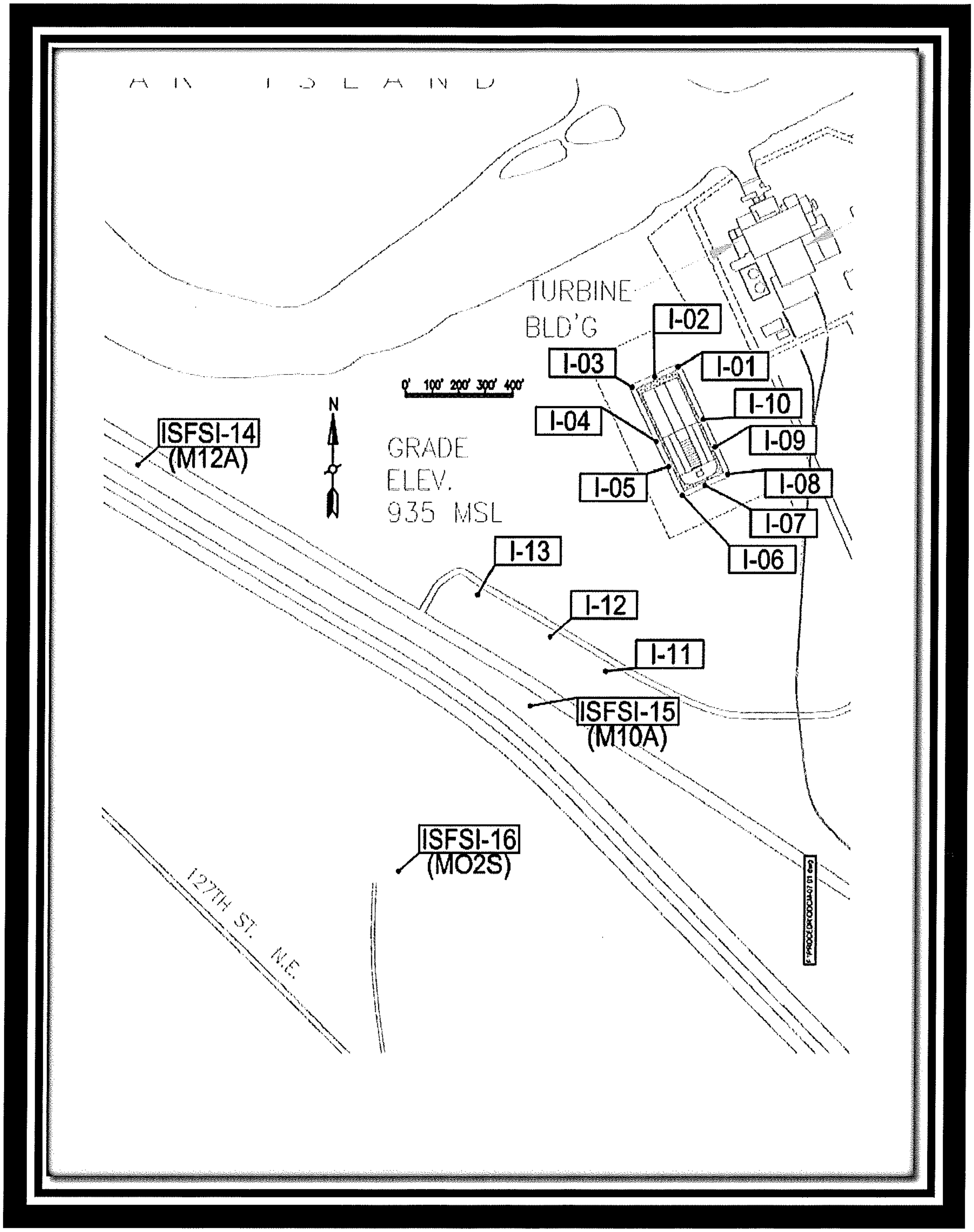

Figure 6, REMP Sample Locations (ISFSI TLD Locations)

7.0 REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Table 6, Reporting Levels for Radioactivity Concentrations in Environmental Samples

Radionuclide	Water (pCi/L)	Air Particulates or Gases (pCi/m^3)	Fish (pCi/Kg-wet)	Milk (pCi/L)	Food Products (pCi/Kg-wet)
H-3	20,000 (10)	NA	NA	NA	NA
Mn-54	1,000	NA	30,000	NA	NA
Fe-59	400	NA	10,000	NA	NA
Co-58	1,000	NA	30,000	NA	NA
Co-60	300	NA	10,000	NA	NA
Zn-65	300	NA	20,000	NA	NA
Zr-Nb-95	400 (11)	NA	NA	NA	NA
I-131	2 (12)	0.9	NA	3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba-La-140	200 (11)	NA	NA	300 (11)	NA

[10] For drinking water samples: If no drinking water pathway exists, a value of 30,000 pCi/L may be used.
[11] Total for parent and daughter product.
[12] If no drinking water pathway exists, a value of 20 pCi/L may be used.

Table 7, Maximum Values for the Limit of Detection

Radionuclide	Water (pCi/L)	Air Particulates or Gases (pCi/m^3)	Fish (pCi/Kg-wet)	Milk (pCi/L)	Food Products (pCi/Kg-wet)	Sediment (pCi/Kg-dry)
Gross Beta	4.0	0.01	NA	NA	NA	NA
H-3	2,000 [13]	NA	NA	NA	NA	NA
Mn-54	15	NA	130	NA	NA	NA
Fe-59	30	NA	260	NA	NA	NA
Co-58, Co-60	15	NA	130	NA	NA	NA
Zn-65	30	NA	260	NA	NA	NA
Zr-Nb-95	15 [14]	NA	NA	NA	NA	NA
I-131	1 [15]	0.07		1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140	15 [14]			15		

8.0 SAMPLING PROGRAM, PROGRAM MODIFICATION AND INTEPRETATION OF RESULTS

At most nuclear stations, data was collected prior to plant operation to determine background radioactivity levels in the environment. Annual data is routinely compared to preoperational and/or 10-year average values to determine if changes in the environs are present. Strict comparison is difficult to make due to fallout from historical nuclear weapon testing. Cesium-137 can be routinely found in environmental samples as a result of above ground nuclear weapons testing. It is important to note, levels of Cs-137 in environment are observed to fluctuate, for example as silt distributions shift due to natural erosion and transport processes, Cs-137 may or may not be observed in sediment samples. Results from samples collected and analyzed during the year 2025, are described below.

In the following sections, results from direct radiation, air, water, and food products analyzed as part of REMP in 2025 will be discussed. Sampling program descriptions and deviations will also be discussed.

[13] If no drinking water pathway exists, a value of 3,000 pCi/L may be used. Some states may require a lower LLD for drinking water sources- per 40 CFR 141 Safe drinking water ACT.
[14] The specified LLD applies to the daughter nuclide of an equilibrium mixture of the parent and daughter nuclides. Per the Radiological Assessment Branch Technical Position (BTP), the following values may be used for individual nuclide LLDs when equilibrium conditions are not met: 30 pCi/L for zirconium-95, 15 pCi/L for niobium-95, 60 pCi/L for barium-140, and 15 pCi/L for lanthanum-140.
[15] If no drinking water pathway exists, a value of 15 pCi/l may be used.

8.1 Environmental Direct Radiation Dosimetry Results

Dose is measured as net exposure (field reading less transit reading) normalized to 91-day quarters. Data is treated and analyzed consistent with ANSI/HPS N13.37-2014, which compares the measured dose for each location to the baseline background dose for that location. Environmental dose rates vary by location, depending on geological and land use considerations, and remain relatively constant for any given location (unless land use changes). Some facilities observe seasonal variation in environmental doses. Baseline Background Doses have been determined for both quarterly and annual measurements at each location using historical field measurements.

ANSI/HPS N13.37-2014 uses the concept of minimum differential dose (MDD), which is the minimum facility-related dose that can be detected above background. Due to natural background variations and measurement sensitivities and uncertainties, minimum differential dose is not zero. MDD is calculated based on statistical performance of the dosimetry system in the environment and is site specific.

Normalized doses that exceed the Minimum Differential Dose value above the Baseline Background Dose are considered to indicate Facility-Related Dose; a quality assurance review is performed to verify that any results indicating Facility-Related Dose are accurate.

During the calendar year 2025, a total of 40 locations were monitored and data analyzed in accordance with the requirements in Table 1, Radiological Environmental Monitoring Program – Direct Radiation. Attachment 4, Environmental Direct Radiation Dosimetry Results, provides the annual direct radiation dosimetry analysis.

One of the TLD analysis results indicated detectable radiation above baseline during Q3 of 2025. The REMP TLDs are analyzed with ANSI 13.37 to determine any positive results. The 3rd Quarter 2025 REMP TLD M16B had a result of 20.9 mrem and after analysis shows a positive result of 7.5 mrem. The TLD vendor was contacted and confirmed the 20.9 mrem result was the correct reading. However, the vendor observed that the TLD arrived wet, as described in QIM 501000108865 and Table 9. Moisture can damage the TLD and affect results. The lab suspected the result was based on the wetness and the reading's high standard deviation. Additionally, there were no abnormal gaseous discharges from the site during this time and no other adjacent TLDs are positive. Even with this abnormal result, the annual facility dose at location M16B was still calculated to be a non-detectible amount. See Attachment 4, Environmental Direct Radiation Dosimetry Results.

M06B and M01S TLD were both missing in Q4 2024. The TLD was likely damaged due to weather or other environmental conditions. See Table 9: Sample Deviation Summary in Section 10.

8.2 Air Particulate and Radioiodine Sample Results

Air particulate filters and charcoal canisters were collected from locations specified in Table 2, Radiological Environmental Monitoring Program – Airborne. During the calendar year 2025, a total of 257 samples were collected and analyzed for iodine-131, gross beta, and/or gamma emitters (not including missed samples, noted below). Particulate samplers are used to continuously collect airborne particulates on a filter. The samples are analyzed for gross beta activity following filter changeout which occurs weekly. Gamma isotopic analysis is also performed on the samples collected at each location and is analyzed quarterly. Radioiodine (I-131) analysis is performed weekly on radioiodine sample cartridges.

Some of the air particulate and radioiodine samples were below detection and some contained radioactivity.

The average annual gross beta concentrations in airborne particulates were similar at the indicator (0.036 ± 0.013 picocuries per cubic meter (pCi/m^3) for 2025) and control locations (0.035 ± 0.013 pCi/m^3 for 2025). Air sampler M-1 was found with a partial sample the week of 02/05/2025 and the week of 07/30/2025. Partial samples are all considered missed samples. The M-3 weekly sample for the week of 09/03/2025 is also considered a missed sample due to a small hole the size of a ballpoint pen tip observed in the particulate filter. Further details are provided in Table 9: Sample Deviation Summary, in Section 10.

Air particulate and radioiodine results from this monitoring period, 2025, were compared to the average and range of the previous 10 years of data shown in Figure 7, and there were no changes in the baseline (specifically, the 2025 result was comparable to the previous 10-year dataset).

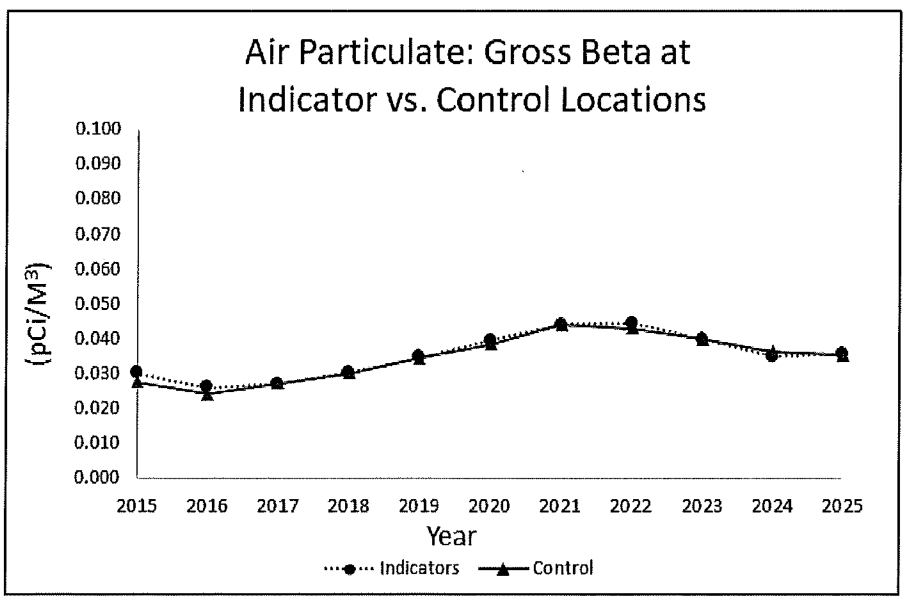

Figure 7, Air Particulate: Analysis for Gross Beta, Average for All Indicator vs. Control Locations

8.3 Waterborne Sample Results

8.3.1 Surface Water (i.e., Bay, Lake etc.)

Composite water samples are collected monthly at the upstream control location and at the downstream indicator locations. Monthly composite samples are analyzed for gamma emitters. Aliquots from the monthly composites are combined to form a quarterly composite which is then analyzed for tritium. During the calendar year 2025, a total of 21 surface water samples were collected and analyzed in accordance with the requirements in the ODCM and shown in Table 3, Radiological Environmental Monitoring Program – Waterborne. Barium-140 was detected at M-9 in May at 63.2 ± 88.3 pCi/L. Although this is below the laboratory MDC of 151 pCi/L, it exceeds the LLD of 60 pCi/L and therefore did not receive a U flag. Despite exceeding the Table 7 reporting level of 60 pCi/L, the quarterly average for April–June (with April and June values below the LLD) remains below 60 pCi/L.

Lanthanum-140 was detected at M-9 in November at 91.4 ± 160 pCi/L, which is below the MDC of 262 pCi/L but above the LLD of 15 pCi/L, so no U flag was assigned. The Q4 2025 average for lanthanum-140 is 5.82 pCi/L, well below the LLD. Per ODCM 07.01 (Section 2.1.3 C.), results that exceed the reporting level in Table 3.4-1 when averaged over any calendar quarter must be reported to the Commission within 30 days.

The vendor misplaced one of the July gamma isotopic samples at location M-9, which caused the July composite gamma isotopic sample to be categorized as a missed sample.

Samples could not be collected from M-8c in January and February of 2025 due to unsafe conditions for sampling (frozen river surface).

Table 9: Sample Deviation Summary contains further details on missed surface water samples.

Tritium concentrations in surface water were well below the EPA tritium drinking water limit of 20,000 pCi/L.

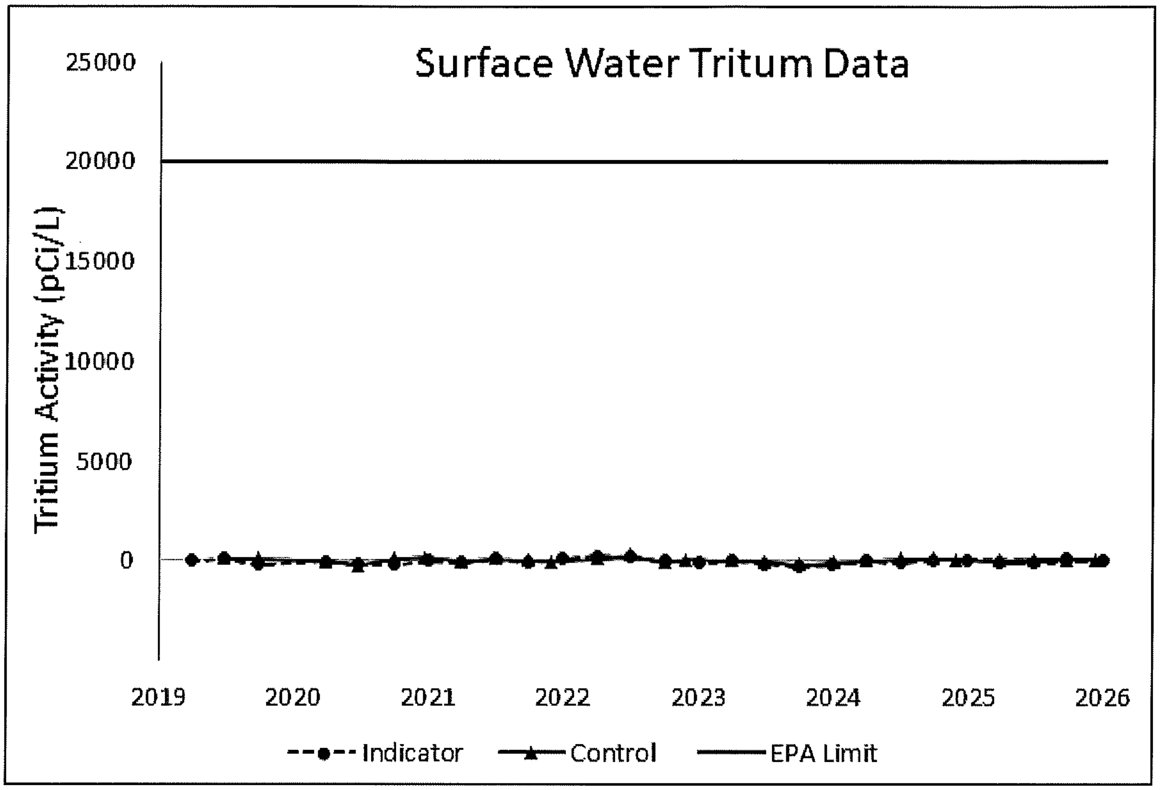

Figure 8: Surface Water Tritium Results

8.3.2 REMP Groundwater

Groundwater samples were collected from control location upgradient from the plant and indicator location downgradient from the plant. During the calendar year 2025, a total of 16 groundwater water samples were collected from offsite monitoring wells and analyzed in accordance with the requirements in the ODCM and shown in Table 3: Radiological Environmental Sampling Program – Exposure Pathway - Waterborne. A total of four control samples and a total of 12 indicator samples were collected. These samples were analyzed for tritium and gamma quarterly.

There were no samples containing detectable amounts of radioactivity. Tritium concentrations in groundwater were well below the EPA tritium drinking water limit of 20,000 pCi/L.

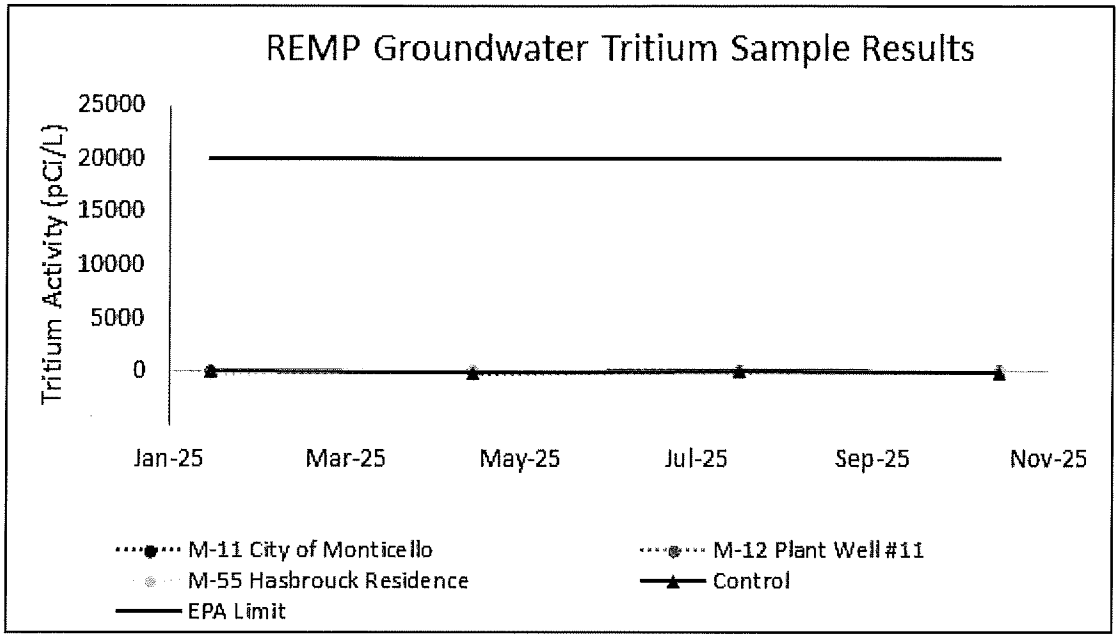

Figure 9: REMP Groundwater Tritium Sample Results

8.3.3 Drinking Water

A total of 12 drinking water samples were obtained in 2025. These samples were analyzed for gross beta and gamma analysis monthly and tritium quarterly in accordance with requirements in the ODCM and shown in Table 3, Radiological Environmental Monitoring Program – Waterborne. A detectible amount of gross beta resulted in samples taken on 06/02/2025 and 08/31/2025. Each of the results were slightly over the LLD value at 4.10 ± 2.2 pCi/L and 4.06 ± 3.06 pCi/L, respectively. The quarterly average for the third and fourth quarters of 2025 remained below the 4.0 pCi/L LLD. The 2025 quarterly average gross beta was below its respective LLD value, thus the annual dose for drinking water was assumed to be less than 1 mrem/year. Therefore, iodine-131 analyses were not conducted in 2025 per ODCM 07.01 Revision 27. Tritium concentrations in drinking water were well below the EPA tritium drinking water limit of 20,000 pCi/L.

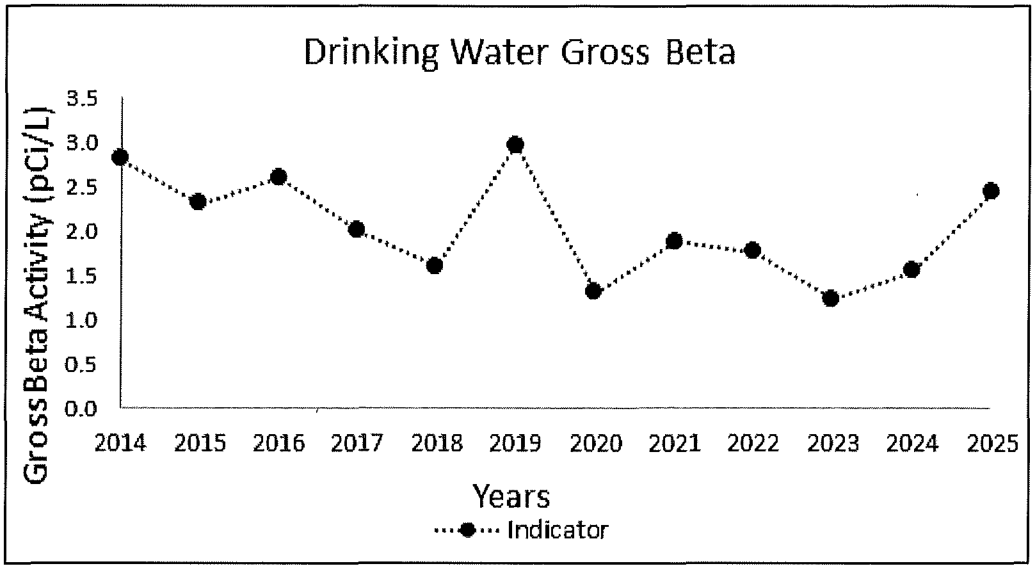

Figure 10: Drinking Water Gross Beta Samples Control

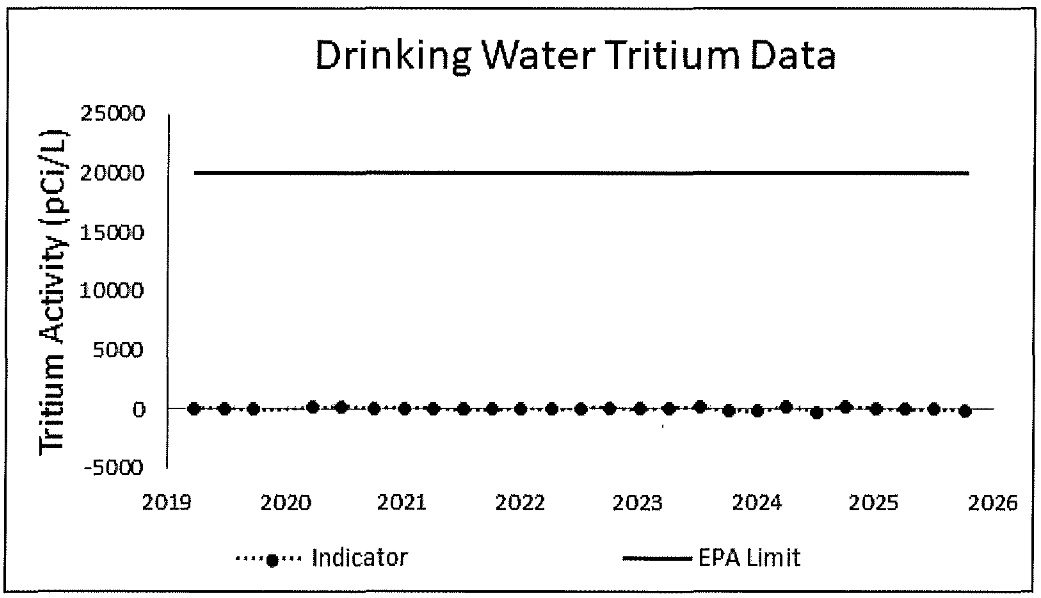

Figure 11: Drinking Water Tritium Sample Results

8.3.4 Sediment from Shoreline

Shoreline sediment collections were made in May and September of 2025 and analyzed for gamma-emitting isotopes. Samples are collected at both indicator and control locations. A total of six shoreline samples were analyzed in accordance with requirements in the ODCM and shown in Table 3, Radiological Environmental Monitoring Program – Waterborne.

Naturally occurring beryllium-7 and potassium-40 were detected. There was no indication of a MNGP effect.

8.4 Ingestion Pathway Sample Results

8.4.1 Milk

Since 2019, one milk cow has been located in the NNE sector at 3.2 miles. The cow gave birth approximately five years ago and discussion with the owner confirmed they now milk the newer cow. Discussion with the owner indicates that when the cows are producing milk there is enough for the family to use, but not enough extra to provide samples in the quantity/frequency required for the site. There is also a beef cow and a garden at this location (Milk, Meat, and Vegetable exposure pathways present.) Due to the relatively low deposition parameter, the calculated dose at this location remains lower than other vegetable locations that are closer to the plant in high D/Q sectors. Milk samples are required for three locations within 1 mile or three locations where doses are calculated to be >1mRem/year per ODCM-07.01. The currently identified milk location is outside 3 miles and maximum calculated dose by all pathways was 0.0172 mRem to infant thyroid. Thus, vegetation sampling was performed in lieu of milk sampling. Samples are collected from broad leaf vegetation grown nearest each of two different offsite locations of highest predicated annual average ground level atmospheric deposition factors (D/Q). Samples were analyzed for gamma isotopic and I-131 monthly.

8.4.2 Fish

A total of seven fish samples were collected in 2025 from the indicator and control areas as required by the ODCM. These samples were analyzed for gamma emitting radionuclides in edible portions, in accordance with requirements of the ODCM and summarized in Table 4, Radiological Environmental Monitoring Program – Ingestion. These samples are collected from the indicator and control areas as required by the ODCM.

Smallmouth bass were unable to be obtained at the M-9 sampling location due to low river level during the second semiannual fish sampling event. However, samples of the red horse species collected at upstream and downstream locations fulfilled the one species at each location requirement per ODCM-07.01. Naturally occurring potassium-40 was detected in both indicator and control location fish samples during each sampling event.

8.4.3 Food Products

Food product samples were not analyzed in 2025, as this sample pathway is currently unavailable to MNGP.

There are no crops being irrigated from the Mississippi River within five miles downstream of the plant, based upon the most recent Water Use Resources Permit Index Report from the Minnesota Department of Natural Resources. The nearest downstream drinking water supplies drawn from the Mississippi River remain St. Paul and Minneapolis water supplies as currently documented in the ODCM and Updated Final Safety Analysis Report.

8.4.4 Leafy Vegetation

In accordance with the ODCM and as described in Table 4, Radiological Environmental Monitoring Program – Ingestion, in the highest predicted annual average ground level D/Q sectors, 12 broad leaf vegetation samples were collected from the growing locations near the site boundary. Samples are collected and analyzed for gamma isotopic and I-131 from the indicator and control locations monthly during growing season. It is common to detect Cs-137 in broadleaf samples at both indicator and control locations. Cs-137 can be attributed to offsite sources such as weapons testing, Chernobyl, and Fukushima events.

Leafy vegetation samples contained no detectable amounts of radioactivity in 2025.

9.0 LAND USE CENSUS

The ODCM requires the performance of an annual land use census, where changes in how the land is used at or beyond the site boundary are documented. These changes are evaluated and modifications to the REMP are made as needed. The land use census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR 50 [2]. NUREG-1301/1302 Control 3.12.2 specifies that "a Land Use Census shall be conducted and shall identify within a distance of 8 km (5 mi.) the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence and the nearest garden of greater than 50 m^2 (500 ft^2) producing broad leaf vegetation." MNGP also located all milk animals, meat animals, and gardens of 500 ft^2 or greater with leafy green vegetables within a three-mile radius of the plant. Note, per NUREG-1301/1302, Broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the SITE BOUNDARY in each of two different direction sectors with the highest predicted D/Qs in lieu of the garden census.

The land use census was conducted within the growing season in the calendar year 2025 to identify changes in land use, receptor locations, and new exposure pathways. The results for the 2025 Land Use Census are listed in Table 8: Land Use Census – Nearest Receptors within 5 miles. In summary, the highest D/Q locations for nearest garden, nearest residence and nearest milk animal did not change following the 2025 census. In summary, the highest D/Q Residence remained the same. The highest D/Q garden has remained the same and is the critical receptor at 1.11 miles SE (G). The highest D/Q meat and Meat/Vegetable locations remained the same as last year (1.8 mi WSW and 1.8 mi W, respectively). There are two milk animals currently being milked at one location located between 3-5 miles from the plant with calculated dose <0.05 mrem so sampling is not required for this location.

Table 8: Land Use Census – Nearest Receptors within 5 miles

Sector	Direction	Nearest Residence (Miles)	Meat Animal (Miles)	Nearest Milk Animal (Miles)	Meat and Garden (Miles)	Nearest Garden (Miles)
A	N	2.58	3.78			3.31
B	NNE	2.63	3.28	3.24	3.30	3.30
C	NE	2.24	3.30			2.78
D	ENE	1.35				2.41
E	E	1.38				1.74
F	ESE	1.49				1.50
G	SE	1.00				1.14
H	SSE	0.99				1.21
J	S	0.83	4.40		4.40	0.90
K	SSW	0.64	4.54			1.64
L	SW	0.52	2.27		3.40	2.01
M	WSW	0.72	1.78		2.32	1.22
N	W	1.29	1.82		1.82	1.38
P	WNW	1.32	3.15		3.40	1.68
Q	NW	2.28	3.43			2.49
R	NNW	2.40				2.39

10.0 SAMPLE DEVIATIONS, ANOMALIES AND UNAVAILABILITY

Sampling and analysis are performed for media types addressed in the Offsite Dose Calculation Manual. Sampling and analysis challenges may be experienced due to a multitude of reasons including environmental factors, loss of TLDs/OSLDs, contamination of samples, etc. To aid classification of sampling and analysis challenges experienced in 2025, the following three terms are used to describe the issues: Sample Anomalies, Sample Deviation, and Unavailable Samples.

Media that experienced downtime (i.e., air samplers or water samplers) during a surveillance period are classified a "Sample Deviation". "Sample Anomalies" are defined as errors that were introduced to a sample once it arrived in the laboratory, errors that prevents the sample from being analyzed as it normally would or may have altered the outcome of the analysis (i.e., cross contamination, human error).

"Sample Unavailability" is defined as sample collection with no available sample (i.e., food crop, TLD).

All required samples were collected and analyzed as scheduled except for the following:

Table 9: Sample Deviation Summary

Sample Type and Analysis	Location	Collection Date or Period	Reason for not conducting REMP sampling as required by ODCM	Plans for preventing reoccurrence
Surface Water Gamma Isotopic	M-8c	Jan-25	Unsafe condition for sampling due to frozen river surface (501000093699 501000093881 501000094082 501000094265 501000094565).	Sample obtained when water thawed. Expected seasonal condition.
Surface Water Gamma Isotopic	M-8c	Feb-25	Unsafe condition for sampling due to frozen river surface (501000094875 501000095584).	Sample obtained when water thawed. Expected seasonal condition.
Surface Water Tritium	M-8c	1Q	Unsafe condition for sampling due to frozen river surface (501000093699 501000093881 501000094082 501000094265 501000094565 501000094875 501000095584 501000095872).	Sample obtained when water thawed. Expected seasonal condition.

Table 9: Sample Deviation Summary

Airborne Particulate Gross Beta and Radioiodine	M-1	Week of 02/05/2025	Following quarterly pump calibration and pump changeout, GFCI outlet tripped and failed to reset. Declaring missed sample due to possibility of partial sample (501000094934).	Returned to M-1 air sampler and started sample pump. Documented these actions in CAP and 2025 DAR for missed/partial samples. GFCI replacement completed by commercial electrician.
Surface Water Gamma Isotopic	M-8c	Mar-25	Unsafe condition for sampling due to frozen river surface (501000095872).	Sample obtained when water thawed. Expected seasonal condition.
Direct Radiation Gamma Dose	M16B	Q3	TLD arrived wet, abnormal result value (501000108865).	Include result and discussion in 2025 ARERR.
Airborne Particulate Gross Beta and Radioiodine	M-1	Week of 07/30/2025	Pump was found not running when performing weekly filter replacement activities. After some troubleshooting, the GFCI was found to be tripped. The air sampler ran for a total of 80.30 hours and likely tripped off during one of the storms experienced earlier in the week. Declaring missed sample due to possibility of partial sample (501000101417).	After the GFCI was reset, the pump started, and the filter was replaced per procedure I.05.33. Wrote CAP. Informed Shift Manager and Chemistry Supervision.
Surface Water Gamma Isotopic	M-9	Jul-25	Vendor misplaced sample (501000104658).	The site provided coaching to the vendor on improving their communication when these issues occur; the vendor is taking actions to prevent recurrence per their corrective action program. (GEL Report 737332_082125)

Table 9: Sample Deviation Summary

Airborne Particulate Gross Beta and Radioiodine	M-3	Week of 09/03/2025	During weekly filter media replacement on the REMP air samplers, a small hole the size of a ballpoint pen tip was found in the particulate filter of REMP air sampler M-3 located near the MET tower. Some of the total air sample flow bypassed the particulate filter through the hole as evidenced by the staining on the charcoal cartridge (501000102650).	Informed Radiochemist and spoke with Shift Manager about any implications resulting from a missed weekly REMP air sample. Per procedure, shipped the partial sample along with the 4 other weekly samples for outside lab analysis.
Surface Water Gamma Isotopic	M-8c	Dec-25	Unsafe condition for sampling due to frozen river surface (501000106407 501000106191).	Sample obtained when water thawed. Expected seasonal condition.
Direct Radiation Gamma Dose	M06B M01S	Q4	TLDs found missing. M06B was mounted to a siren pole and siren pole was missing during sample collection. M01S was also found missing and its pole was found damaged (501000106606).	Attached a new TLD holder at each location for M06B and M01S. Updated REMP tracking DAR.
2nd semiannual smallmouth bass at M-9	M-9 Downstream	Sep - 2025	Bass were unable to be collected due to low river level prohibiting the use of electrofishing.	Obtained redhorse at both upstream and downstream locations, meeting the sampling requirements of the ODCM for one species at both upstream and downstream locations.

11.0 OTHER SUPPLEMENTAL INFORMATION

11.1 NEI 07-07 Onsite Radiological Groundwater Monitoring Program

Monticello Nuclear Generating Plant has developed a Groundwater Protection Initiative (GPI) program in accordance with NEI 07-07, Industry Ground Water Protection Initiative – Final Guidance Document. The purpose of the GPI is to ensure timely detection and an effective response to situations involving inadvertent radiological releases to groundwater in order to prevent migration of licensed radioactive material off-site and to quantify impacts on decommissioning. It is important to note that samples and results taken in support of NEI 07-07 on-site groundwater monitoring program are separate from the Radiological Environmental Monitoring Program (REMP). Results of the NEI 07-07 Radiological Groundwater Monitoring Program for onsite groundwater wells are provided in the ARERR.

11.2 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Program

Gamma and Neutron TLDs are located around the Independent Spent Fuel Storage Installation (ISFSI) to monitor direct radiation from stored fuel for trending purposes. The ISFSI TLDs are not considered true REMP TLDs and are not representative of the dose to members of the public. Results for monitoring are included in Attachment 2.

No additional spent fuel casks were moved to the ISFSI in 2025. Annual data trends at and in the vicinity of the ISFSI are consistent with expectations. There were no detectable dose rate increases observed at the Site boundary TLDs in 2025.

11.3 Corrections to Previous Reports

There are no corrections to any other AREORs included with this report.

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Attachment 1, Data Table Summary

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name / Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Airborne Particulates (pCi/m³)	Gross Beta (257)	0.01	0.036 (207/207) 0.012 - 0.083	M-2, Air Station 11.0 m @ 104 SE	0.037 (50/50) 0.016-0.083	0.035 (50/50) 0.012-0.067	0
	Gamma (20)						0
	Be-7[18]	-	0.053 (20/20) 0.031 - 0.091	M-2, Air Station 11.0 m @ 104 SE	0.059 (5/5) 0.051 - 0.090	0.065 (4/4) 0.037 - 0.091	
	Mn-54	-	<LLD	-	-	<LLD	
	Co-58	-	<LLD	-	-	<LLD	
	Co-60	-	<LLD	-	-	<LLD	
	Zn-65	-	<LLD	-	-	<LLD	
	Zr-Nb-95	-	<LLD	-	-	<LLD	
	Ru-103	-	<LLD	-	-	<LLD	
	Ru-106	-	<LLD	-	-	<LLD	
	Cs-134	0.05	<LLD	-	-	<LLD	
	Cs-137	0.06	<LLD	-	-	<LLD	
	Ba-La-140	-	<LLD	-	-	<LLD	
	Ce-141	-	<LLD	-	-	<LLD	
	Ce-144	-	<LLD	-	-	<LLD	
Airborne Radioiodine (pCi/m³)	I-131 (257)	0.07	<LLD	-	-	<LLD	0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.
[18] Natural and not due to Plant influence.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name / Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Broadleaf Vegetation (pCi/kg-wet)	Gamma (12)						0
	Mn-54	-	<LLD	-	-	<LLD	
	Fe-59	-	<LLD	-	-	<LLD	
	Co-58	-	<LLD	-	-	<LLD	
	Co-60	-	<LLD	-	-	<LLD	
	Zn-65	-	<LLD	-	-	<LLD	
	Zr-Nb-95	-	<LLD	-	-	<LLD	
	I-131	60	<LLD	-	-	<LLD	
	Cs-134	60	<LLD	-	-	<LLD	
	Cs-137	80	<LLD	-	-	<LLD	
Milk (pCi/L)	I-131 (0)	1	N/A	N/A	N/A	N/A	0
	Gamma (0)	N/A	N/A	N/A	N/A	N/A	0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Fish (pCi/kg-wet)	Gamma (7)						0
	K-40[19]	-	3020 (4/4) 2900 - 3150	M-8 Upstream of Plant	3147 (4/4) 2710 - 3960	3147 (4/4) 2710 - 3960 <LLD	
	Mn-54	130	<LLD	-	-	<LLD	
	Fe-59	260	<LLD	-	-	<LLD	
	Co-58	130	<LLD	-	-	<LLD	
	Co-60	130	<LLD	-	-	<LLD	
	Zn-65	260	<LLD	-	-	<LLD	
	Zr-Nb-95	-	<LLD	-	-	<LLD	
	Cs-134	130	<LLD	-	-	<LLD	
	Cs-137	150	<LLD	-	-	<LLD	
	Ba-La-140	-	<LLD	-	-	<LLD	
	Ce-144	-	<LLD	-	-		

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.
[19] Natural and not due to Plant influence.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name, Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Shoreline Sediments (pCi/kg-dry)	Gamma (6)						0
	Be-7[(18)]	-	639 (1/4) 639	M-9 Downstream of Plant	639 (1/4) 639	- (0/2) -	
	K-40[(18)]	-	11267 (4/4) 9070 - 12900	M-9 Downstream of Plant	12900 (2/2) 9070 - 12900	11500 (2/2) 9800 - 10200	
	Mn-54	-	<LLD		-	<LLD	
	Fe-59	-	<LLD		-	<LLD	
	Co-58	-	<LLD	-	-	<LLD	
	Co-60	-	<LLD	-	-	<LLD	
	Zn-65	-	<LLD	-	-	<LLD	
	Zr-Nb-95	-	<LLD	-	-	<LLD	
	Cs-134	150	<LLD	-	-	<LLD	
				-			
	Cs-137	180	<LLD	-	-	<LLD	
				-		<LLD	
	Ba-La-140	-	<LLD		-	<LLD	
	Ce-144	-	<LLD		-		
				- -			
Drinking Water (pCi/L)	Gross Beta (12)	4	<LLD	M-14 City of Minneapolis	4.08 (2/12) 4.06 - 4.10	None	0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name / Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Drinking Water (pCi/L)	Gamma (12)						0
	Mn-54	15	<LLD	-	-	None	
	Fe-59	30	<LLD	-	-	None	
	Co-58	15	<LLD	-	-	None	
	Co-60	15	<LLD	-	-	None	
	Zn-65	30	<LLD	-	-	None	
	Zr-Nb-95	15[20]	<LLD	-	-	None	
	Cs-134	15	<LLD	-	-	None	
	Cs-137	18	<LLD	-	-	None	
	Ba-La-140	15[20]	<LLD	-	-	None	
	Ce-144	-	<LLD	-	-	None	
	I-131 (0)	1	-	-	-	None	0
	Tritium (4)	2000	<LLD	-	-	None	0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.
[20] The specified LLD applies to the daughter nuclide of an equilibrium mixture of the parent and daughter nuclides. Per the BPT, the following values may be used for individual nuclide LLDs when equilibrium conditions are not met: 30 pCi/L for zirconium-95, 15 pCi/L for niobium-95, 60 pCi/L for barium-140, and 15 pCi/L for lanthanum-140.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name, Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Groundwater (pCi/L)	Gamma (16)						0
	Mn-54	15	<LLD	-	-	<LLD	
	Fe-59	30	<LLD	-	-	<LLD	
	Co-58	15	<LLD	-	-	<LLD	
	Co-60	15	<LLD	-	-	<LLD	
	Zn-65	30	<LLD	-	-	<LLD	
	Zr-Nb-95	15[20]	<LLD	-	-	<LLD	
	Cs-134	15	<LLD	-	-	<LLD	
	Cs-137	18	<LLD	-	-	<LLD	
	Ba-La-140	15[20]	<LLD	-	-	<LLD	
	Ce-144	-	<LLD	-	-	<LLD	
	I-131[21] (0)	1[22]	<LLD	-	-	<LLD	0
	Tritium (4)	2000	<LLD	-	-	<LLD	0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.
[20] The specified LLD applies to the daughter nuclide of an equilibrium mixture of the parent and daughter nuclides. Per the BPT, the following values may be used for individual nuclide LLDs when equilibrium conditions are not met: 30 pCi/L for zirconium-95, 15 pCi/L for niobium-95, 60 pCi/L for barium-140, and 15 pCi/L for lanthanum-140.
[21] Not required.
[22] If no drinking water pathway exists, a value of 15 pCi/L may be used.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name, Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
River Water (pCi/L)	Gamma (21)						0
	Mn-54	15	<LLD	-	-	<LLD	
	Fe-59	30	<LLD	-	-	<LLD	
	Co-58	15	<LLD	-	-	<LLD	
	Co-60	15	<LLD	-	-	<LLD	
	Zn-65	30	<LLD	-	-	<LLD	
	Zr-Nb-95	15[20]	<LLD	-	-	<LLD	
	Cs-134	15	<LLD	-	-	<LLD	
	Cs-137	18	<LLD	-	-	<LLD	
	Ba-La-140	15[20]	77 (2/11)	M-9 Downstream of Plant	77 (2/11) 63 - 91	- (0/10) -	
	Ce-144	-	<LLD	-	-	<LLD	
	Tritium (8)	2000	<LLD	-	-	<LLD	0
Direct Radiation: Control (10 to 12 miles distant) (mrem/91 days)	Gamma (16)	-	N/A	M03C 11.6 mi @ 130/SE	14.0 (4/4) (12.0- 15.7)	10.6 (16/16) (12.2 – 14.0)	0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.
[20] The specified LLD applies to the daughter nuclide of an equilibrium mixture of the parent and daughter nuclides. Per the BPT, the following values may be used for individual nuclide LLDs when equilibrium conditions are not met: 30 pCi/L for zirconium-95, 15 pCi/L for niobium-95, 60 pCi/L for barium-140, and 15 pCi/L for lanthanum-140.

Medium or Pathway Sampled (Units)	Type, Total Number of Analyses performed (e.g. I-131, 400)	ODCM Table 3 Lower Limit of Detection (LLD)	Indicator Mean[16] (f)[17] Range[16]	Location with Highest Annual Mean: Name, Distance and Direction	Location with Highest Annual Mean: Mean[16] (f)[17] Range[16]	Control Mean[16] (f)[17] Range[16]	Number of Nonroutine Reported Measurements
Direct Radiation: Inner Ring (General Area at Site Boundary) (mrem/91 days)	Gamma (56)	-	14.7 (56/56) (10.4 – 17.9)	M01A, 0.75 mi @ 353/N	16.5 (4/4) (14.7-17.9)		0
Direct Radiation: Outer Ring (4-5 mi. distant) (mrem/91 days)	Gamma (63)	-	14.4 (63/63) (11.2 – 20.9)	M16B, 4.4 mi @ 341/NNW	15.6 (4/4) (11.2 – 20.9)		0
Direct Radiation: Special Interest Areas (mrem/91 days)	Gamma (35)	-	14.4 (35/35) (11.1 – 17.3)	I-13 0.34 mi @ 240/WSW	15.4 (4/4) (13.2- 17.3)		0

[16] Mean and range are based upon detectible measurements only.
[17] (f) Fraction of detectible measurements at a specific location.

Attachment 2, Complete Data Table for All Analysis Results Obtained In 2025

Table 10: Airborne Cartridge: Radioiodine (pCi/m3)					
Date	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
1/2/2025	-7.17E-03 ± 1.14E-02 **U**	1.12E-02 ± 1.02E-02 **U**	8.20E-03 ± 7.66E-03 **U**	4.32E-03 ± 1.28E-02 **U**	4.36E-04 ± 1.23E-02 **U**
1/8/2025	-3.83E-03 ± 2.21E-02 **U**	-6.05E-03 ± 2.26E-02 **U**	8.91E-03 ± 2.05E-02 **U**	8.22E-03 ± 2.03E-02 **U**	3.68E-03 ± 1.56E-02 **U**
1/15/2025	6.56E-03 ± 2.58E-02 **U**	1.61E-02 ± 2.09E-02 **U**	1.66E-02 ± 2.23E-02 **U**	-1.04E-02 ± 2.59E-02 **U**	-5.99E-03 ± 2.07E-02 **U**
1/22/2025	-2.10E-03 ± 1.06E-02 **U**	6.46E-03 ± 1.68E-02 **U**	-2.62E-03 ± 9.92E-03 **U**	8.46E-03 ± 1.89E-02 **U**	-2.89E-03 ± 1.97E-02 **U**
1/29/2025	-1.24E-03 ± 1.68E-02 **U**	-1.38E-03 ± 1.67E-02 **U**	-7.28E-03 ± 1.44E-02 **U**	-4.01E-04 ± 1.61E-02 **U**	1.18E-02 ± 1.64E-02 **U**
2/5/2025	2.32E-04 ± 2.65E-02 **U**	-2.53E-02 ± 3.45E-02 **U**	8.69E-05 ± 3.44E-02 **U**	-7.26E-04 ± 3.35E-02 **U**	1.27E-02 ± 2.67E-02 **U**
2/11/2025	-6.22E-03 ± 2.07E-02 **U**	-1.85E-03 ± 2.15E-02 **U**	6.73E-03 ± 1.79E-02 **U**	2.20E-03 ± 1.41E-02 **U**	-1.47E-02 ± 2.96E-02 **U**
2/19/2025	3.04E-03 ± 1.38E-02 **U**	-1.79E-03 ± 1.53E-02 **U**	7.09E-03 ± 9.99E-03 **U**	3.62E-03 ± 1.34E-02 **U**	-6.25E-04 ± 1.43E-02 **U**
2/26/2025	-2.20E-02 ± 3.04E-02 **U**	3.06E-03 ± 2.71E-02 **U**	-8.56E-03 ± 3.32E-02 **U**	2.76E-03 ± 2.49E-02 **U**	1.49E-03 ± 2.72E-02 **U**
3/6/2025	5.08E-03 ± 1.52E-02 **U**	5.59E-03 ± 1.51E-02 **U**	5.84E-03 ± 1.06E-02 **U**	-4.40E-03 ± 1.46E-02 **U**	1.75E-03 ± 1.16E-02 **U**
3/12/2025	-1.26E-02 ± 2.46E-02 **U**	1.38E-02 ± 1.52E-02 **U**	-3.79E-03 ± 1.34E-02 **U**	7.81E-03 ± 1.86E-02 **U**	9.55E-04 ± 1.50E-02 **U**
3/18/2025	1.21E-02 ± 2.75E-02 **U**	3.54E-03 ± 3.92E-02 **U**	-1.80E-02 ± 2.57E-02 **U**	-8.34E-03 ± 2.35E-02 **U**	2.44E-02 ± 2.90E-02 **U**
3/26/2025	-4.38E-03 ± 1.36E-02 **U**	8.18E-03 ± 1.71E-02 **U**	2.58E-03 ± 1.09E-02 **U**	-6.08E-03 ± 1.63E-02 **U**	-4.08E-03 ± 1.13E-02 **U**
4/3/2025	-1.20E-02 ± 1.27E-02 **U**	1.34E-03 ± 1.45E-02 **U**	4.20E-03 ± 8.57E-03 **U**	3.28E-04 ± 8.64E-03 **U**	-1.32E-03 ± 1.26E-02 **U**
4/9/2025	-4.31E-02 ± 4.83E-02 **U**	-9.88E-03 ± 3.29E-02 **U**	-2.49E-02 ± 3.52E-02 **U**	-9.21E-03 ± 3.07E-02 **U**	3.00E-02 ± 2.93E-02 **U**

Table 10: Airborne Cartridge: Radioiodine (pCi/m3)					
Date	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
4/16/2025	1.09E-02 ± 1.82E-02 **U**	1.39E-02 ± 2.18E-02 **U**	-2.18E-02 ± 2.64E-02 **U**	8.78E-04 ± 1.77E-02 **U**	7.65E-03 ± 1.99E-02 **U**
4/23/2025	3.50E-04 ± 2.79E-02 **U**	1.12E-03 ± 3.69E-02 **U**	-2.81E-03 ± 3.19E-02 **U**	-1.59E-02 ± 4.20E-02 **U**	-2.12E-02 ± 3.72E-02 **U**
4/30/2025	1.21E-02 ± 1.99E-02 **U**	5.20E-03 ± 2.28E-02 **U**	-1.16E-03 ± 2.82E-02 **U**	-9.60E-03 ± 1.98E-02 **U**	4.00E-03 ± 2.58E-02 **U**
5/7/2025	1.44E-03 ± 2.18E-02 **U**	-9.82E-03 ± 2.22E-02 **U**	-1.63E-02 ± 2.64E-02 **U**	-2.77E-03 ± 1.93E-02 **U**	1.04E-02 ± 3.32E-02 **U**
5/14/2025	7.76E-03 ± 2.95E-02 **U**	1.14E-02 ± 2.78E-02 **U**	-6.15E-03 ± 2.14E-02 **U**	1.72E-02 ± 2.04E-02 **U**	-2.92E-02 ± 3.04E-02 **U**
5/21/2025	-4.41E-02 ± 4.04E-02 **U**	-6.83E-03 ± 3.15E-02 **U**	4.20E-03 ± 3.94E-02 **U**	7.39E-03 ± 2.69E-02 **U**	-2.11E-02 ± 3.43E-02 **U**
5/28/2025	-1.32E-03 ± 2.98E-02 **U**	4.84E-02 ± 3.73E-02 **UI**	-1.03E-02 ± 3.25E-02 **U**	-1.08E-02 ± 3.18E-02 **U**	-6.53E-03 ± 4.18E-02 **U**
6/3/2025	-1.11E-02 ± 2.62E-02 **U**	-3.52E-02 ± 2.64E-02 **U**	-6.70E-04 ± 2.55E-02 **U**	1.63E-02 ± 3.42E-02 **U**	-4.30E-04 ± 2.73E-02 **U**
6/10/2025	-5.28E-03 ± 1.64E-02 **U**	-1.09E-03 ± 1.18E-02 **U**	-3.63E-03 ± 1.90E-02 **U**	2.25E-02 ± 1.67E-02 **U**	9.08E-03 ± 1.59E-02 **U**
6/18/2025	-1.72E-02 ± 2.97E-02 **U**	1.17E-02 ± 2.77E-02 **U**	1.76E-02 ± 3.41E-02 **U**	5.00E-03 ± 2.39E-02 **U**	-2.17E-02 ± 4.21E-02 **U**
6/26/2025	-1.13E-02 ± 1.77E-02 **U**	1.47E-04 ± 1.52E-02 **U**	-8.58E-03 ± 1.13E-02 **U**	6.25E-03 ± 1.36E-02 **U**	-1.59E-04 ± 1.46E-02 **U**
7/2/2025	6.99E-03 ± 1.59E-02 **U**	-7.93E-03 ± 1.35E-02 **U**	5.56E-04 ± 1.82E-02 **U**	-9.63E-03 ± 1.57E-02 **U**	-7.45E-03 ± 2.46E-02 **U**
7/9/2025	1.81E-03 ± 2.17E-02 **U**	1.20E-02 ± 2.11E-02 **U**	2.23E-02 ± 3.20E-02 **U**	-2.18E-03 ± 1.48E-02 **U**	1.32E-02 ± 1.97E-02 **U**
7/17/2025	-7.33E-03 ± 1.44E-02 **U**	3.71E-03 ± 1.20E-02 **U**	-6.18E-03 ± 1.25E-02 **U**	2.08E-03 ± 1.12E-02 **U**	-2.57E-03 ± 1.48E-02 **U**
7/24/2025	-8.66E-04 ± 3.36E-02 **U**	2.08E-02 ± 2.52E-02 **U**	-4.67E-04 ± 3.33E-02 **U**	-1.00E-02 ± 3.06E-02 **U**	3.16E-03 ± 3.14E-02 **U**
7/30/2025	1.35E-02 ± 3.95E-02 **U**	2.50E-02 ± 3.51E-02 **U**	3.63E-02 ± 2.67E-02 **U**	8.70E-03 ± 3.38E-02 **U**	-5.15E-03 ± 3.56E-02 **U**

Table 10: Airborne Cartridge: Radioiodine (pCi/m3)

Date	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
8/6/2025	-2.06E-02 ± 1.44E-02 **U**	-1.24E-02 ± 2.36E-02 **U**	1.25E-02 ± 1.35E-02 **U**	-6.55E-03 ± 1.53E-02 **U**	-8.74E-03 ± 1.41E-02 **U**
8/14/2025	6.27E-03 ± 2.29E-02 **U**	1.63E-02 ± 1.96E-02 **U**	1.17E-02 ± 1.56E-02 **U**	3.09E-03 ± 2.21E-02 **U**	-8.12E-03 ± 1.98E-02 **U**
8/20/2025	-5.98E-03 ± 1.27E-02 **U**	-3.25E-04 ± 1.30E-02 **U**	2.42E-03 ± 9.38E-03 **U**	-4.04E-04 ± 1.11E-02 **U**	7.48E-03 ± 1.17E-02 **U**
8/27/2025	1.20E-02 ± 1.35E-02 **U**	5.26E-03 ± 1.61E-02 **U**	-1.70E-02 ± 2.02E-02 **U**	2.15E-03 ± 1.98E-02 **U**	-1.76E-02 ± 1.75E-02 **U**
9/3/2025	1.44E-02 ± 1.84E-02 **U**	1.87E-03 ± 1.14E-02 **U**	5.20E-03 ± 1.38E-02 **U**	-4.71E-03 ± 1.15E-02 **U**	-2.63E-02 ± 1.69E-02 **U**
9/10/2025	9.97E-03 ± 9.85E-03 **U**	-3.10E-03 ± 9.52E-03 **U**	9.29E-03 ± 1.43E-02 **U**	-5.10E-03 ± 8.77E-03 **U**	1.69E-03 ± 8.24E-03 **U**
9/17/2025	-5.99E-03 ± 1.35E-02 **U**	2.08E-02 ± 1.24E-02 **U**	4.15E-03 ± 7.20E-03 **U**	5.34E-04 ± 1.29E-02 **U**	-1.87E-04 ± 6.46E-03 **U**
9/24/2025	1.78E-03 ± 7.18E-03 **U**	3.66E-03 ± 8.14E-03 **U**	-1.73E-02 ± 1.25E-02 **U**	-6.41E-03 ± 7.76E-03 **U**	6.48E-03 ± 7.84E-03 **U**
10/1/2025	-8.19E-03 ± 1.04E-02 **U**	1.99E-02 ± 9.59E-03 **U**	6.24E-03 ± 1.36E-02 **U**	-3.02E-02 ± 2.17E-02 **U**	-1.74E-03 ± 1.16E-02 **U**
10/8/2025	5.60E-03 ± 7.41E-03 **U**	-8.19E-03 ± 1.21E-02 **U**	-6.58E-03 ± 7.29E-03 **U**	1.86E-04 ± 9.12E-03 **U**	-3.37E-03 ± 1.07E-02 **U**
10/15/2025	-1.52E-02 ± 1.52E-02 **U**	-4.34E-03 ± 1.21E-02 **U**	-6.75E-03 ± 1.65E-02 **U**	1.40E-02 ± 1.25E-02 **U**	2.15E-02 ± 1.39E-02 **U**
10/22/2025	-1.78E-02 ± 3.55E-02 **U**	3.48E-02 ± 3.48E-02 **U**	1.62E-02 ± 3.82E-02 **U**	-9.37E-03 ± 3.83E-02 **U**	6.01E-03 ± 3.29E-02 **U**
10/28/2025	-4.32E-03 ± 4.83E-02 **U**	-6.67E-03 ± 4.83E-02 **U**	-8.32E-03 ± 4.57E-02 **U**	5.22E-02 ± 4.53E-02 **U**	8.70E-03 ± 3.96E-02 **U**
11/5/2025	2.52E-03 ± 1.01E-02 **U**	1.93E-02 ± 1.84E-02 **UI**	3.94E-03 ± 8.70E-03 **U**	4.65E-03 ± 1.55E-02 **U**	-1.18E-03 ± 1.81E-02 **U**
11/11/2025	8.47E-03 ± 2.42E-02 **U**	3.20E-03 ± 2.59E-02 **U**	9.96E-03 ± 2.84E-02 **U**	2.52E-03 ± 2.55E-02 **U**	
11/12/2025					1.15E-02 ± 2.27E-02 **U**

Table 10: Airborne Cartridge: Radioiodine (pCi/m3)					
Date	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
11/19/2025	2.93E-04 ± 1.87E-02 **U**	-3.25E-03 ± 1.31E-02 **U**	-2.86E-04 ± 1.47E-02 **U**	1.10E-02 ± 1.02E-02 **U**	1.86E-02 ± 2.16E-02 **U**
11/25/2025	2.07E-03 ± 1.26E-02 **U**	1.14E-03 ± 1.10E-02 **U**	2.94E-03 ± 9.10E-03 **U**	2.94E-03 ± 1.02E-02 **U**	3.95E-03 ± 1.06E-02 **U**
12/3/2025	2.19E-03 ± 9.35E-03 **U**	2.98E-03 ± 8.71E-03 **U**	-2.77E-03 ± 7.57E-03 **U**	-1.63E-03 ± 7.08E-0 **U**	-3.17E-04 ± 8.05E-03 **U**
12/10/2025	5.83E-03 ± 2.69E-02 **U**	1.98E-02 ± 2.31E-02 **U**	4.51E-03 ± 3.20E-02 **U**	-9.41E-03 ± 2.92E-02 **U**	2.40E-02 ± 2.63E-02 **U**
12/17/2025	3.23E-03 ± 2.91E-02 **U**	2.62E-03 ± 2.77E-02 **U**	6.37E-03 ± 2.69E-02 **U**	-4.80E-03 ± 2.86E-02 **U**	6.39E-03 ± 2.32E-02 **U**
12/23/2025	-5.15E-03 ± 2.48E-02 **U**	1.26E-02 ± 1.72E-02 **U**	-4.12E-03 ± 2.58E-02 **U**	4.37E-03 ± 2.03E-02 **U**	-1.13E-02 ± 1.71E-02 **U**
12/31/2025	-3.07E-03 ± 1.12E-02 **U**	-4.21E-03 ± 1.43E-02 **U**	1.81E-03 ± 2.33E-02 **U**	-1.65E-03 ± 1.00E-02 **U**	-1.09E-03 ± 9.98E-03 **U**

Table 11: Airborne Particulates: Gross Beta (pCi/m3)

Date/ Sample ID	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
1/2/2025	4.81E-02 ± 5.08E-03	5.72E-02 ± 5.73E-03	4.47E-02 ± 4.82E-03	5.66E-02 ± 5.90E-03	4.68E-02 ± 5.21E-03
1/8/2025	4.04E-02 ± 4.93E-03	4.43E-02 ± 5.57E-03	3.96E-02 ± 4.69E-03	4.56E-02 ± 5.59E-03	5.10E-02 ± 5.92E-03
1/15/2025	5.01E-02 ± 4.98E-03	8.28E-02 ± 6.72E-03	4.35E-02 ± 4.45E-03	5.13E-02 ± 5.50E-03	6.07E-02 ± 5.91E-03
1/22/2025	3.46E-02 ± 4.37E-03	4.22E-02 ± 4.98E-03	3.66E-02 ± 4.41E-03	4.43E-02 ± 5.41E-03	4.28E-02 ± 4.98E-03
1/29/2025	3.66E-02 ± 4.50E-03	3.96E-02 ± 5.20E-03	4.25E-02 ± 5.05E-03	4.06E-02 ± 5.12E-03	3.96E-02 ± 5.12E-03
2/5/2025	3.26E-02 ± 4.32E-03	3.76E-02 ± 5.03E-03	3.26E-02 ± 4.35E-03	3.64E-02 ± 4.88E-03	3.49E-02 ± 4.61E-03
2/11/2025	3.95E-02 ± 5.72E-03	4.25E-02 ± 5.81E-03	4.67E-02 ± 5.88E-03	3.77E-02 ± 4.67E-03	4.61E-02 ± 5.62E-03
2/19/2025	4.91E-02 ± 4.70E-03	4.96E-02 ± 5.00E-03	4.62E-02 ± 4.47E-03	4.87E-02 ± 4.72E-03	5.26E-02 ± 5.05E-03
2/26/2025	4.38E-02 ± 4.89E-03	4.10E-02 ± 5.04E-03	3.50E-02 ± 4.20E-03	3.83E-02 ± 4.66E-03	4.51E-02 ± 5.16E-03
3/6/2025	3.06E-02 ± 3.88E-03	3.43E-02 ± 4.40E-03	3.10E-02 ± 3.90E-03	3.28E-02 ± 4.00E-03	3.03E-02 ± 4.04E-03
3/12/2025	3.09E-02 ± 4.62E-03	3.28E-02 ± 5.11E-03	2.89E-02 ± 4.50E-03	2.98E-02 ± 4.55E-03	3.02E-02 ± 4.80E-03
3/18/2025	3.27E-02 ± 4.70E-03	3.26E-02 ± 5.05E-03	3.26E-02 ± 4.97E-03	3.04E-02 ± 4.56E-03	3.31E-02 ± 4.95E-03
3/26/2025	2.72E-02 ± 3.65E-03	2.74E-02 ± 4.08E-03	5.57E-02 ± 5.38E-03	2.37E-02 ± 3.24E-03	2.72E-02 ± 3.81E-03
4/3/2025	2.02E-02 ± 3.21E-03	2.16E-02 ± 3.60E-03	1.95E-02 ± 3.37E-03	2.07E-02 ± 3.27E-03	2.19E-02 ± 3.46E-03
4/9/2025	3.73E-02 ± 5.18E-03	3.22E-02 ± 5.16E-03	3.25E-02 ± 4.90E-03	3.53E-02 ± 5.18E-03	3.33E-02 ± 4.82E-03
4/16/2025	2.97E-02 ± 4.01E-03	3.33E-02 ± 4.71E-03	3.21E-02 ± 4.51E-03	3.16E-02 ± 4.16E-03	3.03E-02 ± 4.20E-03
4/23/2025	2.04E-02 ± 3.58E-03	2.99E-02 ± 4.57E-03	2.31E-02 ± 3.95E-03	2.42E-02 ± 3.80E-03	2.39E-02 ± 4.27E-03
4/30/2025	1.92E-02 ± 3.42E-03	2.47E-02 ± 4.12E-03	1.92E-02 ± 3.68E-03	1.95E-02 ± 3.46E-03	2.31E-02 ± 4.08E-03
5/7/2025	2.21E-02 ± 3.58E-03	2.48E-02 ± 3.70E-03	1.87E-02 ± 3.14E-03	2.34E-02 ± 3.66E-03	2.46E-02 ± 4.04E-03
5/14/2025	2.37E-02 ± 3.74E-03	3.09E-02 ± 4.08E-03	2.47E-02 ± 3.70E-03	2.49E-02 ± 3.70E-03	3.05E-02 ± 4.45E-03
5/21/2025	1.17E-02 ± 2.83E-03	1.60E-02 ± 3.13E-03	1.17E-02 ± 2.81E-03	1.22E-02 ± 2.79E-03	1.37E-02 ± 3.24E-03
5/28/2025	1.93E-02 ± 3.42E-03	1.91E-02 ± 3.36E-03	1.69E-02 ± 3.22E-03	2.14E-02 ± 3.50E-03	2.03E-02 ± 3.77E-03
6/3/2025	3.02E-02 ± 4.47E-03	3.35E-02 ± 4.86E-03	2.74E-02 ± 4.34E-03	2.60E-02 ± 4.20E-03	2.85E-02 ± 4.70E-03
6/10/2025	2.58E-02 ± 3.98E-03	2.64E-02 ± 3.80E-03	2.09E-02 ± 3.51E-03	2.77E-02 ± 4.20E-03	2.53E-02 ± 4.01E-03

Table 11: Airborne Particulates: Gross Beta (pCi/m3)

Date/ Sample ID	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
6/18/2025	2.19E-02 ± 3.23E-03	2.17E-02 ± 3.22E-03	2.17E-02 ± 3.28E-03	2.20E-02 ± 3.27E-03	2.42E-02 ± 3.63E-03
6/26/2025	2.66E-02 ± 3.74E-03	2.29E-02 ± 3.28E-03	2.25E-02 ± 3.25E-03	2.47E-02 ± 3.71E-03	2.64E-02 ± 3.79E-03
7/2/2025	1.85E-02 ± 3.43E-03	1.72E-02 ± 3.61E-03	1.98E-02 ± 3.78E-03	1.74E-02 ± 3.55E-03	2.28E-02 ± 4.24E-03
7/9/2025	2.76E-02 ± 3.83E-03	2.86E-02 ± 3.89E-03	2.67E-02 ± 3.85E-03	2.44E-02 ± 3.69E-03	2.61E-02 ± 4.02E-03
7/17/2025	2.88E-02 ± 3.71E-03	2.59E-02 ± 3.70E-03	2.39E-02 ± 3.40E-03	2.54E-02 ± 3.86E-03	3.25E-02 ± 4.20E-03
7/24/2025	1.90E-02 ± 3.33E-03	2.02E-02 ± 3.38E-03	1.65E-02 ± 3.12E-03	2.27E-02 ± 3.63E-03	2.04E-02 ± 3.48E-03
7/30/2025	4.38E-02 ± 7.13E-03	4.29E-02 ± 5.13E-03	2.42E-02 ± 3.52E-03	3.75E-02 ± 5.07E-03	3.10E-02 ± 4.25E-03
8/6/2025	3.39E-02 ± 4.17E-03	3.43E-02 ± 4.55E-03	3.44E-02 ± 4.01E-03	3.41E-02 ± 4.26E-03	2.72E-02 ± 3.60E-03
8/14/2025	3.14E-02 ± 3.91E-03	3.78E-02 ± 4.33E-03	3.58E-02 ± 3.84E-03	3.75E-02 ± 4.37E-03	3.29E-02 ± 3.79E-03
8/20/2025	2.28E-02 ± 3.75E-03	2.86E-02 ± 4.52E-03	2.07E-02 ± 3.27E-03	2.40E-02 ± 3.94E-03	2.70E-02 ± 3.94E-03
8/27/2025	2.65E-02 ± 3.81E-03	2.91E-02 ± 4.20E-03	2.37E-02 ± 3.47E-03	2.51E-02 ± 3.98E-03	2.35E-02 ± 3.57E-03
9/3/2025	4.08E-02 ± 4.83E-03	4.15E-02 ± 4.83E-03	4.10E-02 ± 4.52E-03	3.64E-02 ± 4.64E-03	3.84E-02 ± 4.40E-03
9/10/2025	2.77E-02 ± 3.85E-03	3.24E-02 ± 4.40E-03	2.65E-02 ± 3.57E-03	2.54E-02 ± 3.91E-03	2.80E-02 ± 3.78E-03
9/17/2025	6.73E-02 ± 6.03E-03	7.81E-02 ± 6.56E-03	6.45E-02 ± 5.43E-03	7.73E-02 ± 6.56E-03	6.59E-02 ± 5.65E-03
9/24/2025	4.28E-02 ± 4.94E-03	3.64E-02 ± 4.55E-03	3.92E-02 ± 4.43E-03	3.56E-02 ± 4.60E-03	3.70E-02 ± 4.34E-03
10/1/2025	6.03E-02 ± 5.75E-03	6.66E-02 ± 6.16E-03	6.33E-02 ± 5.64E-03	5.81E-02 ± 5.68E-03	5.06E-02 ± 4.99E-03
10/8/2025	6.61E-02 ± 6.01E-03	6.28E-02 ± 5.84E-03	6.62E-02 ± 5.65E-03	6.52E-02 ± 6.40E-03	6.17E-02 ± 5.47E-03
10/15/2025	3.18E-02 ± 4.34E-03	3.46E-02 ± 4.78E-03	2.92E-02 ± 3.88E-03	3.91E-02 ± 5.35E-03	2.83E-02 ± 3.87E-03
10/22/2025	3.77E-02 ± 4.88E-03	4.11E-02 ± 4.92E-03	3.96E-02 ± 4.53E-03	3.22E-02 ± 4.33E-03	3.26E-02 ± 4.30E-03
10/28/2025	3.95E-02 ± 5.06E-03	3.46E-02 ± 4.67E-03	3.97E-02 ± 5.12E-03	3.76E-02 ± 5.26E-03	3.06E-02 ± 4.52E-03
11/5/2025	2.70E-02 ± 3.60E-03	3.15E-02 ± 3.85E-03	3.17E-02 ± 4.06E-03	2.61E-02 ± 3.76E-03	2.61E-02 ± 3.54E-03
11/11/2025	3.53E-02 ± 5.04E-03	2.34E-02 ± 4.01E-03	3.23E-02 ± 4.80E-03	2.46E-02 ± 4.28E-03	
11/12/2025					2.75E-02 ± 4.38E-03
11/19/2025	4.11E-02 ± 4.66E-03	4.23E-02 ± 4.61E-03	3.43E-02 ± 4.06E-03	4.03E-02 ± 4.55E-03	3.87E-02 ± 4.85E-03
11/25/2025	6.54E-02 ± 6.44E-03	6.11E-02 ± 6.10E-03	6.13E-02 ± 6.37E-03	6.39E-02 ± 6.62E-03	5.80E-02 ± 6.09E-03
12/3/2025	4.54E-02 ± 4.83E-03	3.90E-02 ± 4.22E-03	5.40E-02 ± 5.78E-03	4.87E-02 ± 5.03E-03	3.85E-02 ± 4.49E-03
12/10/2025	5.95E-02 ± 5.89E-03	4.56E-02 ± 4.82E-03	6.24E-02 ± 6.15E-03	5.51E-02 ± 5.73E-03	4.94E-02 ± 5.42E-03
12/17/2025	5.52E-02 ± 5.65E-03	5.50E-02 ± 5.56E-03	5.27E-02 ± 5.37E-03	5.76E-02 ± 5.84E-03	5.30E-02 ± 5.55E-03

Table 11: Airborne Particulates: Gross Beta (pCi/m3)

Date/ Sample ID	Air Station M-1	Air Station M-2	Air Station M-3	Air Station M-4	Air Station M-5
12/23/2025	3.41E-02 ± 4.23E-03	4.00E-02 ± 4.44E-03	4.29E-02 ± 4.99E-03	3.93E-02 ± 4.70E-03	3.74E-02 ± 4.63E-03
12/31/2025	4.62E-02 ± 4.35E-03	4.46E-02 ± 4.23E-03	5.34E-02 ± 5.09E-03	4.48E-02 ± 4.24E-03	4.54E-02 ± 4.32E-03

Table 12: Quarterly Gamma Isotopic Data – Air Station M-1 (pCi/m3)

Nuclide	Q1	Q2	Q3	Q4
Barium-140	2.08E-03 ± 9.90E-03 U	-8.20E-03 ± 3.64E-02 U	4.25E-03 ± 6.93E-03 U	3.74E-04 ± 2.33E-03 U
Beryllium-7	3.72E-02 ± 8.35E-03	6.10E-02 ± 2.81E-02	6.09E-02 ± 8.25E-03	4.52E-02 ± 7.22E-03
Cerium-141	5.38E-04 ± 9.80E-04 U	-6.97E-04 ± 2.16E-03 U	-1.03E-04 ± 4.17E-04 U	-3.22E-04 ± 2.94E-04 U
Cerium-144	-1.45E-04 ± 1.07E-03 U	2.27E-03 ± 3.40E-03 U	-4.93E-04 ± 7.53E-04 U	-6.98E-05 ± 1.04E-03 U
Cesium-134	-2.92E-05 ± 3.16E-04 U	3.51E-04 ± 9.45E-04 U	-5.07E-08 ± 2.14E-04 U	-9.74E-05 ± 2.94E-04 U
Cesium-137	1.07E-04 ± 2.69E-04 U	2.26E-04 ± 7.71E-04 U	-4.61E-05 ± 1.62E-04 U	1.02E-04 ± 2.22E-04 U
Cobalt-58	-3.50E-04 ± 4.22E-04 U	6.92E-04 ± 1.27E-03 U	1.42E-04 ± 2.69E-04 U	-7.48E-05 ± 2.87E-04 U
Cobalt-60	1.26E-04 ± 2.77E-04 U	6.58E-04 ± 1.04E-03 U	3.11E-04 ± 3.09E-04 U	-1.30E-04 ± 2.83E-04 U
Lanthanum-140	-1.93E-04 ± 3.89E-03 U	1.27E-02 ± 1.41E-02 U	-2.01E-03 ± 2.68E-03 U	-8.94E-04 ± 1.09E-03 U
Manganese-54	-6.05E-05 ± 2.54E-04 U	-2.68E-04 ± 8.73E-04 U	4.25E-05 ± 2.40E-04 U	5.10E-05 ± 3.44E-04 U
Niobium-95	3.23E-04 ± 3.99E-04 U	-2.78E-04 ± 9.86E-04 U	-7.69E-05 ± 2.91E-04 U	5.21E-04 ± 5.58E-04 UI
Ruthenium-103	3.90E-04 ± 4.50E-04 U	-4.32E-04 ± 1.40E-03 U	-1.30E-04 ± 3.84E-04 U	5.51E-05 ± 2.72E-04 U
Ruthenium-106	1.25E-04 ± 2.58E-03 U	-1.56E-03 ± 8.29E-03 U	-1.15E-03 ± 2.24E-03 U	8.52E-04 ± 2.56E-03 U
Zinc-65	-2.49E-04 ± 6.71E-04 U	7.92E-04 ± 2.19E-03 U	-1.55E-04 ± 5.69E-04 U	5.16E-04 ± 5.04E-04 U
Zirconium-95	-1.92E-04 ± 7.58E-04 U	9.89E-04 ± 2.47E-03 U	5.02E-05 ± 3.94E-04 U	-2.08E-04 ± 5.18E-04 U

Table 13: Quarterly Gamma Isotopic Data – Air Station M-2 (pCi/m3)				
Nuclide	**Q1**	**Q2**	**Q3**	**Q4**
Barium-140	5.16E-03 ± 1.44E-02 U	2.06E-02 ± 2.66E-02 U	1.55E-03 ± 6.59E-03 U	2.87E-03 ± 3.92E-03 U
Beryllium-7	5.58E-02 ± 1.23E-02	9.12E-02 ± 2.56E-02	7.21E-02 ± 9.60E-03	4.03E-02 ± 8.21E-03
Cerium-141	-8.49E-04 ± 1.34E-03 U	3.47E-04 ± 3.26E-03 U	1.27E-05 ± 5.18E-04 U	1.14E-04 ± 3.44E-04 U
Cerium-144	-1.42E-03 ± 1.99E-03 U	1.26E-03 ± 3.03E-03 U	-6.84E-04 ± 1.01E-03 U	4.02E-04 ± 1.06E-03 U
Cesium-134	-2.88E-04 ± 4.26E-04 U	-5.06E-04 ± 9.59E-04 U	2.64E-04 ± 2.34E-04 U	-1.28E-04 ± 3.49E-04 U
Cesium-137	-1.14E-04 ± 3.33E-04 U	1.33E-05 ± 7.69E-04 U	1.23E-05 ± 2.54E-04 U	1.38E-04 ± 2.77E-04 U
Cobalt-58	-1.77E-05 ± 6.95E-04 U	-5.50E-05 ± 1.22E-03 U	-1.98E-04 ± 4.00E-04 U	-4.88E-05 ± 2.62E-04 U
Cobalt-60	7.29E-05 ± 2.67E-04 U	-2.90E-05 ± 4.82E-04 U	9.42E-06 ± 2.26E-04 U	-9.09E-05 ± 2.64E-04 U
Lanthanum-140	3.48E-03 ± 4.46E-03 U	-1.03E-02 ± 1.17E-02 U	-9.63E-04 ± 1.89E-03 U	6.80E-05 ± 1.25E-03 U
Manganese-54	-1.61E-04 ± 4.02E-04 U	-2.41E-04 ± 7.32E-04 U	1.23E-06 ± 3.00E-04 U	-9.84E-06 ± 2.41E-04 U
Niobium-95	-1.48E-04 ± 6.41E-04 U	1.45E-05 ± 1.38E-03 U	-8.15E-05 ± 3.69E-04 U	-5.63E-05 ± 2.83E-04 U
Ruthenium-103	1.70E-04 ± 7.26E-04 U	4.10E-04 ± 1.33E-03 U	-2.83E-04 ± 5.12E-04 U	-1.00E-04 ± 3.18E-04 U
Ruthenium-106	-1.16E-03 ± 3.63E-03 U	1.55E-03 ± 6.96E-03 U	6.33E-04 ± 2.10E-03 U	4.96E-04 ± 2.16E-03 U
Zinc-65	1.35E-03 ± 1.09E-03 UI	5.62E-04 ± 1.80E-03 U	3.26E-04 ± 6.92E-04 U	-2.65E-04 ± 4.54E-04 U
Zirconium-95	2.57E-04 ± 1.24E-03 U	5.32E-04 ± 1.43E-03 U	-2.82E-04 ± 6.75E-04 U	6.71E-05 ± 5.49E-04 U

Table 14: Quarterly Gamma Isotopic Data – Air Station M-3 (pCi/m3)

Nuclide	Q1	Q2	Q3	Q4
Barium-140	4.17E-03 ± 9.43E-03 U	-2.13E-03 ± 2.36E-02 U	2.05E-03 ± 4.75E-03 U	-3.84E-04 ± 2.23E-03 U
Beryllium-7	4.38E-02 ± 1.02E-02	6.30E-02 ± 1.33E-02	5.09E-02 ± 7.41E-03	4.49E-02 ± 6.77E-03
Cerium-141	4.33E-04 ± 6.42E-04 U	2.03E-04 ± 9.04E-04 U	2.37E-04 ± 3.79E-04 U	9.57E-05 ± 3.21E-04 U
Cerium-144	2.66E-04 ± 1.19E-03 U	1.13E-03 ± 1.61E-03 U	-4.01E-05 ± 6.65E-04 U	-1.82E-04 ± 8.08E-04 U
Cesium-134	1.75E-04 ± 3.24E-04 U	-2.47E-04 ± 5.48E-04 U	1.53E-04 ± 1.59E-04 U	-1.51E-04 ± 2.43E-04 U
Cesium-137	3.32E-05 ± 3.00E-04 U	3.98E-04 ± 3.48E-04 U	1.37E-05 ± 1.81E-04 U	1.94E-04 ± 2.43E-04 U
Cobalt-58	-1.65E-05 ± 4.01E-04 U	-3.00E-04 ± 6.65E-04 U	-1.20E-04 ± 2.71E-04 U	-1.32E-05 ± 2.50E-04 U
Cobalt-60	7.80E-06 ± 4.38E-04 U	-1.30E-04 ± 5.00E-04 U	-2.00E-04 ± 1.96E-04 U	2.15E-04 ± 2.41E-04 U
Lanthanum-140	8.12E-04 ± 3.66E-03 U	2.50E-03 ± 8.66E-03 U	-3.44E-05 ± 1.03E-03 U	1.59E-04 ± 1.29E-03 U
Manganese-54	6.19E-05 ± 2.51E-04 U	2.21E-04 ± 3.60E-04 U	-1.97E-04 ± 1.90E-04 U	7.01E-05 ± 2.76E-04 U
Niobium-95	-7.65E-05 ± 4.12E-04 U	-8.23E-05 ± 5.46E-04 U	1.10E-05 ± 2.41E-04 U	7.10E-05 ± 2.44E-04 U
Ruthenium-103	2.46E-04 ± 5.54E-04 U	4.45E-04 ± 8.03E-04 U	2.14E-04 ± 2.61E-04 U	2.05E-04 ± 2.83E-04 U
Ruthenium-106	6.68E-04 ± 2.88E-03 U	1.20E-03 ± 4.10E-03 U	-8.22E-04 ± 1.32E-03 U	4.10E-04 ± 2.17E-03 U
Zinc-65	-5.92E-04 ± 7.71E-04 U	-6.20E-04 ± 1.23E-03 U	2.75E-05 ± 3.91E-04 U	-1.14E-04 ± 6.63E-04 U
Zirconium-95	-2.05E-04 ± 7.93E-04 U	-3.47E-04 ± 1.25E-03 U	2.26E-04 ± 3.47E-04 U	-1.00E-04 ± 4.60E-04 U

Table 15: Quarterly Gamma Isotopic Data – Air Station M-4 (pCi/m3)

Nuclide	Q1	Q2	Q3	Q4
Barium-140	6.78E-03 ± 9.79E-03 U	-3.70E-04 ± 2.80E-02 U	3.65E-03 ± 6.48E-03 U	-1.19E-03 ± 2.72E-03 U
Beryllium-7	6.00E-02 ± 9.53E-03	7.25E-02 ± 1.65E-02	5.68E-02 ± 9.28E-03	4.13E-02 ± 8.94E-03
Cerium-141	-1.71E-04 ± 7.11E-04 U	-3.30E-04 ± 2.08E-03 U	1.11E-04 ± 4.16E-04 U	-1.84E-04 ± 2.75E-04 U
Cerium-144	-1.47E-04 ± 1.14E-03 U	8.31E-04 ± 3.62E-03 U	-4.50E-04 ± 9.21E-04 U	3.54E-04 ± 9.55E-04 U
Cesium-134	-9.33E-05 ± 3.86E-04 U	6.03E-05 ± 7.83E-04 U	6.88E-05 ± 2.81E-04 U	7.11E-05 ± 2.25E-04 U
Cesium-137	2.58E-04 ± 2.61E-04 U	3.45E-04 ± 4.96E-04 U	-7.62E-05 ± 1.92E-04 U	-6.18E-05 ± 2.63E-04 U
Cobalt-58	-2.08E-04 ± 4.38E-04 U	8.07E-05 ± 7.98E-04 U	-3.96E-05 ± 2.87E-04 U	1.16E-04 ± 3.63E-04 U
Cobalt-60	2.26E-04 ± 2.97E-04 U	1.71E-05 ± 6.46E-04 U	1.57E-04 ± 3.22E-04 U	-2.53E-05 ± 3.35E-04 U
Lanthanum-140	3.36E-04 ± 4.33E-03 U	8.35E-03 ± 1.11E-02 U	-4.11E-04 ± 3.20E-03 U	-1.81E-04 ± 9.17E-04 U
Manganese-54	7.69E-05 ± 2.86E-04 U	-5.71E-04 ± 6.94E-04 U	5.92E-05 ± 2.70E-04 U	3.50E-05 ± 2.40E-04 U
Niobium-95	-8.25E-06 ± 4.72E-04 U	6.86E-04 ± 1.07E-03 U	-5.24E-04 ± 4.11E-04 U	1.86E-04 ± 3.44E-04 U
Ruthenium-103	-1.84E-04 ± 5.27E-04 U	1.02E-04 ± 1.26E-03 U	-1.78E-04 ± 3.70E-04 U	3.69E-05 ± 3.34E-04 U
Ruthenium-106	9.75E-04 ± 2.66E-03 U	2.48E-03 ± 5.74E-03 U	-1.45E-03 ± 2.20E-03 U	-5.04E-04 ± 2.17E-03 U
Zinc-65	-5.15E-05 ± 5.40E-04 U	1.14E-03 ± 1.51E-03 U	4.96E-04 ± 6.10E-04 U	1.45E-04 ± 7.33E-04 U
Zirconium-95	1.78E-04 ± 6.86E-04 U	-4.99E-04 ± 1.62E-03 U	8.08E-05 ± 5.40E-04 U	2.70E-04 ± 3.71E-04 U

Table 16: Quarterly Gamma Isotopic Data – Air Station M-5 (pCi/m3)				
Nuclide	**Q1**	**Q2**	**Q3**	**Q4**
Barium-140	1.18E-03 ± 1.19E-02 **U**	-1.80E-02 ± 2.40E-02 **U**	5.04E-04 ± 8.08E-03 **U**	1.99E-03 ± 2.29E-03 **U**
Beryllium-7	6.02E-02 ± 1.09E-02	7.13E-02 ± 1.55E-02	5.30E-02 ± 1.00E-02	3.88E-02 ± 6.74E-03
Cerium-141	-1.32E-04 ± 6.52E-04 **U**	-3.80E-04 ± 1.21E-03 **U**	-2.26E-04 ± 6.81E-04 **U**	-4.26E-04 ± 3.91E-04 **U**
Cerium-144	6.41E-04 ± 1.15E-03 **U**	4.16E-04 ± 1.61E-03 **U**	3.80E-06 ± 1.22E-03 **U**	-5.32E-05 ± 8.24E-04 **U**
Cesium-134	1.67E-04 ± 3.24E-04 **U**	-1.35E-04 ± 5.63E-04 **U**	-1.20E-04 ± 2.32E-04 **U**	-5.53E-05 ± 2.64E-04 **U**
Cesium-137	5.88E-06 ± 3.47E-04 **U**	1.59E-04 ± 3.77E-04 **U**	7.87E-05 ± 2.36E-04 **U**	1.40E-04 ± 2.12E-04 **U**
Cobalt-58	1.05E-04 ± 4.73E-04 **U**	3.78E-05 ± 6.24E-04 **U**	3.71E-05 ± 3.50E-04 **U**	-2.25E-04 ± 2.42E-04 **U**
Cobalt-60	4.01E-05 ± 4.59E-04 **U**	-1.60E-04 ± 6.11E-04 **U**	1.02E-04 ± 2.85E-04 **U**	-2.89E-05 ± 3.11E-04 **U**
Lanthanum-140	-5.79E-03 ± 4.54E-03 **U**	-1.85E-03 ± 6.67E-03 **U**	1.57E-03 ± 2.16E-03 **U**	1.15E-06 ± 1.12E-03 **U**
Manganese-54	-2.28E-04 ± 3.82E-04 **U**	2.58E-04 ± 4.31E-04 **U**	-7.15E-05 ± 2.72E-04 **U**	-1.43E-04 ± 2.24E-04 **U**
Niobium-95	1.05E-04 ± 5.06E-04 **U**	-2.29E-04 ± 5.77E-04 **U**	3.16E-05 ± 3.57E-04 **U**	2.44E-04 ± 2.92E-04 **U**
Ruthenium-103	-7.29E-05 ± 5.49E-04 **U**	3.49E-04 ± 8.70E-04 **U**	2.73E-04 ± 4.28E-04 **U**	-1.42E-04 ± 2.48E-04 **U**
Ruthenium-106	-2.65E-03 ± 3.40E-03 **U**	3.81E-04 ± 2.94E-03 **U**	-4.55E-05 ± 2.36E-03 **U**	-1.93E-04 ± 2.00E-03 **U**
Zinc-65	1.51E-04 ± 8.16E-04 **U**	-8.63E-04 ± 1.02E-03 **U**	-3.86E-04 ± 6.20E-04 **U**	1.13E-04 ± 5.14E-04 **U**
Zirconium-95	-4.34E-04 ± 9.10E-04 **U**	1.22E-03 ± 1.26E-03 **U**	7.73E-06 ± 7.22E-04 **U**	-4.08E-05 ± 5.02E-04 **U**

Table 17: Sediment Gamma Isotopic Data – M-8c Upstream of Plant (pCi/kg)

Nuclide	May	September
Barium-140	-3.40E+01 ± 3.29E+02 **U**	-1.65E+02 ± 2.84E+02 **U**
Beryllium-7	9.49E+01 ± 2.30E+02 **U**	3.67E+02 ± 3.60E+02 **UI**
Cerium-144	-1.35E+01 ± 9.94E+01 **U**	3.58E+01 ± 1.22E+02 **U**
Cesium-134	1.79E+01 ± 2.92E+01 **U**	4.49E-01 ± 2.99E+01 **U**
Cesium-137	-1.28E+01 ± 2.45E+01 **U**	1.82E+01 ± 3.38E+01 **U**
Cobalt-58	-9.16E+00 ± 2.03E+01 **U**	1.09E+01 ± 2.86E+01 **U**
Cobalt-60	-1.58E+01 ± 2.04E+01 **U**	1.10E+01 ± 3.48E+01 **U**
Iron-59	6.45E+00 ± 6.24E+01 **U**	2.00E+00 ± 6.80E+01 **U**
Lanthanum-140	-1.11E+02 ± 1.16E+02 **U**	-1.10E+02 ± 1.17E+02 **U**
Manganese-54	-1.21E+01 ± 2.00E+01 **U**	2.13E+01 ± 2.49E+01 **U**
Niobium-95	7.31E+00 ± 2.73E+01 **U**	-1.09E+01 ± 3.84E+01 **U**
Potassium-40	9.80E+03 ± 9.04E+02	1.02E+04 ± 1.29E+03
Ruthenium-103	1.14E+01 ± 2.81E+01 **U**	-5.56E+00 ± 2.63E+01 **U**
Ruthenium-106	-6.12E+01 ± 1.80E+02 **U**	-3.65E+01 ± 1.85E+02 **U**
Zinc-65	1.78E+01 ± 5.22E+01 **U**	3.94E+00 ± 7.42E+01 **U**
Zirconium-95	-1.71E+01 ± 4.37E+01 **U**	-1.86E+01 ± 5.26E+01 **U**

Table 18: Sediment Gamma Isotopic Data – M-9 Downstream of Plant (pCi/kg)

Nuclide	May	September
Barium-140	-2.11E+02 ± 3.33E+02 **U**	-3.61E+01 ± 2.16E+02 **U**
Beryllium-7	3.93E+01 ± 2.20E+02 **U**	6.39E+02 ± 3.12E+02
Cerium-144	-4.62E-01 ± 1.16E+02 **U**	-1.92E+01 ± 1.14E+02 **U**
Cesium-134	1.30E+01 ± 3.25E+01 **U**	1.28E+02 ± 6.52E+01 **UI**
Cesium-137	4.15E+01 ± 5.42E+01 **UI**	1.37E+01 ± 2.44E+01 **U**
Cobalt-58	-2.39E+01 ± 2.78E+01 **U**	-2.05E+00 ± 2.46E+01 **U**
Cobalt-60	-7.49E+00 ± 2.45E+01 **U**	-1.32E+01 ± 2.02E+01 **U**
Iron-59	-3.92E+01 ± 7.04E+01 **U**	3.10E+01 ± 5.95E+01 **U**
Lanthanum-140	-5.12E+01 ± 1.38E+02 **U**	-4.28E+01 ± 9.91E+01 **U**
Manganese-54	8.90E+00 ± 2.59E+01 **U**	3.71E+00 ± 2.63E+01 **U**
Niobium-95	-1.68E+01 ± 3.12E+01 **U**	-1.75E+01 ± 2.63E+01 **U**
Potassium-40	1.29E+04 ± 1.20E+03	9.07E+03 ± 1.14E+03
Ruthenium-103	1.73E+01 ± 3.12E+01 **U**	-4.76E+00 ± 2.48E+01 **U**
Ruthenium-106	3.13E+01 ± 1.80E+02 **U**	-4.58E+00 ± 1.90E+02 **U**
Zinc-65	-6.95E+00 ± 5.94E+01 **U**	-4.04E+01 ± 5.80E+01 **U**
Zirconium-95	3.31E+01 ± 5.69E+01 **U**	2.59E+01 ± 4.63E+01 **U**

Table 19: Sediment Gamma Isotopic Data – M-15 Montissippi Park (pCi/kg)

Nuclide	May	September
Barium-140	8.34E+01 ± 4.44E+02 **U**	2.33E+02 ± 2.25E+02 **U**
Beryllium-7	-6.68E+01 ± 2.69E+02 **U**	7.98E+00 ± 2.43E+02 **U**
Cerium-144	1.31E+02 ± 1.52E+02 **U**	9.01E+00 ± 1.42E+02 **U**
Cesium-134	4.00E+01 ± 3.10E+01 **U**	1.89E+01 ± 3.28E+01 **U**
Cesium-137	5.67E+01 ± 3.11E+01 **U**	8.25E+00 ± 2.59E+01 **U**
Cobalt-58	-1.95E+00 ± 3.05E+01 **U**	1.23E+01 ± 2.80E+01 **U**
Cobalt-60	-8.75E+00 ± 2.93E+01 **U**	-3.92E+01 ± 2.90E+01 **U**
Iron-59	3.97E+01 ± 8.95E+01 **U**	-5.44E+01 ± 7.39E+01 **U**
Lanthanum-140	-7.30E+01 ± 1.56E+02 **U**	-3.09E+01 ± 9.75E+01 **U**
Manganese-54	6.12E-01 ± 3.25E+01 **U**	-1.20E+01 ± 2.35E+01 **U**
Niobium-95	-5.21E+00 ± 3.61E+01 **U**	-1.73E+01 ± 3.27E+01 **U**
Potassium-40	1.14E+04 ± 1.13E+03	1.17E+04 ± 1.47E+03
Ruthenium-103	7.85E+00 ± 3.55E+01 **U**	5.65E+00 ± 3.11E+01 **U**
Ruthenium-106	2.26E+01 ± 2.33E+02 **U**	8.22E+01 ± 2.27E+02 **U**
Zinc-65	-1.15E+02 ± 8.61E+01 **U**	-6.61E+01 ± 8.64E+01 **U**
Zirconium-95	-3.01E+01 ± 5.82E+01 **U**	-1.65E+01 ± 5.18E+01 **U**

Table 20: Tissue-Fish Gamma Isotopic Data – M-8c Upstream of Plant (pCi/kg, wet)				
Nuclide	**July**		**September**	
	Fish 1	**Fish 2**	**Fish 1**	**Fish 2**
Barium-140	-59.2 ± 121.0 **U**	195.0 ± 507.0 **U**	1.9 ± 25.5 **U**	0.9 ± 24.3 **U**
Cerium-144	1.6 ± 38.9 **U**	5.9 ± 104.0 **U**	-1.7 ± 22.0 **U**	3.9 ± 26.0 **U**
Cesium-134	-0.6 ± 8.2 **U**	3.8 ± 26.8 **U**	-3.5 ± 4.8 **U**	-2.9 ± 5.9 **U**
Cesium-137	8.8 ± 7.9 **U**	-2.6 ± 24.0 **U**	-2.2 ± 6.2 **U**	3.5 ± 5.0 **U**
Cobalt-58	-0.5 ± 11.6 **U**	-5.5 ± 25.9 **U**	0.0 ± 4.5 **U**	-0.3 ± 4.7 **U**
Cobalt-60	1.2 ± 10.5 **U**	2.1 ± 15.1 **U**	2.1 ± 5.2 **U**	2.1 ± 6.4 **U**
Iron-59	-13.7 ± 29.4 **U**	-5.9 ± 63.3 **U**	4.0 ± 12.4 **U**	-3.5 ± 11.1 **U**
Lanthanum-140	51.0 ± 44.7 **U**	-182.0 ± 165.0 **U**	-5.0 ± 9.2 **U**	2.7 ± 6.7 **U**
Manganese-54	1.9 ± 8.3 **U**	-4.7 ± 20.7 **U**	0.8 ± 4.0 **U**	-0.2 ± 5.0 **U**
Niobium-95	0.5 ± 8.9 **U**	7.2 ± 28.8 **U**	0.7 ± 4.2 **U**	-6.1 ± 5.6 **U**
Potassium-40	3160.0 ± 434.0	3960.0 ± 1000.0	2760.0 ± 264.0	2710.0 ± 283.0
Zinc-65	-4.1 ± 21.3 **U**	17.5 ± 75.3 **U**	7.9 ± 11.4 **U**	-4.9 ± 10.0 **U**
Zirconium-95	0.4 ± 13.1 **U**	30.1 ± 67.9 **U**	0.6 ± 8.3 **U**	1.5 ± 8.3 **U**

Table 21: Tissue-Fish Gamma Isotopic Data – M-9 Downstream of Plant (pCi/kg, wet)

Nuclide	May		September
	Fish 1	Fish 2	Fish 1
Barium-140	7.1 ± 139.0 U	85.0 ± 158.0 U	0.5 ± 27.4 U
Cerium-144	-4.5 ± 50.7 U	-28.2 ± 41.1 U	-7.0 ± 25.6 U
Cesium-134	1.1 ± 9.3 U	-1.4 ± 13.9U	0.2 ± 6.7 U
Cesium-137	0.1 ± 8.0 U	2.4 ± 8.5 U	-0.1 ± 4.6 U
Cobalt-58	-3.0 ± 9.1 U	1.8 ± 11.3 U	-0.1 ± 5.6 U
Cobalt-60	-6.7 ± 8.5 U	0.8 ± 5.4 U	1.0 ± 5.1 U
Iron-59	-5.3 ± 35.9 U	25.9 ± 31.7 U	-0.6 ± 11.1 U
Lanthanum-140	-10.8 ± 48.8 U	11.7 ± 45.1 U	6.5 ± 6.7 U
Manganese-54	4.7 ± 10.5 U	8.5 ± 9.3 U	2.5 ± 5.3 U
Niobium-95	-12.1 ± 11.3 U	-0.8 ± 14.1 U	2.3 ± 5.1 U
Potassium-40	3150.0 ± 437.0	2900.0 ± 475.0	3010.0 ± 279.0
Zinc-65	5.8 ± 18.6 U	-5.7 ± 32.3 U	-7.5 ± 12.8 U
Zirconium-95	-10.5 ± 17.3 U	-14.2 ± 21.9 U	-4.0 ± 9.5 U

Table 22: Tissue-Plant Gamma Isotopic Data – M-41 Training Center (pCi/kg)				
Nuclide	**June**	**July**	**August**	**September**
Cesium-134	7.58E+00 ± 1.01E+01 U	3.73E-01 ± 8.35E+00 U	-2.96E+00 ± 1.25E+01 U	-1.08E+01 ± 1.05E+01 U
Cesium-137	2.89E+00 ± 5.99E+00 U	-4.41E-01 ± 7.78E+00 U	4.43E+00 ± 1.35E+01 U	-3.13E+00 ± 8.33E+00 U
Cobalt-58	1.20E+00 ± 5.88E+00 U	1.63E+00 ± 8.59E+00 U	3.40E+00 ± 1.74E+01 U	-2.76E+00 ± 8.42E+00 U
Cobalt-60	5.40E+00 ± 6.40E+00 U	1.08E+00 ± 7.47E+00 U	5.77E+00 ± 1.19E+01 U	1.48E+01 ± 1.25E+01 U
Iodine-131	2.37E+00 ± 1.10E+01 U	-3.06E+01 ± 3.65E+01 U	7.70E+00 ± 1.99E+01 U	-1.41E+01 ± 1.55E+01 U
Iron-59	-1.04E+01 ± 1.37E+01 U	1.40E+01 ± 1.71E+01 U	6.76E+00 ± 3.13E+01 U	5.39E+00 ± 2.16E+01 U
Manganese-54	4.90E+00 ± 7.96E+00 U	5.32E-01 ± 7.96E+00 U	-9.89E+00 ± 1.68E+01 U	6.53E+00 ± 1.05E+01 U
Niobium-95	3.28E+00 ± 6.42E+00 U	-3.38E+00 ± 9.28E+00 U	-4.87E+00 ± 1.61E+01 U	1.58E+01 ± 1.31E+01 UI
Zinc-65	-9.05E-01 ± 1.53E+01 U	7.04E+00 ± 1.46E+01 U	-1.07E+01 ± 2.77E+01 U	3.61E+00 ± 2.18E+01 U

Table 23: Tissue-Plant Gamma Isotopic Data – M-42 Biology Station Road (pCi/kg)

Nuclide	June	July	August	September
Cesium-134	-5.50E+00 ± 5.92E+00 U	3.20E+01 ± 2.47E+01 UI	-1.35E+01 ± 2.02E+01 U	4.95E+00 ± 1.18E+01 U
Cesium-137	1.02E+01 ± 8.74E+00 UI	4.46E+00 ± 1.22E+01 U	4.38E+01 ± 2.76E+01 UI	3.89E+00 ± 1.09E+01 U
Cobalt-58	-1.17E+00 ± 5.57E+00 U	-5.66E+00 ± 1.57E+01 U	-4.79E+00 ± 2.03E+01 U	-2.00E+00 ± 1.01E+01 U
Cobalt-60	-2.23E+00 ± 5.69E+00 U	6.31E-01 ± 1.14E+01 U	1.21E+01 ± 2.25E+01 U	7.83E+00 ± 1.30E+01 U
Iodine-131	-9.87E-01 ± 1.03E+01 U	2.09E+01 ± 4.87E+01 U	5.91E+00 ± 3.01E+01 U	-6.47E+00 ± 1.38E+01 U
Iron-59	-2.67E+00 ± 1.27E+01 U	3.32E+00 ± 2.86E+01 U	4.87E+01 ± 2.83E+01 U	1.27E+01 ± 1.76E+01 U
Manganese-54	-2.06E+00 ± 5.70E+00 U	4.91E+00 ± 1.46E+01 U	-1.02E+01 ± 2.02E+01 U	-6.06E+00 ± 1.00E+01 U
Niobium-95	5.21E+00 ± 6.13E+00 U	5.01E+00 ± 1.54E+01 U	-9.17E+00 ± 1.96E+01 U	6.57E+00 ± 1.35E+01 U
Zinc-65	-6.16E+00 ± 1.28E+01 U	-9.63E-01 ± 3.85E+01 U	-1.61E+01 ± 3.60E+01 U	-1.14E+01 ± 2.54E+01 U

Table 24: Tissue-Plant Gamma Isotopic Data – M-43c Imholte Farm (pCi/kg)

Nuclide	June	July	August	September
Cesium-134	-1.24E+00 ± 6.75E+00 U	-3.30E+00 ± 7.38E+00 U	-1.73E+01 ± 2.52E+01 U	1.00E+01 ± 1.42E+01 U
Cesium-137	2.25E-01 ± 6.51E+00 U	-5.91E+00 ± 7.80E+00 U	1.85E+01 ± 1.98E+01 U	-6.01E+00 ± 1.25E+01 U
Cobalt-58	-1.12E+00 ± 6.02E+00 U	-3.41E+00 ± 7.99E+00 U	-1.09E+01 ± 2.35E+01 U	1.47E+00 ± 1.29E+01 U
Cobalt-60	8.75E-01 ± 6.57E+00 U	5.88E+00 ± 7.85E+00 U	-9.20E+00 ± 2.36E+01 U	3.97E+00 ± 1.57E+01 U
Iodine-131	1.51E+00 ± 1.10E+01 U	3.23E+01 ± 1.05E+02 U	7.91E+00 ± 2.85E+01 U	3.64E+00 ± 1.90E+01 U
Iron-59	1.99E+00 ± 1.11E+01 U	1.70E+01 ± 1.91E+01 U	-1.62E+01 ± 3.99E+01 U	1.26E+00 ± 2.52E+01 U
Manganese-54	5.54E+00 ± 6.04E+00 U	1.61E-01 ± 5.95E+00 U	-3.71E-01 ± 2.27E+01 U	-4.93E+00 ± 1.24E+01 U
Niobium-95	4.88E+00 ± 6.35E+00 U	2.48E+00 ± 7.66E+00 U	-1.60E+01 ± 2.62E+01 U	-1.06E+00 ± 1.15E+01 U
Zinc-65	-4.31E-01 ± 1.32E+01 U	7.39E+00 ± 1.72E+01 U	-1.36E+01 ± 5.07E+01 U	-1.78E+01 ± 2.67E+01 U

Table 25: Water Tritium Data (pCi/kg)				
Location	**Q1**	**Q2**	**Q3**	**Q4**
M-11 City of Monticello	37.7 ± 98.7 **U**	86.6 ± 174.0 **U**	-43.5 ± 190.0 **U**	-0.6 ± 108.0 **U**
M-12 Plant Well #11	-16.3 ± 90.2 **U**	-23.1 ± 206.0 **U**	3.7 ± 110.0 **U**	-23.3 ± 190.0 **U**
M-14 City of Minneapolis	51.1 ± 141.0 **U**	-36.5 ± 205.0 **U**	8.4 ± 170.0 **U**	-96.8 ± 76.1 **U**
M-43c Imholte Farm	58.7 ± 102.0 **U**	47.9 ± 215.0 **U**	-117.0 ± 185.0 **U**	-71.2 ± 85.2 **U**
M-55 Hasbrouck Residence	-47.5 ± 82.6 **U**	-97.1 ± 203.0 **U**	-7.0 ± 194.0 **U**	-28.2 ± 99.9 **U**
M-8c Upstream of Plant	33.4 ± 184.0 **U**	68.1 ± 188.0 **U**	74.8 ± 198.0 **U**	80.7 ± 116.0 **U**
M-9 Downstream of Plant	-88.7 ± 174.0 **U**	-18.4 ± 180.0 **U**	126.0 ± 203.0 **U**	37.5 ± 104.0 **U**

Table 26: Drinking Water Gross Beta Data (pCi/kg)

M-14 City of Minneapolis	Gross Beta
Jan	2.60E+00 ± 1.97E+00 **U**
Feb	4.11E-01 ± 2.05E+00 **U**
Mar	2.81E+00 ± 2.05E+00 **U**
Apr	3.09E+00 ± 1.85E+00 **M**
May	4.10E+00 ± 2.20E+00
Jun	6.70E-01 ± 1.94E+00 **U**
Jul	2.76E+00 ± 2.10E+00 **U**
Aug	4.06E+00 ± 2.31E+00
Sep	2.29E+00 ± 2.16E+00 **U**
Oct	2.61E+00 ± 2.27E+00 **U**
Nov	1.19E+00 ± 1.88E+00 **U**
Dec	2.76E+00 ± 2.08E+00 **U**

Table 27: Groundwater Gamma Isotopic Data – M-11 City of Monticello (pCi/m3)				
Nuclide	**Q1**	**Q2**	**Q3**	**Q4**
Barium-140	-3.57E-01 ± 1.10E+01 U	1.90E+00 ± 2.25E+01 U	4.56E+00 ± 7.02E+00 U	-9.12E+00 ± 1.42E+01 U
Cerium-144	-9.66E-01 ± 1.50E+01 U	1.27E+01 ± 1.78E+01 U	-3.88E+00 ± 5.81E+00 U	1.50E+00 ± 1.06E+01 U
Cesium-134	4.87E-01 ± 1.79E+00 U	2.67E+00 ± 2.73E+00 U	-8.72E-01 ± 8.86E-01 U	4.16E-01 ± 2.35E+00 U
Cesium-137	2.07E-01 ± 1.57E+00 U	-1.71E+00 ± 3.10E+00 U	1.30E-01 ± 7.36E-01 U	-5.95E-01 ± 1.66E+00 U
Cobalt-58	-6.58E-01 ± 2.68E+00 U	-2.10E+00 ± 3.23E+00 U	-1.78E-01 ± 8.55E-01 U	1.66E-01 ± 2.17E+00 U
Cobalt-60	1.20E+00 ± 1.89E+00 U	-4.11E+00 ± 3.55E+00 U	-4.12E-01 ± 7.06E-01 U	1.44E+00 ± 1.61E+00 U
Iron-59	3.06E+00 ± 3.28E+00 U	-7.84E-01 ± 5.29E+00 U	-5.50E-01 ± 2.18E+00 U	-5.20E-01 ± 3.03E+00 U
Lanthanum-140	-3.11E+00 ± 3.73E+00 U	-3.00E+00 ± 9.02E+00 U	6.47E-01 ± 2.55E+00 U	3.03E+00 ± 4.85E+00 U
Manganese-54	-1.86E+00 ± 2.59E+00 U	-2.18E+00 ± 2.60E+00 U	5.42E-01 ± 8.10E-01 U	-9.95E-01 ± 1.67E+00 U
Niobium-95	3.88E-02 ± 2.49E+00 U	-3.65E-01 ± 2.89E+00 U	-1.26E+00 ± 1.78E+00 U	9.66E-01 ± 1.71E+00 U
Zinc-65	3.02E+00 ± 3.79E+00 U	-9.66E-01 ± 5.05E+00 U	3.43E-02 ± 1.67E+00 U	-1.44E-01 ± 3.44E+00 U
Zirconium-95	9.29E-01 ± 4.20E+00 U	-1.25E+00 ± 5.14E+00 U	8.29E-01 ± 1.75E+00 U	5.17E-01 ± 3.66E+00 U

Table 28: Groundwater Gamma Isotopic Data – M-12 Plant Well #11 (pCi/m3)				
Nuclide	**Q1**	**Q2**	**Q3**	**Q4**
Barium-140	6.48E+00 ± 1.47E+01 U	-2.84E+01 ± 2.09E+01 U	5.50E-01 ± 6.34E+00 U	2.23E+01 ± 1.67E+01 U
Cerium-144	3.12E+00 ± 1.86E+01 U	2.74E+00 ± 1.66E+01 U	8.82 E-01 ± 4.70E+00 U	2.39E+00 ± 1.67E+01 U
Cesium-134	1.24E+00 ± 1.93E+00 U	1.01E+00 ± 2.79E+00 U	2.48E-01 ± 8.77E-01 U	-1.63E+00 ± 2.05E+00 U
Cesium-137	-6.99E-02 ± 2.72E+00 U	4.29E-01 ± 2.87E+00 U	-3.88E-01 ± 6.88E-01 U	1.44E+00 ± 2.19E+00 U
Cobalt-58	-9.28E-01 ± 2.57E+00 U	-2.08E+00 ± 3.44E+00 U	-1.43E-01 ± 7.96E-01 U	2.86E-01 ± 2.02E+00 U
Cobalt-60	8.28E-01 ± 2.21E+00 U	-8.91E-01 ± 2.26E+00 U	5.77E-01 ± 8.12E-01 U	3.98E-01 ± 2.09E+00 U
Iron-59	2.47E+00 ± 4.67E+00 U	-2.56E+00 ± 6.27E+00 U	1.25E+00 ± 2.09E+00 U	8.74E-02 ± 4.90E+00 U
Lanthanum-140	-1.87E+00 ± 5.23E+00 U	5.61E+00 ± 7.28E+00 U	-1.68E+00 ± 2.62E+00 U	6.78E-01 ± 4.50E+00 U
Manganese-54	1.86E-01 ± 2.39E+00 U	-1.85E+00 ± 2.60E+00 U	-1.36E-01 ± 8.09E-01 U	4.98E-01 ± 2.25E+00 U
Niobium-95	3.95E-01 ± 3.39E+00 U	-9.45E-01 ± 3.15E+00 U	4.30E-01 ± 8.88E-01 U	1.23E+00 ± 2.42E+00 U
Zinc-65	-8.50E-02 ± 5.94E+00 U	-2.00E+00 ± 4.02E+00 U	9.56E-01 ± 1.64E+00 U	2.18E+00 ± 5.03E+00 U
Zirconium-95	-9.28E-02 ± 4.47E+00 U	-2.68E-02 ± 6.18E+00 U	5.84E-01 ± 1.32E+00 U	-3.64E-01 ± 3.97E+00 U

Table 29: Groundwater Gamma Isotopic Data – M-43c Imholte Farm (pCi/m3)

Nuclide	Q1	Q2	Q3	Q4
Barium-140	-1.26E+01 ± 1.69E+01 **U**	8.27E-02 ± 1.83E+01 **U**	-8.17E-01 ± 5.50E+00 **U**	4.36E+00 ± 1.34E+01 **U**
Cerium-144	-6.37E+00 ± 1.70E+01 **U**	-2.72E+00 ± 1.53E+01 **U**	4.31E+01 ± 4.02E+00 **U**	-5.90E+00 ± 1.23E+01 **U**
Cesium-134	-1.74E+00 ± 2.30E+00 **U**	-1.68E+00 ± 2.77E+00 **U**	4.17E-01 ± 6.32E-01 **U**	5.69E-01 ± 1.72E+00 **U**
Cesium-137	-1.11E+00 ± 2.87E+00 **U**	7.22E-01 ± 2.73E+00 **U**	-4.24E-01 ± 6.92E-01 **U**	1.17E+00 ± 1.97E+00 **U**
Cobalt-58	6.49E-02 ± 2.73E+00 **U**	1.16E+00 ± 2.22E+00 **U**	3.31E-01 ± 6.92E-01 **U**	-1.23E+00 ± 2.37E+00 **U**
Cobalt-60	-9.69E-01 ± 2.86E+00 **U**	9.59E-01 ± 2.22E+00 **U**	-8.31E-02 ± 6.36E-01 **U**	-1.39E+00 ± 2.42E+00 **U**
Iron-59	-5.95E+00 ± 7.48E+00 **U**	-1.65E+00 ± 7.14E+00 **U**	-1.39E+00 ± 1.36E+00 **U**	1.30E+00 ± 4.41E+00 **U**
Lanthanum-140	-7.74E-01 ± 5.77E+00 **U**	-5.83E+00 ± 8.79E+00 **U**	2.92E-01 ± 1.84E+00 **U**	6.04E-01 ± 4.82E+00 **U**
Manganese-54	8.56E-01 ± 2.26E+00 **U**	-2.29E-01 ± 2.14E+00 **U**	-3.00E-01 ± 5.04E-01 **U**	-1.49E-01 ± 2.97E+00 **U**
Niobium-95	-2.97E+00 ± 2.90E+00 **U**	1.10E+00 ± 2.53E+00 **U**	-1.35E+00 ± 1.33E+00 **U**	-4.49E-01 ± 2.30E+00 **U**
Zinc-65	8.63E-01 ± 5.38E+00 **U**	2.82E+00 ± 4.14E+00 **U**	-4.41E-01 ± 1.25E+00 **U**	-4.03E-01 ± 3.79E+00 **U**
Zirconium-95	4.37E+00 ± 4.92E+00 **U**	-1.19E+00 ± 4.07E+00 **U**	-5.03E-01 ± 1.08E+00 **U**	4.66E+00 ± 3.67E+00 **U**

Table 30: Groundwater Gamma Isotopic Data – M-55 Hasbrouck Residence (pCi/m3)

Nuclide	Q1	Q2	Q3	Q4
Barium-140	4.77E+00 ± 1.31E+01 U	-1.42E+01 ± 1.80E+01 U	2.73E+00 ± 1.08E+01 U	3.60E+00 ± 1.10E+01 U
Cerium-144	-1.16E+00 ± 1.38E+01 U	1.36E+01 ± 1.51E+01 U	-2.42E+00 ± 5.40E+00 U	2.08E+00 ± 1.06E+01 U
Cesium-134	1.53E+00 ± 2.04E+00 U	2.11E-01 ± 2.07E+00 U	7.25E-01 ± 1.50E+00 U	5.14E-01 ± 1.45E+00 U
Cesium-137	-1.26E+00 ± 1.71E+00 U	1.98E+00 ± 2.29E+00 U	-1.26E-01 ± 5.55E-01 U	9.10E-01 ± 1.72E+00 U
Cobalt-58	-7.63E-01 ± 2.26E+00 U	-1.39E+00 ± 2.60E+00 U	-6.90E-01 ± 7.53E-01 U	-7.44E-02 ± 2.16E+00 U
Cobalt-60	1.11E+00 ± 1.90E+00 U	-5.12E-01 ± 1.75E+00 U	-3.23E-01 ± 5.89E-01 U	1.78E+00 ± 2.43E+00 U
Iron-59	-1.46E-01 ± 4.03E+00 U	-5.32E+00 ± 4.21E+00 U	-1.39E-01 ± 1.58E+00 U	6.29E-01 ± 3.86E+00 U
Lanthanum-140	2.51E+00 ± 3.92E+00 U	-1.43E+00 ± 5.24E+00 U	-3.19E+00 ± 3.64E+00 U	7.40E-01 ± 4.10E+00 U
Manganese-54	9.58E-01 ± 1.86E+00 U	2.70E+00 ± 1.62E+00 U	-5.25E-02 ± 5.67E-01 U	1.15E+00 ± 1.80E+00 U
Niobium-95	8.95E-01 ± 2.26E+00 U	-6.35E-01 ± 2.75E+00 U	1.50E-01 ± 7.98E-01 U	1.20E-01 ± 1.76E+00 U
Zinc-65	-7.59E-01 ± 3.61E+00 U	-3.12E-01 ± 3.93E+00 U	6.87E-02 ± 1.25E+00 U	-5.75E-01 ± 2.47E+00 U
Zirconium-95	-3.00E-01 ± 3.57E+00 U	-2.56E+00 ± 4.76E+00 U	9.95E-02 ± 1.40E+00 U	6.65E-01 ± 3.68E+00 U

Table 31: Drinking Water Gamma Isotopic Data – M-14 City of Minneapolis

Nuclide	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Barium-140	-3.32E+00 ± 1.21E+01 **U**	-1.73E-02 ± 1.40E+01 **U**	-3.68E+00 ± 1.41E+01 **U**	3.80E+00 ± 1.83E+01 **U**	-8.99E-01 ± 1.61E+01 **U**	1.23E+00 ± 1.68E+01 **U**	4.60E+00 ± 2.40E+01 **U**	-1.89E+00 ± 6.29E+00 **U**	-3.76E+00 ± 1.08E+01 **U**	-3.31E+00 ± 1.99E+01 **U**	8.78E+00 ± 7.59E+00 **U**	3.81E-01 ± 7.92E+00 **U**
Cerium-144	4.61E-01 ± 1.38E+01 **U**	-7.41E+00 ± 1.38E+01 **U**	2.78E+00 ± 1.34E+01 **U**	-1.29E+01 ± 1.40E+01 **U**	2.89E+00 ± 1.63E+01 **U**	6.07E+00 ± 1.93E+01 **U**	-1.26E+01 ± 1.42E+01 **U**	3.63E+00 ± 3.59E+00 **U**	3.83E+00 ± 1.36E+01 **U**	2.99E-01 ± 1.71E+01 **U**	2.52E+00 ± 7.68E+00 **U**	-2.79E+00 ± 8.46E+00 **U**
Cesium-134	-9.23E-01 ± 2.07E+00 **U**	-1.05E+00 ± 2.09E+00 **U**	-5.28E-01 ± 1.97E+00 **U**	3.36E-01 ± 1.92E+00 **U**	1.19E+00 ± 2.52E+00 **U**	2.15E+00 ± 2.59E+00 **U**	-2.46E+00 ± 2.68E+00 **U**	-4.33E-02 ± 5.58E-01 **U**	-3.24E-01 ± 2.01E+00 **U**	1.27E+00 ± 2.60E+00 **U**	9.77E-01 ± 1.31E+00 **U**	-4.90E-02 ± 2.13E+00 **U**
Cesium-137	-9.64E-01 ± 2.41E+00 **U**	-1.98E+00 ± 1.67E+00 **U**	1.37E+00 ± 1.90E+00 **U**	8.27E-01 ± 1.80E+00 **U**	-7.81E-02 ± 2.37E+00 **U**	1.08E+00 ± 2.60E+00 **U**	9.82E-01 ± 2.17E+00 **U**	1.23E-01 ± 6.22E-01 **U**	9.04E-01 ± 2.21E+00 **U**	2.09E+00 ± 2.62E+00 **U**	3.05E-01 ± 1.08E+00 **U**	-1.48E+00 ± 1.32E+00 **U**
Cobalt-58	1.55E+00 ± 2.08E+00 **U**	1.69E+00 ± 1.89E+00 **U**	1.61E+00 ± 2.08E+00 **U**	-1.21E+00 ± 2.33E+00 **U**	-1.59E+00 ± 2.60E+00 **U**	-1.75E+00 ± 2.18E+00 **U**	5.02E-01 ± 1.80E+00 **U**	-1.12E-01 ± 4.89E-01 **U**	-2.30E-01 ± 2.18E+00 **U**	9.12E-01 ± 2.44E+00 **U**	-2.48E-01 ± 1.14E+00 **U**	-1.38E+00 ± 1.53E+00 **U**
Cobalt-60	1.01E+00 ± 1.57E+00 **U**	2.23E+00 ± 2.76E+00 **U**	2.40E-01 ± 2.36E+00 **U**	1.04E+00 ± 2.34E+00 **U**	2.80E+00 ± 2.50E+00 **U**	-9.05E-01 ± 2.09E+00 **U**	-4.95E-01 ± 1.66E+00 **U**	1.18E-01 ± 4.39E-01 **U**	-2.11E+00 ± 2.76E+00 **U**	1.19E+00 ± 1.69E+00 **U**	2.91E+00 ± 1.63E+00 **UI**	-1.46E+00 ± 1.41E+00 **U**
Iron-59	-1.11E+00 ± 3.69E+00 **U**	5.89E-01 ± 4.15E+00 **U**	6.29E+00 ± 5.21E+00 **U**	2.41E+00 ± 5.01E+00 **U**	-2.66E+00 ± 6.07E+00 **U**	9.20E-04 ± 5.41E+00 **U**	-1.39E+00 ± 3.55E+00 **U**	-7.41E-01 ± 1.17E+00 **U**	2.70E+00 ± 4.16E+00 **U**	-2.11E+00 ± 5.48E+00 **U**	-1.83E+00 ± 2.45E+00 **U**	-7.11E-01 ± 2.92E+00 **U**
Lanthanum-140	-2.11E+00 ± 4.65E+00 **U**	-2.02E+00 ± 2.96E+00 **U**	1.63E+00 ± 4.07E+00 **U**	2.32E+00 ± 5.96E+00 **U**	-4.38E+00 ± 4.37E+00 **U**	-4.59E+00 ± 5.66E+00 **U**	1.72E+00 ± 8.12E+00 **U**	1.01E-01 ± 1.03E+00 **U**	7.45E-01 ± 4.05E+00 **U**	1.40E+00 ± 6.06E+00 **U**	5.52E-01 ± 3.00E+00 **U**	-4.48E-01 ± 2.05E+00 **U**
Manganese-54	-6.58E-01 ± 1.93E+00 **U**	-1.50E-01 ± 2.07E+00 **U**	2.71E+00 ± 1.99E+00 **U**	-9.22E-01 ± 2.23E+00 **U**	1.71E+00 ± 2.46E+00 **U**	-9.61E-01 ± 2.54E+00 **U**	-4.18E-01 ± 1.91E+00 **U**	2.29E-01 ± 5.11E-01 **U**	1.53E+00 ± 1.90E+00 **U**	5.69E-01 ± 2.27E+00 **U**	3.40E-01 ± 1.11E+00 **U**	3.79E-02 ± 1.28E+00 **U**
Niobium-95	5.95E-01 ± 2.07E+00 **U**	5.93E-01 ± 2.10E+00 **U**	1.17E+00 ± 2.15E+00 **U**	-3.78E-01 ± 2.37E+00 **U**	2.54E+00 ± 3.44E+00 **U**	-1.72E+00 ± 2.96E+00 **U**	-2.33E-01 ± 2.40E+00 **U**	3.65E-01 ± 1.21E+00 **U**	2.56E-01 ± 2.17E+00 **U**	1.22E+00 ± 1.79E+00 **U**	2.45E-01 ± 1.07E+00 **U**	-4.10E-02 ± 1.33E+00 **U**

Table 31: Drinking Water Gamma Isotopic Data – M-14 City of Minneapolis

Nuclide	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Zinc-65	-2.39E+00 ± 4.02E+00 **U**	-1.85E+00 ± 3.56E+00 **U**	-1.97E+00 ± 4.06E+00 **U**	-1.48E+00 ± 4.59E+00 **U**	1.71E+00 ± 6.22E+00 **U**	-2.79E-01 ± 5.65E+00 **U**	1.19E+00 ± 3.63E+00 **U**	5.14E-01 ± 1.03E+00 **U**	-3.20E+00 ± 4.67E+00 **U**	6.98E-01 ± 4.55E+00 **U**	-3.48E-01 ± 2.26E+00 **U**	-1.29E+00 ± 3.17E+00 **U**
Zirconium-95	9.76E-02 ± 3.86E+00 **U**	1.29E+00 ± 3.31E+00 **U**	2.21E-01 ± 3.27E+00 **U**	1.64E+00 ± 4.03E+00 **U**	-7.44E-01 ± 4.54E+00 **U**	6.41E-01 ± 5.79E+00 **U**	-2.17E-01 ± 3.99E+00 **U**	-2.63E-01 ± 9.04E-01 **U**	2.44E+00 ± 4.73E+00 **U**	4.68E+00 ± 4.32E+00 **U**	-1.22E+00 ± 2.30E+00 **U**	4.27E-01 ± 2.64E+00 **U**

Table 32: Surface Water Gamma Isotopic Data – M-8c Upstream of Plant

Nuclide	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec[23]
Barium-140	-3.90E+00 ± 1.30E+01 U	-3.79E+00 ± 1.80E+01 U	3.04E+00 ± 9.90E+00 U	-2.66E+00 ± 1.59E+01 U	6.16E+00 ± 3.15E+01 U	1.78E+00 ± 1.49E+01 U	1.05E+01 ± 1.72E+01 U	2.84E+01 ± 3.29E+01 U	1.56E+01 ± 1.90E+01 U	4.21E+00 ± 1.09E+01 U	1.58E+01 ± 1.98E+01 U	-
Cerium-144	-2.23E+00 ± 9.82E+00 U	-7.38E-02 ± 1.57E+01 U	9.26E-03 ± 6.66E+00 U	1.74E+00 ± 1.77E+01 U	-1.10E+00 ± 6.54E+00 U	-2.86E+00 ± 1.22E+01 U	7.87E+00 ± 9.89E+00 U	-6.76E+00 ± 8.12E+00 U	3.47E+00 ± 1.31E+01 U	3.53E+00 ± 6.65E+00 U	-2.54E+00 ± 1.15E+01 U	-
Cesium-134	-1.13E+00 ± 2.00E+00 U	-3.83E+00 ± 2.84E+00 U	2.57E-02 ± 9.34E-01 U	1.90E-01 ± 2.18E+00 U	2.19E-01 ± 9.28E-01 U	3.10E-01 ± 1.75E+00 U	6.69E-01 ± 1.70E+00 U	1.30E+00 ± 1.13E+00 U	7.32E-01 ± 2.69E+00 U	3.60E-01 ± 9.50E-01 U	2.48E+00 ± 2.50E+00 U	-
Cesium-137	8.43E-01 ± 1.65E+00 U	-2.21E-01 ± 2.71E+00 U	4.78E-01 ± 9.93E-01 U	6.34E-01 ± 2.60E+00 U	4.81E-01 ± 9.15E-01 U	2.49E-01 ± 1.79E+00 U	8.12E-01 ± 1.46E+00 U	-1.92E-01 ± 1.12E+00 U	-7.27E-01 ± 2.14E+00 U	4.14E-01 ± 1.06E+00 U	-1.61E-01 ± 2.04E+00 U	-
Cobalt-58	5.02E-01 ± 2.47E+00 U	-7.59E-01 ± 2.59E+00 U	4.90E-02 ± 1.17E+00 U	-1.35E+00 ± 3.28E+00 U	4.86E-01 ± 1.13E+00 U	-1.64E+00 ± 1.89E+00 U	1.68E-01 ± 1.75E+00 U	-5.35E-02 ± 1.39E+00 U	-1.54E+00 ± 2.39E+00 U	-1.55E-01 ± 9.98E-01 U	1.68E-01 ± 2.03E+00 U	-
Cobalt-60	4.37E-01 ± 1.63E+00 U	8.31E-02 ± 3.20E+00 U	-3.62E-01 ± 9.17E-01 U	1.79E+00 ± 2.86E+00 U	1.35E-01 ± 9.23E-01 U	-8.23E-01 ± 2.22E+00 U	3.05E-01 ± 1.65E+00 U	-7.93E-03 ± 1.11E+00 U	2.11E-01 ± 1.90E+00 U	-3.81E-01 ± 1.20E+00 U	4.18E-01 ± 1.40E+00 U	-
Iron-59	-2.86E+00 ± 4.62E+00 U	-7.02E+00 ± 6.56E+00 U	-1.42E+00 ± 2.45E+00 U	-2.38E+00 ± 5.72E+00 U	3.86E-01 ± 3.00E+00 U	2.64E+00 ± 4.21E+00 U	-1.85E-02 ± 4.51E+00 U	-1.11E+00 ± 3.67E+00 U	-3.25E+00 ± 5.31E+00 U	-1.51E+00 ± 2.50E+00 U	2.72E+00 ± 7.42E+00 U	-
Lanthanum-140	-2.09E+00 ± 4.36E+00 U	-6.92E-01 ± 7.40E+00 U	-2.17E+00 ± 3.81E+00 U	-5.60E+00 ± 5.65E+00 U	1.81E+01 ± 1.60E+01	-9.67E-02 ± 5.07E+00 U	1.88E+00 ± 7.53E+00 U	-1.49E+01 ± 1.44E+01 U	0.00E+00 ± 7.33E+00 U	-2.21E-01 ± 3.84E+00 U	2.65E+00 ± 7.09E+00 U	-
Manganese-54	6.20E-01 ± 1.69E+00 U	4.76E-01 ± 2.20E+00 U	-3.26E-01 ± 9.23E-01 U	-2.07E+00 ± 2.82E+00 U	1.37E-01 ± 8.95E-01 U	5.42E-01 ± 1.71E+00 U	-1.22E+00 ± 1.68E+00 U	-1.06E-01 ± 1.11E+00 U	5.17E-01 ± 1.86E+00 U	4.50E-01 ± 9.06E-01 U	-1.40E+00 ± 1.71E+00 U	-
Niobium-95	-2.18E+00 ±	1.16E-01 ±	3.61E-01 ±	-9.87E-01 ±	-4.67E-01 ±	-3.99E-01 ±	-2.36E-01 ±	1.56E+00 ±	-1.15E+00 ±	8.94E-01 ±	-1.22E+00 ±	-

[23] Unsafe condition for sampling due to frozen river surface.

Table 32: Surface Water Gamma Isotopic Data – M-8c Upstream of Plant

Nuclide	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec[23]
	2.41E+00 U	2.77E+00 U	1.04E+00 U	2.47E+00 U	1.22E+00 U	2.53E+00 U	1.96E+00 U	1.58E+00 U	2.22E+00 U	9.22E-01 U	2.13E+00 U	
Zinc-65	2.67E+00 ± 3.69E+00 U	-2.04E+00 ± 6.09E+00 U	-3.74E-01 ± 1.94E+00 U	1.17E+00 ± 4.30E+00 U	-7.09E-01 ± 1.99E+00 U	-3.67E+00 ± 3.65E+00 U	9.89E-02 ± 3.10E+00 U	1.25E-01 ± 2.44E+00 U	-6.70E-01 ± 4.50E+00 U	4.39E-01 ± 2.15E+00 U	5.23E-01 ± 3.37E+00 U	-
Zirconium-95	2.08E+00 ± 3.65E+00 U	8.70E-01 ± 4.44E+00 U	-1.18E+00 ± 2.08E+00 U	2.80E+00 ± 4.51E+00 U	7.11E-04 ± 2.18E+00 U	-1.60E+00 ± 3.52E+00 U	4.24E-01 ± 3.66E+00 U	-4.97E-02 ± 2.70E+00 U	-3.16E+00 ± 4.35E+00 U	6.66E-01 ± 1.91E+00 U	-1.38E-01 ± 3.53E+00 U	-

Table 33: Surface Water Gamma Isotopic Data – M-9 Downstream of Plant												
Nuclide	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Barium-140	-3.55E+00 ± 1.64E+01 **U**	6.78E+00 ± 1.03E+01 **U**	2.67E+00 ± 9.27E+00 **U**	-9.20E+00 ± 1.55E+01 **U**	1.10E+01 ± 3.04E+01 **U**	-4.13E+00 ± 1.66E+01 **U**	-4.94E+00 ± 2.16E+01 **U**	5.05E+01 ± 4.32E+01 **U**	-2.83E+00 ± 2.09E+01 **U**	-2.80E+00 ± 8.94E+00 **U**	-6.27E+00 ± 2.63E+01 **U**	1.39E+00 ± 1.36E+01 **U**
Cerium-144	4.48E+00 ± 1.47E+01 **U**	4.05E+00 ± 1.18E+01 **U**	-2.66E+00 ± 5.72E+00 **U**	6.85E+00 ± 1.49E+01 **U**	3.40E+00 ± 6.01E+00 **U**	-9.23E+00 ± 1.42E+01 **U**	5.96E+00 ± 1.45E+01 **U**	3.90E+00 ± 6.64E+00 **U**	-8.35E+00 ± 2.07E+01 **U**	-3.31E+00 ± 5.45E+00 **U**	-1.04E+01 ± 1.42E+01 **U**	4.16E-01 ± 1.24E+01 **U**
Cesium-134	1.44E+00 ± 2.45E+00 **U**	-1.67E-01 ± 1.75E+00 **U**	-3.24E-01 ± 9.33E-01 **U**	-1.19E+00 ± 2.60E+00 **U**	-4.38E-02 ± 8.52E-01 **U**	4.19E-01 ± 2.54E+00 **U**	-1.71E+00 ± 2.17E+00 **U**	1.03E+00 ± 1.46E+00 **U**	1.47E+00 ± 1.59E+00 **U**	2.05E-01 ± 8.65E-01 **U**	5.11E-01 ± 2.39E+00 **U**	-2.77E-02 ± 1.95E+00 **U**
Cesium-137	1.52E+00 ± 2.73E+00 **U**	-6.17E-01 ± 2.03E+00 **U**	2.16E-01 ± 9.44E-01 **U**	4.29E-01 ± 2.27E+00 **U**	-1.02E+00 ± 1.43E+00 **U**	-7.68E-02 ± 2.77E+00 **U**	6.75E-01 ± 1.93E+00 **U**	5.75E-01 ± 8.90E-01 **U**	-1.01E+00 ± 2.57E+00 **U**	-1.16E-01 ± 8.27E-01 **U**	3.29E-01 ± 2.01E+00 **U**	6.35E-01 ± 1.80E+00 **U**
Cobalt-58	-6.14E-01 ± 2.59E+00 **U**	1.29E-01 ± 1.78E+00 **U**	-3.95E-02 ± 9.51E-01 **U**	1.62E+00 ± 2.72E+00 **U**	4.80E-01 ± 1.16E+00 **U**	-9.61E-01 ± 2.79E+00 **U**	2.47E+00 ± 2.32E+00 **U**	6.95E-01 ± 1.28E+00 **U**	-1.88E+00 ± 2.90E+00 **U**	4.35E-01 ± 9.84E-01 **U**	-8.95E-01 ± 2.16E+00 **U**	9.41E-01 ± 1.99E+00 **U**
Cobalt-60	-7.12E-01 ± 1.88E+00 **U**	1.78E-01 ± 1.80E+00 **U**	-1.87E+00 ± 1.41E+00 **U**	3.63E-01 ± 3.11E+00 **U**	-2.52E-01 ± 8.88E-01 **U**	-9.08E-01 ± 2.19E+00 **U**	-5.09E-01 ± 2.24E+00 **U**	3.58E-02 ± 8.91E-01 **U**	3.62E-01 ± 2.07E+00 **U**	2.35E-01 ± 8.54E-01 **U**	-9.46E-01 ± 3.14E+00 **U**	4.88E-01 ± 1.73E+00 **U**
Iron-59	2.68E+00 ± 5.66E+00 **U**	-7.26E+00 ± 4.75E+00 **U**	4.93E-01 ± 2.40E+00 **U**	-1.35E+00 ± 5.63E+00 **U**	9.02E-01 ± 2.59E+00 **U**	5.03E+00 ± 4.91E+00 **U**	-1.82E+00 ± 5.01E+00 **U**	-2.29E+00 ± 3.27E+00 **U**	1.73E+00 ± 5.14E+00 **U**	-3.23E-01 ± 2.02E+00 **U**	4.61E+00 ± 4.76E+00 **U**	5.76E-01 ± 3.24E+00 **U**
Lanthanum-140	-5.38E+00 ± 6.43E+00 **U**	1.35E+00 ± 3.19E+00 **U**	-2.07E+00 ± 4.10E+00 **U**	-3.84E+00 ± 5.98E+00 **U**	-1.55E+01 ± 1.01E+01 **U**	-2.38E+00 ± 4.82E+00 **U**	2.43E+00 ± 7.49E+00 **U**	3.04E-01 ± 9.68E+00 **U**	1.89E+00 ± 7.18E+00 **U**	-9.08E-01 ± 2.64E+00 **U**	-3.31E+00 ± 8.69E+00 **U**	3.38E+00 ± 4.03E+00 **U**
Manganese-54	8.91E-01 ± 2.42E+00 **U**	-2.09E-01 ± 1.84E+00 **U**	4.97E-01 ± 9.53E-01 **U**	-6.20E-01 ± 2.20E+00 **U**	5.61E-01 ± 8.54E-01 **U**	-2.68E-01 ± 1.95E+00 **U**	-2.15E-01 ± 2.19E+00 **U**	-1.23E-01 ± 1.52E+00 **U**	-3.97E-01 ± 1.93E+00 **U**	-7.58E-01 ± 1.35E+00 **U**	3.37E+00 ± 2.08E+00 **U**	3.02E-01 ± 2.05E+00 **U**
Niobium-95	-7.04E-01 ± 2.47E+00 **U**	2.74E-01 ± 1.93E+00 **U**	1.65E-01 ± 1.05E+00 **U**	-4.88E-01 ± 1.84E+00 **U**	3.82E-01 ± 2.37E+00 **U**	1.99E+00 ± 2.46E+00 **U**	7.59E-01 ± 3.60E+00 **U**	6.30E-01 ± 1.89E+00 **U**	1.80E+00 ± 2.56E+00 **U**	1.08E+00 ± 1.15E+00 **U**	3.31E-01 ± 2.67E+00 **U**	3.44E-01 ± 1.91E+00 **U**

Table 33: Surface Water Gamma Isotopic Data – M-9 Downstream of Plant

Nuclide	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Zinc-65	-3.49E+00 ± 4.82E+00 **U**	1.18E+00 ± 3.29E+00 **U**	-6.52E-01 ± 1.69E+00 **U**	2.53E+00 ± 4.36E+00 **U**	1.26E+00 ± 2.04E+00 **U**	-1.32E+00 ± 4.50E+00 **U**	-8.86E-01 ± 4.35E+00 **U**	4.57E-01 ± 1.94E+00 **U**	-3.78E-01 ± 6.23E+00 **U**	-1.62E+00 ± 1.89E+00 **U**	-8.87E-01 ± 5.35E+00 **U**	3.53E+00 ± 3.57E+00 **U**
Zirconium-95	-1.09E+00 ± 4.52E+00 **U**	1.47E+00 ± 3.20E+00 **U**	1.98E+00 ± 1.93E+00 **U**	-7.04E-01 ± 3.95E+00 **U**	-3.04E+00 ± 2.08E+00 **U**	1.08E+00 ± 3.64E+00 **U**	1.48E-01 ± 4.07E+00 **U**	5.09E+00 ± 3.45E+00 **UI**	-7.56E-01 ± 4.40E+00 **U**	8.74E-01 ± 1.62E+00 **U**	-1.13E+00 ± 4.57E+00 **U**	1.19E+00 ± 3.72E+00 **U**

Table 34: Direct Radiation Data – TLD: Gamma (mrem/91 day)					
Location		Q1	Q2	Q3	Q4
Control					
M01C	Kirchenbauer Farm	11.5 ± 0.6	12.7 ± 0.6	14.7 ± 0.9	14.6 ± 0.8
M02C	Cty Rd 4 & 15	11.5 ± 0.6	12.3 ± 0.5	13.6 ± 0.8	13.3 ± 0.8
M03C	Cty Rd 19 & Jason Ave	12.0 ± 0.7	13.5 ± 0.5	15.7 ± 0.7	14.7 ± 0.7
M04C	Maple Lake Water Tower	11.3 ± 0.5	13.0 ± 0.8	14.5 ± 0.9	14.1 ± 0.7
Inner					
M01A	Sherburne Ave. So.1	14.7 ± 0.7	16.3 ± 0.7	17.9 ± 0.7	17.1 ± 0.8
M02A	Sherburne Ave. So.	13.9 ± 0.6	14.6 ± 0.8	16.7 ± 0.6	15.9 ± 0.9
M03A	Sherburne Ave. So.	13.4 ± 0.6	14.8 ± 0.7	16.3 ± 0.9	15.9 ± 0.8
M04A	Biology Station Rd.	11.9 ± 0.9	13.3 ± 0.6	15.1 ± 0.9	14.3 ± 0.6
M05A	Biology Station Rd.	12.2 ± 0.6	13.5 ± 0.6	15.9 ± 0.8	14.7 ± 0.8
M06A	Biology Station Rd.	13.4 ± 0.7	15.0 ± 0.7	16.6 ± 0.6	15.5 ± 0.9
M07A	Parking Lot H	13.1 ± 1.6	13.1 ± 1.0	16.1 ± 0.8	15.7 ± 0.8
M08A	Parking Lot F	12.7 ± 0.6	14.8 ± 0.6	16.1 ± 0.7	15.5 ± 0.8
M09A	County Road 75	13.2 ± 0.6	14.3 ± 0.6	16.4 ± 0.8	15.2 ± 0.7
M10A	County Road 75	13.2 ± 1.2	13.9 ± 1.0	16.1 ± 0.7	15.0 ± 0.8
M11A	County Road 75 2	13.5 ± 0.6	14.9 ± 0.7	16.8 ± 0.7	16.0 ± 0.7
M12A	County Road 75	13.0 ± 0.6	14.4 ± 0.7	15.9 ± 0.7	15.2 ± 0.8
M13A	North Boundary Rd.	10.4 ± 0.6	12.2 ± 0.7	13.3 ± 0.7	13.1 ± 0.8
M14A	North Boundary Rd.	13.7 ± 0.6	15.7 ± 1.2	16.2 ± 0.8	16.6 ± 0.9
Outer					
M01B	117th Street	12.4 ± 0.6	13.8 ± 0.9	15.5 ± 0.7	15.2 ± 1.4
M02B	County Road 11	12.5 ± 0.7	14.2 ± 0.9	14.9 ± 0.7	14.7 ± 1.0
M03B	County Rd. 73 & 81	11.2 ± 0.5	12.3 ± 0.8	12.8 ± 0.8	13.2 ± 0.7
M04B	County Rd. 73 (196th Street)	12.4 ± 0.6	13.6 ± 0.6	14.2 ± 0.6	14.6 ± 0.8

Table 34: Direct Radiation Data – TLD: Gamma (mrem/91 day)

Location	Q1	Q2	Q3	Q4
M05B City of Big Lake	13.4 ± 0.9	13.9 ± 0.9	14.9 ± 1.0	15.6 ± 1.2
M06B County Rd 14 & 196th Street	12.4 ± 0.6	14.4 ± 0.7	15.3 ± 0.9	Missed Sample
M07B Monticello Industrial Dr.	12.5 ± 0.5	13.8 ± 0.6	15.4 ± 0.8	15.2 ± 0.8
M08B Residence Hwy 25 & Davidson Ave	11.8 ± 0.6	13.5 ± 0.9	14.7 ± 0.6	14.7 ± 0.6
M09B Weinand Farm	13.4 ± 0.7	15.1 ± 0.8	16.0 ± 0.7	16.4 ± 1.0
M10B Reisewitz Farm - Acacia Ave	12.1 ± 0.5	14.3 ± 0.6	15.4 ± 0.7	15.6 ± 0.7
M11B Vanlith Farm - 97th Ave	13.1 ± 0.6	15.4 ± 0.9	16.2 ± 1.1	16.0 ± 0.9
M12B Lake Maria St. Park	12.3 ± 0.6	14.6 ± 0.7	16.4 ± 0.6	15.4 ± 0.9
M01B 117th Street	13.1 ± 0.5	15.2 ± 1.0	16.0 ± 0.8	15.8 ± 0.7
M13B Bridgewater Sta.	13.2 ± 0.7	15.1 ± 0.8	16.6 ± 0.8	16.6 ± 1.0
M14B Anderson Res. - Cty Rd 111	11.6 ± 0.6	13.3 ± 0.6	15.0 ± 0.9	14.7 ± 0.8
M15B Barton Ave NW	12.2 ± 0.5	14.1 ± 1.0	20.9 ± 2.3	15.0 ± 0.7
M16B University Ave and Hancock St, Becker	12.4 ± 0.6	13.8 ± 0.9	15.5 ± 0.7	15.2 ± 1.4
Special Interest				
M01S 127th St. NE	12.9 ± 0.9	14.6 ± 0.9	15.4 ± 0.9	15.6 ± 0.9
M02S Krone Residence	12.6 ± 0.4	14.3 ± 0.8	16.7 ± 0.7	15.8 ± 1.1
M03S Big Oaks Park	13.2 ± 0.8	14.3 ± 0.8	16.6 ± 0.7	17.3 ± 0.9
M04S Pinewood School	11.1 ± 0.6	13.0 ± 1.4	14.0 ± 0.8	Missed Sample
M05S 20500 Co. Rd 11, Big Lake	11.2 ± 0.5	12.8 ± 0.8	14.0 ± 0.8	13.9 ± 0.6
M06S Monticello Public Works	12.6 ± 0.6	14.0 ± 0.8	15.8 ± 0.6	15.7 ± 0.8
I-11 OCA Fence South, on exit road	12.7 ± 0.5	14.6 ± 1.3	16.0 ± 0.7	15.5 ± 0.8
I-12 OCA Fence Middle, on exit road	12.8 ± 0.6	14.3 ± 0.6	16.0 ± 0.6	14.9 ± 1.1
I-13 OCA Fence North, on exit road	11.7 ± 0.6	14.5 ± 0.7	16.3 ± 0.8	16.1 ± 0.7

Table 35: Direct Radiation Data – ISFSI: Gamma (mrem/91 day)

Location	Q1	Q2	Q3	Q4
I-01 NE corner of ISFSI	38.6 ± 2.4	32.6 ± 1.4	44.8 ± 3.9	39.1 ± 2.4
I-02 North side of ISFSI, center	33.7 ± 1.8	28.5 ± 1.7	38.1 ± 4.1	33.9 ± 2.3
I-03 NW corner of ISFSI	28.6 ± 1.8	26.2 ± 2.2	31.5 ± 1.7	28.1 ± 1.6
I-04 West side of ISFSI, middle	69.9 ± 8.3	72.5 ± 7.8	66.1 ± 4.7	65.0 ± 4.6
I-05 West side of ISFSI, at center of array	51.0 ± 5.5	46.6 ± 3.6	50.5 ± 3.1	48.2 ± 3.5
I-06 SW corner of ISFSI	28.2 ± 2.7	28.0 ± 2.1	29.3 ± 3.1	27.5 ± 2.3
I-07 South side of ISFSI, center	30.7 ± 1.8	28.4 ± 1.3	30.6 ± 1.7	29.9 ± 1.4
I-08 SE corner of ISFSI	29.0 ± 2.0	29.4 ± 2.6	32.8 ± 2.6	30.1 ± 2.7
I-09 East side of ISFSI, at center of array	65.2 ± 5.5	67.8 ± 9.8	69.1 ± 5.2	71.1 ± 8.8
I-10 East side of ISFSI, middle	53.4 ± 3.8	52.4 ± 3.4	57.4 ± 3.6	57.6 ± 3.7

Attachment 3, Cross Check Intercomparison Program

Participation in cross check intercomparison studies is mandatory for laboratories performing analyses of REMP samples satisfying the requirements in the Offsite Site Dose Calculation Manual. Intercomparison studies provide a consistent and effective means to evaluate the accuracy and precision of analyses performed by a laboratory. Study results should fall within specified control limits and results that fall outside the control limits are investigated and corrected.

The analytical laboratory analyzing samples for MNGP, GEL Laboratories, LLC (GEL), participated in the following proficiency testing studies provided by Environmental Resource Associates (ERA), Eckert & Ziegler Analytics, Inc., and the Department of Energy Mixed Analyte Performance Evaluation Program (MAPEP) in 2025. The Laboratory's intercomparison program results for 2025 are summarized below.

- Eckert & Ziegler Analytics Environmental Cross-Check Program (including samples for 69 individual environmental analyses)
- MAPEP Monitoring Program (including Series 49, Series 50, and Series 51 samples)
- ERA Multimedia Radiochemistry Proficiency Test (MRAD PT) Program (including MRAD-40 and MRAD-41 samples)
- ERA PT Program (including RAD-136, RAD-137, RAD-138 and RAD-139 samples)

During 2025, forty-one (41) radioisotopes associated with six (6) matrix types (air filter, cartridge, water, milk, soil, and vegetation) were analyzed under GEL's Performance Evaluation program in participation with ERA, MAPEP, and Eckert & Ziegler Analytics, as noted above. Matrix types were representative of client analyses performed during 2024. Of the three hundred sixty-nine (369) total results, 97% (358 of 369) were found to be acceptable within the PT providers' three sigma or other statistical criteria. The results of these analyses are provided in GEL's 2025 Annual Quality Assurance Report for the Radiological Environmental Monitoring Program (REMP), included in Attachment 5. The Annual Quality Assurance Status Report provided by the TLD analysis laboratory, Environmental Dosimetry Company, is also provided in Attachment 5.

Attachment 4, Environmental Direct Radiation Dosimetry Results

Monitoring Location	Quarterly Baseline, B_Q (mrem)		Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem, or "ND" if $F_Q \leq MDD_Q$)				Annual Baseline, B_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or "ND" if $F_A \leq MDD_A$)
	Q1	Q2-Q4	1	2	3	4	1	2	3	4			
M01A	13.2	15.1	14.7	16.3	17.9	17.1	ND	ND	ND	ND	58.5	66.0	ND
M02A	14.2	16.1	13.9	14.6	16.7	15.9	ND	ND	ND	ND	62.6	61.0	ND
M03A	13.9	15.7	13.4	14.8	16.3	15.9	ND	ND	ND	ND	61.0	60.4	ND
M04A	13.1	15.6	11.9	13.3	15.1	14.3	ND	ND	ND	ND	59.8	54.5	ND
M05A	13.2	15.9	12.2	13.5	15.9	14.7	ND	ND	ND	ND	60.8	56.2	ND
M06A	14.1	16.1	13.4	15.0	16.6	15.5	ND	ND	ND	ND	62.4	60.6	ND
M07A	13.9	15.9	13.1	13.1	16.1	15.7	ND	ND	ND	ND	61.4	58.0	ND
M08A	13.9	15.8	12.7	14.8	16.1	15.5	ND	ND	ND	ND	61.5	59.1	ND
M09A	14.3	15.8	13.2	14.3	16.4	15.2	ND	ND	ND	ND	61.5	59.1	ND
M10A	14.3	16.4	13.2	13.9	16.1	15.0	ND	ND	ND	ND	63.4	58.2	ND
M11A	15.4	16.9	13.5	14.9	16.8	16.0	ND	ND	ND	ND	66.0	61.2	ND
M12A	15.5	17.1	13.0	14.4	15.9	15.2	ND	ND	ND	ND	66.5	58.5	ND
M13A	13.6	14.6	10.4	12.2	13.3	13.1	ND	ND	ND	ND	57.3	49.1	ND
M14A	14.3	16.3	13.7	15.7	16.2	16.6	ND	ND	ND	ND	63.4	62.2	ND
M01B	14.3	15.4	12.4	13.8	15.5	15.2	ND	ND	ND	ND	60.7	56.8	ND
M02B	14.6	15.4	12.5	14.2	14.9	14.7	ND	ND	ND	ND	60.8	56.3	ND
M03B	12.2	12.9	11.2	12.3	12.8	13.2	ND	ND	ND	ND	50.9	49.4	ND
M04B	12.9	14.4	12.4	13.6	14.2	14.6	ND	ND	ND	ND	56.1	54.9	ND
M05B	14.6	16.0	13.4	13.9	14.9	15.6	ND	ND	ND	ND	62.5	57.9	ND
M06B	12.8	15.4	12.4	14.4	15.3	*	ND	ND	ND	*	58.8	56.0	ND
M07B	15.3	16.1	12.5	13.8	15.4	15.2	ND	ND	ND	ND	63.5	56.9	ND
M08B	13.6	14.8	11.8	13.5	14.7	14.7	ND	ND	ND	ND	58.0	54.6	ND
M09B	14.2	16.7	13.4	15.1	16.0	16.4	ND	ND	ND	ND	64.3	60.8	ND
M10B	14.5	16.0	12.1	14.3	15.4	15.6	ND	ND	ND	ND	62.5	57.4	ND

Monitoring Location	Quarterly Baseline, B_Q (mrem)		Normalized Quarterly Monitoring Data, M_Q (mrem)				Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem, or "ND" if $F_Q \leq MDD_Q$)				Annual Baseline, B_A (mrem)	Annual Monitoring Data, M_A (mrem)	Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or "ND" if $F_A \leq MDD_A$)
	Q1	Q2-Q4	1	2	3	4	1	2	3	4			
M11B	13.9	16.0	13.1	15.4	16.2	16.0	ND	ND	ND	ND	61.8	60.7	ND
M12B	13.5	15.6	12.3	14.6	16.4	15.4	ND	ND	ND	ND	60.3	58.8	ND
M13B	13.5	14.4	13.1	15.2	16.0	15.8	ND	ND	ND	ND	56.6	60.1	ND
M14B	13.4	15.5	13.2	15.1	16.6	16.6	ND	ND	ND	ND	59.9	61.5	ND
M15B	13.5	15.0	11.6	13.3	15.0	14.7	ND	ND	ND	ND	58.4	54.6	ND
M16B	13.0	13.5	12.2	14.1	20.9	15.0	ND	ND	7.5	ND	53.4	62.3	ND
M01S	12.1	13.3	11.1	13.0	14.0	*	ND	ND	ND	*	51.7	50.9	ND
M02S	11.5	12.7	11.2	12.8	14.0	13.9	ND	ND	ND	ND	49.7	52.0	ND
M03S	13.6	15.3	12.6	14.0	15.8	15.7	ND	ND	ND	ND	59.4	58.1	ND
M04S	14.3	15.8	12.7	14.6	16.0	15.5	ND	ND	ND	ND	61.7	58.9	ND
M05S	14.1	15.3	12.8	14.3	16.0	14.9	ND	ND	ND	ND	60.1	58.0	ND
M06S	15.9	16.9	11.7	14.5	16.3	16.1	ND	ND	ND	ND	66.6	58.5	ND
M01C	14.0	14.8	11.5	12.7	14.7	14.6	ND	ND	ND	ND	58.4	53.5	ND
M02C	14.0	15.6	11.5	12.3	13.6	13.3	ND	ND	ND	ND	60.9	50.7	ND
M03C	15.3	16.3	12.0	13.5	15.7	14.7	ND	ND	ND	ND	64.3	55.9	ND
M04C	14.1	14.8	11.3	13.0	14.5	14.1	ND	ND	ND	ND	58.7	52.9	ND

MDD_Q = Quarterly Minimum Differential Dose = 4.7 mrem
MDD_A = Annual Minimum Differential Dose = 11.2 mrem
ND = Not Detected, where $M_Q \leq (B_Q+MDD_Q)$ or $M_A \leq (B_A+MDD_A)$
* = TLD was missing in the field.

Attachment 5, Laboratory Quality Assurance Reports (Enclosed)

ENVIRONMENTAL DOSIMETRY COMPANY

ANNUAL QUALITY ASSURANCE STATUS REPORT

January - December 2025

Prepared By: Jim Sears Date: 2/24/26

Approved By: [signature] Date: 2/25/26

Environmental Dosimetry Company
10 Ashton Lane
Sterling, MA 01564

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EXECUTIVE SUMMARY

Routine quality control (QC) testing was performed for dosimeters issued by the Environmental Dosimetry Company (EDC) .

During this annual period100% (72/72) of the individual dosimeters, evaluated against the EDC internal performance acceptance criteria (high-energy photons only), met the criterion for accuracy and 100% (72/72) met the criterion for precision (Table 1). In addition, 100% (12/12) of the dosimeter sets evaluated against the internal tolerance limits met EDC acceptance criteria (Table 2) and 100% of independent testing passed the performance criteria (Table 3). Trending graphs, which evaluate performance statistic for high-energy photon irradiations and co-located stations are given in Appendix A.

One internal assessment was performed in 2025.There were no findings.

I. INTRODUCTION

The TLD systems at the Environmental Dosimetry Company (EDC) are calibrated and operated to ensure consistent and accurate evaluation of TLDs. The quality of the dosimetric results reported to EDC clients is ensured by in-house performance testing and independent performance testing by EDC clients, and both internal and client directed program assessments.

The purpose of the dosimetry quality assurance program is to provide performance documentation of the routine processing of EDC dosimeters. Performance testing provides a statistical measure of the bias and precision of dosimetry processing against a reliable standard, which in turn points out any trends or performance changes. Two programs are used:

A. QC Program

Dosimetry quality control tests are performed on EDC Panasonic 814 Environmental dosimeters. These tests include: (1) the in-house testing program coordinated by the EDC QA Officer and (2) independent test perform by EDC clients. In-house test are performed using six pairs of 814 dosimeters, a pair is reported as an individual result and six pairs are reported as the mean result. Results of these tests are described in this report.

Excluded from this report are instrumentation checks. Although instrumentation checks represent an important aspect of the quality assurance program, they are not included as process checks in this report. Instrumentation checks represent between 5-10% of the TLDs processed.

B. QA Program

An internal assessment of dosimetry activities is conducted annually by the Quality Assurance Officer (Reference 1). The purpose of the assessment is to review procedures, results, materials or components to identify opportunities to improve or enhance processes and/or services.

II. PERFORMANCE EVALUATION CRITERIA

A. Acceptance Criteria for Internal Evaluations

1. Bias

For each dosimeter tested, the measure of bias is the percent deviation of the reported result relative to the delivered exposure. The percent deviation relative to the delivered exposure is calculated as follows:

$$\frac{(H_i' - H_i)}{H_i}100$$

where:

H_i' = the corresponding reported exposure for the i^{th} dosimeter (i.e., the reported exposure)

H_i = the exposure delivered to the i^{th} irradiated dosimeter (i.e., the delivered exposure)

2. Mean Bias

For each group of test dosimeters, the mean bias is the average percent deviation of the reported result relative to the delivered exposure. The mean percent deviation relative to the delivered exposure is calculated as follows:

$$\sum\left(\frac{(H_i' - H_i)}{H_i}\right)100\left(\frac{1}{n}\right)$$

where:

H_i' = the corresponding reported exposure for the i^{th} dosimeter (i.e., the reported exposure)

H_i = the exposure delivered to the i^{th} irradiated test dosimeter (i.e., the delivered exposure)

n = the number of dosimeters in the test group

Precision

For a group of test dosimeters irradiated to a given exposure, the measure of precision is the percent deviation of individual results relative to the mean reported exposure. At least two values are required for the determination of precision. The measure of precision for the i^{th} dosimeter is:

$$\left(\frac{(H_i' - \bar{H})}{\bar{H}}\right)100$$

where:

H_i' = the reported exposure for the i^{th} dosimeter (i.e., the reported exposure)

$\bar{H}$ = the mean reported exposure; i.e., $\bar{H} = \sum H_i'\left(\frac{1}{n}\right)$

n = the number of dosimeters in the test group

3. EDC Internal Tolerance Limits

All evaluation criteria are taken from the "EDC Quality System Manual," (Reference 2). These criteria are only applied to individual test dosimeters irradiated with high-energy photons (Cs-137) and are as follows for Panasonic Environmental dosimeters: ± 15% for bias and ± 12.8% for precision.

B. QC Investigation Criteria and Result Reporting

EDC Quality System Manual (Reference 2) specifies when an investigation is required due to a QC analysis that has failed the EDC bias criteria. The criteria are as follows:

1. No investigation is necessary when an individual QC result falls outside the QC performance criteria for accuracy.

2. Investigations are initiated when the mean of a QC processing batch is outside the performance criterion for bias.

C. Reporting of Environmental Dosimetry Results to EDC Customers

1. All results are to be reported in a timely fashion.

2. If the QA Officer determines that an investigation is required for a process, the results shall be issued as normal unless if the QC results prompting the investigation have a mean bias from the known of greater than ±20%, then the results shall be issued with a note indicating that they may be updated in the future, pending resolution of a QA issue.

3. Environmental dosimetry results do not require updating if the investigation has shown that the mean bias between the original results and the corrected results, based on applicable correction factors from the investigation, does not exceed ±15%.

III. DATA SUMMARY FOR ISSUANCE PERIOD JANUARY-DECEMBER 2025

A. General Discussion

Results of performance tests conducted are summarized and discussed in the following sections. Summaries of the performance tests for the reporting period are given in Tables 1 through 3 and Figures 1 through 4.

Table 1 provides a summary of individual dosimeter results evaluated against the EDC internal acceptance criteria for high-energy photons only. During this period100% (72/72) of the individual dosimeters, evaluated against these criteria, met the tolerance limits for accuracy and 100% (72/72) met the criterion for precision. A graphical interpretation is provided in Figures 1 and 2.

Table 2 provides the bias and standard deviation results for each group (N=6) of dosimeters evaluated against the internal tolerance criteria. Overall,100% (12/12) of the dosimeter sets, evaluated against the internal tolerance performance criteria, met these criteria. A graphical interpretation is provided in Figure 3.

Table 3 presents the independent blind spike results for dosimeters processed during this annual period. All results passed the performance acceptance criterion. Figure 4 is a graphical interpretation of Seabrook Station blind co-located station results.

B. Result Trending

One of the main benefits of performing quality control tests on a routine basis is to identify trends or performance changes. The results of the Panasonic environmental dosimeter performance tests are presented in Appendix A. The results are evaluated against each of the performance criteria listed in Section II, namely: individual dosimeter accuracy, individual dosimeter precision, and mean bias.

All of the results presented in Appendix A are plotted sequentially by processing date.

IV. STATUS OF EDC CONDITION REPORTS (CR)

No condition reports were issued during this annual period.

V. STATUS OF AUDITS/ASSESSMENTS

1. Internal

   EDC Internal Quality Assurance Assessment was conducted during the fourth quarter 2025. There were no findings identified.

2. External

   None.

VI. PROCEDURES AND MANUALS REVISED DURING JANUARY - DECEMBER 2025

Manual 1 and several procedures were reissued with no changes as part of the 5 year review cycle.

VII. CONCLUSION AND RECOMMENDATIONS

The quality control evaluations continue to indicate the dosimetry processing programs at the EDC satisfy the criteria specified in the Quality System Manual. The EDC demonstrated the ability to meet all applicable acceptance criteria.

VIII. REFERENCES

1. EDC Quality Control and Audit Assessment Schedule, 2025.
2. EDC Manual 1, Quality System Manual, Rev. 4, September 29, 2025.

TABLE 1

PERCENTAGE OF INDIVIDUAL DOSIMETERS THAT PASSED EDC INTERNAL CRITERIA JANUARY – DECEMBER 2025[(1), (2)]

Dosimeter Type	Number Tested	% Passed Bias Criteria	% Passed Precision Criteria
Panasonic Environmental	72	100	100

[(1)]This table summarizes results of tests conducted by EDC.
[(2)]Environmental dosimeter results are free in air.

TABLE 2

MEAN DOSIMETER ANALYSES (N=6) JANUARY – DECEMBER 2025[(1), (2)]

Process Date	Exposure Level	Mean Bias %	Standard Deviation %	Tolerance Limit +/-15%
4/23/2025	35	-2.6	1.5	Pass
4/29/2025	53	1.5	1.2	Pass
5/13/2025	77	2.6	1.9	Pass
7/21/2025	26	0.2	0.8	Pass
7/26/2025	107	-2.1	1.3	Pass
7/28/2025	43	-0.2	1.2	Pass
10/22/2025	38	1.7	1.0	Pass
10/27/2025	88	0.9	2.1	Pass
11/26/2025	119	2.9	1.0	Pass
01/24/2026	65	-0.3	1.3	Pass
01/27/2026	96	-0.3	1.2	Pass
02/22/2026	47	-3.3	2.3	Pass

[(1)]This table summarizes results of tests conducted by EDC for TLDs issued in 2025.
[(2)]Environmental dosimeter results are free in air.

TABLE 3
SUMMARY OF INDEPENDENT DOSIMETER TESTING JANUARY – DECEMBER 2025[(1), (2)]

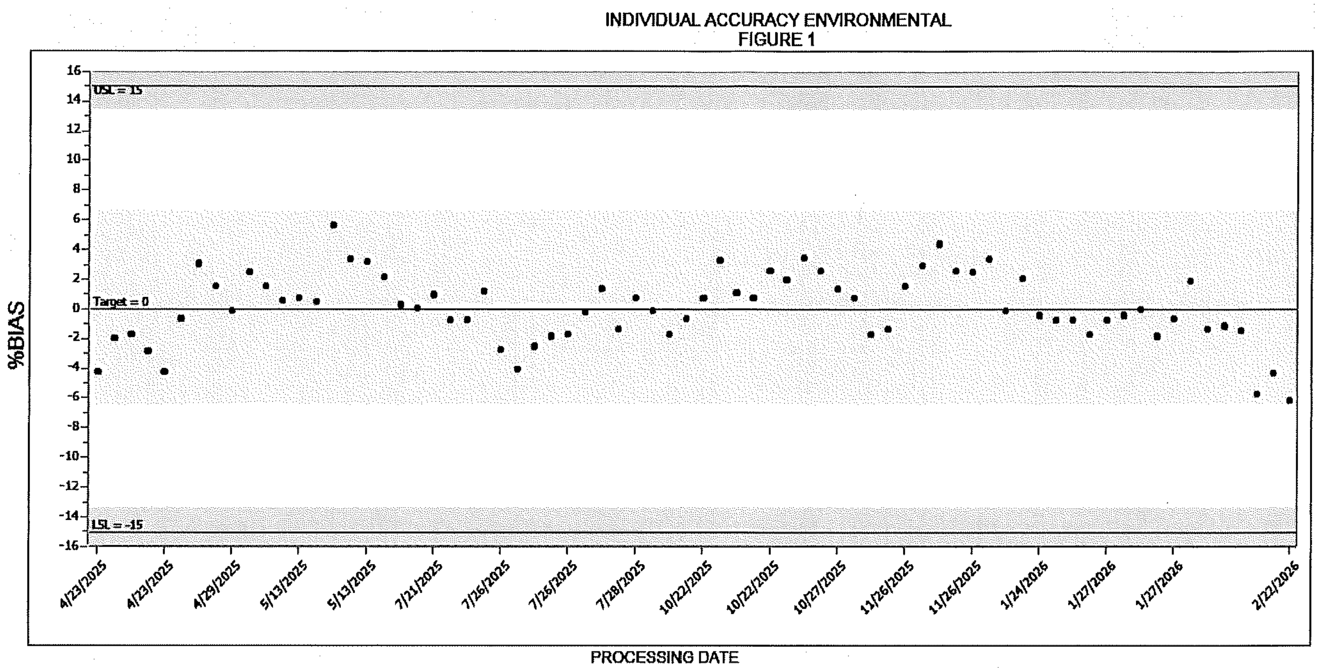
Issuance Period	Client	Mean Bias %	Standard Deviation %	Pass / Fail
1st Qtr. 2025	Millstone	1.5	1.4	Pass
2nd Qtr.2025	Seabrook	7.3	1.0	Pass
2nd Qtr. 2025	Millstone	2.8	1.1	Pass
3rd Qtr. 2025	SONGS	-4.4	2.4	Pass
3rd Qtr. 2025	Millstone	8.6	3.5	Pass
4th Qtr.2025	Millstone	3.3	3.5	Pass

[(1)]Performance criteria are +/- 15%.
[(2)]Blind spike irradiations using Cs-137

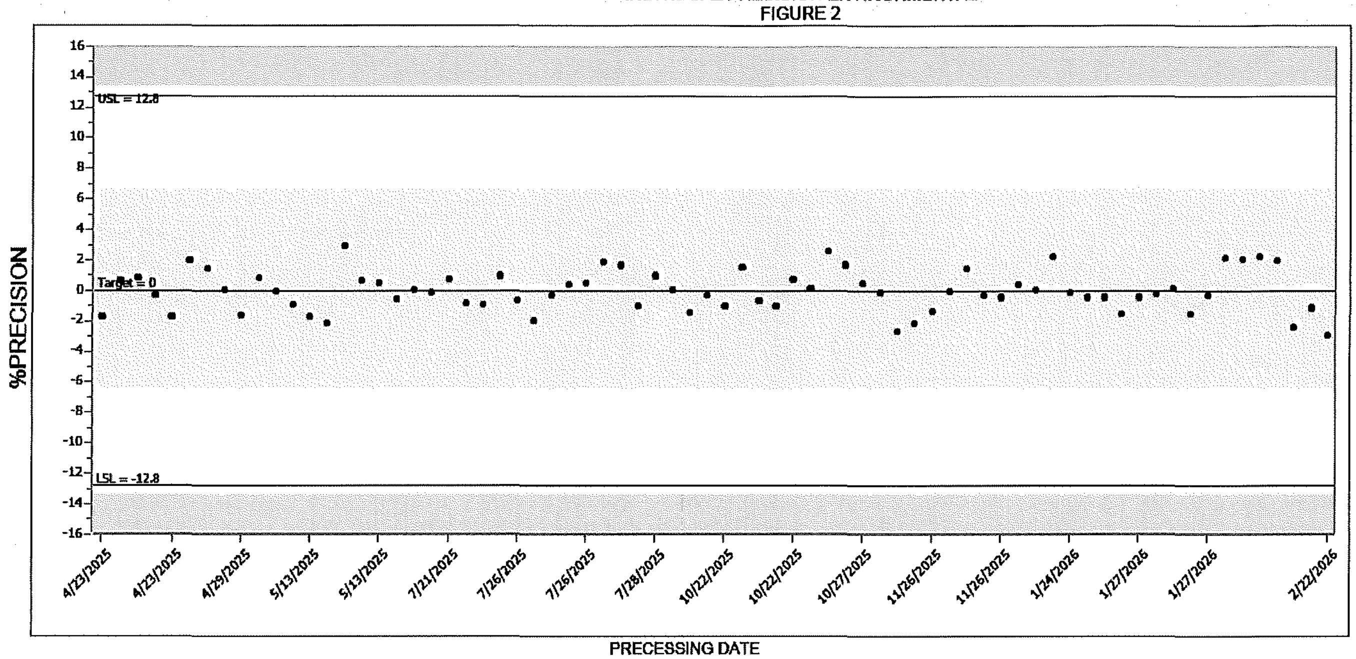
APPENDIX A

DOSIMETRY QUALITY CONTROL TRENDING GRAPHS

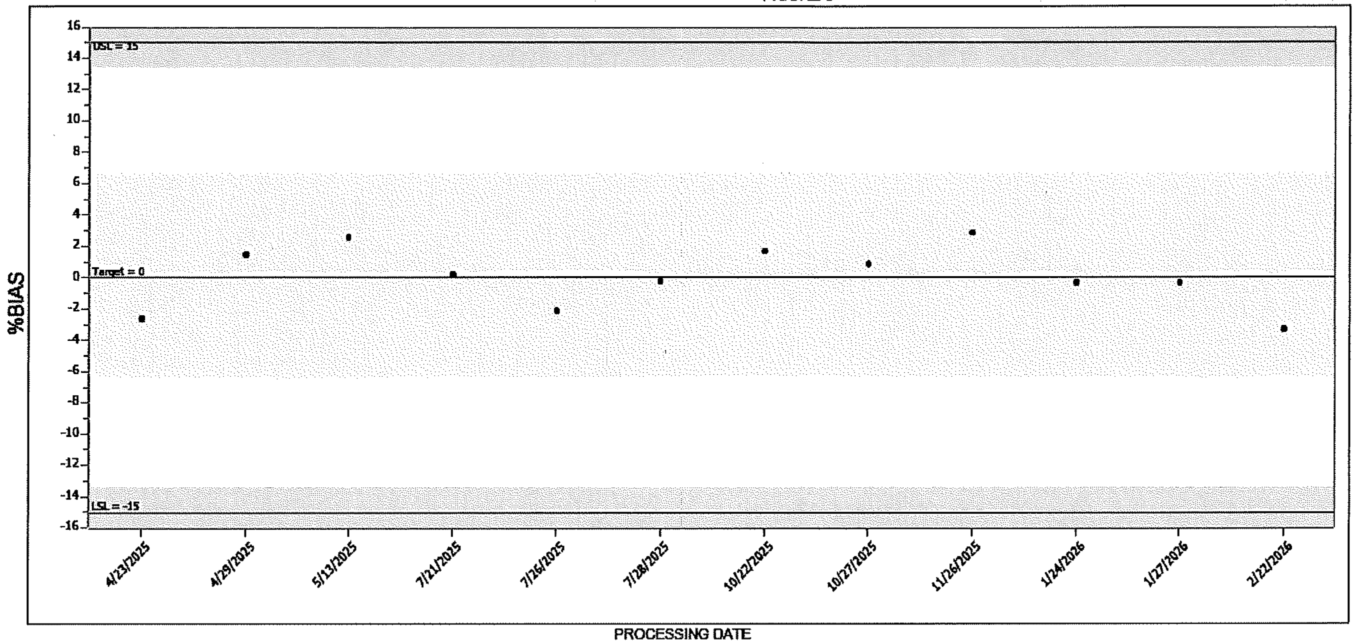
ISSUE PERIOD JANUARY - DECEMBER 2025


INDIVIDUAL ACCURACY ENVIRONMENTAL
FIGURE 1
USL = 15
Target = 0
LSL = -15
%BIAS
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
4/23/2025
4/23/2025
4/29/2025
5/13/2025
5/13/2025
7/21/2025
7/26/2025
7/26/2025
7/28/2025
10/22/2025
10/22/2025
10/27/2025
11/26/2025
11/26/2025
1/24/2026
1/27/2026
1/27/2026
2/22/2026
PROCESSING DATE

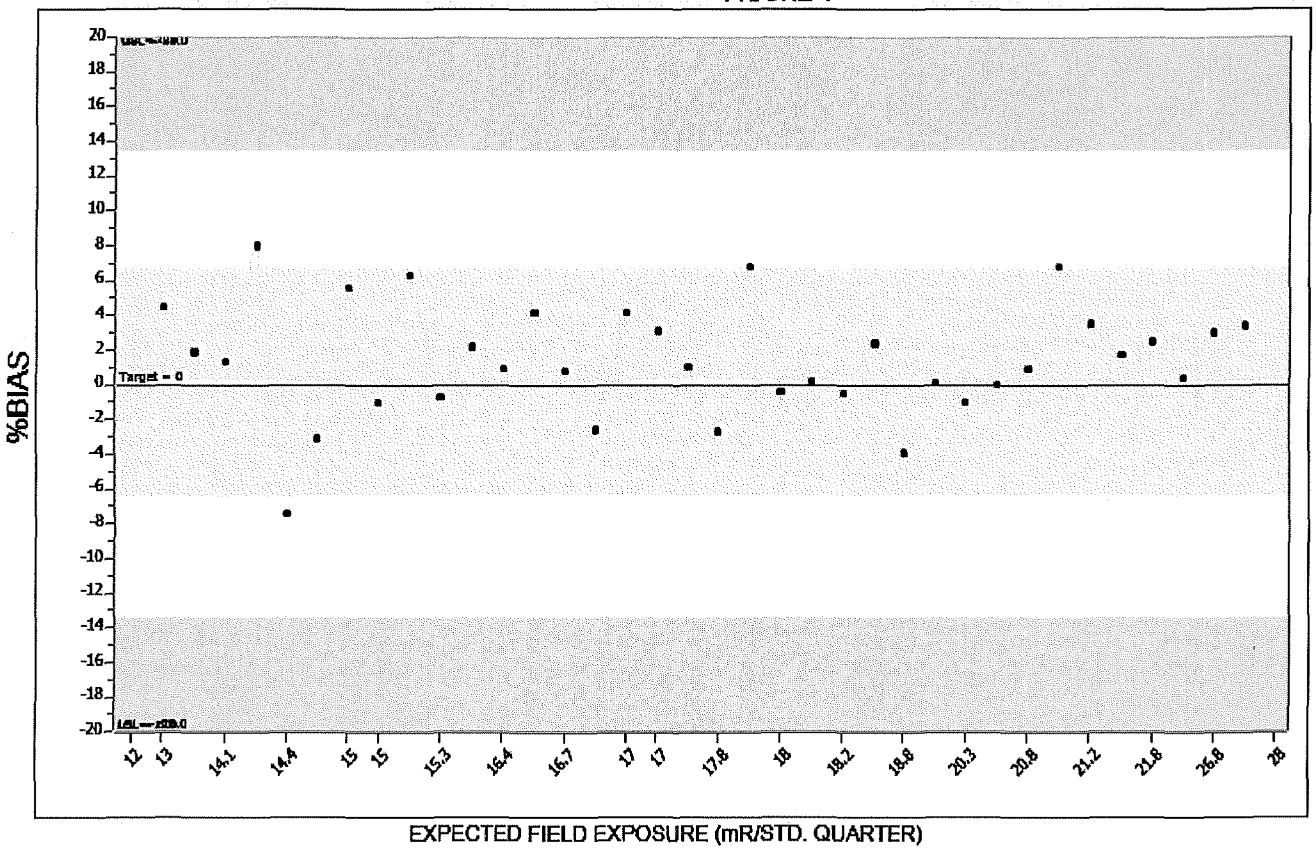
INDIVIDUAL PRECISION ENVIRONMENTAL
FIGURE 2



MEAN ACCURACY ENVIRONMENTAL
FIGURE 3



SEABROOK CO-LOCATE ACCURACY
FIGURE 4



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2025 ANNUAL QUALITY ASSURANCE REPORT

FOR THE

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

2025 ANNUAL QUALITY ASSURANCE REPORT

FOR THE

RADIOLOGICAL ENVIRONMENTAL

MONITORING PROGRAM (REMP)

Approved By ______________________ March 12, 2025

Angela A. Johnson — Date

Director, Quality Systems

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2025 ANNUAL QUALITY ASSURANCE REPORT FOR THE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

1. Introduction

GEL Laboratories, LLC (GEL) is a privately owned environmental laboratory dedicated to providing personalized client services of the highest quality. GEL was established as an analytical testing laboratory in 1981. Now a full-service lab, our analytical divisions use state of the art equipment and methods to provide a comprehensive array of organic, inorganic, and radiochemical analyses to meet the needs of our clients.

At GEL, quality is emphasized at every level of personnel throughout the company. Management's ongoing commitment to good professional practice and to the quality of our testing services to our customers is demonstrated by their dedication to personnel and resources to develop, implement, assess, and improve our technical and management operations.

The purpose of GEL's quality assurance program is to establish policies, procedures, and processes to meet or exceed the expectations of our clients. To achieve this, all personnel that support these services to our clients are introduced to the program and policies during their initial orientation, and annually thereafter during company-wide training sessions.

GEL's primary goals are to ensure that all measurement data generated are scientifically and legally defensible, of known and acceptable quality per the data quality objectives (DQOs) and thoroughly documented to provide sound support for environmental decisions. In addition, GEL continues to ensure compliance with all contractual requirements, environmental standards, and regulations established by local, state, and federal authorities.

GEL administers the QA program in accordance with the Quality Assurance Plan, GL-QS-B-001. Our Quality Systems include all quality assurance (QA) policies and quality control (QC) procedures necessary to plan, implement, and assess the work we perform. GEL's QA Program establishes a quality management system (QMS) that governs all of the activities of our organization.

This report entails the quality assurance program for the proficiency testing and environmental monitoring aspects of GEL for 2025. GEL's QA Program is designed to monitor the quality of analytical processing associated with environmental, radiobioassay, effluent (10 CFR Part 50), and waste (10 CFR Part 61) sample analysis.

This report covers the category of Radiological Environmental Monitoring Program (REMP) and includes:

- Intra-laboratory QC results analyzed during 2025.
- Inter-laboratory QC results analyzed during 2025 where known values are available.

2. Quality Assurance Programs for Inter-laboratory, Intra-laboratory and Third Party Cross-Check

In addition to internal and client audits, our laboratory participates in annual performance evaluation studies conducted by independent providers. We routinely participate in the following types of performance audits:

- Proficiency testing and other inter-laboratory comparisons
- Performance requirements necessary to retain certifications

- Evaluation of recoveries of certified reference and in-house secondary reference materials using statistical process control data.
- Evaluation of relative percent difference between measurements through SPC data.

We also participate in a number of proficiency testing programs for federal and state agencies and as required by contracts. It is our policy that no proficiency evaluation samples be analyzed in any special manner. Our annual performance evaluation participation generally includes a combination of studies that support the following:

- US Environmental Protection Agency Discharge Monitoring Report, Quality Assurance Program (DMR-QA). Annual national program sponsored by EPA for laboratories engaged in the analysis of samples associated with the NPDES monitoring program. Participation is mandatory for all holders of NPDES permits. The permit holder must analyze for all of the parameters listed on the discharge permit. Parameters include general chemistry, metals, BOD/COD, oil and grease, ammonia, nitrates, etc.

- Department of Energy Mixed Analyte Performance Evaluation Program (MAPEP). A semiannual program developed by DOE in support of DOE contractors performing waste analyses. Participation is required for all laboratories that perform environmental analytical measurements in support of environmental management activities. This program includes radioactive isotopes in water, soil, vegetation and air filters.

- ERA's MRAD-Multimedia Radiochemistry Proficiency test program. This program is for labs seeking certification for radionuclides in wastewater and solid waste. The program is conducted in strict compliance with USEPA National Standards for Water Proficiency study.

- ERA's InterLaB RadCheM Proficiency Testing Program for radiological analyses. This program completes the process of replacing the USEPA EMSL-LV Nuclear Radiation Assessment Division program discontinued in 1998. Laboratories seeking certification for radionuclide analysis in drinking water also use the study. This program is conducted in strict compliance with the USEPA National Standards for Water Proficiency Testing Studies. This program encompasses Uranium by EPA method 200.8 (for drinking water certification in Utah/Primary NELAP), gamma emitters, Gross Alpha/Beta, Iodine-131, naturally occurring radioactive isotopes, Strontium-89/90, and Tritium.

- ERA's Water Pollution (WP) biannual program for waste methodologies includes parameters for both organic and inorganic analytes.

- ERA's Water Supply (WS) biannual program for drinking water methodologies includes parameters for organic and inorganic analytes.

- Environmental Cross-Check Program administered by Eckert & Ziegler Analytics, Inc. This program encompasses radionuclides in water, soil, milk, naturally occurring radioactive isotopes in soil and air filters.

GEL procures single-blind performance evaluation samples from Eckert & Ziegler Analytics to verify the analysis of sample matrices processed at GEL. GEL's Third-Party Cross-Check Program provides environmental matrices encountered in a typical nuclear utility REMP. The Third-Party Cross-Check Program is intended to meet or exceed the inter-laboratory comparison program requirements discussed in NRC Regulatory Guide 4.15. Once performance evaluation samples have been prepared in accordance with the instructions provided by the PT provider, samples are managed and analyzed in the same manner as environmental samples from GEL's clients.

3. Quality Assurance Program for Internal and External Audits

During each annual reporting period, at least one internal assessment of each area of the laboratory is conducted in accordance with the pre-established schedule from Standard Operating Procedure for the Conduct of Quality Audits, GL-QS-E-001. The annual internal audit plan is reviewed for adequacy and includes the scheduled frequency and scope of quality control actions necessary for GEL's QA program. Internal audits are conducted at least annually in accordance with a schedule approved by the Quality Systems Director. Supplier audits are contingent upon the categorization of the supplies and may or may not be conducted prior to the use of a supplier or subcontractor. Type I suppliers and subcontractors, regardless of how they were initially qualified, are re-evaluated at least once every three years.

In addition, prospective customers audit GEL during pre-contract audits. GEL hosts several external audits each year for both our clients and other programs. These programs include environmental monitoring, waste characterization, and radiobioassay. The following list of programs may audit GEL at least annually or up to every three years depending on the program.

- TNI, The NELAC Institute, National Environmental Laboratory Accreditation Program
- DOECAP, U.S. Department of Energy Consolidated Audit Program
- DOELAP, U.S. Department of Energy Laboratory Accreditation Program
- DOE QSAS, U.S. Department of Energy, Quality Systems for Analytical Services
- ISO/IEC 17025:2017
- A2LA, American Association for Laboratory Accreditation
- DoD ELAP, US Department of Defense Environmental Accreditation Program
- NUPIC, Nuclear Procurement Issues Committee
- South Carolina Department of Environmental Services (SC DES)

The annual radiochemistry laboratory internal audit (25-RAD-001) was conducted in September of 2025. There were no findings, two observations and no recommendations for improvement from this assessment.

4. Performance Evaluation Acceptance Criteria for Environmental Sample Analysis

GEL utilized an acceptance protocol based upon two performance models. For those inter-laboratory programs that already have established performance criteria for bias (i.e., MAPEP, and ERA/ELAP), GEL will utilize the criteria for the specific program. For intra-laboratory or third-party quality control programs that do not have a specific acceptance criteria (i.e. the Eckert-Ziegler Analytics Environmental Cross-check Program), results will be evaluated in accordance with GEL's internal acceptance criteria.

5. Performance Evaluation Samples

Performance Evaluation (PE) results and internal quality control sample results are evaluated in accordance with GEL acceptance criteria. The first criterion concerns bias, which is defined as the deviation of any one result from the known value. The second criterion concerns precision, which deals with the ability of the measurement to be replicated by comparison of an individual result with the mean of all results for a given sample set.

At GEL, we also evaluate our analytical performance on a regular basis through statistical process control (SPC) acceptance criteria. Where feasible, this criterion is applied to both measures of precision and accuracy and is specific to sample matrix. We establish environmental process control limits at least annually.

For Radiochemistry analysis, quality control evaluation is based on static limits rather than those that are statistically derived. Our current process control limits are maintained in

GEL's LIMS. We also measure precision with matrix duplicates and/or matrix spike duplicates. The upper and lower control limits (UCL and LCL respectively) for precision are plus or minus three times the standard deviation from the mean of a series of relative percent differences. The static precision criteria for radiochemical analyses are 0 - 20%, for activity levels exceeding the contract required detection limit (CRDL).

6. Quality Control Program for Environmental Sample Analysis

GEL's internal QA Program is designed to include QC functions such as instrumentation calibration checks (to insure proper instrument response), blank samples, instrumentation backgrounds, duplicates, as well as overall staff qualification analyses and statistical process controls. Both quality control and qualification analyses samples are used to be as similar as the matrix type of those samples submitted for analysis by the various laboratory clients. These performance test samples (or performance evaluation samples) are either actual sample submitted in duplicate in order to evaluate the precision of laboratory measurements, or fortified blank samples, which have been given a known quantity of a radioisotope that is in the interest to GEL's clients.

Accuracy (or Bias) is measured through laboratory control samples and/or matrix spikes, as well as surrogates and internal standards. The UCLs and LCLs for accuracy are plus or minus three times the standard deviation from the mean of a series of recoveries. The static limit for most radiochemical analyses is 75 - 125%. Specific instructions for out-of-control situations are provided in the applicable analytical SOP.

GEL's Laboratory Control Standard (LCS) is an aliquot of reagent water or other blank matrix to which known quantities of the method analytes are added in the laboratory. The LCS is analyzed exactly like a sample, and its purpose is to determine whether the methodology is in control, and whether the laboratory is capable of making accurate and precise measurements. Some methods may refer to these samples as Laboratory Fortified Blanks (LFB). The requirement for recovery is between 75% and 125% for radiological analyses excluding drinking water matrix.

$$\text{Bias (\%)} = \frac{\text{(observed concentration)}}{\text{(known concentration)}} * 100\ \%$$

Precision is a data quality indicator of the agreement between measurements of the same property, obtained under similar conditions, and how well they conform to themselves. Precision is usually expressed as standard deviation, variance or range in either absolute or relative (percentage) terms.

GEL's laboratory duplicate (DUP or LCSD) is an aliquot of a sample taken from the same container and processed in the same manner under identical laboratory conditions. The aliquot is analyzed independently from the parent sample and the results are compared to measure precision and accuracy.

If a sample duplicate is analyzed, it will be reported as Relative Percent Difference (RPD). The RPD must be 20 percent or less, if both samples are greater than 5 times the MDC. If both results are less than 5 times MDC, then the RPD must be equal to or less than 100%. If one result is above the MDC and the other is below the MDC, then the RPD can be calculated using the MDC for the result of the one below the MDC. The RPD must be 100% or less. In the situation where both results are above the MDC but one result is greater than 5 times the MDC and the other is less than 5 times the MDC, the RPD must be less than or equal to 20%. If both results are below MDC, then the limits on % RPD are not applicable.

$$\text{Difference (\%)} = \frac{\text{(high duplicate result – low duplicate result)}}{\text{(average of results)}} * 100\ \%$$

7. Summary of Data Results

During 2025, forty-one (41) radioisotopes associated with six (6) matrix types were analyzed under GEL's Performance Evaluation program in participation with ERA, MAPEP, and Eckert & Ziegler Analytics. Matrix types were representative of client analyses performed during 2025. Of the three hundred sixty-nine (369) total results, 97% (358 out of 369) were found to be acceptable within the PT providers three sigma or other statistical criteria. The list below contains the type of matrix evaluated by GEL.

- Air Filter
- Cartridge
- Water
- Milk
- Soil
- Vegetation

Graphs are provided in Figures 1-9 of this report to allow for the evaluation of trends or biases. These graphs include radioisotopes Cobalt-60, Cesium-137, Tritium, Strontium-90, Gross Alpha, Gross Beta, Iodine-131, Americium-241, and Plutonium-238.

8. Summary of Participation in the Eckert & Ziegler Analytics Environmental Cross-Check Program

Eckert & Ziegler Analytics provided samples for forty-six (46) individual environmental analyses. The accuracy of each result reported to Eckert & Ziegler Analytics, Inc. is measured by the ratio of GEL's result to the known value. Of the 46 analyses reported, 95.7% (44 out of 46) fell within the acceptance criteria.

9. Summary of Participation in the MAPEP Monitoring Program

MAPEP Series 52 and Series 53 were analyzed by the laboratory. Of the one hundred thirty-nine (139) analyses reported, 97.1% (135 out of 139) fell within the PT provider's acceptance criteria.

10. Summary of Participation in the ERA MRAD PT Program

The ERA MRAD program provided samples (MRAD-42 and MRAD-43) for one hundred forty-eight (148) individual environmental analyses reported. Of the 148 analyses reported, 98.6% (146 of the 148) fell within the PT provider's acceptance criteria.

11. Summary of Participation in the ERA PT Program

The ERA program provided samples (RAD-140, RAD-142,and RAD-143) for thirty-six (36) individual environmental analyses. Of the 36 analyses reported, 91.7% (33 of 36) fell within the PT provider's acceptance criteria.

12. Corrective Action Request and Report (CARR)

There are two categories of corrective action at GEL. One is corrective action implemented at the analytical and data review level in accordance with the analytical SOP. The other is formal corrective action documented by the Quality Systems Team in accordance with GL-QS-E-002. A formal corrective action is initiated when a nonconformance reoccurs or is so significant that permanent elimination or prevention of the problem is required. Formal corrective action investigations include root cause analysis.

GEL includes quality requirements in most analytical standard operating procedures to ensure that data are reported only if the quality control criteria are met or the quality control measures that did not meet the acceptance criteria are documented. A formal corrective action is implemented according to GL-QS-E-002 for Conducting Corrective/Preventive Action and Identifying Opportunities for Improvement. Recording and documentation is performed following guidelines stated in GL-QS-E-012 for Client NCR Database Operation.

Any employee at GEL can identify and report a nonconformance and request that corrective action be taken. Any GEL employee can participate on a corrective action team as requested by the QS team or Group Leaders. The steps for conducting corrective action are detailed in GL-QS-E-002. In the event that correctness or validity of the laboratory's test results in doubt, the laboratory will take corrective action. If investigations show that the results have been impacted, affected clients will be informed of the issue in writing within five (5) calendar days of the discovery.

Table 8 provides the status of CARRs for radiological performance testing during 2025. **It has been determined that the causes of the unacceptable results did not impact any data reported to our clients.**

13. References

1. GEL Quality Assurance Plan, GL-QS-B-001
2. GEL Standard Operating Procedure for the Conduct of Quality Audits, GL-QS-E-001
3. GEL Standard Operating Procedure for Conducting Corrective/Preventive Action and Identifying Opportunities for Improvement, GL-QS-E-002
4. GEL Standard Operating Procedure for LIMS Documentation of Nonconformance Reporting and Dispositioning and Control of Nonconforming Items, GL-QS-E-004
5. GEL Standard Operating Procedure for Handling Proficiency Evaluation Samples, GL-QS-E-013
6. GEL Standard Operating Procedure for Quality Assurance Measurement Calculations and Processes, GL-QS-E-014
7. 40 CFR Part 136 Guidelines Establishing Test Procedures for the Analysis of Pollutants
8. ISO/IEC 17025-2017, General Requirements for the Competence of Testing and Calibration Laboratories
9. ANSI/ASQC E4-1994, Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs, American National Standard
10. 2016 TNI Standard, The NELAC Institute, National Environmental Accreditation Program
11. MARLAP, Multi-Agency Radiological Laboratory Analytical Protocols
12. 10 CFR Part 21, Reporting of Defects and Noncompliance
13. 10 CFR Part 50 Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
14. 10 CFR Part 61, Licensing Requirements for Land Disposal and Radioactive Waste
15. NRC REG Guide 4.15 and NRC REG Guide 4.8

TABLE 1

2025 RADIOLOGICAL PROFICIENCY TESTING RESULTS AND ACCEPTANCE CRITERIA

PT Provider	Quarter / Year	Report Closing / Received Date	Sample Number	Sample Media	Units	Analyte	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Barium-133	103	89.7	71.5 - 108	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Cesium-134	39.9	38.4	25.4 - 51.4	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Cesium-137	162	157	123 - 191	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Cobalt-60	75.8	66.8	50.9 - 82.7	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Zinc-65	78.7	74.3	39.3 - 109	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Gross Alpha	77.3	72.2	55.3 - 89.1	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Gross Beta	54.9	59.2	44.1 - 74.3	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Uranium (Nat)	63.1	63.6	56.6 - 70.6	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	µg/L	Uranium (mass)	85.7	92.7	82.5 - 103	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Tritium	9760	11400	9340 - 13500	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Strontium-89	65	57.4	42.5 - 72.3	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Strontium-90	36.8	42.6	36.5 - 48.7	Acceptable
ERA	1st/2025	3/3/2025	RAD-140	Water	pCi/L	Iodine-131	31.8	28.1	24.4 - 31.8	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Actinium-228	1140	1150	759-1450	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Americium-241	986	1060	572-1710	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Bismuth-212	1160	1150	329-1710	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Bismuth-214	514	634	304-943	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Cesium-134	5860	6520	4460-7790	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Cesium-137	4170	4420	3340-5590	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Cobalt-60	3160	3260	2570-4020	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Lead-212	1200	1150	802-1450	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Lead-214	661	634	266-997	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Manganese-54	<37.1	<555	0-555	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Plutonium-238	1000	1070	534-1630	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Plutonium-239	1070	1150	627-1650	Acceptable

ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Potassium-40	33600	34100	23500-40700	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Strontium-90	3990	5710	1780-8890	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Thorium-234	3640	3470	1310-5940	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Uranium-234	3320	3500	1640-4590	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Uranium-238	3190	3470	1900-4660	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Uranium-Total	6650	7120	3950-9210	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	µg/kg	Uranium (mass)	9540	10400	4690-14000	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Zinc-65	1330	1240	990-1690	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Americium-241	72.6	67.7	48.3-90.3	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Cesium-134	224	232	151-284	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Cesium-137	468	451	370-592	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Cobalt-60	278	250	212-318	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Iron-55	216	181	66.1-289	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Manganese-54	<3.45	<35.0	0-35	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Plutonium-238	39	40.2	30.4-49.4	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Plutonium-239	64.6	62.3	46.6-75.2	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Strontium-90	19.7	24.6	15.6-33.5	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Uranium-234	32.7	34.2	25.4-40.1	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Uranium-238	32.8	33.9	25.6-40.4	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Uranium-Total	67.2	69.7	50.9-82.7	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	µg/Filter	Uranium (mass)	98.4	102	81.9-119	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Zinc-65	702	632	518-966	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Gross Alpha	43.8	39.5	20.6-65.1	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Gross Beta	57.5	55.2	33.5-83.4	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Tritium	6450	9420	7100-11500	Not Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Americium-241	45.5	39.5	27.1-50.5	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Cesium-134	1530	1600	1210-1760	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Cesium-137	1130	1080	925-1230	Acceptable

ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Cobalt-60	276	255	220-293	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Iron-55	1740	1460	858-2120	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Manganese-54	<3.16	<71.0	0-71	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Plutonium-238	69.4	77.2	46.4-100	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Plutonium-239	54.8	58.4	36.1-72.0	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Strontium-90	556	626	451-774	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Uranium-234	90.8	98.2	74.8-112	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Uranium-238	97.6	97.4	75.5-115	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Uranium-Total	193	200	156-228	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	µg/L	Uranium (mass)	292	292	237-331	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Zinc-65	258	231	206-292	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Gross Alpha	71.8	77.3	28.2-107	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Gross Beta	103	99.4	49.7-137	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Americium-241	1640	1800	1110-2540	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Cesium-134	1700	1880	1250-2500	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Cesium-137	627	572	440-700	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Cobalt-60	1800	1720	1350-2250	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Curium-244	719	860	485-1070	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Manganese-54	<34.7	<207	0-207	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Plutonium-238	3210	3750	2600-4840	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Plutonium-239	4170	4590	3170-5810	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Potassium-40	31200	28500	21400-36100	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Strontium-90	2000	2360	1330-3080	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Uranium-234	3580	3960	2780-5050	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Uranium-238	3700	3930	2780-4920	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Uranium-Total	7510	8080	5160-10900	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	µg/kg	Uranium (mass)	11100	11800	9060-14600	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Zinc-65	825	741	553-1100	Acceptable

ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Barium-133	36.1	30.1	17.9-42.3	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Cesium-134	60.9	65.6	49.8-81.4	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Cesium-137	166	152	118-186	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Cobalt-60	133	113	92.5-134	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Zinc-65	83.5	80.6	44.9-116	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Gross Alpha	28.8	33.8	24.6-43.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Gross Alpha	27.6	33.8	24.6-43.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Gross Beta	45.7	41.7	24.6-43.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Radium-226	14	14.4	12.0-16.8	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Radium-228	4.4	4.76	2.99-6.53	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Radium-228	5.33	4.76	2.99-6.53	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Uranium (Nat)	65.9	68.1	60.8-75.6	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	µg/L	Uranium (mass)	91.76	99.5	88.6-110	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Tritium	14500	15800	13300-18300	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Tritium	15000	15800	13300-18300	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-89	51.2	45.3	31.6-59.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-89	47.3	45.3	31.6-59.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-90	30.5	34.3	29.0-39.6	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-90	26.5	34.3	29.0-39.6	Not Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Iodine-131	22.8	28.3	24.5-32.1	Not Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Actinium-228	112	1150	759-1450	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Americium-241	1400	1550	837-2190	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Bismuth-212	1260	1150	329-1710	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Bismuth-214	2010	2880	1380-4290	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Cesium-134	2900	3340	2280-3990	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Cesium-137	6950	7190	5440-9090	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Cobalt-60	1170	1190	937-1470	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Lead-212	1350	1150	802-1460	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Lead-214	2530	3020	1270-4750	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Manganese-54	<20.4	<555	0.0-555	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Plutonium-238	831	845	421-1280	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Plutonium-239	1550	1300	708-1870	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Potassium-40	32500	34100	23500-40700	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Strontium-90	6510	9490	2950--14800	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Thorium-234	3850	4200	1590-7190	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-234	4350	4240	1990-5560	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-234	3890	4240	1990-5560	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-238	4380	4200	2300-5640	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-238	4050	4200	2300-5640	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-Total	8942	8630	4790-11200	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-Total	8160	8630	4790-11200	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	µg/kg	Uranium (mass)	13100	12600	5690-17000	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	µg/kg	Uranium (mass)	12200	12600	5690-17000	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Zinc-65	3680	3820	3050-5210	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Americium-241	3290	3510	2170-4960	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Cesium-134	1700	2040	1350-2720	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Cesium-137	2010	2190	1680-2950	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Cobalt-60	1990	1940	1520-2540	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Curium-244	2040	2130	1200-2650	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Manganese-54	<30.7	<207	0.0-207	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Plutonium-238	1140	1120	776-1440	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Plutonium-239	3880	3550	2450-4490	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Potassium-40	27800	28500	21400-36100	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Strontium-90	4200	5330	3000-6950	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Uranium-234	3070	3230	2270-4120	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Uranium-238	3290	3210	2270-4010	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Uranium-Total	6580	6590	4210-8880	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	µg/kg	Uranium (mass)	9880	9610	7380-11900	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Zinc-65	2070	1940	1450-2880	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Americium-241	38.7	39.8	28.4-53.1	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Cesium-134	304	341	221-418	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Cesium-137	383	379	311-497	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Cobalt-60	349	322	274-409	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Iron-55	189	166	60.6-265	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Manganese-54	<2.5	<35.0	0.0-35.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Plutonium-238	20	18.4	13.9-22.6	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Plutonium-239	35.6	31.3	23.4-37.8	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Strontium-90	161	158	99.9-215	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-234	60.2	63.4	47.0-74.3	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-234	59.6	63.4	47.0-74.3	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-238	67.8	62.9	47.5-75.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-238	63.1	62.9	47.5-75.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-Total	131	129	94.2-153	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-Total	127	129	94.2-153	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	µg/Filter	Uranium (mass)	203	188	151-220	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	µg/Filter	Uranium (mass)	189	188	151-220	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Zinc-65	219	193	158-295	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Gross Alpha	37.5	22	11.5-36.2	Not Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Gross Beta	42.3	40.5	24.6-61.2	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Americium-241	73.9	68.6	47.1-87.7	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Cesium-134	720	765	578-842	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Cesium-137	1690	1670	1790-2390	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Cobalt-60	2170	2080	1790-2390	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Iron-55	455	399	234-580	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Manganese-54	<5.37	<71.0	0.0-71.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Plutonium-238	106	115	69.1-149	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Plutonium-239	40.4	39.8	24.6-49.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Strontium-90	790	699	503-864	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-234	129	133	101-152	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-234	140	133	101-152	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-238	132	132	102-155	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-238	132	132	102-155	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-Total	270	271	211-309	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-Total	278	271	211-309	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	µg/L	Uranium (mass)	395	395	320-448	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	µg/L	Uranium (mass)	397	395	320-448	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Zinc-65	512	463	412-584	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Gross Alpha	99.8	136	49.6-188	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Gross Beta	194	188	94.0-259	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Tritium	27500	28300	21300-34400	Acceptable
ERA	4th/2025	12/12/25	RAD-143	Water	pCi/L	Iodine-131	22.9	24.3	20.9-27.7	Acceptable
ERA	4th/2025	12/12/25	RAD-143	Water	pCi/L	Strontium-89	63	64.2	48.6-79.8	Acceptable
ERA	4th/2025	12/12/25	RAD-143	Water	pCi/L	Strontium-90	35.7	43.8	37.6-50.0	Not Acceptable
EZA	1st/2025	5/14/25	E14302	Cartridge	pCi	Iodine-131	6.64E+01	6.61E+01	1	Acceptable
EZA	1st/2025	5/14/25	E14303	Milk	pCi/L	Strontium-89	9.67E+01	9.19E+01	1.05	Acceptable
EZA	1st/2025	5/14/25	E14303	Milk	pCi/L	Strontium-90	9.00E+00	1.56E+01	0.58	Not Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cerium-141	7.85E+01	7.58E+01	1.04	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cobalt-58	1.06E+02	1.05E+02	1.01	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cobalt-60	1.99E+02	1.93E+02	1.03	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Chromium-51	2.83E+02	2.91E+02	0.97	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cesium-134	1.28E+02	1.42E+02	0.90	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cesium-137	1.72E+02	1.68E+02	1.03	Acceptable

EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Iron-59	1.53E+02	1.35E+02	1.14	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Iodine-131	1.02E+02	9.47E+01	1.08	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Manganese-54	2.09E+02	1.89E+02	1.11	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Zinc-65	2.87E+02	2.51E+02	1.15	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cerium-141	8.94E+01	7.57E+01	1.18	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cobalt-58	1.09E+02	1.05E+02	1.04	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cobalt-60	2.00E+02	1.93E+02	1.04	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Chromium-51	3.07E+02	2.91E+02	1.06	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cesium-134	1.26E+02	1.42E+02	0.89	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cesium-137	1.76E+02	1.68E+02	1.05	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Iron-59	1.58E+02	1.35E+02	1.17	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Iodine-131	7.86E+01	7.60E+01	1.03	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Manganese-54	2.07E+02	1.89E+02	1.10	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Zinc-65	2.77E+02	2.50E+02	1.11	Acceptable
EZA	4th/2025	2/6/26	E14410	Cartridge	pCi	Iodine-131	8.28E+01	8.88E+01	0.93	Acceptable
EZA	4th/2025	2/6/26	E14411	Milk	pCi/L	Strontium-89	1.19E+02	8.49E+01	1.40	Not Acceptable
EZA	4th/2025	2/6/26	E14411	Milk	pCi/L	Strontium-90	1.53E+01	1.56E+01	0.98	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cerium-141	1.50E+02	1.43E+02	1.05	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cobalt-58	1.75E+02	1.69E+02	1.03	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cobalt-60	2.24E+02	2.17E+02	1.03	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Chromium-51	3.36E+02	2.99E+02	1.12	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cesium-134	1.28E+02	1.39E+02	0.92	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cesium-137	1.75E+02	1.68E+02	1.04	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Iron-59	1.57E+02	1.34E+02	1.17	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Iodine-131	9.80E+01	8.60E+01	1.14	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Manganese-54	1.98E+02	1.87E+02	1.06	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Zinc-65	2.94E+02	2.44E+02	1.2	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cerium-141	1.53E+02	1.43E+02	1.06	Acceptable

EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cobalt-58	1.74E+02	1.69E+02	1.03	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cobalt-60	2.40E+02	2.17E+02	1.11	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Chromium-51	3.04E+02	2.98E+02	1.02	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cesium-134	1.29E+02	1.39E+02	0.93	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cesium-137	1.72E+02	1.68E+02	1.02	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Iron-59	1.58E+02	1.33E+02	1.18	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Iodine-131	4.73E+01	4.52E+01	1.05	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Manganese-54	2.05E+02	1.87E+02	1.10	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Zinc-65	2.84E+02	2.44E+02	1.17	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrF52	Filter	Bq/smpl	Gross Alpha	0.179	0.255	0.077-0.434	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrF52	Filter	Bq/smpl	Gross Beta	0.844	0.894	0.447-1.341	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrW52	Water	Bq/L	Gross Alpha	0.365	0.411	0.123-0.699	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrW52	Water	Bq/L	Gross Beta	2.98	3.03	1.52-4.55	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Americium-241	38.2	39.8	27.9-51.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cesium-134	465	519	363-675	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cesium-137	464	442	309-575	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cobalt-57	1160	1000	700-1300	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cobalt-60	605	626	438-814	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Iron-55	1310	1090	763-1417	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Manganese-54	1120	1080	756-1404	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Nickel-63	1380	1560	1092-2028	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Plutonium-238	33.7	33.3	23.3-43.3	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Plutonium-239/240	36.1	40.1	28.1-52.1	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Potassium-40	505	511	358-664	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Strontium-90	597	727	509-945	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Technetium-99	734	725	508-943	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Thorium 228	49	44.4	31.1-57.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Thorium 230	49	47	32.9-61.1	Acceptable

MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Thorium 232	42.3	41.4	29.0-53.8	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Uranium-234/233	34.7	35.9	25.1-46.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Uranium-238	62	69	48-90	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Zinc-65	833	776	543-1009	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Americium-241	0.555	0.559	0.391-0.727	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cesium-134	0.0271	NA	False Pos. Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cesium-137	6.67	6.9	4.8-9.0	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cobalt-57	30	30.9	21.6-40.2	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cobalt-58	37.5	37.7	26.4-49.0	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cobalt-60	0.322	0.29	Sens. Eval.	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Hydrogen-3	164	191	134-248	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Iron-55	35.2	25.5	17.9-33.2	Not Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Manganese-54	-0.0059	NA	False Pos. Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Nickel-63	30.8	38.9	27.2-50.6	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Plutonium-238	0.00764	0.0081	Sens. Eval.	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Plutonium-239/240	0.536	0.569	0.398-0.740	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Potassium-40	35.1	30.3	21.2-39.4	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Radium-226	0.386	0.437	0.306-0.568	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Strontium-90	2.46	2.82	1.97-3.67	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Technetium-99	7.4	6.34	4.44-8.24	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Uranium-234/233	0.526	0.535	0.375-0.696	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Uranium-238	0.528	0.548	0.384-0.712	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Zinc-65	29	26.7	18.7-34.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	ug/smpl	Uranium-235	0.0361	0.039	0.027-0.051	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	ug/smpl	Uranium-238	5.45	5.36	3.75-6.97	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	ug/smpl	Uranium-Total	5.486	5.4	3.78-7.02	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Americium-241	0.045	0.0437	0.0306-0.0568	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cesium-134	0.408	0.34	0.238-0.442	Acceptable

MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cesium-137	0.803	0.678	0.475-0.881	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cobalt-57	0.001	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cobalt-60	0.522	0.486	0.340-0.632	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Manganese-54	0.0108	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Plutonium-238	0.0272	0.0216	0.0151-0.0281	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Plutonium-239/240	0.0164	0.0141	0.0099-0.0183	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Strontium-90	0.455	0.502	0.351-0.653	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Uranium-234/233	0.0641	0.064	0.045-0.083	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Uranium-238	0.0661	0.067	0.047-0.087	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Zinc-65	0.0464	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Americium-241	0.0787	0.0728	0.0510-0.0946	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cesium-134	-0.0168	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cesium-137	0.593	0.707	0.495-0.919	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cobalt-57	3.41	3.4	2.38-4.42	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cobalt-60	0.000769	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Manganese-54	2.79	2.72	1.90-3.54	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Plutonium-238	0.0714	0.0734	0.0514-0.0954	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Plutonium-239/240	0.0011	0.00026	Sens. Eval.	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Strontium-90	0.266	0.37	0.259-0.481	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Uranium-234/233	0.214	0.208	0.146-0.270	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Uranium-238	0.218	0.214	0.150-0.278	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Zinc-65	2.05	1.87	1.31-2.43	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrF53	Filter	Bq/smpl	Gross Alpha	1.07	1.24	0.36-2.11	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrF53	Filter	Bq/smpl	Gross Beta	1.79	1.75	0.88-2.63	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrW53	Water	Bq/L	Gross Alpha	0.831	0.96	0.29-1.63	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrW53	Water	Bq/L	Gross Beta	1.75	1.9	0.95-2.85	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Americium-241	0.449	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cesium-134	523	613	429-797	Acceptable

MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cesium-137	676	686	480-892	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cobalt-57	1.61	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cobalt-60	1090	1144	801-1487	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Iron-55	1240	518	363-673	Not Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Manganese-54	769	771	540-1002	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Neptunium-237	0.465	18.35	12.85-23.86	Not Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Nickel-63	1130	1474	1032-1916	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Plutonium-238	0.0987	0.48	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Plutonium-239/240	0.831	0.33	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Potassium-40	514	492	516-958	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Strontium-90	552	737	516-958	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Technetium-99	433	370	259-481	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Thorium 228	42.8	41.7	29.2-54.2	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Thorium 230	51.6	45.6	31.9-59.3	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Thorium 232	42.4	38.7	27.1-50.3	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Uranium-234/233	33.8	35.9	25.1-46.7	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Uranium-238	62	68	48-88	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Zinc-65	-1.2	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Americium-241	0.368	0.361	0.253-0.469	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cerium-139	27.3	26.4	18.5-34.3	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cesium-134	6.57	7.34	5.14-9.54	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cesium-137	6.69	6.7	4.7-8.7	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cobalt-57	0.0111	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cobalt-60	7.17	7.24	5.07-9.41	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Hydrogen-3	252	276	193-359	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Iron-55	31.7	33	23.1-42.9	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Manganese-54	7.93	7.95	5.57-10.34	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Nickel-63	21.2	25	17.5-32.5	Acceptable

MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Plutonium-238	-0.00369	0.0019	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Plutonium-239/240	0.00805	0.0037	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Potassium-40	-1.1	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Radium-226	0.343	0.407	0.285-0.529	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Strontium-90	2.62	3.02	2.11-3.93	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Technetium-99	-0.363	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Uranium-234/233	0.399	0.426	0.298-0.554	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Uranium-238	0.373	0.404	0.283-0.525	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Zinc-65	24.7	23.1	16.2-30.0	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	ug/smpl	Uranium-235	0.0228	0.023	0.0161-0.0299	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	ug/smpl	Uranium-238	2.72	3.18	2.23-4.13	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	ug/smpl	Uranium-Total	2.743	3.21	2.25-4.17	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Americium-241	0.0377	0.0364	0.0255-0.0473	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cesium-134	0.761	0.802	0.561-1.043	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cesium-137	0.569	0.512	0.358-0.666	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cobalt-57	1.18	1.13	0.79-1.47	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cobalt-60	0.0219	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Manganese-54	1.12	1.07	0.75-1.39	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Plutonium-238	0.0545	0.0538	0.0377-0.0699	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Plutonium-239/240	0.0541	0.0527	0.0369-0.0685	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Strontium-90	1.05	1.15	0.81-1.50	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Uranium-234/233	0.0393	0.0381	0.0267-0.0495	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Uranium-238	0.0409	0.0396	0.0277-0.0515	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Zinc-65	8.84	1.51	1.06-1.96	Not Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Americium-241	-0.000308	0.00038	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cesium-134	0.00315	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cesium-137	1.12	0.986	0.690-1.282	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cobalt-57	4.91	4.47	3.13-5.81	Acceptable

MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cobalt-60	2.42	2.3	1.61-2.99	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Manganese-54	3.3	3.1	2.17-4.03	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Plutonium-238	0.04	0.0366	0.0256-0.0476	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Plutonium-239/240	0.0377	0.371	0.0260-0.0482	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Strontium-90	1.42	1.43	1.00-1.86	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Uranium-234/233	0.111	0.115	0.081-0.150	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Uranium-238	0.117	0.119	0.083-0.155	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Zinc-65	10.4	9.29	6.5-12.08	Acceptable

TABLE 2
2025 ECKERT & ZIEGLER ANALYTICS PERFORMANCE EVALUATION RESULTS

PT Provider	Quarter / Year	Report Closing / Received Date	Sample Number	Sample Media	Units	Analyte	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation
EZA	1st/2025	5/14/25	E14302	Cartridge	pCi	Iodine-131	6.64E+01	6.61E+01	1	Acceptable
EZA	1st/2025	5/14/25	E14303	Milk	pCi/L	Strontium-89	9.67E+01	9.19E+01	1.05	Acceptable
EZA	1st/2025	5/14/25	E14303	Milk	pCi/L	Strontium-90	9.00E+00	1.56E+01	0.58	Not Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cerium-141	7.85E+01	7.58E+01	1.04	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cobalt-58	1.06E+02	1.05E+02	1.01	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cobalt-60	1.99E+02	1.93E+02	1.03	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Chromium-51	2.83E+02	2.91E+02	0.97	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cesium-134	1.28E+02	1.42E+02	0.90	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Cesium-137	1.72E+02	1.68E+02	1.03	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Iron-59	1.53E+02	1.35E+02	1.14	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Iodine-131	1.02E+02	9.47E+01	1.08	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Manganese-54	2.09E+02	1.89E+02	1.11	Acceptable
EZA	1st/2025	5/14/25	E14304	Milk	pCi/L	Zinc-65	2.87E+02	2.51E+02	1.15	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cerium-141	8.94E+01	7.57E+01	1.18	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cobalt-58	1.09E+02	1.05E+02	1.04	Acceptable

EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cobalt-60	2.00E+02	1.93E+02	1.04	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Chromium-51	3.07E+02	2.91E+02	1.06	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cesium-134	1.26E+02	1.42E+02	0.89	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Cesium-137	1.76E+02	1.68E+02	1.05	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Iron-59	1.58E+02	1.35E+02	1.17	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Iodine-131	7.86E+01	7.60E+01	1.03	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Manganese-54	2.07E+02	1.89E+02	1.10	Acceptable
EZA	1st/2025	5/14/25	E14305	Water	pCi/L	Zinc-65	2.77E+02	2.50E+02	1.11	Acceptable
EZA	4th/2025	2/6/26	E14410	Cartridge	pCi	Iodine-131	8.28E+01	8.88E+01	0.93	Acceptable
EZA	4th/2025	2/6/26	E14411	Milk	pCi/L	Strontium-89	1.19E+02	8.49E+01	1.40	Not Acceptable
EZA	4th/2025	2/6/26	E14411	Milk	pCi/L	Strontium-90	1.53E+01	1.56E+01	0.98	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cerium-141	1.50E+02	1.43E+02	1.05	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cobalt-58	1.75E+02	1.69E+02	1.03	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cobalt-60	2.24E+02	2.17E+02	1.03	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Chromium-51	3.36E+02	2.99E+02	1.12	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cesium-134	1.28E+02	1.39E+02	0.92	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Cesium-137	1.75E+02	1.68E+02	1.04	Acceptable

EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Iron-59	1.57E+02	1.34E+02	1.17	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Iodine-131	9.80E+01	8.60E+01	1.14	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Manganese-54	1.98E+02	1.87E+02	1.06	Acceptable
EZA	4th/2025	2/6/26	E14412	Milk	pCi/L	Zinc-65	2.94E+02	2.44E+02	1.2	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cerium-141	1.53E+02	1.43E+02	1.06	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cobalt-58	1.74E+02	1.69E+02	1.03	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cobalt-60	2.40E+02	2.17E+02	1.11	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Chromium-51	3.04E+02	2.98E+02	1.02	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cesium-134	1.29E+02	1.39E+02	0.93	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Cesium-137	1.72E+02	1.68E+02	1.02	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Iron-59	1.58E+02	1.33E+02	1.18	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Iodine-131	4.73E+01	4.52E+01	1.05	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Manganese-54	2.05E+02	1.87E+02	1.10	Acceptable
EZA	4th/2025	2/6/26	E14413	Water	pCi/L	Zinc-65	2.84E+02	2.44E+02	1.17	Acceptable

TABLE 3

2025 DEPARTMENT OF ENERGY MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP) RESULTS

PT Provider	Quarter / Year	Report Closing / Received Date	Sample Number	Sample Media	Units	Analyte	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrF52	Filter	Bq/smpl	Gross Alpha	0.179	0.255	0.077-0.434	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrF52	Filter	Bq/smpl	Gross Beta	0.844	0.894	0.447-1.341	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrW52	Water	Bq/L	Gross Alpha	0.365	0.411	0.123-0.699	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-GrW52	Water	Bq/L	Gross Beta	2.98	3.03	1.52-4.55	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Americium-241	38.2	39.8	27.9-51.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cesium-134	465	519	363-675	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cesium-137	464	442	309-575	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cobalt-57	1160	1000	700-1300	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Cobalt-60	605	626	438-814	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Iron-55	1310	1090	763-1417	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Manganese-54	1120	1080	756-1404	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Nickel-63	1380	1560	1092-2028	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Plutonium-238	33.7	33.3	23.3-43.3	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Plutonium-239/240	36.1	40.1	28.1-52.1	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Potassium-40	505	511	358-664	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Strontium-90	597	727	509-945	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Technetium-99	734	725	508-943	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Thorium 228	49	44.4	31.1-57.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Thorium 230	49	47	32.9-61.1	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Thorium 232	42.3	41.4	29.0-53.8	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Uranium-234/233	34.7	35.9	25.1-46.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Uranium-238	62	69	48-90	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaS52	Soil	Bq/Kg	Zinc-65	833	776	543-1009	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Americium-241	0.555	0.559	0.391-0.727	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cesium-134	0.0271	NA	False Pos. Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cesium-137	6.67	6.9	4.8-9.0	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cobalt-57	30	30.9	21.6-40.2	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cobalt-58	37.5	37.7	26.4-49.0	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Cobalt-60	0.322	0.29	Sens. Eval.	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Hydrogen-3	164	191	134-248	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Iron-55	35.2	25.5	17.9-33.2	Not Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Manganese-54	-0.0059	NA	False Pos. Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Nickel-63	30.8	38.9	27.2-50.6	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Plutonium-238	0.00764	0.0081	Sens. Eval.	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Plutonium-239/240	0.536	0.569	0.398-0.740	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Potassium-40	35.1	30.3	21.2-39.4	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Radium-226	0.386	0.437	0.306-0.568	Acceptable

MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Strontium-90	2.46	2.82	1.97-3.67	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Technetium-99	7.4	6.34	4.44-8.24	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Uranium-234/233	0.526	0.535	0.375-0.696	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Uranium-238	0.528	0.548	0.384-0.712	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-MaW52	Water	Bq/L	Zinc-65	29	26.7	18.7-34.7	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	ug/smpl	Uranium-235	0.0361	0.039	0.027-0.051	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	ug/smpl	Uranium-238	5.45	5.36	3.75-6.97	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	ug/smpl	Uranium-Total	5.486	5.4	3.78-7.02	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Americium-241	0.045	0.0437	0.0306-0.0568	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cesium-134	0.408	0.34	0.238-0.442	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cesium-137	0.803	0.678	0.475-0.881	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cobalt-57	0.001	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Cobalt-60	0.522	0.486	0.340-0.632	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Manganese-54	0.0108	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Plutonium-238	0.0272	0.0216	0.0151-0.0281	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Plutonium-239/240	0.0164	0.0141	0.0099-0.0183	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Strontium-90	0.455	0.502	0.351-0.653	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Uranium-234/233	0.0641	0.064	0.045-0.083	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Uranium-238	0.0661	0.067	0.047-0.087	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdF52	Filter	Bq/smpl	Zinc-65	0.0464	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Americium-241	0.0787	0.0728	0.0510-0.0946	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cesium-134	-0.0168	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cesium-137	0.593	0.707	0.495-0.919	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cobalt-57	3.41	3.4	2.38-4.42	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Cobalt-60	0.000769	NA	False Pos.Test	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Manganese-54	2.79	2.72	1.90-3.54	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Plutonium-238	0.0714	0.0734	0.0514-0.0954	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Plutonium-239/240	0.0011	0.00026	Sens. Eval.	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Strontium-90	0.266	0.37	0.259-0.481	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Uranium-234/233	0.214	0.208	0.146-0.270	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Uranium-238	0.218	0.214	0.150-0.278	Acceptable
MAPEP	2nd/2025	6/6/2025	MAPEP-25-RdV52	Veg	Bq/smpl	Zinc-65	2.05	1.87	1.31-2.43	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrF53	Filter	Bq/smpl	Gross Alpha	1.07	1.24	0.36-2.11	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrF53	Filter	Bq/smpl	Gross Beta	1.79	1.75	0.88-2.63	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrW53	Water	Bq/L	Gross Alpha	0.831	0.96	0.29-1.63	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-GrW53	Water	Bq/L	Gross Beta	1.75	1.9	0.95-2.85	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Americium-241	0.449	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cesium-134	523	613	429-797	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cesium-137	676	686	480-892	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cobalt-57	1.61	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Cobalt-60	1090	1144	801-1487	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Iron-55	1240	518	363-673	Not Acceptable

problem solved

MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Manganese-54	769	771	540-1002	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Neptunium-237	0.465	18.35	12.85-23.86	Not Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Nickel-63	1130	1474	1032-1916	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Plutonium-238	0.0987	0.48	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Plutonium-239/240	0.831	0.33	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Potassium-40	514	492	516-958	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Strontium-90	552	737	516-958	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Technetium-99	433	370	259-481	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Thorium 228	42.8	41.7	29.2-54.2	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Thorium 230	51.6	45.6	31.9-59.3	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Thorium 232	42.4	38.7	27.1-50.3	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Uranium-234/233	33.8	35.9	25.1-46.7	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Uranium-238	62	68	48-88	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaS53	Soil	Bq/Kg	Zinc-65	-1.2	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Americium-241	0.368	0.361	0.253-0.469	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cerium-139	27.3	26.4	18.5-34.3	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cesium-134	6.57	7.34	5.14-9.54	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cesium-137	6.69	6.7	4.7-8.7	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cobalt-57	0.0111	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Cobalt-60	7.17	7.24	5.07-9.41	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Hydrogen-3	252	276	193-359	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Iron-55	31.7	33	23.1-42.9	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Manganese-54	7.93	7.95	5.57-10.34	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Nickel-63	21.2	25	17.5-32.5	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Plutonium-238	-0.00369	0.0019	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Plutonium-239/240	0.00805	0.0037	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Potassium-40	-1.1	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Radium-226	0.343	0.407	0.285-0.529	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Strontium-90	2.62	3.02	2.11-3.93	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Technetium-99	-0.363	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Uranium-234/233	0.399	0.426	0.298-0.554	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Uranium-238	0.373	0.404	0.283-0.525	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-MaW53	Water	Bq/L	Zinc-65	24.7	23.1	16.2-30.0	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	ug/smpl	Uranium-235	0.0228	0.023	0.0161-0.0299	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	ug/smpl	Uranium-238	2.72	3.18	2.23-4.13	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	ug/smpl	Uranium-Total	2.743	3.21	2.25-4.17	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Americium-241	0.0377	0.0364	0.0255-0.0473	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cesium-134	0.761	0.802	0.561-1.043	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cesium-137	0.569	0.512	0.358-0.666	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cobalt-57	1.18	1.13	0.79-1.47	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Cobalt-60	0.0219	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Manganese-54	1.12	1.07	0.75-1.39	Acceptable

MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Plutonium-238	0.0545	0.0538	0.0377-0.0699	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Plutonium-239/240	0.0541	0.0527	0.0369-0.0685	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Strontium-90	1.05	1.15	0.81-1.50	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Uranium-234/233	0.0393	0.0381	0.0267-0.0495	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Uranium-238	0.0409	0.0396	0.0277-0.0515	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdF53	Filter	Bq/smpl	Zinc-65	8.84	1.51	1.06-1.96	Not Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Americium-241	-0.000308	0.00038	Sens. Eval.	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cesium-134	0.00315	NA	False Pos. Test	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cesium-137	1.12	0.986	0.690-1.282	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cobalt-57	4.91	4.47	3.13-5.81	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Cobalt-60	2.42	2.3	1.61-2.99	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Manganese-54	3.3	3.1	2.17-4.03	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Plutonium-238	0.04	0.0366	0.0256-0.0476	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Plutonium-239/240	0.0377	0.371	0.0260-0.0482	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Strontium-90	1.42	1.43	1.00-1.86	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Uranium-234/233	0.111	0.115	0.081-0.150	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Uranium-238	0.117	0.119	0.083-0.155	Acceptable
MAPEP	4th/2025	12/19/25	MAPEP-25-RdV53	Veg	Bq/smpl	Zinc-65	10.4	9.29	6.5-12.08	Acceptable

TABLE 4

2025 ERA PROGRAM PERFORMANCE EVALUATION RESULTS

PT Provider	Quarter / Year	Report Closing / Received Date	Sample Number	Sample Media	Units	Analyte	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Barium-133	103	89.7	71.5 - 108	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Cesium-134	39.9	38.4	25.4 - 51.4	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Cesium-137	162	157	123 - 191	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Cobalt-60	75.8	66.8	50.9 - 82.7	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Zinc-65	78.7	74.3	39.3 - 109	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Gross Alpha	77.3	72.2	55.3 - 89.1	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Gross Beta	54.9	59.2	44.1 - 74.3	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Uranium (Nat)	63.1	63.6	56.6 - 70.6	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	µg/L	Uranium (mass)	85.7	92.7	82.5 - 103	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Tritium	9760	11400	9340 - 13500	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Strontium-89	65	57.4	42.5 - 72.3	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Strontium-90	36.8	42.6	36.5 - 48.7	Acceptable
ERA	1st/2025	03/03/25	RAD-140	Water	pCi/L	Iodine-131	31.8	28.1	24.4 - 31.8	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Barium-133	36.1	30.1	17.9-42.3	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Cesium-134	60.9	65.6	49.8-81.4	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Cesium-137	166	152	118-186	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Cobalt-60	133	113	92.5-134	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Zinc-65	83.5	80.6	44.9-116	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Gross Alpha	28.8	33.8	24.6-43.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Gross Alpha	27.6	33.8	24.6-43.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Gross Beta	45.7	41.7	24.6-43.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Radium-226	14	14.4	12.0-16.8	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Radium-228	4.4	4.76	2.99-6.53	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Radium-228	5.33	4.76	2.99-6.53	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Uranium (Nat)	65.9	68.1	60.8-75.6	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	µg/L	Uranium (mass)	91.76	99.5	88.6-110	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Tritium	14500	15800	13300-18300	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Tritium	15000	15800	13300-18300	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-89	51.2	45.3	31.6-59.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-89	47.3	45.3	31.6-59.0	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-90	30.5	34.3	29.0-39.6	Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Strontium-90	26.5	34.3	29.0-39.6	Not Acceptable
ERA	3rd/2025	08/25/25	RAD-142	Water	pCi/L	Iodine-131	22.8	28.3	24.5-32.1	Not Acceptable
ERA	4th/2025	12/12/25	RAD-143	Water	pCi/L	Iodine-131	22.9	24.3	20.9-27.7	Acceptable
ERA	4th/2025	12/12/25	RAD-143	Water	pCi/L	Strontium-89	63	64.2	48.6-79.8	Acceptable
ERA	4th/2025	12/12/25	RAD-143	Water	pCi/L	Strontium-90	35.7	43.8	37.6-50.0	Not Acceptable

TABLE 5

2025 ERA PROGRAM (MRAD) PERFORMANCE EVALUATION RESULTS

PT Provider	Quarter / Year	Report Closing / Received Date	Sample Number	Sample Media	Units	Analyte	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Actinium-228	1140	1150	759-1450	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Americium-241	986	1060	572-1710	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Bismuth-212	1160	1150	329-1710	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Bismuth-214	514	634	304-943	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Cesium-134	5860	6520	4460-7790	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Cesium-137	4170	4420	3340-5590	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Cobalt-60	3160	3260	2570-4020	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Lead-212	1200	1150	802-1450	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Lead-214	661	634	266-997	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Manganese-54	<37.1	<555	0-555	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Plutonium-238	1000	1070	534-1630	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Plutonium-239	1070	1150	627-1650	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Potassium-40	33600	34100	23500-40700	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Strontium-90	3990	5710	1780-8890	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Thorium-234	3640	3470	1310-5940	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Uranium-234	3320	3500	1640-4590	Acceptable

ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Uranium-238	3190	3470	1900-4660	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Uranium-Total	6650	7120	3950-9210	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	µg/kg	Uranium (mass)	9540	10400	4690-14000	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Soil	pCi/kg	Zinc-65	1330	1240	990-1690	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Americium-241	72.6	67.7	48.3-90.3	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Cesium-134	224	232	151-284	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Cesium-137	468	451	370-592	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Cobalt-60	278	250	212-318	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Iron-55	216	181	66.1-289	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Manganese-54	<3.45	<35.0	0-35	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Plutonium-238	39	40.2	30.4-49.4	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Plutonium-239	64.6	62.3	46.6-75.2	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Strontium-90	19.7	24.6	15.6-33.5	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Uranium-234	32.7	34.2	25.4-40.1	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Uranium-238	32.8	33.9	25.6-40.4	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Uranium-Total	67.2	69.7	50.9-82.7	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	µg/Filter	Uranium (mass)	98.4	102	81.9-119	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Zinc-65	702	632	518-966	Acceptable

ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Gross Alpha	43.8	39.5	20.6-65.1	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Filter	pCi/Filter	Gross Beta	57.5	55.2	33.5-83.4	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Tritium	6450	9420	7100-11500	Not Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Americium-241	45.5	39.5	27.1-50.5	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Cesium-134	1530	1600	1210-1760	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Cesium-137	1130	1080	925-1230	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Cobalt-60	276	255	220-293	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Iron-55	1740	1460	858-2120	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Manganese-54	<3.16	<71.0	0-71	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Plutonium-238	69.4	77.2	46.4-100	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Plutonium-239	54.8	58.4	36.1-72.0	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Strontium-90	556	626	451-774	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Uranium-234	90.8	98.2	74.8-112	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Uranium-238	97.6	97.4	75.5-115	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Uranium-Total	193	200	156-228	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	µg/L	Uranium (mass)	292	292	237-331	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Zinc-65	258	231	206-292	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Gross Alpha	71.8	77.3	28.2-107	Acceptable

ERA	2nd/2025	5/20/2025	MRAD-42	Water	pCi/L	Gross Beta	103	99.4	49.7-137	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Americium-241	1640	1800	1110-2540	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Cesium-134	1700	1880	1250-2500	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Cesium-137	627	572	440-700	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Cobalt-60	1800	1720	1350-2250	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Curium-244	719	860	485-1070	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Manganese-54	<34.7	<207	0-207	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Plutonium-238	3210	3750	2600-4840	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Plutonium-239	4170	4590	3170-5810	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Potassium-40	31200	28500	21400-36100	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Strontium-90	2000	2360	1330-3080	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Uranium-234	3580	3960	2780-5050	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Uranium-238	3700	3930	2780-4920	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Uranium-Total	7510	8080	5160-10900	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	µg/kg	Uranium (mass)	11100	11800	9060-14600	Acceptable
ERA	2nd/2025	5/20/2025	MRAD-42	Veg	pCi/kg	Zinc-65	825	741	553-1100	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Actinium-228	112	1150	759-1450	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Americium-241	1400	1550	837-2190	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Bismuth-212	1260	1150	329-1710	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Bismuth-214	2010	2880	1380-4290	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Cesium-134	2900	3340	2280-3990	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Cesium-137	6950	7190	5440-9090	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Cobalt-60	1170	1190	937-1470	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Lead-212	1350	1150	802-1450	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Lead-214	2530	3020	1270-4750	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Manganese-54	<20.4	<555	0.0-555	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Plutonium-238	831	845	421-1280	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Plutonium-239	1550	1300	708-1870	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Potassium-40	32500	34100	23500-40700	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Strontium-90	6510	9490	2950--14800	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Thorium-234	3850	4200	1590-7190	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-234	4350	4240	1990-5560	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-234	3890	4240	1990-5560	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-238	4380	4200	2300-5640	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-238	4050	4200	2300-5640	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-Total	8942	8630	4790-11200	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Uranium-Total	8160	8630	4790-11200	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	µg/kg	Uranium (mass)	13100	12600	5690-17000	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	µg/kg	Uranium (mass)	12200	12600	5690-17000	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Soil	pCi/kg	Zinc-65	3680	3820	3050-5210	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Americium-241	3290	3510	2170-4960	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Cesium-134	1700	2040	1350-2720	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Cesium-137	2010	2190	1680-2950	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Cobalt-60	1990	1940	1520-2540	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Curium-244	2040	2130	1200-2650	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Manganese-54	<30.7	<207	0.0-207	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Plutonium-238	1140	1120	776-1440	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Plutonium-239	3880	3550	2450-4490	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Potassium-40	27800	28500	21400-36100	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Strontium-90	4200	5330	3000-6950	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Uranium-234	3070	3230	2270-4120	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Uranium-238	3290	3210	2270-4010	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Uranium-Total	6580	6590	4210-8880	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Veg	µg/kg	Uranium (mass)	9880	9610	7380-11900	Acceptable

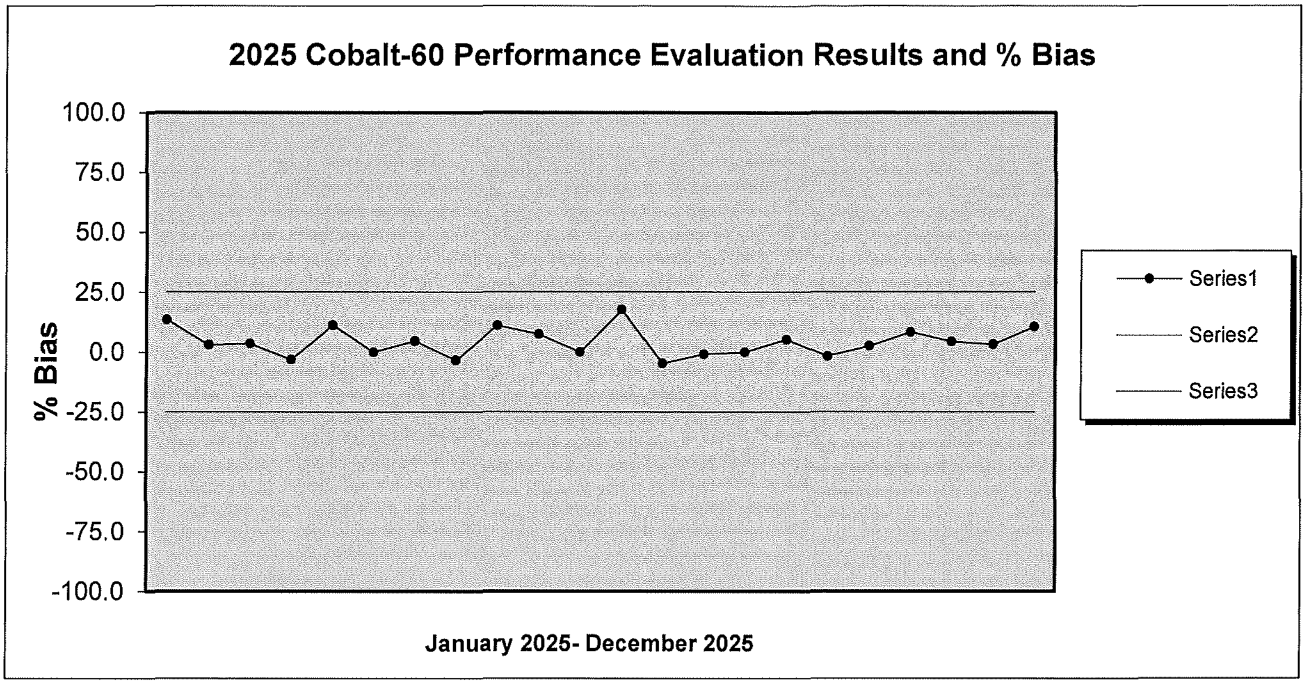
ERA	4th/2025	12/31/25	MRAD-43	Veg	pCi/kg	Zinc-65	2070	1940	1450-2880	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Americium-241	38.7	39.8	28.4-53.1	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Cesium-134	304	341	221-418	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Cesium-137	383	379	311-497	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Cobalt-60	349	322	274-409	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Iron-55	189	166	60.6-265	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Manganese-54	<2.5	<35.0	0.0-35.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Plutonium-238	20	18.4	13.9-22.6	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Plutonium-239	35.6	31.3	23.4-37.8	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Strontium-90	161	158	99.9-215	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-234	60.2	63.4	47.0-74.3	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-234	59.6	63.4	47.0-74.3	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-238	67.8	62.9	47.5-75.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-238	63.1	62.9	47.5-75.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-Total	131	129	94.2-153	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Uranium-Total	127	129	94.2-153	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	µg/Filter	Uranium (mass)	203	188	151-220	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	µg/Filter	Uranium (mass)	189	188	151-220	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Zinc-65	219	193	158-295	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Gross Alpha	37.5	22	11.5-36.2	Not Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Filter	pCi/Filter	Gross Beta	42.3	40.5	24.6-61.2	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Americium-241	73.9	68.6	47.1-87.7	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Cesium-134	720	765	578-842	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Cesium-137	1690	1670	1790-2390	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Cobalt-60	2170	2080	1790-2390	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Iron-55	455	399	234-580	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Manganese-54	<5.37	<71.0	0.0-71.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Plutonium-238	106	115	69.1-149	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Plutonium-239	40.4	39.8	24.6-49.0	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Strontium-90	790	699	503-864	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-234	129	133	101-152	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-234	140	133	101-152	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-238	132	132	102-155	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-238	132	132	102-155	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-Total	270	271	211-309	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Uranium-Total	278	271	211-309	Acceptable

ERA	4th/2025	12/31/25	MRAD-43	Water	µg/L	Uranium (mass)	395	395	320-448	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	µg/L	Uranium (mass)	397	395	320-448	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Zinc-65	512	463	412-584	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Gross Alpha	99.8	136	49.6-188	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Gross Beta	194	188	94.0-259	Acceptable
ERA	4th/2025	12/31/25	MRAD-43	Water	pCi/L	Tritium	27500	28300	21300-34400	Acceptable

FIGURE 1

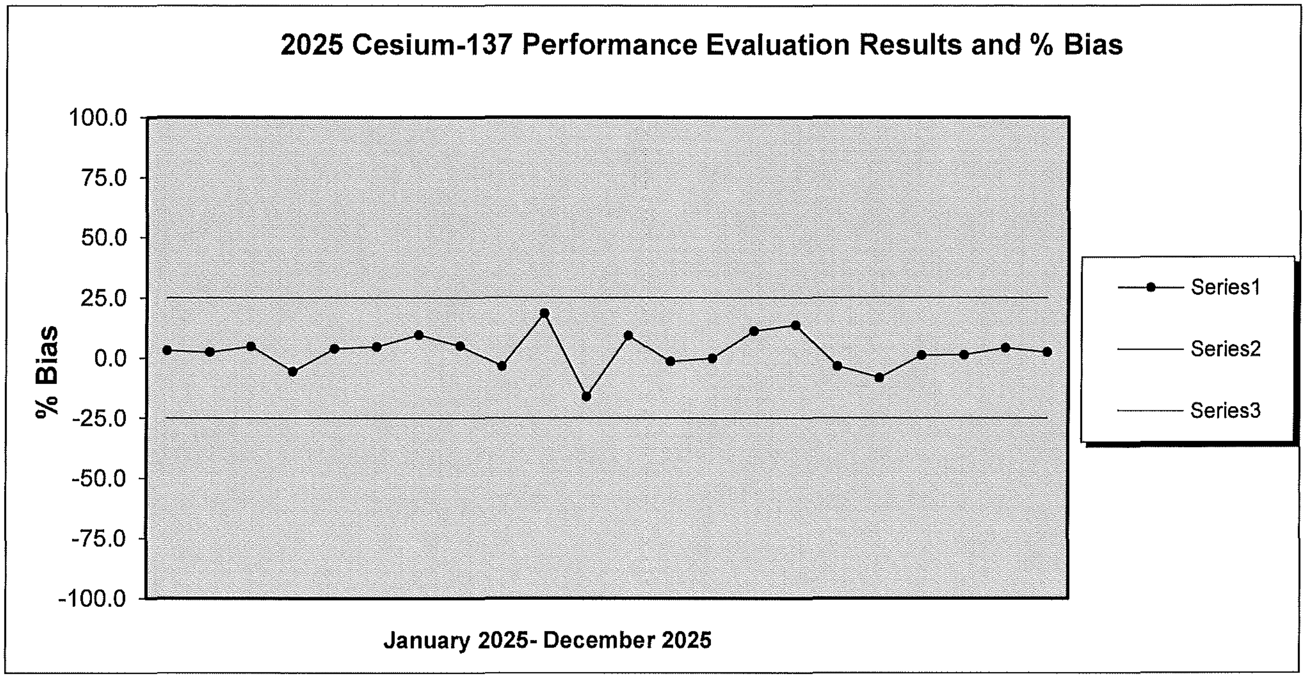
COBALT-60 PERFORMANCE EVALUATION RESULTS AND % BIAS



problem solved

FIGURE 2

CESIUM-137 PERFORMANCE EVALUATION RESULTS AND % BIAS



problem solved

FIGURE 3

TRITIUM PERFORMANCE EVALUATION RESULTS AND % BIAS

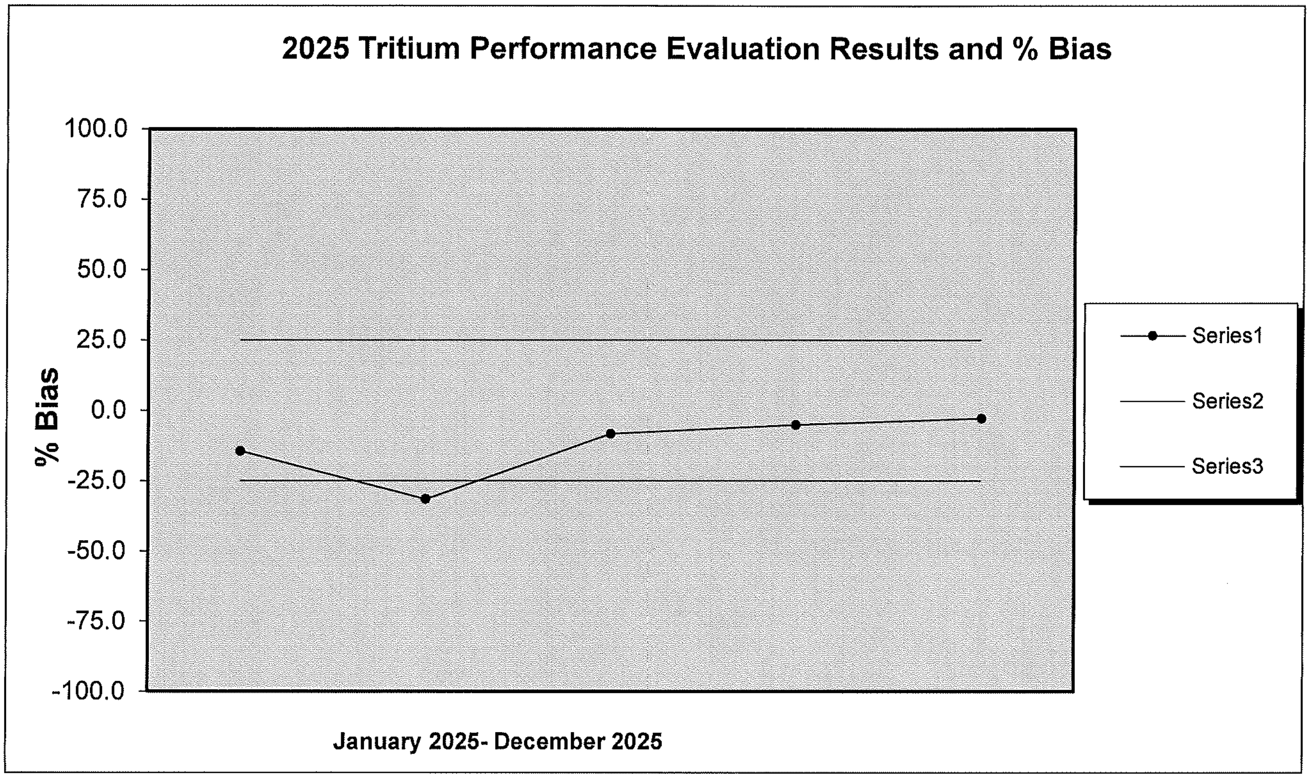
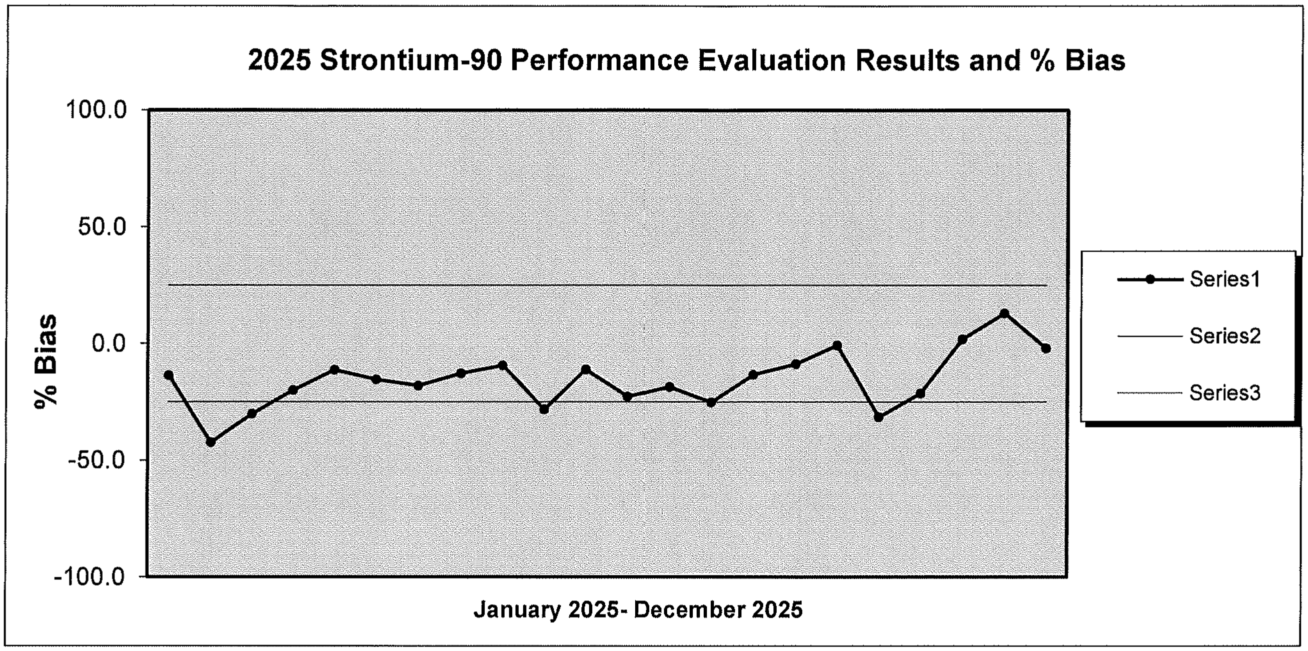


FIGURE 4

STRONTIUM-90 PERFORMANCE EVALUATION RESULTS AND % BIAS



problem solved

FIGURE 5

GROSS ALPHA PERFORMANCE EVALUATION RESULTS AND % BIAS

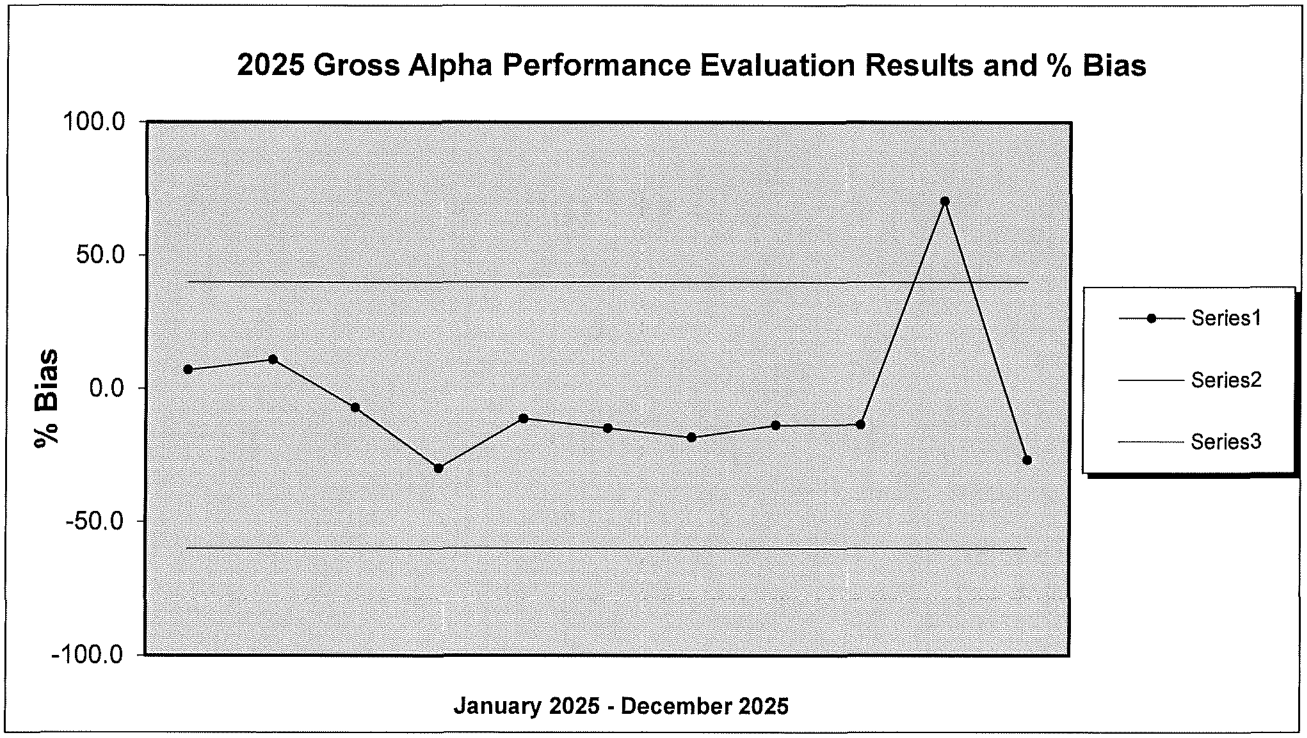
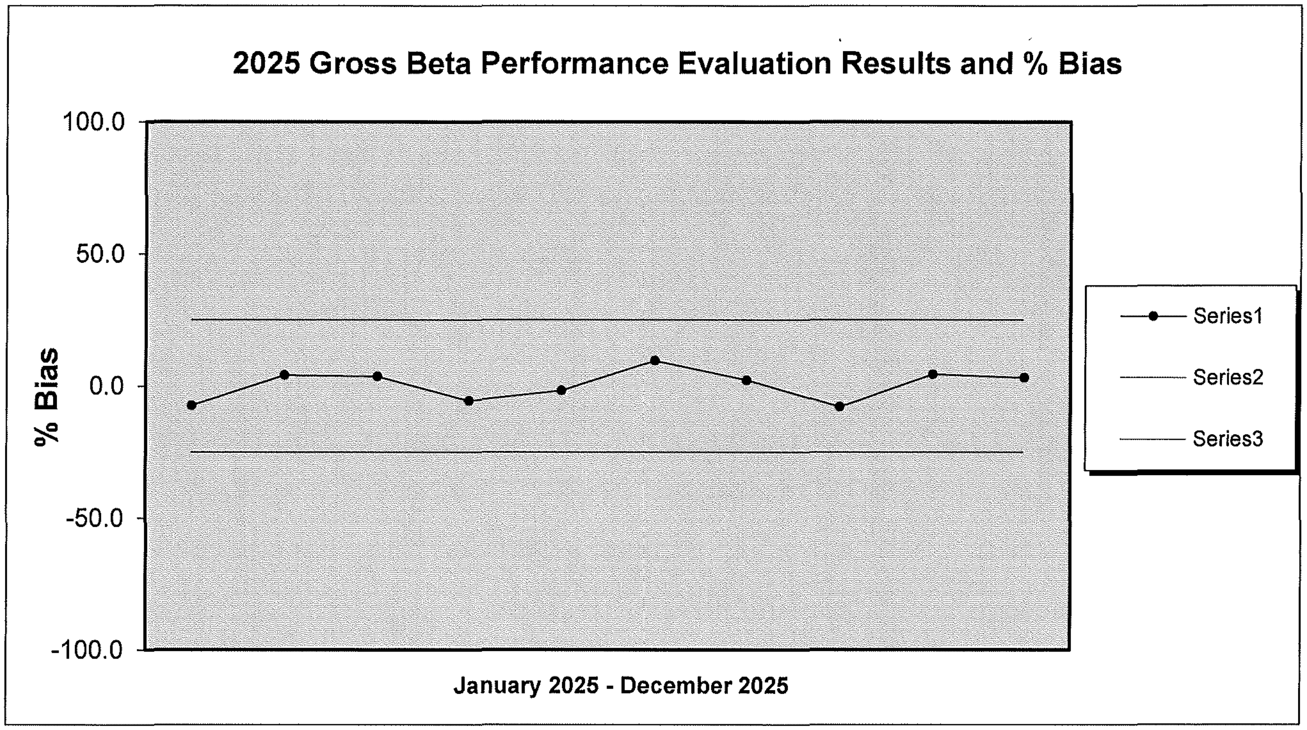


FIGURE 6

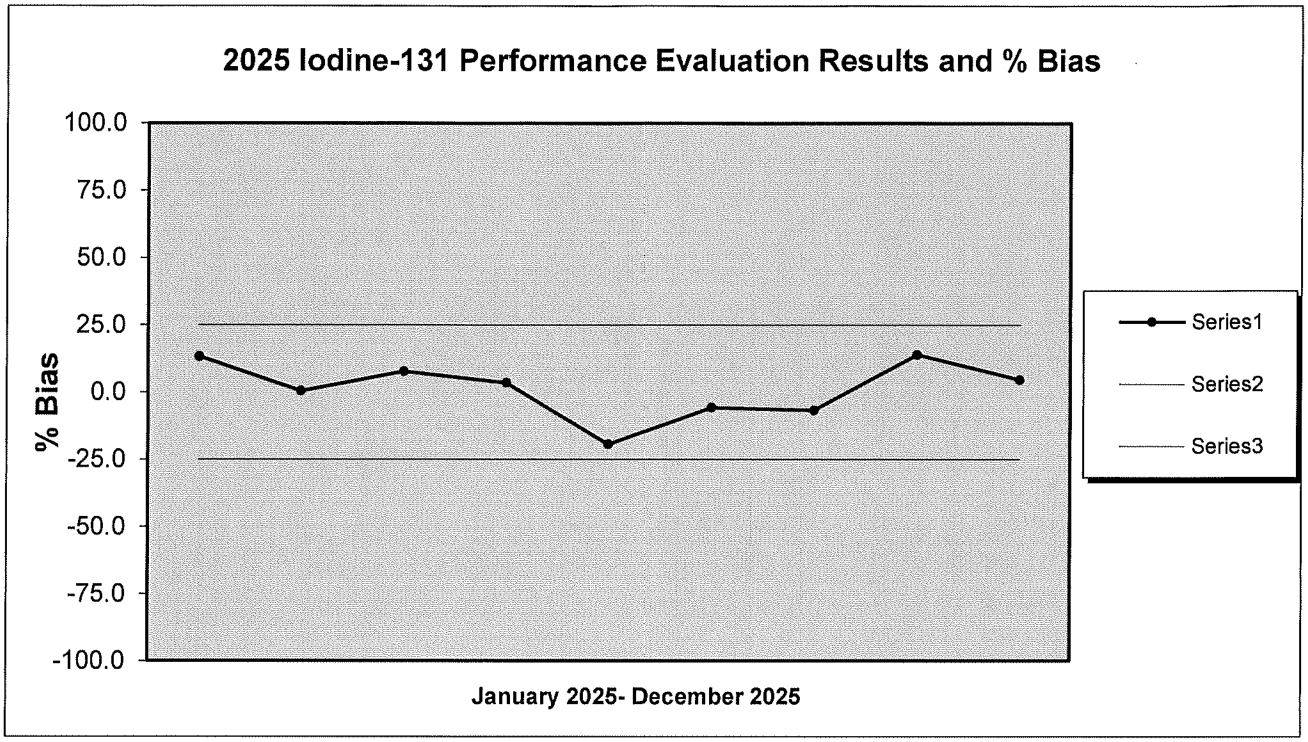
GROSS BETA PERFORMANCE EVALUATION RESULTS AND % BIAS



problem solved

FIGURE 7

IODINE-131 PERFORMANCE EVALUATION RESULTS AND % BIAS



problem solved

FIGURE 8

AMERICIUM-241 PERFORMANCE EVALUATION RESULTS AND % BIAS

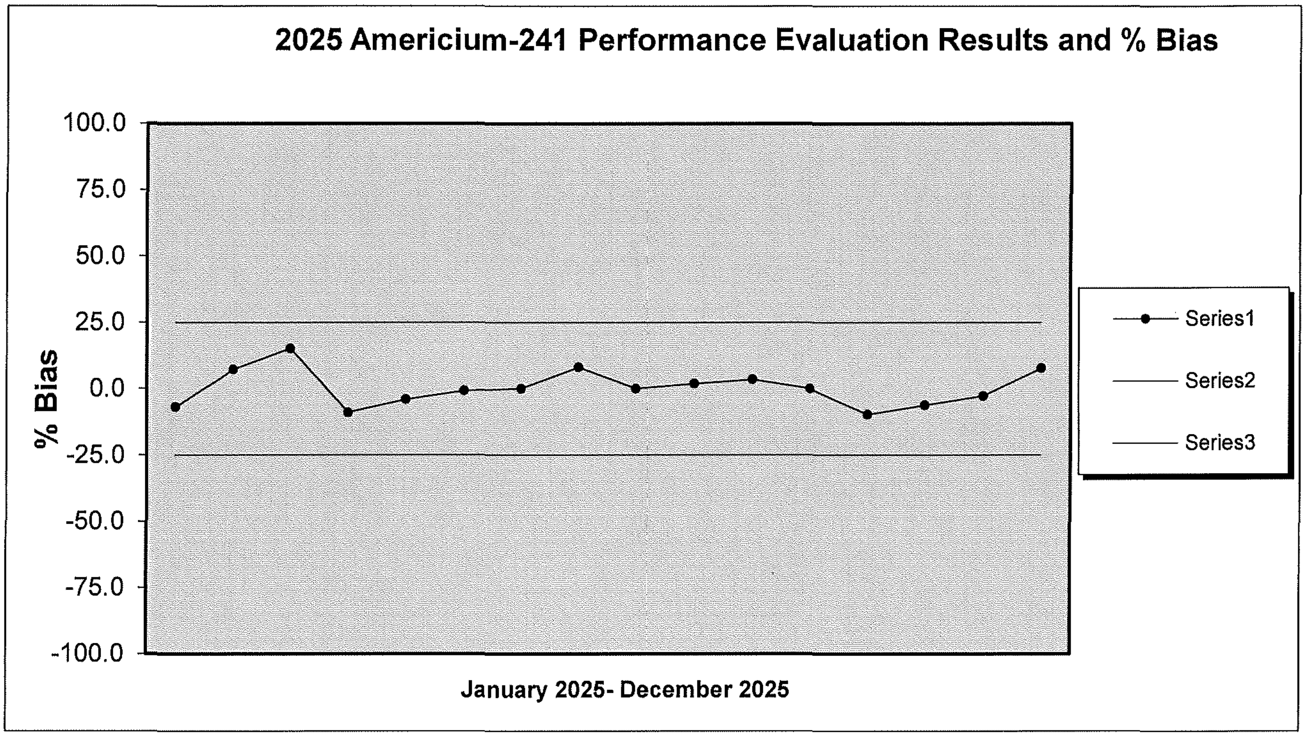


FIGURE 9

PLUTONIUM-238 PERFORMANCE EVALUATION RESULTS AND % BIAS

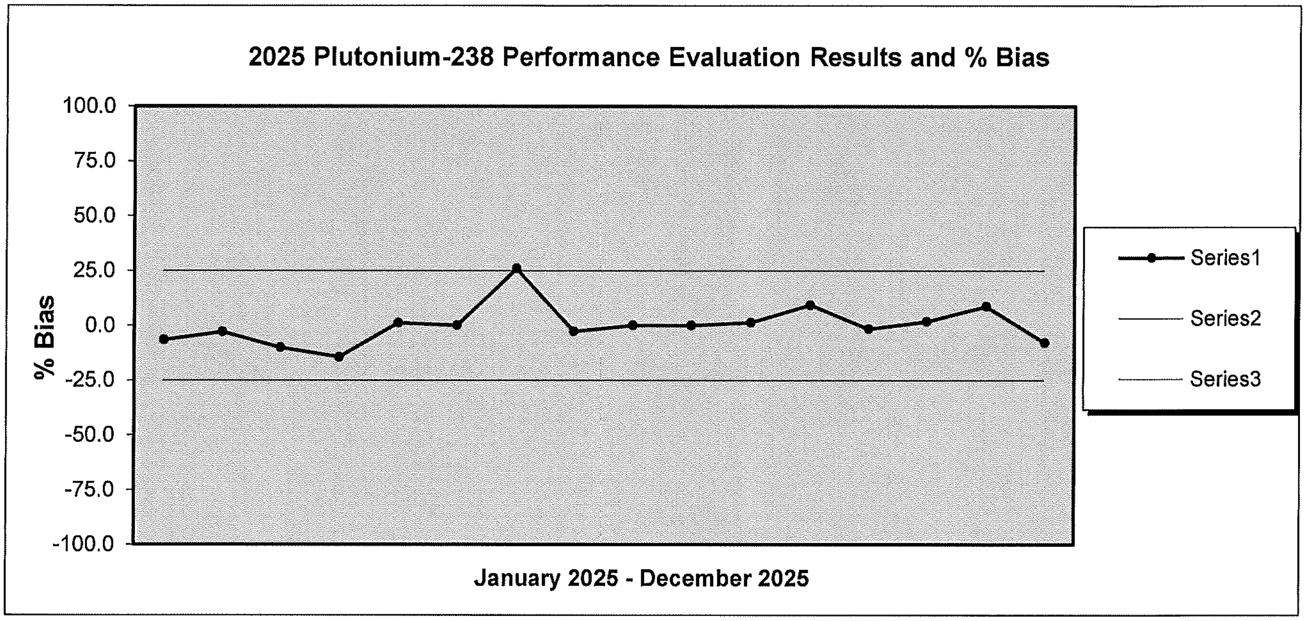


TABLE 6

REMP INTRA-LABORATORY DATA SUMMARY: BIAS AND PRECISION BY MATRIX

2025	Bias Criteria (+ / - 25%		Precision Criteria (Note 1)	
	WITHIN CRITERIA	OUTSIDE CRITERIA	WITHIN CRITERIA	OUTSIDE CRITERIA
TISSUE				
Gamma Spec Solid RAD A-013	85	2	94	0
SOLID				
Gamma Spec Solid RAD A-013 with Iodine	46	6	81	0
VEGETATION				
Gamma Spec Solid RAD A-013	14	0	21	0
LIQUID				
Iodine-131	0	0	253	0
Gross Alpha Non Vol Beta	77	1	220	0
MILK				
Gamma Iodine-131	29	0	205	0
Gamma Spec Liquid RAD A-013 with Ba, La	73	0	202	0
LIQUID				
Gamma Spec Liquid RAD A-013 with Ba, La	206	4	441	0
FILTER				
Gross A & B	1223	2	797	0
LIQUID				
Tritium	624	0	885	0
FILTER				
Gamma Spec Filter	67	2	148	0
SOLID				
Gamma Spec Solid RAD A-013	20	1	21	0
VEGETATION				
Gamma Spec Solid RAD A-013 with Iodine	191	3	220	0
DRINKING WATER				
Gross Alpha Non Vol Beta	193	1	205	0
MILK				
Gas Flow Sr 2nd count	98	0	113	0
LIQUID				
Gas Flow Sr 2nd count	43	0	43	0
Gamma Spec Liquid RAD A-013 with Iodine	50	0	245	0

MILK				
Gamma Spec Liquid RAD A-013 with Iodine	0	0	4	0
TISSUE				
Gas Flow Total Strontium	13	0	13	0
LIQUID				
Gas Flow Total Strontium	50	0	57	0
SOLID				
Gas Flow Sr 2nd count	6	0	20	1
DRINKING WATER				
Tritium	115	0	106	0
Gamma Spec Liquid RAD A-013 with Ba, La	92	0	123	0
LIQUID				
LSC Iron-55	72	0	84	0
LSC Nickel 63	74	0	88	0
DRINKING WATER				
Gas Flow Sr 2nd count	10	0	2	0
SOLID				
Gas Flow Total Strontium	11	0	11	0
MILK				
Gas Flow Total Strontium	30	0	30	0
DRINKING WATER				
LSC Iron-55	61	0	57	0
LSC Nickel 63	65	0	57	0
LIQUID				
Gamma Iodine-131	0	0	4	0
VEGETATION				
Gas Flow Sr 2nd count	17	0	19	0
AIR CHARCOAL				
Gamma Iodine 131 RAD A-013	641	0	956	0
DRINKING WATER				
Gas Flow Total Strontium	56	0	49	0
Gamma Iodine-131	63	0	59	0
SOLID				
LSC Iron-55	15	0	15	0
LSC Nickel 63	15	0	19	0
TISSUE				
Gamma Spec Solid RAD A-013 with Iodine	18	0	22	0
LSC Iron-55	0	0	4	0
LSC Nickel 63	0	0	8	0
AIR CHARCOAL				
Carbon-14 (Ascarite/Soda Lime Filter per Liter)	75	0	75	0
DRINKING WATER				

Gamma Spec Liquid RAD A-013	19	0	19	0
Iodine-131	0	0	49	0
Gamma Spec Liquid RAD A-013 with Iodine	0	0	27	0
TISSUE				
Gas Flow Sr 2nd count	27	0	23	0
FILTER				
Gas Flow Sr 2nd Count	11	0	11	0
TISSUE				
Tritium	2	0	2	0
LIQUID				
Gamma Spec Liquid RAD A-013	10	0	10	0
SOLID				
Gamma Spec Solid RAD A-013 with Ba, La	2	0	2	0
FILTER				
Carbon-14 (Soda Lime)	0	0	8	0
Alpha Spec Plutonium	0	0	2	0
SOLID				
Tritium	3	0	3	0
VEGETATION				
Carbon-14	3	0	3	0

Note 1: The RPD must be 20 percent or less, if both samples are greater than 5 times the MDC. If both results are less than 5 times MDC, then the RPD must be equal to or less than 100%. If one result is above the MDC and the other is below the MDC, then the RPD can be calculated using the MDC for the result of the one below the MDC. The RPD must be 100% or less. In the situation where both results are above the MDC but one result is greater than 5 times the MDC and the other is less than 5 times the MDC, the RPD must be less than or equal to 20%. If both results are below MDC, then the limits on % RPD are not applicable.

TABLE 7

ALL RADIOLOGICAL INTRA-LABORATORY DATA SUMMARY:
BIAS AND PRECISION BY MATRIX:

2025	Bias Criteria (+ / - 25%		Precision Criteria (Note 1)	
	WITHIN CRITERIA	OUTSIDE CRITERIA	WITHIN CRITERIA	OUTSIDE CRITERIA
LIQUID				
ICP-MS Uranium-233, 234 Prep in Liquid	84	0	146	0
Plutonium	600	0	722	2
VEGETATION				
Gas Flow Strontium 90	214	2	205	0
FILTER				
Gross A & B (Americium Calibration) Liquid	383	2	504	0
Alpha Spec Am243	62	3	174	0
SOLID				
LSC Promethium 147	105	0	117	0
TISSUE				
Alpha Spec Plutonium	133	0	163	0
SOLID				
Technetium-99	2478	5	2868	3
FILTER				
Gas Flow Sr-90	3	0	184	0
LSC Plutonium 241 Filter per Liter	0	0	101	0
ICP-MS Uranium-235, 236, 238 in Filter	36	0	164	0
Alpha Spec Polonium	3	0	82	0
LIQUID				
ICP-MS Technetium-99 in Water	65	0	94	0
TISSUE				
Gross Alpha/Beta	22	1	26	0
FILTER				
Carbon-14 (Soda Lime)	0	0	12	0
TISSUE				
Gas Flow Total Strontium	17	0	17	0
DRINKING WATER				
Gas Flow Sr 2nd count	14	0	3	0
LIQUID				
LSC Sulfur 35	42	0	54	0
DRINKING WATER				
Iodine-131	0	0	55	5
MILK				
Alpha Spec Uranium	1	0	4	0
LIQUID				

Iodine-131	8	0	13	1
SOLID				
Alpha Spec Neptunium (pCi/Sample)	18	0	18	0
MILK				
Alpha Spec Neptunium	1	0	1	0
VEGETATION				
Gas Flow Strontium 90	18	0	9	0
DRINKING WATER				
Gas Flow Strontium 90	8	0	4	0
MILK				
Technetium-99	1	0	1	0
FILTER				
Gas Flow Total Radium	0	0	11	0
AIR CHARCOAL				
Gas Flow Strontium 90	0	0	3	0
Alpha Spec Thorium	3	0	3	0
LIQUID				
Alpha Spec Plutonium	1625	8	2068	1
SOLID				
Alpha Spec Plutonium	2347	12	2541	0
LIQUID				
Gamma Nickel 59 RAD A-022	196	1	313	0
SOLID				
Alpha Spec Am241 Curium	2148	5	2294	0
DRINKING WATER				
Tritium in Drinking Water by EPA 906.0	467	0	515	0
FILTER				
Gas Flow Sr 2nd Count	41	1	177	0
MILK				
Gas Flow Sr 2nd count	133	0	153	0
SOLID				
LSC Selenium 79	131	0	248	1
FILTER				
Alpha Spec Plutonium	269	5	532	0
Tritium	556	0	1222	0
Gamma Iodine-129	0	0	342	0
SOLID				
ICP-MS Uranium-234, 235, 236, 238 Prep in Solid	427	0	424	0
VEGETATION				
Alpha Spec Plutonium	150	0	143	0
FILTER				
Gamma Spec Filter	440	9	533	0
SOLID				
ICP-MS Uranium-235, 236, 238 in Solid	775	2	846	1

LIQUID				
Gas Flow Strontium 89 & 90	6	0	58	0
SOLID				
Tritium	209	0	282	1
Gross Alpha Beta Soil Leach	193	0	199	0
TISSUE				
Alpha Spec Uranium	70	0	117	0
AIR CHARCOAL				
Carbon-14 (Ascarite/Soda Lime Filter per Liter)	101	0	101	0
FILTER				
Alpha Spec Thorium	4	0	175	0
DRINKING WATER				
Alpha Spec Uranium	6	1	13	0
LIQUID				
Alpha Spec Radium 226	136	0	161	0
Alpha Spec Actinium	9	0	81	0
MILK				
Carbon-14	22	0	22	0
FILTER				
ICP-MS Tc-99 Prep in Filter	0	0	11	0
Alpha Spec Radium 226	22	0	28	0
LSC Iron-55	11	0	34	0
SOLID				
Technetium-99	15	0	15	0
FILTER				
GFC Chlorine-36 in Filters	3	0	31	0
LIQUID				
Gamma Iodine-131	0	0	5	0
TISSUE				
Alpha Spec Total Uranium	4	0	4	0
Gamma Iodine-129	15	0	15	0
Carbon-14	12	0	12	0
DRINKING WATER				
Gamma Nickel 59 RAD A-022	5	0	5	0
LIQUID				
Alpha Spec Am241 Curium	1552	5	1967	0
SOLID				
Alpha Spec Thorium	3358	78	3351	1
FILTER				
Direct Count-Gross Alpha/Beta	837	16	287	0
SOLID				
Gas Flow Strontium 90	2056	10	2221	0
LIQUID				
Alpha Spec Total U RAD A-011	252	3	193	0

SOLID				
Alpha Spec Total Uranium	181	8	145	0
DRINKING WATER				
Gamma Spec Liquid RAD A-013 with Ba, La	125	0	170	0
LIQUID				
Gamma Spec Liquid RAD A-013 with Iodine	249	2	543	0
FILTER				
Alphaspec Pu Filter per Liter	0	0	175	0
DRINKING WATER				
Gas Flow Total Radium	5	0	5	0
SOLID				
Gamma Nickel 59 RAD A-022	1092	5	1161	0
FILTER				
Alpha Spec Neptunium	273	0	588	0
VEGETATION				
Alpha Spec Thorium	33	2	35	0
TISSUE				
Alpha Spec Plutonium	8	0	11	0
SOLID				
ICP-MS Uranium-234, 235, 236, 238 in Solid	788	12	785	0
DRINKING WATER				
Gamma Spec Drinking Water RAD A-013	122	1	295	33
AIR CHARCOAL				
Gamma Spec Filter RAD A-013	108	18	126	0
FILTER				
Nickel-63	0	0	115	0
VEGETATION				
Gamma Spec Solid RAD A-013 with Iodine	264	3	302	0
FILTER				
Gross Alpha/Beta	113	3	373	0
SOLID				
ICP-MS Uranium-235, 236, 238 Prep in Solid	422	0	461	0
DRINKING WATER				
Gas Flow Strontium 89 & 90	22	0	63	14
LSC Nickel 63	92	0	82	0
FILTER				
ICP-MS Uranium-233, 234 Prep in Filter	19	0	71	0
ICP-MS Uranium-235, 236, 238 Prep in Filter	26	0	85	0
Alpha Spec Polonium,(Filter/Liter)	0	0	63	0
TISSUE				

Gas Flow Strontium 90	167	0	166	0
LIQUID				
LSC, Rapid Strontium 89 and 90	74	0	128	1
TISSUE				
LSC Iron-55	0	0	5	0
FILTER				
Carbon-14	18	1	106	1
Gas Flow Pb-210	0	0	98	0
Tritium	487	0	589	0
SOLID				
Gross Alpha/Beta (Americium Calibration) Solid	16	0	20	0
LIQUID				
LSC Radon 222	93	0	98	0
SOLID				
Alpha Spec Uranium	112	5	159	0
FILTER				
LSC Promethium 147	8	0	35	0
TISSUE				
Alpha Spec Am241 Curium	60	0	112	0
LIQUID				
Gross Alpha Co-precipitation	6	0	138	1
TISSUE				
Alpha Spec Neptunium	29	0	29	0
AIR CHARCOAL				
Carbon-14	11	0	23	0
SOLID				
Gamma Spec Solid with Ra226, Ra228	13	0	13	0
AIR CHARCOAL				
Gamma Spec Charcoal	25	0	25	0
LIQUID				
LSC Phosphorus-32	3	0	3	0
DRINKING WATER				
Gas Flow Total Alpha Radium	122	1	123	0
VEGETATION				
Alpha Spec Uranium	0	0	3	0
SOLID				
Alpha Spec Plutonium	15	0	15	0
VEGETATION				
Alpha Spec Neptunium	7	0	7	0
LIQUID				
Chlorine-36 in Liquids	28	0	44	0
FILTER				
GFC Chlorine-36 in Filters PL	0	0	17	2
SOLID				

ICP-MS Technetium-99 Prep in Soil	18	0	9	0
ICP-MS Technetium-99 in Soil	18	0	9	0
VEGETATION				
Alpha Spec Plutonium	0	0	9	0
AIR CHARCOAL				
Alpha Spec Uranium	3	0	3	0
DRINKING WATER				
Gamma Iodine-129	3	0	8	0
LIQUID				
Gamma Iodine-129	814	1	987	0
SOLID				
Alpha Spec Uranium	3137	106	3245	0
Alpha Spec Neptunium	1894	1	2105	1
Gamma Spec Solid RAD A-013	7538	347	7612	0
Gas Flow Radium 228	634	5	671	1
Gross Alpha/Beta	2270	65	2539	4
Alpha Spec Plutonium	1076	12	1128	1
LSC Iron-55	808	3	821	0
LIQUID				
Chlorine-36 in Liquids	89	1	166	0
ICP-MS Uranium-234, 235, 236, 238 Prep in Liquid	211	0	287	0
ICP-MS Uranium-234, 235, 236, 238 in Liquid	428	0	541	0
Gamma Spec Liquid RAD A-013	3136	21	3282	0
FILTER				
Alphaspec Am241 Curium Filter per Liter	4	0	213	0
Lucas Cell Ra-226	31	0	119	0
LIQUID				
Alpha Spec Am243	110	1	162	0
FILTER				
LSC Iron-55	184	1	345	0
LSC Nickel 63	19	0	97	0
Alpha Spec Thorium	160	0	507	1
Gamma Nickel 59 RAD A-022	193	2	427	0
Alpha Spec Plutonium	136	1	716	0
LIQUID				
Alpha/Beta (Americium Calibration) Drinking Water	130	0	129	1
FILTER				
LSC, Rapid Strontium 89 and 90	229	1	378	1
Alpha Spec Am241Curium	310	4	949	0
Alpha Spec Uranium	43	1	123	0
SOLID				
ICP-MS Uranium-233, 234 in Solid	390	0	426	0

MILK				
Tritium	6	0	20	0
TISSUE				
LSC Nickel 63	0	0	10	0
VEGETATION				
Gas Flow Total Radium	11	1	12	0
Technetium-99	12	0	12	0
TISSUE				
Tritium	101	0	104	0
FILTER				
Technetium-99	0	0	106	0
SOLID				
Alpha Spec Radium 226	195	2	211	0
FILTER				
Alpha Spec Californium FPL	0	0	37	0
TISSUE				
Technetium-99	92	0	88	0
MILK				
Gamma Spec Liquid RAD A-013 with Iodine	7	0	12	0
SOLID				
GFC Chlorine-36 in Solids	154	0	172	0
VEGETATION				
Carbon-14	23	0	26	0
DRINKING WATER				
ECLS-R-GA NJ 48 Hr Rapid Gross Alpha	70	0	51	0
MILK				
Alpha Spec Am241 Curium	1	0	4	0
DRINKING WATER				
Lucas Cell Radium 226	10	0	5	0
MILK				
Gamma Iodine-129	20	0	29	0
SOLID				
Alpha Spec Am241 (pCi/Sample)	15	0	15	0
Alpha Spec Thorium	15	0	15	0
Gross Alpha/Beta	4	0	4	0
LIQUID				
Alpha Spec Uranium	4	0	4	0
SOLID				
LSC Sulfur 35	6	0	6	0
Organically Bound Tritium	3	0	3	0
FILTER				
Gamma Spec Liquid RAD A-013	0	0	5	0
LIQUID				
Alpha Spec Neptunium	991	0	1233	0

problem solved

Alpha Spec Plutonium	272	8	390	1
Tritium	6505	8	7440	5
SOLID				
Tritium	2076	5	2536	1
FILTER				
Gross A & B	1806	2	1424	0
LIQUID				
Gas Flow Total Radium	1352	5	1473	0
Gross Alpha Non Vol Beta	4683	50	6237	7
DRINKING WATER				
Gas Flow Total Strontium	77	0	68	0
LIQUID				
Gamma Spec Liquid RAD A-013 with Ba, La	277	4	597	0
Gas Flow Strontium 90	2496	16	3113	1
SOLID				
Alpha Spec Am243	728	14	818	0
LIQUID				
LSC Promethium 147	224	1	324	0
Gas Flow Sr 2nd count	316	0	618	1
FILTER				
LSC Plutonium Filter	327	1	620	1
VEGETATION				
Alpha Spec Uranium	145	2	164	0
TISSUE				
Alpha Spec Uranium	8	0	8	0
FILTER				
LSC Nickel 63	217	0	439	1
Gamma Spec Charcoal	59	1	60	0
Gamma Iodine 129	64	0	56	0
SOLID				
Gas Flow Lead 210	569	2	604	2
LIQUID				
Gas Flow Strontium 90	63	0	107	0
MILK				
Gamma Spec Liquid RAD A-013	26	0	213	0
LIQUID				
Gross Alpha Beta (Americium Calibration) Liquid	180	3	424	0
AIR CHARCOAL				
Gamma Iodine 131 RAD A-013	874	0	1305	0
VEGETATION				
Alpha Spec Total Uranium	64	1	32	0
DRINKING WATER				
LSC Radon 222	282	0	282	0
VEGETATION				

Gamma Spec Solid RAD A-013	286	2	244	0
SOLID				
Alpha Spec Polonium Solid	34	0	34	0
VEGETATION				
Gas Flow Lead 210	12	0	12	0
MILK				
Gamma Iodine 131 RAD A-013	0	0	192	0
FILTER				
Alpha Spec Radium,Filter/Liter	0	0	45	0
LSC Selenium 79	0	0	50	0
LIQUID				
ICP-MS Technetium-99 Prep in Water	79	0	101	0
FILTER				
Lucas Cell Radium-226	0	0	75	0
LIQUID				
Lucas Cell Radium-226	36	0	56	0
FILTER				
Alphaspec Np Filter per Liter	4	0	55	0
Gross Alpha Beta (Flame, Unflame)	0	0	24	0
MILK				
Alpha Spec Plutonium	1	0	4	0
SOLID				
LSC Phosphorus-32	3	0	6	0
Alpha Spec Polonium Solid	99	3	106	0
LIQUID				
Gas Flow Strontium 90	9	0	9	0
DRINKING WATER				
Gas Flow Lead 210	4	0	4	0
LIQUID				
Pyrolysis Oil Liquid units	0	0	3	0
DRINKING WATER				
Gross Alpha Co-precipitation	0	0	5	0
LIQUID				
Alpha Spec Thorium	1079	3	1638	0
LSC Iron-55	538	0	906	0
DRINKING WATER				
Gross Alpha Non Vol Beta	1274	5	1368	17
SOLID				
Lucas Cell Radium 226	844	20	936	1
TISSUE				
Gamma Spec Solid RAD A-013	366	7	366	0
SOLID				
Gamma Spec Ra226 RAD A-013	546	6	522	0
LIQUID				
Gas Flow Lead 210	279	1	421	0

problem solved

SOLID				
Gas Flow Total Strontium	586	6	673	0
DRINKING WATER				
Alpha/Beta (Americium Calibration) Drinking Water	49	0	52	1
SOLID				
Carbon-14	1787	10	2219	5
Gamma Iodine-129	735	0	1087	0
LIQUID				
LSC Selenium 79	342	0	407	0
VEGETATION				
Alpha Spec Am241 Curium	76	0	100	0
SOLID				
Gas Flow Sr 2nd count	105	0	134	1
DRINKING WATER				
LSC Iron-55	87	0	82	0
FILTER				
ICP-MS Uranium-233, 234 in Filter	19	0	72	0
VEGETATION				
Gross Alpha/Beta	66	0	66	0
SOLID				
ICP-MS Uranium-233, 234 Prep in Solid	408	0	444	0
LIQUID				
Tritium in Drinking Water by EPA 906.0	74	0	111	3
DRINKING WATER				
Gamma Iodine-131	86	0	81	0
SOLID				
Gamma Spec Solid RAD A-013 with Iodine	63	6	107	0
LIQUID				
ECLS-R-GA NJ 48 Hr Rapid Gross Alpha	0	0	59	1
DRINKING WATER				
Iodine-131	0	0	67	0
Gas Flow Radium 228	10	0	5	0
VEGETATION				
Tritium	25	0	25	0
TISSUE				
Alpha Spec Thorium	8	0	8	0
FILTER				
Total Activity in Filter,	15	0	36	0
TISSUE				
Gamma Spec Solid RAD A-013 with Iodine	24	0	30	0
SOLID				
Gamma Spec Liquid RAD A-013	25	0	21	0

FILTER				
Gas Flow Radium 228	6	0	24	0
SOLID				
Gamma Spec Solid RAD A-013 with Ba, La	3	0	3	0
FILTER				
ICP-MS Uranium-234, 235, 236, 238 Prep in Filter	12	0	62	0
LIQUID				
Alpha Spec Polonium	43	0	42	1
VEGETATION				
Alpha Spec Am241 (pCi/Sample)	0	0	9	0
SOLID				
Gross Alpha Beta (F,U)	19	0	19	0
DRINKING WATER				
Carbon-14	0	0	5	0
LIQUID				
ICP-MS Uranium-233, 234 in Liquid	74	0	127	0
ICP-MS Uranium-235, 236, 238 Prep in Liquid	96	0	155	0
ICP-MS Uranium-235, 236, 238 in Liquid	160	0	267	2
Carbon-14	1193	4	1510	2
DRINKING WATER				
Gas Flow Radium 228	681	1	754	6
LIQUID				
Gas Flow Radium 228	3257	26	4041	2
Gas Flow Radium 228	63	0	99	0
DRINKING WATER				
Tritium	164	0	155	0
Gas Flow Strontium 90	261	0	272	18
Lucas Cell Radium-226	614	0	739	1
LIQUID				
Iodine-131	0	0	345	0
SOLID				
LSC Nickel 63	1497	1	1678	6
LIQUID				
Radium 226 + 228 Sum (Result and TPU only)	89	0	217	0
FILTER				
Gas Flow Ra-228	0	0	79	0
LIQUID				
Gross Alpha Beta (Flame, Unflame)	1458	4	1487	1
VEGETATION				
Gas Flow Sr 2nd count	23	0	26	0
FILTER				
Technetium-99	29	0	897	0

Gas Flow Strontium 90	64	3	485	0
SOLID				
Total Activity,	89	0	96	0
VEGETATION				
Tritium	135	1	140	0
MILK				
Gas Flow Total Strontium	41	0	41	0
SOLID				
LSC, Rapid Strontium 89 and 90	239	3	268	0
LIQUID				
Alpha Spec Polonium	92	0	132	0
Gamma Iodine 131 RAD A-013	3	0	8	0
FILTER				
Gas Flow Lead 210	16	1	55	0
AIR CHARCOAL				
Gamma Iodine-129	100	0	100	0
Gamma Iodine 129	26	0	26	0
FILTER				
ICP-MS Uranium-234, 235, 236, 238 in Filter	24	0	124	0
SOLID				
Gas Flow Strontium 90	15	0	15	0
FILTER				
Filter Prep	9	0	0	0
Gas Flow Total Strontium	13	0	16	0
SOLID				
Gamma Spec Solid RAD A-013 (pCi/Sample)	17	0	17	0
LIQUID				
Gamma Spec Drinking Water RAD A-013	17	0	17	0
AIR CHARCOAL				
Alpha Spec Am241Curium	3	0	3	0
DRINKING WATER				
Alpha Spec Thorium	8	0	8	0
LIQUID				
Alpha Spec Uranium	2843	77	3700	0
LSC Nickel 63	754	3	1135	1
Technetium-99	4005	2	3956	1
Lucas Cell Radium 226	1860	19	2438	0
Gas Flow Total Strontium	652	5	747	0
Gas Flow Total Alpha Radium	73	0	133	0
SOLID				
LSC Plutonium	1486	1	1658	3
MILK				

Gamma Spec Liquid RAD A-013 with Ba, La	100	0	276	0
Gamma Iodine-131	40	0	280	0
FILTER				
Gamma Spec Filter RAD A-013 Direct Count	12	0	35	0
Alpha Spec U	8	1	270	0
Alpha Spec Uranium	327	6	826	0
Carbon-14	25	1	452	1
Gamma Spec Filter RAD A-013	1266	63	1429	0
Carbon-14 Direct Count	0	0	59	0
DRINKING WATER				
Gamma Spec Liquid RAD A-013	35	0	35	0
SOLID				
Tritium	203	0	190	0
VEGETATION				
Alpha Spec Plutonium	18	0	21	0
TISSUE				
Gas Flow Sr 2nd count	37	0	31	0
DRINKING WATER				
Gamma Spec Liquid RAD A-013 with Iodine	0	0	36	0
LIQUID				
Total Activity,	26	0	67	0
MILK				
Gas Flow Strontium 90	25	0	46	0
DRINKING WATER				
Alpha Spec Polonium	9	0	9	0
LIQUID				
LSC Calcium 45	42	0	54	0
FILTER				
Alpha Spec Plutonium	41	1	42	0
ICP-MS Tc-99 in Filter	0	0	11	0
SOLID				
ICP-MS U-234, 235, 236, 238 Prep per sample	9	0	9	0
VEGETATION				
Alpha Spec Uranium	0	0	9	0
Gamma Spec Solid RAD A-013 (pCi/Sample)	8	1	9	0
FILTER				
Gamma I-131, filter	7	0	7	0
VEGETATION				
Gamma Iodine-129	3	0	3	0
AIR CHARCOAL				
Alpha Spec Plutonium	3	0	3	0
DRINKING WATER				

Technetium-99	5	0	5	0

Note 1: The RPD must be 20 percent or less, if both samples are greater than 5 times the MDC. If both results are less than 5 times MDC, then the RPD must be equal to or less than 100%. If one result is above the MDC and the other is below the MDC, then the RPD can be calculated using the MDC for the result of the one below the MDC. The RPD must be 100% or less. In the situation where both results are above the MDC but one result is greater than 5 times the MDC and the other is less than 5 times the MDC, the RPD must be less than or equal to 20%. If both results are below MDC, then the limits on % RPD are not applicable.

TABLE 8

2025 CORRECTIVE ACTION REPORT SUMMARY

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 5/29/2025	2. CA Requester: GEL-QA

3. Nonconformance, Audit Finding, Problem, Complaint, or Improvement Opportunity Description:

Summary of MRAD-42 Drinking Water Study Unacceptable Ratings

Sample ID	Parameter	Reported Value	Reference Value	Acceptance Range
MRAD Water	Uranium-234 (by ICP-MS)	114 pCi/L	98.2 pCi/L	74.8-112 pCi/L
MRAD Air Filter	Uranium-234 (by ICP-MS)	44.5 pCi/F	34.2 pCi/F	25.4-40.1 pCi/F
MRAD Water H3	Tritium	6450 pCi/L	9420 pCi/L	7100-11500 pCi/L

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No X	4. CARR No. 250529-1607

5. CA Title: ISO Documentation of PT Failures in MRAD-42

6. Leader Assigned Responsibility for Implementation: Jennie Kill-Bowden and Greg Ramsay

7. Team Members: Liquid Scintillation and Rad-ICPMS analysts

8. Proposed Implementation Date: ASAP

9. Director, Quality Systems Approval: [signature] Date: 5/29/2025

10. Containment Actions, if any:
Upon receipt of the PT report, an investigation was initiated by the Quality Department and a Corrective Action (CARR) team assembled. The team consisted of representatives from the affected laboratories. The sample preparation and chemical separation processes were reviewed. This included review of reagents and standards used in the sample preparation steps, calibration records, process control samples, and data review. The investigation determined that the laboratory met all quality control criteria specified in each method.

11. Root Cause(s):

Uranium-234: The laboratory reviewed the data and noted that the reference values were less than the Lc for the analysis. Both matrices were duplicated during analysis. The duplicates results were within limits and met replication criteria with RER <2. Both samples were run at a 10x dilution due to over range concentration of other isotopes.

Tritium: The laboratory reviewed the data and counting process for this sample and no errors were noted. It was noted that the duplicate meet acceptance criteria in the original preparation. The sample was prepared again in duplicate, and the results were within the acceptance criteria of the PT.

12. Actions to Prevent Potential Occurrence or Recurrence:
The laboratory will scrutinize dilutions to determine the most appropriate level to lessen the impact on the detection limits and non-detected results.

13. Implementation of Permanent Corrective/Preventive Actions or Improvements:
The lab will continue to monitor the recoveries of these parameters to ensure that there are no continued issues. During the analysis time period for MRAD-42, the laboratory successfully completed the analysis of other uranium isotopes in water and filters as well as Tritium in water in PT study MAPEP-52. In which, the samples were prepared and analyzed by the same processes and procedures.

14. Verify Corrective/preventive Action(s) or Improvement(s):
The lab will continue to monitor the performance of these methods and complete additional PT samples as they become available.

15. Lessons Learned. Who can benefit from Lessons Learned?
The Laboratory's objective is to provide accurate data at all times and assurances to our clients that GEL can meet acceptance criteria for the PT programs that it participates in. The laboratory and its clients benefit from continuous demonstration of laboratory proficiency using Performance Testing Samples.

16. Preparer's Name(s):	17. Approval of Leader Responsible for implementation:
Amanda Fehr:	Jennie Kill-Bowden:
Amanda L. Fehr	[signature]
Date: 07/14/2025	Date: 7/15/2025
	Greg Ramsay:
	[signature]
	Date: 7/15/25

Supplemental Pages Attached? Yes ☐ No X

18. Reviewed and Approved by Director, Quality Systems:

[signature] Date: 7/15/2025

problem solved

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 06/06/2025

2. CA Requester: GEL-Quality

3. Nonconformance, Audit Finding, Problem, Complaint or Improvement Opportunity Description:

Unacceptable ratings were obtained for the following parameters associated with this study.

Summary of MAPEP-52 Study Unacceptable Ratings

Sample ID	Parm	Reported Value	Reference Value	Acceptance Range
MAPEP-24-MaW52	Iron-55	35.2 Bq/L	25.5 Bq/L	17.9-33.2 Bq/L
MAPEP-24-MaW52	Copper Lead Nickel Zinc	51.1 mg/L 3.05 mg/L 0.305 mg/L 44.7 mg/L	0.510 mg/L 0.192 mg/L 0.193 mg/L 0.592 mg/L	0.357-0.663 mg/L 0.134-0.250 mg/L 0.135-0.251 mg/L 0.414-0.770
MAPEP-24-MaS52	Cadmium Thallium	0.408 mg/kg -0.926 mg/kg	0.696 mg/kg 1.10 mg/kg	0.0487-0.905 mg/kg 0.77-1.43 mg/kg

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No **X**

4. CARR No. 250606-1612

5. CA Title: ISO Documentation of PT failures in MAPEP-52

6. Leader Assigned Responsibility for Implementation: Jennie Kill-Bowden and Edmund Frampton

7. Team Members: Radiochemistry and Metals analysts

8. Proposed Implementation Date: Immediately

9. Director, Quality Systems Approval: Date: 06/06/2025

10. Containment Actions, if any:

Following receipt of the PT report, the Quality Department initiated an investigation and formed a Corrective Action (CARR) team with representatives from the affected laboratories. The team reviewed sample preparation, reagents, calibration records, and conducted analyst interviews.

The findings of the investigation confirmed that the laboratory adhered to all quality control criteria and followed internal procedures and policies as required. These failures were documented and tracked through GEL's internal non-conformance system, ensuring a systematic approach to addressing and resolving issues.

11. Root Cause(s):

MAPEP-24-MaW52 (Fe-55): During the review of the analysis data, it was noted that the soil results for this study, while within limits, also had a high bias. The laboratory determined that the Fe-59 tracer contained trace amounts of impurities that were having an impact in older standard solutions. As the Fe-59 decays, the cross-talk subtraction does not account for the tracer activity added from the impurity.

MAPEP-24-MaW52 (metals): All instrument and batch QC were within limits at the time of analysis. The laboratory reanalyzed the sample and results were within the acceptance limits of the PT study. The laboratory has concluded that an unidentified error occurred at the time of the original analysis.

MAPEP-24-MaS52 (metals): The laboratory reviewed the analysis data and noted that there were no calibration or instrument QC issues.
For cadmium, the assigned value was 0.696 mg/kg. Method 6010 reported an estimated result of 0.408 mg/kg with an MDL of 0.097 and a PQL of 0.489. Method 6020 reported 0.656 mg/kg. The low 6010 result fell below the PQL, triggering an estimated value flag which should have been further scrutinized when compared to the other method.
For Thallium, the reference value was 1.10 mg/kg, below the laboratory's PQL of 2 mg/kg which can be challenging to interpret due to the uncertainty of method 6010. The Thallium results by method 6020 were within range and this is the more frequent method of analysis for Thallium.

12. Actions to Prevent Potential Occurrence or Recurrence:
The laboratory will re-evaluate the Fe-55 cross talk calibration more frequently to determine if there is an impact from the ingrowing tracer impurities. The laboratory reanalyzed the sample and the results were within the acceptance limits of the PT.
The laboratory will scrutinize results that are at or below the laboratory's detection limits including a comparison to method of similar technology.

13. Implementation of Permanent Corrective/Preventive Actions or Improvements:

The laboratory successfully completed metals analysis in additional PTs SOIL-126 and WS-336. Additionally the laboratory successfully completed analysis of Fe-55 in water in MRAD-42.

14. Verify Corrective/preventive Action(s) or Improvement(s):

The lab will continue monitoring the recoveries of these parameters across all methods to ensure there are no continued issues.

15. Lessons Learned. Who can benefit from Lessons Learned?

The Laboratory's objective is to provide accurate data consistently, assuring clients that GEL can meet acceptance criteria for the PT programs that it participates in. Continuous use of Performance Testing Samples benefits both the lab and its clients by demonstrating ongoing proficiency.

16. Preparer's Name(s):	17. Approval of Leader Responsible for implementation:
Amanda Fehr: Amanda L. Fehr Date: 09/15/2025	Jennie Kill-Bowden: [signature] Date: 9/15/2025 Edmund Frampton: [signature] Date: 9/15/25

Supplemental Pages Attached? Yes ☐ No X

18. Reviewed and Approved by Director of Quality Systems:

[signature] Date: 9/15/2025

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 05/14/2025 | 2. CA Requester: GEL QA

3. Nonconformance, Audit Finding, Problem, Complaint, or Improvement Opportunity Description:

Unacceptable ratings were obtained for the following parameters associated with this study.

Summary of ANA1Q25 Study Unacceptable Ratings

Sample ID	Parm	Reported Value	Reference Value	Acceptance Range
E13890 Milk	Sr-90	9.00 pCi/L	15.6 pCi/L	9.36-19.5 pCi/L

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No X

4. CARR No. 250529-1606

5. CA Title: ISO Documentation of PT failures in ANA1Q25

6. Leader Assigned Responsibility for Implementation: Jennie Kill-Bowden

7. Team Members: REMP Strontium analysts

8. Proposed Implementation Date: Immediately

9. Director, Quality Systems Approval: [signature] Date: 5/14/2025

10. Containment Actions, if any:

Upon receipt of the PT report, an investigation was initiated by the Quality Department and a Corrective Action (CARR) team assembled. The team consisted of representatives from the affected laboratory. The sample preparation and analytical processes were reviewed. This included review of reagents and standards used in the sample preparation steps, calibration records, process control samples, and interviews with the analysts.

The investigation determined that the laboratory met all quality control criteria specified in the method. Additionally, all internal procedures and policies were performed as required. These failures were tracked through GEL's internal non-conformance system.

11. Root Cause(s):

The laboratory reviewed the data for this analysis and no errors were found. It was noted that the Yttrium carrier recovery was greater than is typically seen for this method which could cause a potential low bias in the results. Due to the Sr-89 result recovering greater than 100% in the acceptance limits, it is also suspected that an undetermined error occurred during the second separation resulting in a low Y-90 recovery. The duplicate sample in the analysis batch exhibited the same low bias but was within the acceptance range.

12. Actions to Prevent Potential Occurrence or Recurrence: None needed at this time. The laboratory will evaluate the standardization of the carriers used for analysis and monitor the recoveries of both the Sr and Y carriers.
13. Implementation of Permanent Corrective/Preventive Actions or Improvements: The laboratory will complete an additional PT study for this parameter in 4th quarter of 2025.
14. Verify Corrective/preventive Action(s) or Improvement(s): The lab will continue to monitor the recoveries of this parameter to ensure that there are no continued issues.
15. Lessons Learned. Who can benefit from Lessons Learned? The Laboratory's objective is to provide accurate data at all times and assurances to our clients that GEL can meet acceptance criteria for the PT programs that it participates in. The laboratory and its clients benefit from continuous demonstration of laboratory proficiency using Performance Testing Samples.

16. Preparer's Name(s): Amanda Fehr Amanda L. Fehr Date: 9/15/2025	17. Approval of Leader Responsible for implementation: Jennie Kill-Bowden Date: 9/15/2025

Supplemental Pages Attached? Yes ☐ No X
18. Reviewed and Approved by Director, Quality Systems: Date: 9/15/2025

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 8/25/2025 | 2. CA Requester: GEL-QA

3. Nonconformance, Audit Finding, Problem, Complaint, or Improvement Opportunity Description:

Summary of RAD-142 Drinking Water Study Unacceptable Ratings

Sample ID	Parameter	Reported Value	Reference Value	Acceptance Range
Strontium 89/90	Sr-90 (905.0 Mod)	26.5 pCI/L	34.3 pCI/L	29.0-39.6 pCI/L
Iodine-131	I-131	22.8 pCI/L	28.3 pCI/L	24.5-32.1 pCI/L

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No X

4. CARR No. 250825-1615

5. CA Title: ISO Documentation of PT Failures in RAD-142

6. Leader Assigned Responsibility for Implementation: Lois Buist

7. Team Members: Gas Flow analysts

8. Proposed Implementation Date: ASAP

9. Director, Quality Systems Approval: [signature] Date: 8/25/2025

10. Containment Actions, if any:
Following receipt of the Proficiency Testing (PT) report, the Quality Department initiated an investigation and formed a Corrective Action (CARR) team with representatives from the affected laboratories. The team reviewed sample preparation, reagents, calibration records, and conducted analyst interviews.

The findings of the investigation confirmed that the laboratory adhered to all quality control criteria and followed internal procedures and policies as required. These failures were documented and tracked through GEL's internal non-conformance system, ensuring a systematic approach to addressing and resolving issues.

11. Root Cause(s):

Sr-90: The laboratory conducted a review of the Sr-90 batch in response to the failure. No anomalies were found during the assessment, and all sample yields exceeded 96%, suggesting that sample loss is unlikely. It was noted that the Sr-90 Laboratory Control Sample (LCS) yielded a result of 75%, indicating a low bias in the batch results.

I-131: The laboratory has reviewed the data and found no errors. The sample preparations were reweighed, and it was determined that the originally reported net weight was biased high, resulting in a negatively biased final result. After reweighing the filter, the corrected result fell within the established acceptance limits.

12. Actions to Prevent Potential Occurrence or Recurrence:
Analysts have been reminded to strictly adhere to established taring and balance inspection protocols before initiating weighing procedures.

13. Implementation of Permanent Corrective/Preventive Actions or Improvements:
The laboratory will continue to monitor the analytical processes of these parameters to ensure that there are no continued issues.

14. Verify Corrective/preventive Action(s) or Improvement(s):
The laboratory will continue to monitor the performance of these methods and has scheduled future PT samples as well as single blind samples as they become available.

15. Lessons Learned. Who can benefit from Lessons Learned?
The Laboratory's objective is to provide accurate data consistently, assuring clients that GEL can meet acceptance criteria for the PT programs that it participates in. Continuous use of Performance Testing Samples benefits both the laboratory and its clients by demonstrating ongoing proficiency.

16. Preparer's Name(s): Amanda Fehr Amanda L. Fehr Date: 10/02/2025	17. Approval of Leader Responsible for implementation: Lois Santos Lois Santos Date: 10/07/2025

Supplemental Pages Attached? Yes ☐ No X

18. Reviewed and Approved by Director, Quality Systems:

Date: 10/7/2025

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 12/31/2025 | 2. CA Requester: GEL-QA

3. Nonconformance, Audit Finding, Problem, Complaint, or Improvement Opportunity Description:

Summary of MRAD-43 Study Unacceptable Ratings

Sample ID	Parameter	Reported Value	Reference Value	Acceptance Range
MRAD GAB filter	Gross Alpha	37.3 pCi/Filter	22.0 pCi/Filter	11.5-36.2 pCi/Filter

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No X

4. CARR No. 251231-1664

5. CA Title: ISO Documentation of PT Failures in MRAD-43

6. Leader Assigned Responsibility for Implementation: Lois Santos

7. Team Members: Gross Alpha Beta analysts

8. Proposed Implementation Date: ASAP

9. Director, Quality Systems Approval: Date: 12/31/2025

10. Containment Actions, if any:
Upon receipt of the PT report, an investigation was initiated by the Quality Department and a Corrective Action (CARR) team assembled. The team consisted of representatives from the affected laboratories. The counting process was reviewed for this direct count filter. This included review of instrument run logs, calibration records, process control samples, and data review. The investigation determined that the laboratory met all quality control criteria.

11. Root Cause(s):
A recount of the sample batch was performed to verify the initial results. The recount values were approximately two times higher than the original counts and failed to meet RPD and RER acceptance criteria, indicating variability between counts. The recount results were reported. The original analysis demonstrated a recovery of 107%, suggesting that the variability was due to analyst error during the counting process.

12. Actions to Prevent Potential Occurrence or Recurrence:
Instrument performance, counting geometry, and sample positioning were reviewed with laboratory staff, and counting protocols were reinforced to minimize variability in future analyses. The laboratory will calculate an RPD between recounts to ensure that the results are comparable prior to reporting.

13. Implementation of Permanent Corrective/Preventive Actions or Improvements: The laboratory will continue to trend and monitor recoveries for these parameters to confirm that no recurring issues are present. During the MRAD-43 analysis timeframe, the laboratory successfully analyzed a Gross Alpha direct count filter as part of PT study MAPEP-53. The MAPEP-53 filters were processed and analyzed using the same methods, procedures, and instrumentation as MRAD-43, demonstrating acceptable method performance during this period.
14. Verify Corrective/preventive Action(s) or Improvement(s): The lab will continue to monitor the performance of this method and complete additional PT samples as they become available.
15. Lessons Learned. Who can benefit from Lessons Learned? The Laboratory's objective is to provide accurate data at all times and assurances to our clients that GEL can meet acceptance criteria for the PT programs that it participates in. The laboratory and its clients benefit from continuous demonstration of laboratory proficiency using Performance Testing Samples.

16. Preparer's Name(s):	17. Approval of Leader Responsible for implementation:
Amanda Fehr: Amanda L. Fehr Date: 2/19/2026	Jennie Kill-Bowden (for Lois Santos): [signature] Date: 2/19/2026

Supplemental Pages Attached? Yes ☐ No X
18. Reviewed and Approved by Director, Quality Systems: [signature] Date: 2/19/2026

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 12/19/2025

2. CA Requester: GEL-Quality

3. Nonconformance, Audit Finding, Problem, Complaint or Improvement Opportunity Description:

Unacceptable ratings were obtained for the following parameters associated with this study.

Summary of MAPEP-53 Study Unacceptable Ratings

Sample ID	Parm	Reported Value	Reference Value	Acceptance Range
MAPEP-25-RdF53	Zinc-65	8.84 Bq/sample	1.51 Bq/sample	1.06-1.96 Bq/sample
MAPEP-25-MaS53	Selenium	2.83 mg/kg	1.68 mg/kg	1.18-2.18 mg/kg
MAPEP-25-MaS53	Iron-55 Neptunium-237	1240 Bq/kg 0.465 Bq/kg	518 Bq/kg 18.35 Bq/kg	363-673 Bq/kg 12.85-23.86 Bq/kg

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No **X**

4. CARR No. 251219-1645

5. CA Title: ISO Documentation of PT failures in MAPEP-53

6. Leader Assigned Responsibility for Implementation: Jennie Kill-Bowden, Tim Winters, and Edmund Frampton

7. Team Members: Radiochemistry and Metals analysts

8. Proposed Implementation Date: Immediately

9. Director, Quality Systems Approval: [signature] Date: 12/19/2025

10. Containment Actions, if any:

Following receipt of the PT report, the Quality Department initiated an investigation and formed a Corrective Action (CARR) team with representatives from the affected laboratories. The team reviewed sample preparation, reagents, calibration records, and conducted analyst interviews.

The findings of the investigation confirmed that the laboratory adhered to all quality control criteria and followed internal procedures and policies as required. These failures were documented and tracked through GEL's internal non-conformance system, ensuring a systematic approach to addressing and resolving issues.

11.	Root Cause(s): **MAPEP-25-MaS53** (Fe-55): The data was reviewed and it was noted that the known value is less than the laboratory's standard MDA for this analysis. The sample was recounted due to the result being less than the MDA. The reported count did not meet replication criteria when compared to the initial results. **MAPEP-25-MaS53** (Np-237): The reported result value was in units of pCi/g on the Certificate of Analysis instead of Bq/kg due to a login error. When this value is converted to the appropriate units, the sample recovers at 93% of the known value. **MAPEP-25-MaS53** (Se): All instrument and batch QC were within limits at the time of analysis. The laboratory reanalyzed the sample and results were within the acceptance limits of the PT study. The laboratory has concluded that an unidentified error occurred at the time of the original analysis. **MAPEP-25-RdF53** (Zn-65): Upon investigation, there was a transcription error in determining the average value to be reported. Had the correct value been used, the sample would have recovered at 103%
12.	Actions to Prevent Potential Occurrence or Recurrence: The laboratory will scrutinize results that are at or below the laboratory's detection limits including the use of a larger aliquot and longer count time to improve counting statistics. For future reporting, the laboratory will validate the set-up units for new analytes and will report values from the CofA to minimize reporting errors.
13.	Implementation of Permanent Corrective/Preventive Actions or Improvements: The laboratory successfully completed analysis for these analytes in PTs SOIL-132 and MRAD-43.
14.	Verify Corrective/preventive Action(s) or Improvement(s): The lab will continue monitoring the recoveries of these parameters across all methods to ensure there are no continued issues.
15.	Lessons Learned. Who can benefit from Lessons Learned? The Laboratory's objective is to provide accurate data consistently, assuring clients that GEL can meet acceptance criteria for the PT programs that it participates in. Continuous use of Performance Testing Samples benefits both the lab and its clients by demonstrating ongoing proficiency.

16. Preparer's Name(s):	17. Approval of Leader Responsible for implementation:
Amanda Fehr: [signature] Date: 2/19/2026	Jennie Kill-Bowden: [signature] Date: 2/19/2026 Edmund Frampton: [signature] Date: 2/19/2026 Tim Winters: [signature] Date: 2/19/2026

Supplemental Pages Attached? Yes ☐ No X

18. Reviewed and Approved by Director of Quality Systems:

[signature] Date: 2/19/2026

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 12/12/2025 | 2. CA Requester: GEL-QA

3. Nonconformance, Audit Finding, Problem, Complaint, or Improvement Opportunity Description:

Summary of RAD-143 Drinking Water Study Unacceptable Ratings

Sample ID	Parameter	Reported Value	Reference Value	Acceptance Range
Strontium 89/90	Sr-90 (905.0 Mod)	35.7 pCI/L	43.8 pCI/L	37.6-50.0 pCI/L

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No X | 4. CARR No. 251212-1644

5. CA Title: ISO Documentation of PT Failures in RAD-143

6. Leader Assigned Responsibility for Implementation: Lois Santos

7. Team Members: Gas Flow analysts

8. Proposed Implementation Date: ASAP

9. Director, Quality Systems Approval: Date: 12/12/2025

10. Containment Actions, if any:
Following receipt of the Proficiency Testing (PT) report, the Quality Department initiated an investigation and formed a Corrective Action (CARR) team with representatives from the affected laboratories. The team reviewed sample preparation, reagents, calibration records, and conducted analyst interviews.

The findings of the investigation confirmed that the laboratory adhered to all quality control criteria and followed internal procedures and policies as required. These failures were documented and tracked through GEL's internal non-conformance system, ensuring a systematic approach to addressing and resolving issues.

11. Root Cause(s):

Sr-90: The laboratory conducted a review of the analytical batch in response to the failure. It was noted that the recoveries of the Yttrium carrier were higher than is typically seen in this method, indicating a potential low bias in the batch results.

12. Actions to Prevent Potential Occurrence or Recurrence: Analysts have reviewed all analytical procedures to ensure that all steps are being performed appropriately. In addition, the laboratory made and standardized new Strontium and Yttrium carriers for use in the analysis. The laboratory also re-verified all Sr-90 standards to ensure they meet acceptance criteria for use.
13. Implementation of Permanent Corrective/Preventive Actions or Improvements: The laboratory will continue to monitor and evaluate the analytical processes of this parameter across all matrices to ensure that there are no continued issues.
14. Verify Corrective/preventive Action(s) or Improvement(s): The laboratory will continue to monitor the performance of this method and has scheduled future PT samples as well as single blind samples as they become available. The laboratory successfully completed analysis for Sr-90 by 905.0 Modified method in all matrices in MRAD-43.
15. Lessons Learned. Who can benefit from Lessons Learned? The Laboratory's objective is to provide accurate data consistently, assuring clients that GEL can meet acceptance criteria for the PT programs that it participates in. Continuous use of Performance Testing Samples benefits both the laboratory and its clients by demonstrating ongoing proficiency.

16. Preparer's Name(s): Amanda Fehr Amanda L. Fehr Date: 2/19/2026	17. Approval of Leader Responsible for implementation: Jennie Kill-Bowden (for Lois Santos) [signature] Date: 2/19/2026

Supplemental Pages Attached? Yes ☐ No X
18. Reviewed and Approved by Director, Quality Systems: [signature] Date: 2/19/2026

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CORRECTIVE/PREVENTIVE ACTION REQUEST AND REPORT (CARR)

1. Date Requested: 02/06/2026

2. CA Requester: GEL QA

3. Nonconformance, Audit Finding, Problem, Complaint, or Improvement Opportunity Description:

Unacceptable ratings were obtained for the following parameters associated with this study.

Summary of ANA4Q25 Study Unacceptable Ratings

Sample ID	Parm	Reported Value	Reference Value	Acceptance Range
E14411 Milk	Sr-89	119 pCi/L	84.9 pCi/L	50.9-110.3 pCi/L

Is this issue potentially 10 CFR Part 21 reportable? Yes ☐ No X

4. CARR No. 260210-1663

5. CA Title: ISO Documentation of PT failures in ANA4Q25

6. Leader Assigned Responsibility for Implementation: Jennie Kill-Bowden

7. Team Members: REMP Strontium analysts

8. Proposed Implementation Date: Immediately

9. Director, Quality Systems Approval: [signature] Date: 02/06/2026

10. Containment Actions, if any:

Upon receipt of the PT report, an investigation was initiated by the Quality Department and a Corrective Action (CARR) team assembled. The team consisted of representatives from the affected laboratory. The sample preparation and analytical processes were reviewed. This included review of reagents and standards used in the sample preparation steps, calibration records, process control samples, and interviews with the analysts.

The investigation determined that the laboratory met all quality control criteria specified in the method. Additionally, all internal procedures and policies were performed as required. These failures were tracked through GEL's internal non-conformance system.

11. Root Cause(s):

The laboratory reviewed the data for the Sr-89 result in milk and attributed the failure to matrix interference associated with the high calcium content typical of milk. Calcium and other matrix constituents can co-precipitate or co-elute with strontium during the radiochemical separation process. Incomplete separation of calcium and other matrix components or performing the separation too rapidly and not allowing sufficient contact time for the ion exchange columns to remove interferences, may have contributed to the observed bias. The laboratory concluded that the high bias was caused by matrix interference from calcium or an unknown constituent combined with incomplete chemical separation during sample preparation.

12. Actions to Prevent Potential Occurrence or Recurrence:
Analysts have reviewed SOP steps for Sr-89 analysis in milk against current laboratory practice to confirm procedures are being followed as written. The SOP is being reviewed for possible updates to incorporate additional rinses that are more effective in removing interferences that are common in milk. In addition, the laboratory made and standardized new Strontium and Yttrium carriers for use in the analysis. The laboratory also evaluated the Sr-89 standards to ensure they meet acceptance criteria for use.

13. Implementation of Permanent Corrective/Preventive Actions or Improvements:
The laboratory will continue to monitor and evaluate the analytical processes of this parameter in milk to ensure that there are no continued issues.

14. Verify Corrective/preventive Action(s) or Improvement(s):
The laboratory will continue to monitor the performance of this method and has scheduled a future PT sample.

15. Lessons Learned. Who can benefit from Lessons Learned?
The Laboratory's objective is to provide accurate data at all times and assurances to our clients that GEL can meet acceptance criteria for the PT programs that it participates in. The laboratory and its clients benefit from continuous demonstration of laboratory proficiency using Performance Testing Samples.

16. Preparer's Name(s): Amanda Fehr Amanda L. Fehr Date: 03/10/2026	17. Approval of Leader Responsible for implementation: Jennie Kill-Bowden Date: 3/11/2026

Supplemental Pages Attached? Yes ☐ No X

18. Reviewed and Approved by Director, Quality Systems:

Date: 3/11/2026

problem solved