Clinton Power Station
8401 Power Road
Clinton, IL 61727

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Clinton Power Station, Unit 1
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Subject: Clinton Power Station 2025 Annual Radiological Environmental Operation Report

Clinton Power Station is submitting the 2025 Annual Radiological Environmental Operation Report. This report is submitted in accordance with Technical Specification requirement 5.6.2, "Annual Radiological Environmental Operation Report," and covers the period from January 1, 2025, through December 31, 2025.

There are no regulatory commitments contained in this report.

Questions in regard to this letter may be directed to Ms. Amy Dalby, Chemistry Manager, at 217-937-3200.

Respectfully,

Christopher Smith Digitally signed by Christopher Smith Date: 2026.04.27 13:54:10 -05'00'

Christopher Smith
Plant Manager
Clinton Power Station

Attachment: Annual Radiological Environmental Operation Report

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
Office of Nuclear Facility Safety – Illinois Emergency Management Agency

# 2025 Annual Radiological Environmental Operating Report

Document Number: 50-461

**TABLE OF CONTENTS**



**TABLES**

**FIGURES**



**ATTACHMENTS**

## 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 $3.7 \times 10^{10}$ disintegrations per second, or $2.22 \times 10^{12}$ 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 five % probability of falsely concluding that a blank observation represents a true signal.

17. MDC: Minimum Detectable Concentration. Essentially 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: $3.7 \times 10^4$ disintegrations per second, or $2.22 \times 10^6$ 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

Clinton Clean Energy Center 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 Clinton Station 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) 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 Clinton Station for the reporting period of January 1st through December 31st, 2025. During that time period 1,583 analyses were performed on 1,457 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 Clinton Station, 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 Clinton Station. 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. Pre-operational Radiological Environmental Monitoring Program (pre-operational REMP) was conducted to establish background radioactivity levels prior to operation of the Station. The environmental media sampled and analyzed during the pre-operational REMP were atmospheric radiation, fall-out, domestic water, surface water, marine life, milk, and vegetation. The results of the monitoring were detailed in the report entitled, Environmental Radiological Monitoring for Clinton Power Nuclear Power Station, Illinois Power Company, Annual Report 1987, May 1988. 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].

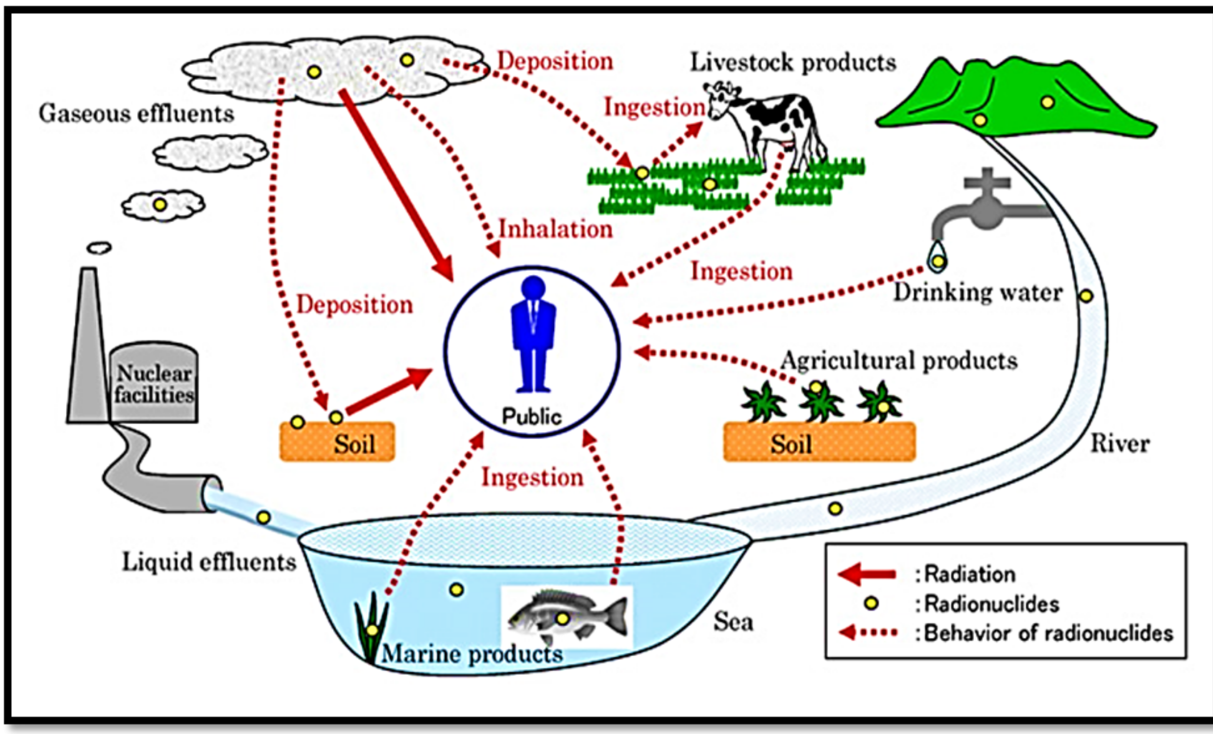


Figure 1, Potential exposure pathways to Members of the Public due to Plant Operations [7]

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 Illinois, Clinton Station 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

The Clinton Clean Energy Center, also known as Clinton Power Station, (CPS), consisting of one approximately 1,120 MW gross electrical power output boiling water reactor is located in Harp Township, DeWitt County, Illinois. CPS is owned and operated by Constellation and became operational in 1987. Unit No. 1 went critical on February 27, 1987. The site encloses approximately 13,626 acres. This includes the approximately 4,900-acre, man-made cooling lake and about 95 acres of property not owned by Constellation. The plant is situated approximately 150 acres. The cooling water discharge flume – which discharges to the eastern arm of the lake – occupies an additional 130 acres. Although the nuclear reactor, supporting equipment and associated electrical generation and distribution equipment lie in Harp Township, portions of the aforementioned 13,626-acre plot reside within Wilson, Rutledge, DeWitt, Creek, Nixon and Santa Anna Townships.

Clinton Station 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 Sampling Program – Exposure Pathway – Direct Radiation
- Table 2, Radiological Environmental Sampling Program – Exposure Pathway - Airborne
- Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne
- Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion
- Table 5, REMP Sampling Locations – Direct Radiation
- Figure 2, Environmental Sampling Locations Within One Mile of the Clinton Power Station, 202
- Figure 3, Environmental Sampling Locations Between One and Two Miles of the Clinton Power Station, 202
- Figure 4, Environmental Sampling Locations Between Two and Five Miles of the Clinton Power Station, 202
- Figure 5, Environmental Sampling Locations Greater Than Five Miles of the Clinton Power Station, 202

## 5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REQUIREMENTS

Table 1, Radiological Environmental Sampling Program – Exposure Pathway – Direct Radiation

| Requirement | Sample Location Description, Distance, and Direction | Sampling Collection/ Frequency | Type and Frequency of Analyses |
|---|---|---|---|
| **Direct Radiation**<br>54 DLRs monitoring stations with two dosimeters placed as follows:<br>An inner ring of stations, one in each compass sector in the general area of the site boundary.<br>An outer ring of stations, one in each compass sector at approximately 5 miles from the site.<br>Special interest areas representing special interest areas.<br>A supplemental set and a control | See Table 5 | Quarterly | Gamma dose Quarterly |

Table 2, Radiological Environmental Sampling Program – Exposure Pathway - Airborne

| Requirement | Sample Location Description, Distance, and Direction | Sampling Collection/ Frequency | Type and Frequency of Analyses |
|---|---|---|---|
| **Airborne Radioiodine and Particulates**<br>Samples from 10 locations:<br><br>Five locations close to the site boundary in different sectors of the highest calculated annual average ground level D/Q.<br><br>Four samples from the vicinity of a community having the highest calculated annual average D/Q.<br><br>One samples from Control Locations between 4 - 8 miles away in the least predominant wind direction. | CL-1 Camp Quest, 1.8 miles W<br>CL-2 Clinton's Main Access Road, 0.7 miles NNE<br>CL-3 Clinton's Secondary Access Road, 0.7 miles NE<br>CL-4 Residence Near Recreation Area, 0.8 miles SW<br>CL-6 Clinton's Recreation Area, 0.7 miles WSW<br>CL-7 Mascoutin Recreation Area, 2.3 miles SE<br>CL-8 DeWitt Cemetery, 2.2 miles E<br><br>CL-11 Illinois Power Substation (C), 16 miles S<br>CL-15 Rt. 900N Residence, 0.9 miles N<br>CL-94 Old Clinton Road, 0.6 miles E | One-week composite of continuous air sampling through glass fiber filter paper.<br>One week composite of continuous air sampling through charcoal filter | Particulate sampler: Gross Beta analysis following weekly filter change and Gamma isotopic quarterly on each station.<br><br>Radioiodine canister: I-131 analysis weekly on near field and control samples. |

Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne

| Requirement | Sample Location Description, Distance, and Direction | Sampling Collection/ Frequency | Type and Frequency of Analyses |
|---|---|---|---|
| Surface Water<br>Two samples upstream (control) and two sample downstream | CL-13 Salt Creek Bridge on Rt. 10, 3.6 miles SW<br>CL-90 Discharge Flume, 0.4 miles SE<br>CL-91 Parnell Boat Access (C), 6.1 miles ENE<br>CL-99 North Fork Access (C), 3.5 miles NNE | Monthly grab and composite from a continuous water compositor.<br>Quarterly composite from a continuous water compositor | Gamma isotopic Monthly<br>I-131 Monthly<br>H-3 Quarterly |
| Drinking (Potable) Water<br>One of sample downstream (indicator) | CL-14[(1)] Station Plant Service Bldg, Onsite | Monthly and quarterly composite from a continuous water compositor | Gamma isotopic Monthly<br>Gross Beta Monthly<br>H-3 Quarterly |
| Groundwater/Well Water<br>Three indicator locations down gradient from the plant, only if likely to be affected. | CL-7D Mascoutin Recreation Area, 2.3 miles ESE<br>CL-12T DeWitt Pump House, 1.6 miles E<br>CL-12R DeWitt Pump House, 1.6 miles E | Quarterly composite from a continuous water compositor | Gamma isotopic Quarterly<br>H-3 Quarterly |
| Sediment from Shoreline<br>One sample upstream (control) and one sample downstream (indicator) | CL-7B Clinton Lake, 2.1 miles SE<br>CL-105 Lake Shelbyville(C), 50 miles S | Semiannual grab samples | Gamma isotopic Semiannually |

(1) During 2025, the ODCM was revised, and sampling location CL-14 changed in Figure 7-1. This change was effective in September of 2025. From January 2025 - September 2025, the CL-14 sampling location was in the janitorial closet in the Service Building. In September 2025, with the approved revision of the ODCM, the location changed to the sink in the Nuclear Training Department building.

Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion

| Requirement | Sample Location Description, Distance, and Direction | Sampling Collection/ Frequency | Type and Frequency of Analyses |
|---|---|---|---|
| Milk<br>One of sample from milking animals at a control location 15 to 30 km distant and in the least prevalent wind direction. | CL-116 Dement Dairy (C), 14 miles WSW | Bi-weekly grab samples when cows are on pasture.<br>Monthly all other times | Gamma isotopic and I-131 analysis on each sample |
| Fish<br>One sample upstream and one sample downstream of each commercially and recreationally important species in vicinity of site discharge. | CL-19 End of Discharge Flume, 3.4 miles E<br>CL-105 Lake Shelbyville(C), 50 miles S | Semiannually | Gamma isotopic analysis on edible portions |
| Vegetation<br>Two locations producing vegetables from areas irrigated by water in which liquid plant wastes have been discharged and one sample collected from a control location. | CL-114 Residence WSW of Site (C), 12.5 miles WSW<br>CL-115 Site's Secondary Access Road, 0.7 miles NE<br>CL-118 Site's Main Access Road, 0.7 miles NNE | Monthly grab June through September | Gamma isotopic on each sample<br>Gross Beta on each sample |
| Grass<br>Four locations from areas irrigated by water in which liquid plant wastes have been discharged and one sample collected from a control location. | CL-1 Camp Quest, 1.8 miles W<br>CL-2 Clinton's Main Access Road, 0.7 miles NNE<br>CL-8 DeWitt Cemetery, 2.2 miles E<br>CL-116 Pasture in Rural Kenney (C), 14 miles WSW | Bi-weekly May through October | Gamma isotopic on each sample |

Table 5, REMP Sampling Locations – Direct Radiation

| Site # | Location Type | Sector | Distance | Description |
|---|---|---|---|---|
| CL-1 | Inner Ring | W | 1.8 miles | |
| CL-5 | Inner Ring | NNE | 0.7 miles | |
| CL-22 | Inner Ring | NE | 0.6 miles | |
| CL-23 | Inner Ring | ENE | 0.5 miles | |
| CL-24 | Inner Ring | E | 0.5 miles | |
| CL-34 | Inner Ring | WNW | 0.8 miles | |
| CL-35 | Inner Ring | NW | 0.7 miles | |
| CL-36 | Inner Ring | N | 0.6 miles | |
| CL-42 | Inner Ring | ESE | 2.8 miles | |
| CL-43 | Inner Ring | SE | 2.8 miles | |
| CL-44 | Inner Ring | SSE | 2.3 miles | |
| CL-45 | Inner Ring | S | 2.8 miles | |
| CL-46 | Inner Ring | SSW | 2.8 miles | |
| CL-47 | Inner Ring | SW | 3.3 miles | |
| CL-48 | Inner Ring | WSW | 2.3 miles | |
| CL-63 | Inner Ring | NNW | 1.3 miles | |
| CL-51 | Outer Ring | NW | 4.4 miles | |
| CL-52 | Outer Ring | NNW | 4.3 miles | |
| CL-53 | Outer Ring | E | 4.3 miles | |
| CL-54 | Outer Ring | ESE | 4.6 miles | |
| CL-55 | Outer Ring | SE | 4.1 miles | |
| CL-56 | Outer Ring | SSE | 4.1 miles | |
| CL-57 | Outer Ring | S | 4.6 miles | |
| CL-58 | Outer Ring | SSW | 4.3 miles | |
| CL-60 | Outer Ring | SW | 4.5 miles | |
| CL-61 | Outer Ring | WSW | 4.5 miles | |
| CL-76 | Outer Ring | N | 4.6 miles | |
| CL-77 | Outer Ring | NNE | 4.5 miles | |

Table 5, REMP Sampling Locations – Direct Radiation

| Site # | Location Type | Sector | Distance | Description |
|---|---|---|---|---|
| CL-78 | Outer Ring | NE | 4.8 miles | |
| CL-79 | Outer Ring | ENE | 4.5 miles | |
| CL-80 | Outer Ring | W | 4.1 miles | |
| CL-81 | Outer Ring | WNW | 4.5 miles | |
| CL-37 | Special Interest | N | 3.4 miles | |
| CL-41 | Special Interest | E | 2.4 miles | |
| CL-49 | Special Interest | W | 3.5 miles | |
| CL-64 | Special Interest | WNW | 2.1 miles | |
| CL-65 | Special Interest | ENE | 2.6 miles | |
| CL-74 | Special Interest | W | 1.9 miles | |
| CL-75 | Special Interest | N | 0.9 miles | |
| CL-2 | Supplemental | NNE | 0.7 miles | |
| CL-3 | Supplemental | NE | 0.7 miles | |
| CL-4 | Supplemental | SW | 0.8 miles | |
| CL-6 | Supplemental | WSW | 0.8 miles | |
| CL-7 | Supplemental | SE | 2.3 miles | |
| CL-8 | Supplemental | E | 2.2 miles | |
| CL-15 | Supplemental | N | 0.9 miles | |
| CL-33 | Supplemental | SW | 11.7 miles | |
| CL-84 | Supplemental | E | 0.6 miles | |
| CL-90 | Supplemental | SE | 0.4 miles | |
| CL-91 | Supplemental | ENE | 6.1 miles | |
| CL-97 | Supplemental | SW | 10.3 miles | |
| CL-99 | Supplemental | NNE | 3.5 miles | |
| CL-114 | Supplemental | WSW | 12.5 miles | |
| CL-11 | Control | S | 16 miles | |

## 6.0 MAPS OF COLLECTION SITES.

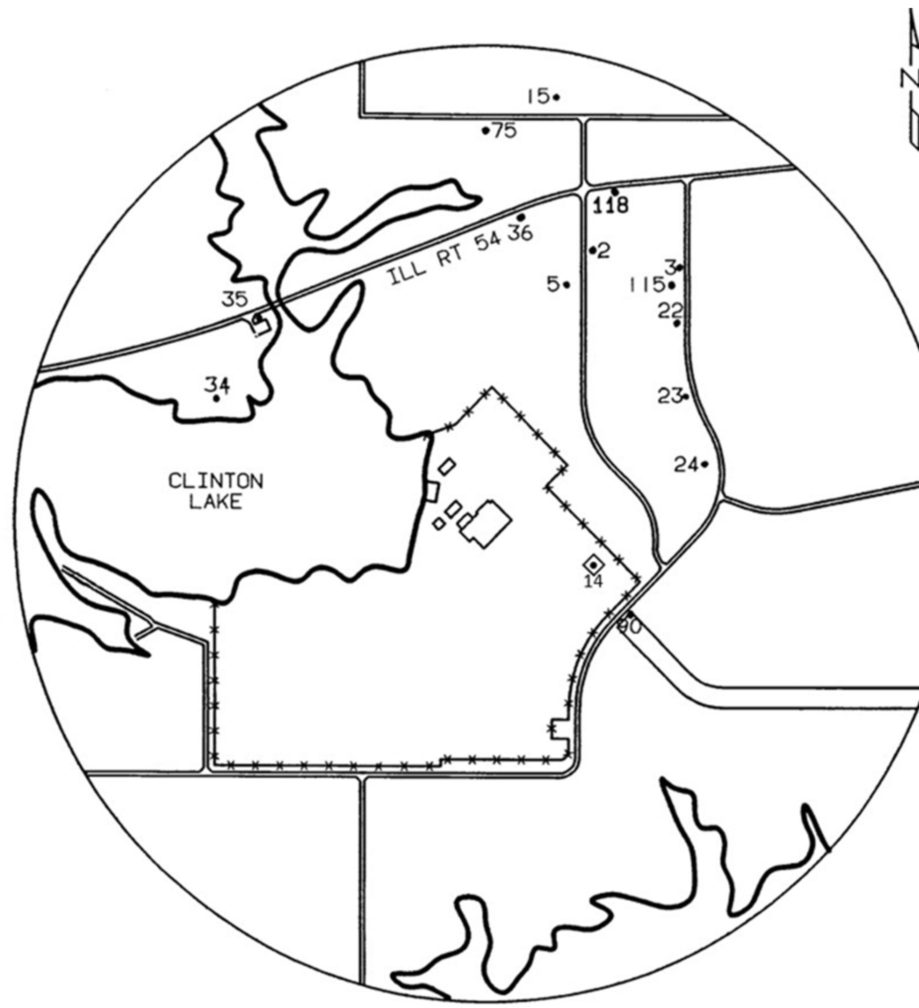


Figure 2, Environmental Sampling Locations Within One Mile of the Clinton Power Station, 2025

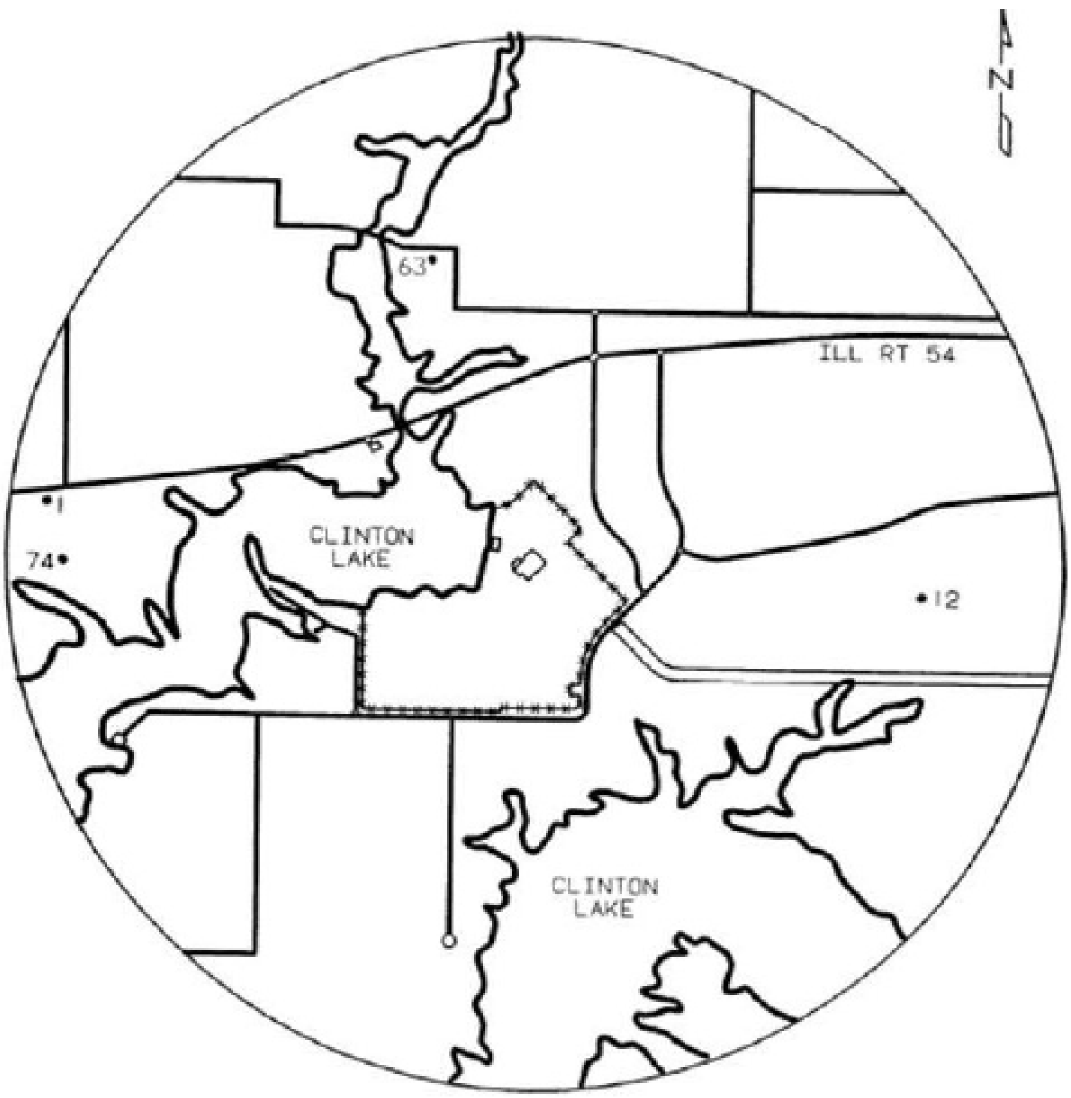


Figure 3, Environmental Sampling Locations Between One and Two Miles of the Clinton Power Station, 2025

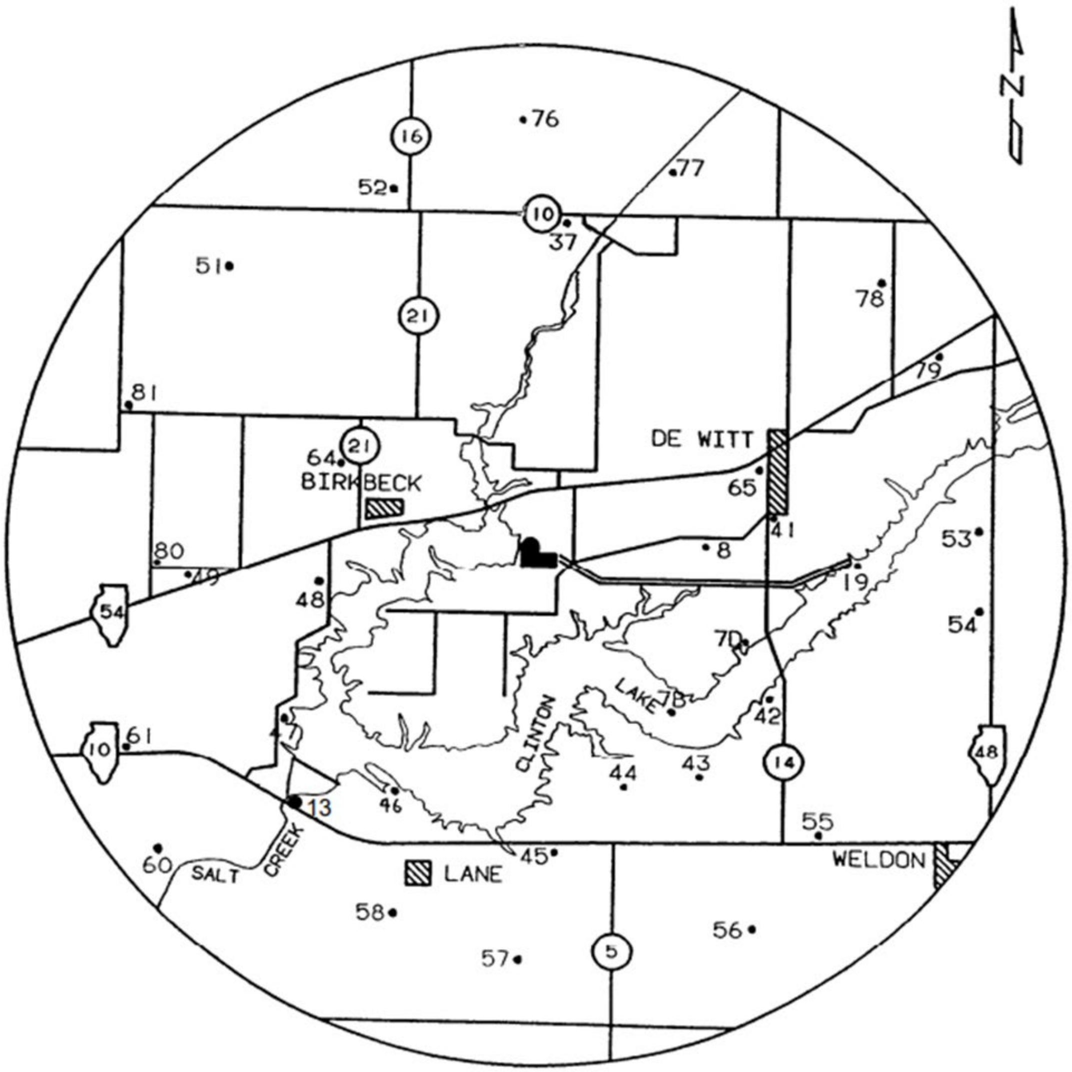


Figure 4, Environmental Sampling Locations Between Two and Five Miles of the Clinton Power Station, 2025

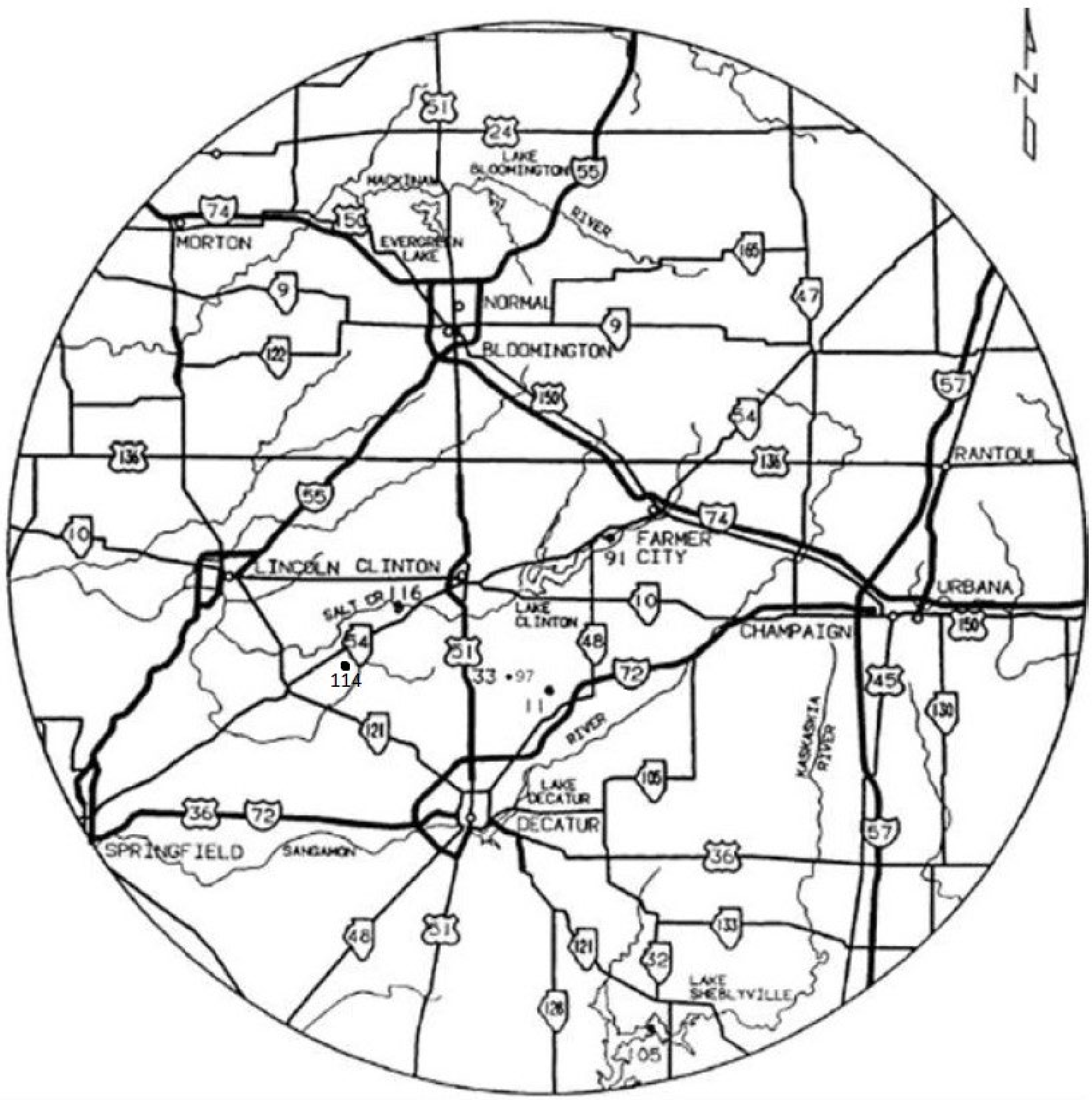


Figure 5, Environmental Sampling Locations Greater Than Five Miles of the Clinton Power Station, 2025

## 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 [(1)] | 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 | NA | NA | NA | NA |
| I-131 | 2 [(2)] | 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 | NA | NA | 300 | NA |

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) |
|---|---|---|---|---|---|---|
| H-3 | 2,000 [(3)] | 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 | NA | NA | NA | NA | NA |
| I-131 | 1 [(4)] | 0.07 | NA | 1 | 60 | NA |
| Cs-134 | 15 | 0.05 | 130 | 15 | 60 | 150 |
| Cs-137 | 18 | 0.06 | 150 | 18 | 80 | 180 |
| Ba-La-140 | 15 | NA | NA | 15 | NA | NA |

[1] **For** drinking water samples: **If** no drinking water pathway exists, a value **of 30,000 pCi/L** may be used.
[2] **If** no drinking water pathway exists, a value of 20 pCi/l may be used
[3] **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.
[4] **If** no drinking water pathway exists, a value of 15 pCi/l may be used

## 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.

### 8.1 <u>Environmental Direct Radiation Dosimetry Results</u>

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 54 locations were monitored and data analyzed in accordance with the requirements in Table 1, Radiological Environmental Sampling Program – Exposure Pathway – Direct Radiation. Attachment 4 provides the annual direct radiation dosimetry analysis.

There was no direct radiation dose detected from the facility. All OSLD measurements were analyzed, and none were found to have radiation levels that had increased over normal background radiation levels.

## 8.2 Air Particulate and Radioiodine Sample Results

Air particulate filters and charcoal canisters were collected from locations specified in Table 2, Radiological Environmental Sampling Program – Exposure Pathway - Airborne. During the calendar year 2025, a total of 520 samples were collected and analyzed for gross beta, gamma emitters and iodine. 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.

All gross beta analyses of air particulate filters detected gross beta activity at levels consistent with previous years. All air particulate quarterly gamma composite samples were below the detection limit except for naturally occurring radionuclides.

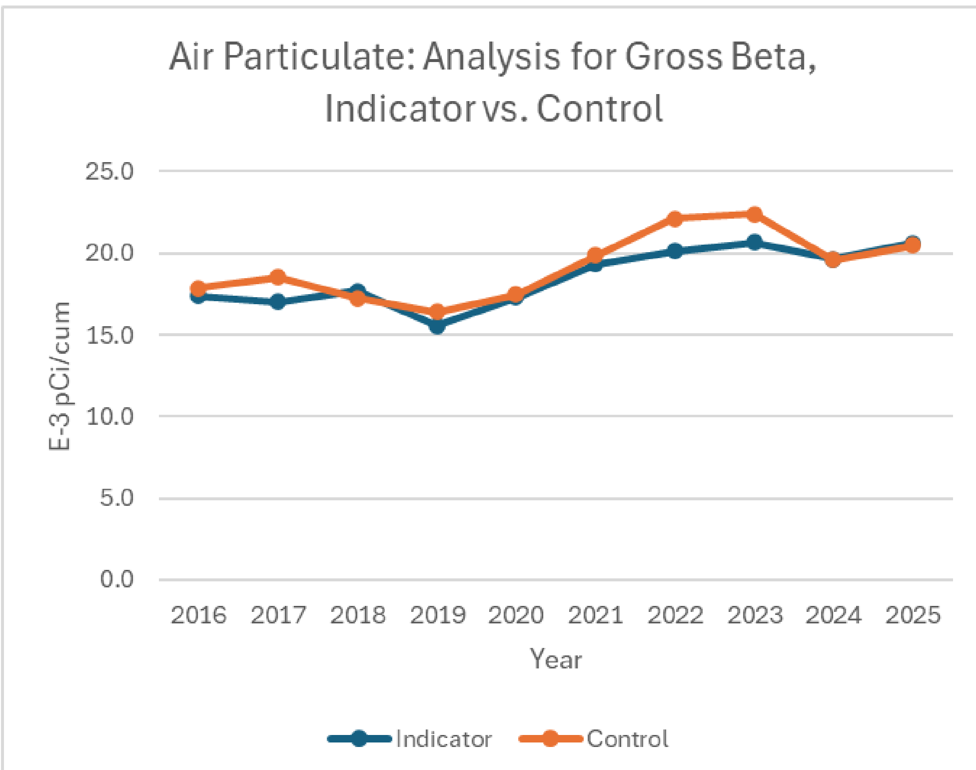


Figure 6, Air Particulate: Analysis for Gross Beta, Average for All Indicator vs. Control Location

Air particulate and radioiodine results from this monitoring period, 2025, were compared to 10-year average as shown in Figure 6, and there were no significant changes.

## 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 48 surface water samples were collected and analyzed in accordance with the requirements in the ODCM and shown in Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne. Samples were analyzed for Iodine-131 (Low Level). There was no detectable Iodine-131 and all required LLDS were met. Samples were analyzed for gamma-emitting nuclides. No nuclides were detected and all required LLDs were met. Tritium concentrations in surface water were well below the EPA tritium drinking water limit of 20,000 pCi/L There has been no detectable tritium in any surface water samples in 2025 or the previous 10 years, therefore, no trend has been established above the detection limit to plot on a trending graph.

### 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 12 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 3 indicator sample locations were collected. These samples were analyzed for tritium and gamma quarterly. All groundwater samples were collected in new containers, which were rinsed with source water prior to collection.

Samples from all locations were analyzed for gamma-emitting nuclides. No nuclides were detected and all required LLDs were met. Tritium concentrations in groundwater were well below the EPA tritium drinking water limit of 20,000 pCi/L. There has been no detectable tritium in any REMP groundwater samples in 2025 or the previous 10 years, therefore, no trend has been established above the detection limit to plot on a trending graph.

8.3.3 Drinking Water

A total of 16 drinking water samples were obtained in 2025. These samples were analyzed for gross beta, gamma, and I-131 monthly and tritium quarterly, in accordance with requirements in the ODCM and shown in Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne. Gross Beta was not detected in any of the samples and all required LLDs were met. No gamma-emitting nuclides were detected and all required LLDs were met. Tritium concentrations in drinking water were well below the EPA tritium drinking water limit of 20,000 pCi/L. There has been no detectable tritium in any REMP drinking water samples in 2025 or in the previous 10 years, therefore, no trend has been established above the detection limit to plot on a trending graph.

8.3.4 Sediment from Shoreline

Shoreline sediment collections were made in May and October, 2025 and analyzed for gamma-emitting isotopes. Samples are collected at both indicator and control locations. A total of 4 shoreline samples were analyzed in accordance with requirements in the ODCM and shown in Table 3, Radiological Environmental Sampling Program – Exposure Pathway - Waterborne

No nuclides potentially associated with Clinton Station were detected and all required LLDs were met.

**8.4 Ingestion Pathway Sample Results**

8.4.1 Milk

Milk samples from milking animals were collected at 1 location within 15-30 km in the least prevalent wind direction. 19 samples were collected between the months of January-December. Samples were analyzed for gamma-emitting isotopes and I-131(Low Level).

No nuclides potentially associated with Clinton Station were detected and all required LLDs were met.

8.4.2 Fish

A total of 16 fish samples were collected in 2025. 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 Sampling Program – Exposure Pathway - Ingestion. These samples are collected from the indicator and control areas as required by the ODCM.

Naturally occurring potassium-40 was identified in all fish samples with concentrations consistent with previous years.

8.4.3 Vegetation

A total of 36 food product type samples were analyzed in 2025, for gamma emitting radionuclides in accordance with requirements of the ODCM, as summarized in Table 4, Radiological Environmental Sampling Program – Exposure Pathway - Ingestion.

No nuclides potentially associated with Clinton Station were detected and all required LLDs were met.

8.4.4 Grass

48 grass samples were collected from growing locations nearest site boundary in areas of highest predicted annual average ground level D/Q. Samples are collected and analyzed for gamma isotopic from the indicator and control locations biweekly May through October.

No nuclides potentially associated with Clinton Station were detected and all required LLDs were met.

## 9.0 LAND USE CENSUS

An annual land use census is required by the Offsite Dose Calculation Manual and is performed to ensure that changes in the use of areas at or beyond the site boundary are identified and modifications to REMP are made if required by changes in land use. 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. 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.

A Land Use Census was conducted during the calendar year, 2025, within the growing season 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 km. In summary, the highest D/Q locations for nearest garden, nearest residence and nearest milk animal did not change following the 2025 census

Table 8, Land Use Census – Nearest Receptors within 5 kilometers

| Sector | Direction | Residence (km) | Milk Farm (km) | Livestock (km) |
|---|---|---|---|---|
| A | N | 1.5 | 4.6 | 1.5 |
| B | NNE | 1.5 | 1.9 | 1.7 |
| C | NE | 2.1 | | |
| D | ENE | 2.9 | 2.9 | 6.6 |
| E | E | 1.7 | | |
| F | ESE | 5.1 | | |
| G | SE | 3.9 | | |
| H | SSE | 3.8 | 4.3 | |
| J | S | 4.8 | | |
| K | SSW | 4.7 | | |
| L | SW | 1.2 | | |
| M | WSW | 3.6 | 4.3 | 4.3 |
| N | W | 2.0 | 3.3 | |
| P | WNW | 2.6 | 2.6 | |
| Q | NW | 2.7 | 4.5 | 3.9 |
| R | NNW | 2.0 | 3.8 | 2.1 |

## 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 prevent the sample from being analyzed normally, or errors that 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 | Location | Collection Date or Period | Reason for not conducting REMP sampling as required by ODCM | Plans for preventing reoccurrence |
|---|---|---|---|---|
| AP/AI | CL-4, CL-7, CL-8, and CL-15 | 4/2/25-4/9/25 | During review of the REMP sampling report L109528 for air particulate and iodine samples, it was identified that there was a small power outage over the sampling period of 4/2/25-4/9-25 at locations CL-7, CL-8, and CL-15. Additionally, the filter at CL-4 was torn during removal from the sample holder. | IR 04860044 |
| AP/AI | CL-15 | 4/23/25 | During review of the REMP sample report L109452 for air particulate and iodine samples on 4/23/25, it was noted the collection timer was a few hours off for the sampling period caused by a small power outage for CL-15. | IR 04859886 |
| AP/AI | CL-1 | 5/14/25-5/21/25 | During review of the REMP sample report L110049, it was identified that CL-1 had a short timer for the period of 5/14/25-5/21/25 indicating a short power outage in the area. CL-1 is a supplemental ODCM air sampler and is located 1.8 mi W from the plant. | IR 04874611 |
| AP/AI | CL-4, CL-6, and CL-8 | 5/21/25-6/11/25 | During review of REMP sample reports L110183 and L110097, it was identified that CL-8 collection timer was estimated for the period of 5/21/25-5/28/25. Collection times were estimated for 5/21/25-5/28/25 and 5/28/25-6/4/25 collection periods. CL-4 and CL-6 air samplers had short timers for the period of 6/4/25-6/11/25 indicating a small power outage in the area. | The collection timer was replaced during the following surveillance on 6/4/25. (IR 04875432) |
| AP/AI | CL-1 | 7/2/25-7/9/25 | On 7/9/25, the REMP vendor identified a malfunctioning timer at air sampling station CL-1. The collection time was estimated for the collection period of 7/2/25-7/9/25. | CL-1 collection timer was replaced. (IR 04880037) |
| AP/AI | CL-15 and CL-94 | 7/16/25-7/23/25 | While reviewing REMP sample report L110801, it was identified that two air samplers had short timers for the period of 7/16/25-7/23/25. Samplers CL-15 and CL-94 were short approximately 2 hours during the collection period. | IR 04888122 |
| AP/AI | CL-3 | 7/23/25-7/30/25 | On 7/30/25, the REMP vendor identified a malfunctioning timer at air sampler station CL-3. The collection time for the period of 7/23/25-7/30/25 was estimated. | CL-3 collection timer was replaced. (IR 04887310) |

Table 9: Sample Deviation Summary

| | | | | |
|---|---|---|---|---|
| AP/AI | CL-94 | 8/6/25-8/13/25<br>8/20/25-8/27/25 | While reviewing REMP sample report L111108, it was identified that the filter from the air sampler at CL-94 had a tear and the obtained results for the period of 8/6/25-8/13/25 were slightly lower than expected. During the collection period of 8/20/25-8/27/25, the REMP vendor identified the air sampler filter had a small tear and was lighter in color compared to the other samples collected. Sample media is rotated on a biweekly basis, indicating a potential issue with the sample holder | The sample holder was adjusted to prevent further future issues of a similar nature.<br>(IR 04894173) |
| AP/AI | CL-1 | 10/15/25 | On 10/15/25, the REMP vendor identified an air sampler located at CL-1 with a short collection timer, indicating a short power outage in the area. The timer displayed a collection time approximately 3.5 hours short from the expected collection time. | IR 04906024 |
| Drinking water and Surface water | CL-14 and CL-91 | 5/7/25 | On 5/7/25, The water compositor at location CL-91 was found stuck in pumping mode. The compositor at CL-14 was nonfunctional, and the Microbac vendor collected weekly samples for the monthly composite. | The compositor for CL-91 was replaced.<br>(IR 04867487) |
| Surface Water | CL-91 | 5/21/25 | During the 5/21/25 sampling, the REMP vendor identified a pump jam on water compositor CL-91 leading to a low sample volume being collected. | The pump was replaced and old pump was sent for repair.<br>(IR 04867773) |
| Surface Water | CL-99 | 7/2/25 | On 7/2/25, the REMP vendor performed a compositor check on CL-99 and identified a broken piece of plastic, making it inoperable and unable to collect a 20mL/hour composite sample. Due to the equipment damage, the REMP vendor collected a grab sample in place of the monthly composite. | The company that services and repairs the compositors was contacted for replacement parts and a quote for a replacement compositor.<br>(IR 04878418) |
| Surface Water | CL-99 | 9/10/25 | During the REMP vendor weekly compositor walkdowns, it was identified that the hose connected to the surface water compositor located at CL-99 had washed up on the bank and was not able to collect a sample. Due to the issue, a grab sample was taken in place of the 20mL/hour composite sample. | Facilities Ticket (FT) #112 was generated to extend the PVC pipe to extend the pipe for submergence into the water.<br>(IR 04896913) |
| TLD | TLD-35 | 3/27/25 | On March 27$^{th}$, 2025 the Microbac service technician identified the TLD at location CL-35 was missing. | IR 04849960 |

# 1.0 OTHER SUPPLEMENTAL INFORMATION

## 1.1 NEI 07-07 Onsite Radiological Groundwater Monitoring Program

Clinton Clean Energy Center 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, 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 AREOR.

## 1.2 Corrections to Previous Reports

No corrections made in previous reports in 2024

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**Attachment 1, Data Table Summary**

Table 10: Clinton Station Data Summary Table

| Medium or Pathway Sampled (Units) | Type, Total Number of Analyses performed (e.g., I-131, 400) | | Required Lower Limit of Detection (LLD) | Indicator Mean[5]; (f[6]). Range[5] | Location with Highest Annual Mean | | Control Mean[5] (f[6]). Range[5] | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|---|
| | | | | | Name Distance and Direction | Mean[5] (f[6]) Range[5] | | |
| Air Particulates (E-03 pCi/$m^3$) | Gross Beta, 520 | | 10 | 20 (466/468)<br>(5/48) | CL-4<br>Residence Near Recreation Area<br>0.8 miles SW | 21 (50/52)<br>(10/48) | CL-11<br>20 (51/52)<br>(8/50) | 0 |
| | Gamma, 40 | Co-60 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ru-103 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ru-106 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 50 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-141 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| Airborne Radioiodine (E-03 pCi/$m^3$) | Gamma, 520 I-131 | | 70 | < LLD | < LLD | < LLD | N/A | 0 |
| Direct Radiation (mrem/qtr.) | Gamma Dose, 215 | | N/A | 19.7 (210/211)<br>(15.1/24.5) | CL-41<br>2.4 miles E | 21.7 (4/4)<br>(20.3/22.9) | CL-11<br>17.8 (4/4)<br>(17.0/18.3) | 0 |

[5] Mean and range are based on detectable measurements only.
[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses

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Table 10: Clinton Station Data Summary Table

| Medium or Pathway Sampled (Units) | Type, Total Number of Analyses performed (e.g., I-131, 400) | | Required Lower Limit of Detection (LLD) | Indicator Mean[5]; (f[6]). Range[5] | Location with Highest Annual Mean[7] | | Control Mean[5] (f[6]). Range[5] | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|---|
| | | | | | Name Distance and Direction | Mean[5] (f[6]) Range[5] | | |
| Milk (pCi/L) | I-131(Low Level), 19 | | 1 | < LLD | < LLD | < LLD | < LLD | 0 |
| | Gamma, 19 | K-40 | N/A | N/A | CL-116 Dement Dairy 14 miles WSW | 1070 (19/19) (861/1253) | CL-116 1070 (19/19) (861/1253) | 0 |
| | | Mn-54 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | N/A | N/A | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 15 | N/A | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 18 | N/A | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | 60 | N/A | < LLD | < LLD | < LLD | 0 |
| | | La-140 | 15 | N/A | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | N/A | < LLD | < LLD | < LLD | 0 |

[5] Mean and range are based on detectable measurements only.
[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses
[7] Inner and outer ring dosimeter results can be found in Attachment 4 and sample locations are referenced in Table 5. Location with the highest annual mean during 2025 was Special Interest location CL-41.

**Attachment 1, Data Table Summary**

Table 10: Clinton Station Data Summary Table

| Medium or Pathway Sampled (Units) | Type, Total Number of Analyses performed (e.g., I-131, 400) | | Required Lower Limit of Detection (LLD) | Indicator Mean[5]; (f[6]). Range[5] | Location with Highest Annual Mean | | Control Mean[5] (f[6]). Range[5] | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|---|
| | | | | | Name Distance and Direction | Mean[5] (f[6]) Range[5] | | |
| Vegetation (pCi/kg Wet) | Gamma, 36 | Mn-54 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | I-131 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 80 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | La-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| Grass (pCi/kg Wet) | Gamma, 48 | Mn-54 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | I-131 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 80 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | La-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |

[5] Mean and range are based on detectable measurements only.
[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses

## Attachment 1, Data Table Summary

Table 10: Clinton Station Data Summary Table

| Medium or Pathway Sampled (Units) | Type, Total Number of Analyses performed (e.g., I-131, 400) | | Required Lower Limit of Detection (LLD) | Indicator Mean[5]; (f[6]). Range[5] | Location with Highest Annual Mean: Name Distance and Direction | Location with Highest Annual Mean: Mean[5] (f[6]) Range[5] | Control Mean[5] (f[6]). Range[5] | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|---|
| Surface Water (pCi/L) | I-131 (Low Level), 12 | | 1 | < LLD | < LLD | < LLD | < LLD | 0 |
| | H-3, 16 | | 200 | < LLD | < LLD | < LLD | < LLD | 0 |
| | Gamma, 48 | Mn-54 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | 30 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | 30 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | 30 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 18 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | La-140 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |

[5] Mean and range are based on detectable measurements only.
[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses

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|---|---|---|---|---|---|---|---|---|
| | | | | | Name Distance and Direction | Mean[5] (f[6]) Range[5] | | |
| Drinking water (pCi/L) | I-131 (Low Level), 12 | | 1 | < LLD | < LLD | < LLD | N/A | 0 |
| | Gross Beta, 12 | | 4 | < LLD | < LLD | < LLD | N/A | 0 |
| | H-3, 4 | | 200 | < LLD | < LLD | < LLD | N/A | 0 |
| | Gamma, 12 | Mn-54 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | 30 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | 30 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | 30 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 18 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | 60 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | La-140 | 15 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |

[5] Mean and range are based on detectable measurements only.
[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses

## Attachment 1, Data Table Summary

Table 10: Clinton Station Data Summary Table

| Medium or Pathway Sampled (Units) | Type, Total Number of Analyses performed (e.g., I-131, 400) | | Required Lower Limit of Detection (LLD) | Indicator Mean[5]; (f[6]). Range[5] | Location with Highest Annual Mean | | Control Mean[5] (f[6]). Range[5] | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|---|
| | | | | | Name Distance and Direction | Mean[5] (f[6]) Range[5] | | |
| Ground/Well Water (pCi/L) | H-3, 12 | | 200 | < LLD | < LLD | < LLD | N/A | 0 |
| | Gamma, 12 | Mn-54 | 15 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Co-58 | 15 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Fe-59 | 30 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Co-60 | 15 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Zn-65 | 30 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Nb-95 | 15 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Zr-95 | 30 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Cs-134 | 15 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Cs-137 | 18 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Ba-140 | 60 | < LLD | < LLD | < LLD | N/A | 0 |
| | | La-140 | 15 | < LLD | < LLD | < LLD | N/A | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| Fish (pCi/kg Wet) | Gamma, 16 | Mn-54 | 130 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | 130 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | 260 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | 130 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | 260 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 130 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 150 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | La-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |

[5] Mean and range are based on detectable measurements only.

[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses

**Attachment 1, Data Table Summary**

Table 10: Clinton Station Data Summary Table

| Medium or Pathway Sampled (Units) | Type, Total Number of Analyses performed (e.g., I-131, 400) | | Required Lower Limit of Detection (LLD) | Indicator Mean[5]; (f[6]). Range[5] | Location with Highest Annual Mean | | Control Mean[5] (f[6]). Range[5] | Number of Nonroutine Reported Measurements |
|---|---|---|---|---|---|---|---|---|
| | | | | | Name Distance and Direction | Mean[5] (f[6]) Range[5] | | |
| Sediment (pCi/kg Dry) | Gamma, 4 | Mn-54 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-58 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Fe-59 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Co-60 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zn-65 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Nb-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Zr-95 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-134 | 150 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Cs-137 | 180 | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ba-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | La-140 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |
| | | Ce-144 | N/A | < LLD | < LLD | < LLD | < LLD | 0 |

[5] Mean and range are based on detectable measurements only.

[6] Fraction are based on detectable measurements at specified locations is indicated in parentheses

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

*Note: Throughout Attachment 2, bold data entries are for the reported concentration*

Table 11, Weekly Air Particulate Gross Beta ($E^{-3}$ $pCi/m^3$)

| Collection Date | CL-2 | CL-3 | CL-4 | CL-6 | CL-15 | CL-94 | CL-1 | CL-7 | CL-8 | CL-11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 12/31/2024 | **17** ± 4 | **21** ± 4 | **16** ± 4 | **20** ± 4 | **19** ± 4 | **18** ± 4 | **21** ± 4 | **18** ± 4 | **16** ± 4 | **18** ± 4 |
| 01/08/2025 | **29** ± 5 | **26** ± 5 | **24** ± 5 | **24** ± 5 | **24** ± 5 | **24** ± 5 | **26** ± 5 | **32** ± 5 | **25** ± 5 | **25** ± 5 |
| 01/15/2025 | **19** ± 4 | **21** ± 5 | **22** ± 5 | **23** ± 5 | **19** ± 4 | **22** ± 5 | **19** ± 4 | **19** ± 4 | **18** ± 4 | **17** ± 4 |
| 01/22/2025 | **27** ± 5 | **28** ± 5 | **26** ± 5 | **25** ± 5 | **26** ± 5 | **26** ± 5 | **26** ± 5 | **28** ± 5 | **25** ± 5 | **22** ± 5 |
| 01/29/2025 | **16** ± 4 | **17** ± 4 | **19** ± 4 | **16** ± 4 | **16** ± 4 | **15** ± 4 | **14** ± 4 | **17** ± 4 | **17** ± 4 | **14** ± 4 |
| 02/05/2025 | **21** ± 4 | **21** ± 4 | **17** ± 4 | **20** ± 4 | **18** ± 4 | **24** ± 5 | **19** ± 4 | **19** ± 4 | **20** ± 4 | **18** ± 4 |
| 02/12/2025 | **25** ± 5 | **22** ± 5 | **22** ± 5 | **22** ± 4 | **21** ± 4 | **22** ± 5 | **21** ± 5 | **22** ± 5 | **22** ± 5 | **24** ± 5 |
| 02/19/2025 | **25** ± 5 | **25** ± 5 | **21** ± 4 | **26** ± 5 | **19** ± 4 | **22** ± 4 | **21** ± 4 | **18** ± 4 | **23** ± 5 | **22** ± 5 |
| 02/26/2025 | **14** ± 4 | **14** ± 4 | **15** ± 4 | **13** ± 4 | **11** ± 4 | **15** ± 4 | **18** ± 4 | **16** ± 4 | **17** ± 4 | **13** ± 4 |
| 03/05/2025 | **17** ± 4 | **18** ± 4 | **17** ± 4 | **19** ± 4 | **15** ± 4 | **14** ± 4 | **16** ± 4 | **21** ± 4 | **18** ± 4 | **13** ± 4 |
| 03/12/2025 | **20** ± 4 | **20** ± 4 | **20** ± 4 | **21** ± 4 | **14** ± 4 | **23** ± 5 | **21** ± 4 | **17** ± 4 | **17** ± 4 | **17** ± 4 |
| 03/19/2025 | **18** ± 4 | **16** ± 4 | **12** ± 4 | **13** ± 4 | **15** ± 4 | **18** ± 4 | **17** ± 4 | **13** ± 4 | **17** ± 4 | **15** ± 4 |
| 03/26/2025 | **11** ± 4 | **11** ± 4 | **14** ± 4 | **13** ± 4 | **10** ± 4 | **10** ± 4 | **8** ± 4 | **9** ± 4 | **10** ± 4 | **12** ± 4 |
| 04/02/2025 | **9** ± 4 | **15** ± 4 | < 5[1] | **15** ± 4 | **11** ± 4 | **13** ± 4 | **12** ± 4 | **13** ± 4 | **12** ± 4 | **13** ± 4 |
| 04/09/2025 | **17** ± 4 | **16** ± 4 | **15** ± 4 | **15** ± 4 | **9** ± 4 | **16** ± 4 | **15** ± 4 | **16** ± 4 | **17** ± 4 | **14** ± 4 |
| 04/16/2025 | **19** ± 4 | **17** ± 4 | **18** ± 4 | **16** ± 4 | **15** ± 4 | **20** ± 4 | **17** ± 4 | **16** ± 4 | **16** ± 4 | **20** ± 4 |
| 04/23/2025 | **14** ± 4 | **16** ± 4 | **17** ± 4 | **14** ± 4 | **13** ± 4 | **17** ± 4 | **17** ± 4 | **12** ± 4 | **13** ± 4 | **16** ± 4 |
| 04/30/2025 | **10** ± 4 | **8** ± 4 | < 5[2] | **11** ± 4 | **8** ± 4 | **8** ± 4 | **8** ± 4 | **10** ± 4 | **7** ± 4 | **8** ± 4 |
| 05/07/2025 | **17** ± 4 | **11** ± 4 | **16** ± 4 | **10** ± 4 | **15** ± 4 | **10** ± 4 | **15** ± 4 | **15** ± 4 | **12** ± 4 | **15** ± 4 |
| 05/14/2025 | **9** ± 4 | **9** ± 4 | **10** ± 4 | **10** ± 4 | **6** ± 4 | **10** ± 4 | **13** ± 4 | **10** ± 4 | **9** ± 4 | **11** ± 4 |
| 05/21/2025 | **10** ± 3 | **11** ± 4 | **11** ± 3 | **9** ± 3 | **12** ± 4 | **10** ± 3 | **12** ± 4 | **10** ± 3 | **11** ± 3 | **12** ± 3 |

[1] See Table 9: Sample Deviation Summary

[2] Filter was torn.

Table 11, Weekly Air Particulate Gross Beta ($E^{-3}$ pCi/$m^3$) Cont'd

| Collection Date | CL-2 | CL-3 | CL-4 | CL-6 | CL-15 | CL-94 | CL-1 | CL-7 | CL-8 | CL-11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 05/28/2025 | **19** ± 4 | **18** ± 4 | **14** ± 4 | **21** ± 4 | **21** ± 4 | **17** ± 4 | **21** ± 4 | **21** ± 4 | **20** ± 4 | **20** ± 4 |
| 06/04/2025 | **12** ± 4 | **13** ± 4 | **10** ± 4 | **12** ± 4 | **10** ± 4 | **13** ± 4 | **12** ± 4 | **13** ± 4 | **12** ± 4 | **12** ± 4 |
| 06/11/2025 | **14** ± 4 | **17** ± 4 | **15** ± 4 | **15** ± 4 | **12** ± 4 | **17** ± 4 | **16** ± 4 | **16** ± 4 | **20** ± 4 | **10** ± 4 |
| 06/18/2025 | **20** ± 4 | **19** ± 4 | **18** ± 4 | **21** ± 4 | **19** ± 4 | **21** ± 4 | **19** ± 4 | **25** ± 5 | **23** ± 5 | **20** ± 4 |
| 06/25/2025 | **13** ± 4 | **12** ± 4 | **15** ± 4 | **13** ± 4 | **13** ± 4 | **17** ± 4 | **14** ± 4 | **15** ± 4 | **14** ± 4 | **12** ± 4 |
| 07/02/2025 | **23** ± 4 | **20** ± 4 | **21** ± 4 | **24** ± 4 | **24** ± 4 | **24** ± 4 | **19** ± 4 | **19** ± 4 | **19** ± 4 | **24** ± 4 |
| 07/09/2025 | **25** ± 5 | **25** ± 5 | **24** ± 5 | **24** ± 5 | **21** ± 4 | **30** ± 5 | **21** ± 4 | **28** ± 5 | **19** ± 4 | **19** ± 4 |
| 07/16/2025 | **15** ± 4 | **15** ± 4 | **19** ± 4 | **15** ± 4 | **13** ± 4 | **17** ± 4 | **17** ± 4 | **16** ± 4 | **16** ± 4 | **13** ± 4 |
| 07/23/2025 | **16** ± 4 | **20** ± 4 | **21** ± 4 | **16** ± 4 | **14** ± 4 | **16** ± 4 | **17** ± 4 | **18** ± 4 | **13** ± 4 | **17** ± 4 |
| 07/30/2025 | **17** ± 4 | **19** ± 5 | **16** ± 4 | **17** ± 4 | **22** ± 5 | **24** ± 5 | **18** ± 4 | **17** ± 4 | **17** ± 4 | **17** ± 4 |
| 08/06/2025 | **26** ± 5 | **25** ± 5 | **29** ± 5 | **28** ± 5 | **23** ± 5 | **11** ± 4 | **26** ± 5 | **28** ± 5 | **26** ± 5 | **26** ± 5 |
| 08/13/2025 | **25** ± 4 | **27** ± 5 | **24** ± 4 | **28** ± 5 | **23** ± 4 | **25** ± 4 | **27** ± 5 | **27** ± 5 | **25** ± 4 | **17** ± 4 |
| 08/20/2025 | **11** ± 4 | **16** ± 4 | **14** ± 4 | **10** ± 4 | **11** ± 4 | **5** ± 3 | **11** ± 4 | **14** ± 4 | **16** ± 4 | < 5 (1) |
| 08/27/2025 | **21** ± 5 | **17** ± 4 | **21** ± 5 | **17** ± 4 | **21** ± 5 | **24** ± 5 | **24** ± 5 | **20** ± 4 | **20** ± 5 | **20** ± 4 |
| 09/03/2025 | **21** ± 4 | **15** ± 4 | **17** ± 4 | **18** ± 4 | **18** ± 4 | **19** ± 4 | **14** ± 4 | **17** ± 4 | **25** ± 5 | **14** ± 4 |
| 09/10/2025 | **43** ± 6 | **39** ± 5 | **48** ± 6 | **40** ± 6 | **40** ± 5 | **42** ± 6 | **38** ± 5 | **41** ± 6 | **35** ± 5 | **50** ± 6 |
| 09/17/2025 | **34** ± 5 | **34** ± 5 | **32** ± 5 | **34** ± 5 | **34** ± 5 | **31** ± 5 | **36** ± 5 | **36** ± 5 | **33** ± 5 | **31** ± 5 |
| 09/24/2025 | **41** ± 6 | **37** ± 5 | **38** ± 5 | **39** ± 5 | **31** ± 5 | **37** ± 5 | **37** ± 5 | **34** ± 5 | **35** ± 5 | **42** ± 6 |
| 10/01/2025 | **31** ± 5 | **28** ± 5 | **30** ± 5 | **31** ± 5 | **29** ± 5 | **32** ± 5 | **29** ± 5 | **31** ± 5 | **32** ± 5 | **29** ± 5 |
| 10/08/2025 | **34** ± 5 | **37** ± 5 | **33** ± 5 | **32** ± 5 | **29** ± 5 | **34** ± 5 | **30** ± 5 | **31** ± 5 | **35** ± 5 | **37** ± 5 |
| 10/15/2025 | **20** ± 5 | **25** ± 5 | **20** ± 4 | **23** ± 5 | **22** ± 5 | **21** ± 5 | **21** ± 5 | **19** ± 4 | **22** ± 5 | **23** ± 5 |
| 10/22/2025 | **17** ± 4 | **16** ± 4 | **16** ± 4 | **18** ± 4 | **17** ± 4 | **19** ± 4 | **13** ± 4 | **17** ± 4 | **15** ± 4 | **21** ± 5 |

(1) Filter damaged during exchange.

Table 11, Weekly Air Particulate Gross Beta ($E^{-3}$ pCi/m$^3$) Cont'd

| Collection Date | CL-2 | CL-3 | CL-4 | CL-6 | CL-15 | CL-94 | CL-1 | CL-7 | CL-8 | CL-11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/29/2025 | **24** ± 5 | **22** ± 5 | **19** ± 4 | **21** ± 4 | **19** ± 4 | **20** ± 4 | **20** ± 4 | **18** ± 4 | **19** ± 4 | **23** ± 5 |
| 11/05/2025 | **14** ± 4 | **19** ± 4 | **22** ± 5 | **16** ± 4 | **16** ± 4 | **17** ± 4 | **15** ± 4 | **15** ± 4 | **13** ± 4 | **17** ± 4 |
| 11/12/2025 | **21** ± 4 | **20** ± 4 | **19** ± 4 | **26** ± 5 | **23** ± 5 | **23** ± 5 | **21** ± 4 | **21** ± 4 | **25** ± 5 | **21** ± 4 |
| 11/19/2025 | **34** ± 5 | **35** ± 5 | **37** ± 5 | **33** ± 5 | **34** ± 5 | **33** ± 5 | **33** ± 5 | **30** ± 5 | **34** ± 5 | **33** ± 5 |
| 11/26/2025 | **16** ± 4 | **19** ± 4 | **20** ± 4 | **16** ± 4 | **23** ± 4 | **19** ± 4 | **19** ± 4 | **19** ± 4 | **17** ± 4 | **17** ± 4 |
| 12/03/2025 | **30** ± 5 | **31** ± 5 | **29** ± 5 | **35** ± 5 | **35** ± 5 | **37** ± 5 | **35** ± 5 | **31** ± 5 | **38** ± 6 | **32** ± 5 |
| 12/10/2025 | **34** ± 5 | **29** ± 5 | **33** ± 5 | **33** ± 5 | **32** ± 5 | **34** ± 5 | **29** ± 5 | **33** ± 5 | **29** ± 5 | **35** ± 5 |
| 12/17/2025 | **27** ± 5 | **31** ± 5 | **27** ± 5 | **26** ± 5 | **28** ± 5 | **27** ± 5 | **25** ± 5 | **25** ± 5 | **25** ± 5 | **26** ± 5 |
| 12/24/2025 | **27** ± 5 | **31** ± 5 | **28** ± 5 | **30** ± 5 | **23** ± 5 | **27** ± 5 | **26** ± 5 | **28** ± 5 | **27** ± 5 | **28** ± 5 |

Table 12, Quarterly Air Particulate Gamma Isotopic (pCi/m$^3$ ± 2 Sigma)

| Station | Nuclide | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|
| CL-2 | Co-60 | < 2 | < 3 | < 3 | < 3 |
| | Nb-95 | < 2 | < 4 | < 4 | < 4 |
| | Zr-95 | < 4 | < 7 | < 7 | < 6 |
| | Ru-103 | < 2 | < 5 | < 4 | < 5 |
| | Ru-106 | < 19 | < 28 | < 27 | < 25 |
| | Cs-134 | < 2 | < 4 | < 3 | < 4 |
| | Cs-137 | < 2 | < 3 | < 3 | < 3 |
| | Ce-141 | < 2 | < 5 | < 8 | < 6 |
| | Ce-144 | < 7 | < 12 | < 13 | < 14 |
| CL-3 | Co-60 | < 3 | < 2 | < 3 | < 3 |
| | Nb-95 | < 3 | < 2 | < 2 | < 3 |
| | Zr-95 | < 5 | < 4 | < 4 | < 5 |
| | Ru-103 | < 3 | < 3 | < 4 | < 3 |
| | Ru-106 | < 19 | < 17 | < 18 | < 23 |
| | Cs-134 | < 3 | < 2 | < 3 | < 2 |
| | Cs-137 | < 2 | < 2 | < 2 | < 2 |
| | Ce-141 | < 4 | < 3 | < 5 | < 4 |
| | Ce-144 | < 10 | < 7 | < 10 | < 11 |

| Station | Nuclide | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|
| CL-4 | Co-60 | < 2 | < 2 | < 2 | < 2 |
| | Nb-95 | < 3 | < 3 | < 3 | < 2 |
| | Zr-95 | < 4 | < 5 | < 6 | < 4 |
| | Ru-103 | < 2 | < 4 | < 4 | < 2 |
| | Ru-106 | < 19 | < 22 | < 18 | < 17 |
| | Cs-134 | < 2 | < 3 | < 3 | < 2 |
| | Cs-137 | < 2 | < 2 | < 2 | < 2 |
| | Ce-141 | < 3 | < 6 | < 6 | < 3 |
| | Ce-144 | < 9 | < 12 | < 10 | < 8 |
| CL-6 | Co-60 | < 2 | < 2 | < 4 | < 3 |
| | Nb-95 | < 3 | < 2 | < 5 | < 5 |
| | Zr-95 | < 7 | < 4 | < 8 | < 4 |
| | Ru-103 | < 3 | < 2 | < 7 | < 2 |
| | Ru-106 | < 20 | < 14 | < 31 | < 21 |
| | Cs-134 | < 3 | < 2 | < 4 | < 3 |
| | Cs-137 | < 3 | < 2 | < 3 | < 2 |
| | Ce-141 | < 5 | < 3 | < 7 | < 3 |
| | Ce-144 | < 14 | < 7 | < 12 | < 7 |

Table 12, Quarterly Air Particulate Gamma Isotopic (pCi/$m^3$ ± 2 Sigma) Cont'd

| Station | Nuclide | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|
| CL-15 | Co-60 | < 3 | < 3 | < 3 | < 3 |
| | Nb-95 | < 3 | < 2 | < 4 | < 3 |
| | Zr-95 | < 5 | < 5 | < 7 | < 5 |
| | Ru-103 | < 4 | < 3 | < 5 | < 3 |
| | Ru-106 | < 17 | < 15 | < 25 | < 23 |
| | Cs-134 | < 3 | < 2 | < 3 | < 3 |
| | Cs-137 | < 3 | < 1 | < 3 | < 2 |
| | Ce-141 | < 3 | < 3 | < 8 | < 4 |
| | Ce-144 | < 9 | < 8 | < 14 | < 10 |
| CL-94 | Co-60 | < 1 | < 3 | < 3 | < 1 |
| | Nb-95 | < 2 | < 3 | < 3 | < 2 |
| | Zr-95 | < 5 | < 5 | < 5 | < 3 |
| | Ru-103 | < 2 | < 4 | < 5 | < 2 |
| | Ru-106 | < 19 | < 21 | < 17 | < 12 |
| | Cs-134 | < 2 | < 2 | < 1 | < 1 |
| | Cs-137 | < 2 | < 2 | < 2 | < 1 |
| | Ce-141 | < 3 | < 5 | < 5 | < 3 |
| | Ce-144 | < 9 | < 13 | < 10 | < 6 |

| Station | Nuclide | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|
| CL-1 | Co-60 | < 3 | < 3 | < 4 | < 3 |
| | Nb-95 | < 3 | < 3 | < 5 | < 3 |
| | Zr-95 | < 6 | < 4 | < 8 | < 5 |
| | Ru-103 | < 3 | < 3 | < 5 | < 3 |
| | Ru-106 | < 22 | < 14 | < 23 | < 24 |
| | Cs-134 | < 3 | < 2 | < 3 | < 3 |
| | Cs-137 | < 3 | < 2 | < 3 | < 2 |
| | Ce-141 | < 4 | < 3 | < 7 | < 4 |
| | Ce-144 | < 11 | < 7 | < 11 | < 11 |
| CL-7 | Co-60 | < 3 | < 3 | < 3 | < 4 |
| | Nb-95 | < 3 | < 2 | < 3 | < 3 |
| | Zr-95 | < 5 | < 4 | < 4 | < 6 |
| | Ru-103 | < 2 | < 2 | < 3 | < 3 |
| | Ru-106 | < 23 | < 23 | < 19 | < 20 |
| | Cs-134 | < 2 | < 2 | < 2 | < 3 |
| | Cs-137 | < 3 | < 2 | < 2 | < 2 |
| | Ce-141 | < 3 | < 3 | < 5 | < 4 |
| | Ce-144 | < 9 | < 8 | < 10 | < 10 |

Table 12, Quarterly Air Particulate Gamma Isotopic (pCi/m$^3$ ± 2 Sigma) Cont'd

| Station | Nuclide | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|
| CL-8 | Co-60 | < 2 | < 2 | < 3 | < 3 |
| | Nb-95 | < 3 | < 3 | < 3 | < 3 |
| | Zr-95 | < 4 | < 6 | < 5 | < 6 |
| | Ru-103 | < 2 | < 4 | < 4 | < 4 |
| | Ru-106 | < 14 | < 18 | < 20 | < 21 |
| | Cs-134 | < 2 | < 3 | < 2 | < 3 |
| | Cs-137 | < 2 | < 3 | < 2 | < 3 |
| | Ce-141 | < 3 | < 5 | < 5 | < 5 |
| | Ce-144 | < 8 | < 13 | < 8 | < 14 |
| CL-11 | Co-60 | < 2 | < 3 | < 3 | < 2 |
| | Nb-95 | < 2 | < 3 | < 5 | < 4 |
| | Zr-95 | < 4 | < 5 | < 9 | < 7 |
| | Ru-103 | < 3 | < 3 | < 7 | < 3 |
| | Ru-106 | < 13 | < 21 | < 31 | < 19 |
| | Cs-134 | < 2 | < 2 | < 4 | < 3 |
| | Cs-137 | < 2 | < 2 | < 3 | < 4 |
| | Ce-141 | < 2 | < 4 | < 6 | < 5 |
| | Ce-144 | < 7 | < 9 | < 11 | < 13 |

Table 13, Weekly Air Iodine I-131 ($E^{-3}$ $pCi/m^3$)

| Collection Date | CL-2 | CL-3 | CL-4 | CL-6 | CL-15 | CL-94 | CL-1 | CL-7 | CL-8 | CL-11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 12/31/2024 | < 34 | < 35 | < 16 | < 34 | < 28 | < 29 | < 35 | < 28 | < 22 | < 29 |
| 01/08/2025 | < 24 | < 51 | < 50 | < 50 | < 42 | < 30 | < 50 | < 41 | < 42 | < 41 |
| 01/15/2025 | < 54 | < 40 | < 54 | < 54 | < 43 | < 33 | < 54 | < 42 | < 43 | < 43 |
| 01/22/2025 | < 42 | < 42 | < 32 | < 42 | < 39 | < 39 | < 42 | < 39 | < 17 | < 39 |
| 01/29/2025 | < 40 | < 40 | < 40 | < 21 | < 46 | < 45 | < 40 | < 45 | < 46 | < 23 |
| 02/05/2025 | < 28 | < 42 | < 42 | < 42 | < 28 | < 60 | < 42 | < 59 | < 59 | < 60 |
| 02/12/2025 | < 56 | < 56 | < 56 | < 56 | < 18 | < 27 | < 26 | < 28 | < 29 | < 28 |
| 02/19/2025 | < 38 | < 29 | < 38 | < 37 | < 44 | < 43 | < 37 | < 43 | < 43 | < 21 |
| 02/26/2025 | < 10 | < 10 | < 10 | < 5 | < 34 | < 18 | < 10 | < 34 | < 34 | < 34 |
| 03/05/2025 | < 39 | < 38 | < 38 | < 38 | < 41 | < 45 | < 29 | < 41 | < 41 | < 41 |
| 03/12/2025 | < 18 | < 40 | < 40 | < 40 | < 38 | < 38 | < 40 | < 38 | < 38 | < 29 |
| 03/19/2025 | < 30 | < 30 | < 20 | < 30 | < 51 | < 52 | < 30 | < 23 | < 52 | < 52 |
| 03/26/2025 | < 30 | < 30 | < 30 | < 23 | < 16 | < 37 | < 29 | < 37 | < 37 | < 37 |
| 04/02/2025 | < 40 | < 40 | < 41 | < 40 | < 36 | < 36 | < 20 | < 28 | < 36 | < 35 |
| 04/09/2025 | < 28 | < 27 | < 28 | < 12 | < 20 | < 26 | < 28 | < 26 | < 26 | < 26 |
| 04/16/2025 | < 42 | < 42 | < 42 | < 32 | < 30 | < 30 | < 42 | < 30 | < 30 | < 14 |
| 04/23/2025 | < 49 | < 49 | < 49 | < 23 | < 52 | < 26 | < 49 | < 50 | < 51 | < 50 |
| 04/30/2025 | < 48 | < 49 | < 38 | < 49 | < 53 | < 24 | < 50 | < 52 | < 52 | < 52 |
| 05/07/2025 | < 50 | < 50 | < 51 | < 51 | < 52 | < 22 | < 24 | < 52 | < 53 | < 52 |
| 05/14/2025 | < 64 | < 63 | < 63 | < 64 | < 65 | < 66 | < 28 | < 64 | < 65 | < 69 |
| 05/21/2025 | < 35 | < 28 | < 36 | < 36 | < 36 | < 37 | < 36 | < 36 | < 28 | < 35 |

Table 13, Weekly Air Iodine I-131 ($E^{-3}$ $pCi/m^3$)   Cont'd

| Collection Date | CL-2 | CL-3 | CL-4 | CL-6 | CL-15 | CL-94 | CL-1 | CL-7 | CL-8 | CL-11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 05/28/2025 | < 64 | < 64 | < 48 | < 64 | < 65 | < 65 | < 63 | < 66 | < 50 | < 64 |
| 06/04/2025 | < 36 | < 36 | < 37 | < 38 | < 40 | < 41 | < 39 | < 19 | < 41 | < 41 |
| 06/11/2025 | < 34 | < 34 | < 34 | < 34 | < 18 | < 41 | < 18 | < 41 | < 40 | < 40 |
| 06/18/2025 | < 51 | < 51 | < 51 | < 51 | < 41 | < 40 | < 58 | < 41 | < 21 | < 41 |
| 06/25/2025 | < 20 | < 42 | < 43 | < 43 | < 53 | < 53 | < 42 | < 39 | < 53 | < 53 |
| 07/02/2025 | < 45 | < 45 | < 45 | < 45 | < 45 | < 44 | < 23 | < 44 | < 21 | < 44 |
| 07/09/2025 | < 39 | < 39 | < 39 | < 39 | < 36 | < 19 | < 19 | < 37 | < 36 | < 36 |
| 07/16/2025 | < 42 | < 58 | < 58 | < 58 | < 44 | < 59 | < 58 | < 59 | < 60 | < 59 |
| 07/23/2025 | < 45 | < 45 | < 34 | < 45 | < 39 | < 53 | < 44 | < 53 | < 54 | < 53 |
| 07/30/2025 | < 62 | < 62 | < 61 | < 62 | < 66 | < 65 | < 30 | < 66 | < 67 | < 64 |
| 08/06/2025 | < 34 | < 35 | < 34 | < 38 | < 69 | < 32 | < 34 | < 69 | < 69 | < 69 |
| 08/13/2025 | < 35 | < 67 | < 67 | < 68 | < 66 | < 58 | < 68 | < 59 | < 59 | < 58 |
| 08/20/2025 | < 65 | < 65 | < 65 | < 66 | < 63 | < 62 | < 32 | < 63 | < 63 | < 29 |
| 08/27/2025 | < 51 | < 51 | < 51 | < 39 | < 29 | < 56 | < 51 | < 56 | < 57 | < 55 |
| 09/03/2025 | < 48 | < 62 | < 62 | < 62 | < 32 | < 65 | < 63 | < 67 | < 66 | < 67 |
| 09/10/2025 | < 64 | < 34 | < 66 | < 66 | < 52 | < 52 | < 66 | < 52 | < 24 | < 52 |
| 09/17/2025 | < 11 | < 14 | < 14 | < 14 | < 21 | < 17 | < 14 | < 22 | < 21 | < 21 |
| 09/24/2025 | < 46 | < 52 | < 46 | < 46 | < 48 | < 47 | < 46 | < 22 | < 48 | < 48 |
| 10/01/2025 | < 30 | < 67 | < 66 | < 65 | < 66 | < 64 | < 66 | < 65 | < 64 | < 64 |
| 10/08/2025 | < 68 | < 69 | < 67 | < 68 | < 64 | < 64 | < 36 | < 64 | < 30 | < 64 |
| 10/15/2025 | < 61 | < 61 | < 60 | < 61 | < 63 | < 63 | < 47 | < 64 | < 64 | < 47 |
| 10/22/2025 | < 67 | < 65 | < 68 | < 69 | < 68 | < 67 | < 69 | < 67 | < 67 | < 52 |

Table 13, Weekly Air Iodine I-131 ($E^{-3}$ pCi/$m^3$) Cont'd

| Collection Date | CL-2 | CL-3 | CL-4 | CL-6 | CL-15 | CL-94 | CL-1 | CL-7 | CL-8 | CL-11 |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/29/2025 | < 65 | < 31 | < 65 | < 65 | < 65 | < 65 | < 65 | < 65 | < 65 | < 50 |
| 11/05/2025 | < 25 | < 49 | < 48 | < 49 | < 68 | < 67 | < 49 | < 68 | < 69 | < 54 |
| 11/12/2025 | < 65 | < 34 | < 64 | < 65 | < 60 | < 60 | < 66 | < 59 | < 60 | < 30 |
| 11/19/2025 | < 51 | < 41 | < 52 | < 52 | < 57 | < 57 | < 52 | < 58 | < 30 | < 57 |
| 11/26/2025 | < 41 | < 41 | < 41 | < 41 | < 32 | < 31 | < 32 | < 31 | < 32 | < 25 |
| 12/03/2025 | < 70 | < 67 | < 67 | < 67 | < 69 | < 53 | < 67 | < 69 | < 69 | < 68 |
| 12/10/2025 | < 64 | < 65 | < 64 | < 64 | < 67 | < 62 | < 49 | < 63 | < 62 | < 63 |
| 12/17/2025 | < 68 | < 68 | < 68 | < 68 | < 68 | < 67 | < 36 | < 69 | < 24 | < 69 |
| 12/24/2025 | < 64 | < 66 | < 65 | < 65 | < 46 | < 46 | < 34 | < 46 | < 25 | < 46 |

Table 14, Monthly/Bi-Weekly Milk I-131 (pCi/L ± 2 Sigma)

| Collection Date | CL-116 |
|---|---|
| 01/29/2025 | < 0.9 |
| 02/26/2025 | < 0.9 |
| 03/26/2025 | < 0.7 |
| 04/30/2025 | < 0.8 |
| 05/14/2025 | < 0.9 |
| 05/28/2025 | < 0.8 |
| 06/11/2025 | < 0.9 |
| 06/25/2025 | < 0.9 |
| 07/09/2025 | < 0.8 |
| 07/23/2025 | < 1.0 |
| 08/06/2025 | < 0.9 |
| 08/20/2025 | < 0.9 |
| 09/03/2025 | < 0.9 |
| 09/17/2025 | < 0.9 |
| 10/01/2025 | < 0.8 |
| 10/15/2025 | < 0.8 |
| 10/29/2025 | < 0.8 |
| 11/26/2025 | < 0.9 |
| 12/24/2025 | < 0.9 |

Table 15, Monthly/Bi-Weekly Milk Gamma Isotopic (pCi/L ± 2 Sigma)

| Station | Collection Dates | K-40 | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-116 | 01/29/2025 | **1209** ± 157 | < 8 | < 7 | < 17 | < 9 | < 19 | < 7 | < 16 | < 8 | < 8 | < 29 | < 10 | < 40 |
| | 02/26/2025 | **1015** ± 148 | < 8 | < 8 | < 17 | < 8 | < 21 | < 8 | < 12 | < 8 | < 8 | < 35 | < 10 | < 53 |
| | 03/26/2025 | **914** ± 174 | < 9 | < 7 | < 20 | < 10 | < 18 | < 11 | < 14 | < 7 | < 8 | < 41 | < 12 | < 60 |
| | 04/30/2025 | **1145** ± 145 | < 7 | < 6 | < 20 | < 8 | < 17 | < 6 | < 13 | < 8 | < 8 | < 27 | < 11 | < 49 |
| | 05/14/2025 | **1063** ± 164 | < 9 | < 8 | < 18 | < 12 | < 20 | < 7 | < 16 | < 10 | < 9 | < 39 | < 8 | < 64 |
| | 05/28/2025 | **1015** ± 162 | < 8 | < 8 | < 16 | < 10 | < 18 | < 8 | < 12 | < 8 | < 8 | < 32 | < 14 | < 56 |
| | 06/11/2025 | **1178** ± 150 | < 7 | < 7 | < 15 | < 9 | < 17 | < 6 | < 13 | < 8 | < 7 | < 30 | < 9 | < 56 |
| | 06/25/2025 | **1253** ± 168 | < 7 | < 9 | < 17 | < 9 | < 17 | < 6 | < 14 | < 8 | < 7 | < 42 | < 13 | < 61 |
| | 07/09/2025 | **1041** ± 166 | < 6 | < 8 | < 21 | < 7 | < 20 | < 8 | < 13 | < 9 | < 9 | < 33 | < 9 | < 43 |
| | 07/23/2025 | **1185** ± 193 | < 8 | < 5 | < 18 | < 10 | < 13 | < 7 | < 12 | < 8 | < 7 | < 32 | < 12 | < 45 |
| | 08/06/2025 | **1122** ± 144 | < 7 | < 8 | < 19 | < 10 | < 17 | < 8 | < 12 | < 8 | < 7 | < 38 | < 14 | < 51 |
| | 08/20/2025 | **941** ± 168 | < 8 | < 8 | < 21 | < 11 | < 16 | < 7 | < 13 | < 8 | < 9 | < 42 | < 10 | < 64 |
| | 09/03/2025 | **975** ± 175 | < 7 | < 6 | < 15 | < 11 | < 17 | < 7 | < 15 | < 9 | < 8 | < 32 | < 13 | < 49 |
| | 09/17/2025 | **1176** ± 166 | < 8 | < 9 | < 19 | < 10 | < 18 | < 8 | < 12 | < 9 | < 8 | < 40 | < 13 | < 64 |
| | 10/01/2025 | **946** ± 202 | < 5 | < 7 | < 14 | < 7 | < 10 | < 5 | < 8 | < 7 | < 6 | < 37 | < 15 | < 40 |
| | 10/15/2025 | **1078** ± 167 | < 6 | < 7 | < 15 | < 8 | < 16 | < 7 | < 12 | < 6 | < 7 | < 40 | < 13 | < 43 |
| | 10/29/2025 | **1195** ± 116 | < 7 | < 6 | < 14 | < 7 | < 14 | < 5 | < 11 | < 6 | < 6 | < 37 | < 14 | < 31 |
| | 11/26/2025 | **1020** ± 118 | < 5 | < 5 | < 13 | < 6 | < 11 | < 6 | < 9 | < 5 | < 5 | < 34 | < 9 | < 33 |
| | 12/24/2025 | **861** ± 142 | < 6 | < 6 | < 14 | < 7 | < 15 | < 5 | < 11 | < 7 | < 5 | < 27 | < 8 | < 43 |

Table 16, Annual Vegetation Gamma Isotopic (pCi/kg Wet ± 2 Sigma)

| Station | | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-114 | KALE | 06/25/2025 | < 37 | < 42 | < 79 | < 34 | < 94 | < 43 | < 68 | < 55 | < 43 | < 40 | < 163 | < 44 | < 217 |
| | LETTUCE | 06/25/2025 | < 34 | < 28 | < 70 | < 35 | < 89 | < 39 | < 59 | < 41 | < 37 | < 29 | < 129 | < 38 | < 145 |
| | SWISS CHARD | 06/25/2025 | < 37 | < 34 | < 74 | < 32 | < 80 | < 31 | < 52 | < 53 | < 37 | < 27 | < 156 | < 43 | < 187 |
| | KALE | 07/30/2025 | < 25 | < 38 | < 69 | < 26 | < 87 | < 40 | < 56 | < 51 | < 43 | < 37 | < 136 | < 48 | < 175 |
| | LETTUCE/CABBAGE | 07/30/2025 | < 24 | < 28 | < 52 | < 29 | < 67 | < 23 | < 47 | < 52 | < 33 | < 31 | < 118 | < 19 | < 205 |
| | SWISS CHARD | 07/30/2025 | < 30 | < 34 | < 89 | < 36 | < 69 | < 33 | < 67 | < 52 | < 33 | < 34 | < 157 | < 47 | < 163 |
| | BROCCOLI | 08/27/2025 | < 30 | < 28 | < 76 | < 29 | < 67 | < 25 | < 52 | < 54 | < 32 | < 29 | < 153 | < 42 | < 158 |
| | LETTUCE | 08/27/2025 | < 38 | < 39 | < 90 | < 33 | < 55 | < 32 | < 55 | < 50 | < 37 | < 18 | < 125 | < 13 | < 160 |
| | SWISS CHARD | 08/27/2025 | < 26 | < 28 | < 64 | < 35 | < 85 | < 24 | < 36 | < 38 | < 30 | < 26 | < 115 | < 32 | < 117 |
| | BROCCOLI | 09/24/2025 | < 41 | < 37 | < 88 | < 34 | < 87 | < 35 | < 55 | < 51 | < 39 | < 35 | < 137 | < 44 | < 180 |
| | CABBAGE | 09/24/2025 | < 19 | < 18 | < 41 | < 26 | < 40 | < 20 | < 33 | < 32 | < 21 | < 20 | < 92 | < 24 | < 131 |
| | SWISS CHARD | 09/24/2025 | < 29 | < 29 | < 82 | < 35 | < 90 | < 35 | < 57 | < 52 | < 28 | < 23 | < 128 | < 40 | < 199 |

Table 16, Annual Vegetation Gamma Isotopic (pCi/kg Wet ± 2 Sigma) Cont'd

| Station | | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-115 | KALE | 06/25/2025 | < 43 | < 44 | < 81 | < 47 | < 107 | < 39 | < 67 | < 50 | < 40 | < 36 | < 217 | < 52 | < 255 |
| | LETTUCE | 06/25/2025 | < 32 | < 32 | < 73 | < 31 | < 73 | < 29 | < 57 | < 54 | < 37 | < 35 | < 157 | < 50 | < 157 |
| | SWISS CHARD | 06/25/2025 | < 32 | < 33 | < 70 | < 30 | < 86 | < 36 | < 64 | < 54 | < 40 | < 35 | < 151 | < 49 | < 191 |
| | BROCCOLI | 07/30/2025 | < 27 | < 23 | < 60 | < 21 | < 64 | < 26 | < 42 | < 41 | < 26 | < 28 | < 119 | < 29 | < 160 |
| | LETTUCE | 07/30/2025 | < 31 | < 29 | < 59 | < 35 | < 59 | < 27 | < 50 | < 45 | < 33 | < 33 | < 133 | < 40 | < 207 |
| | SWISS CHARD | 07/30/2025 | < 26 | < 28 | < 63 | < 30 | < 63 | < 28 | < 43 | < 35 | < 27 | < 21 | < 113 | < 38 | < 133 |
| | BROCCOLI | 08/27/2025 | < 29 | < 24 | < 62 | < 34 | < 72 | < 27 | < 56 | < 48 | < 34 | < 31 | < 161 | < 49 | < 120 |
| | LETTUCE | 08/27/2025 | < 15 | < 15 | < 32 | < 16 | < 35 | < 16 | < 26 | < 27 | < 16 | < 16 | < 77 | < 21 | < 99 |
| | SWISS CHARD | 08/27/2025 | < 13 | < 14 | < 35 | < 16 | < 32 | < 15 | < 23 | < 22 | < 16 | < 13 | < 66 | < 19 | < 67 |
| | BROCCOLI | 09/24/2025 | < 12 | < 13 | < 32 | < 16 | < 29 | < 13 | < 23 | < 19 | < 14 | < 12 | < 59 | < 18 | < 59 |
| | SWISS CHARD | 09/24/2025 | < 14 | < 14 | < 33 | < 15 | < 34 | < 14 | < 24 | < 24 | < 15 | < 15 | < 66 | < 19 | < 79 |
| | SWISS CHARD | 09/24/2025 | < 19 | < 18 | < 40 | < 21 | < 44 | < 21 | < 36 | < 35 | < 21 | < 21 | < 94 | < 21 | < 137 |

Table 16, Annual Vegetation Gamma Isotopic (pCi/kg Wet ± 2 Sigma) Cont'd

| Station | | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-118 | KALE | 06/25/2025 | < 35 | < 27 | < 78 | < 28 | < 63 | < 35 | < 46 | < 49 | < 32 | < 27 | < 124 | < 44 | < 174 |
| | LETTUCE | 06/25/2025 | < 37 | < 28 | < 70 | < 36 | < 77 | < 34 | < 60 | < 52 | < 35 | < 30 | < 151 | < 42 | < 185 |
| | SWISS CHARD | 06/25/2025 | < 42 | < 35 | < 73 | < 36 | < 93 | < 41 | < 67 | < 54 | < 45 | < 33 | < 152 | < 55 | < 168 |
| | BROCCOLI | 07/30/2025 | < 26 | < 29 | < 55 | < 33 | < 40 | < 34 | < 51 | < 45 | < 35 | < 25 | < 77 | < 33 | < 143 |
| | LETTUCE | 07/30/2025 | < 32 | < 33 | < 59 | < 37 | < 74 | < 34 | < 62 | < 46 | < 40 | < 26 | < 115 | < 53 | < 178 |
| | SWISS CHARD | 07/30/2025 | < 43 | < 33 | < 98 | < 29 | < 97 | < 32 | < 65 | < 52 | < 38 | < 41 | < 152 | < 60 | < 191 |
| | BROCCOLI | 08/27/2025 | < 16 | < 15 | < 35 | < 18 | < 36 | < 16 | < 27 | < 26 | < 16 | < 16 | < 71 | < 21 | < 89 |
| | LETTUCE | 08/27/2025 | < 14 | < 14 | < 32 | < 17 | < 34 | < 16 | < 26 | < 25 | < 16 | < 16 | < 70 | < 22 | < 71 |
| | SWISS CHARD | 08/27/2025 | < 22 | < 20 | < 45 | < 25 | < 47 | < 22 | < 37 | < 32 | < 23 | < 20 | < 94 | < 30 | < 102 |
| | BROCCOLI | 09/24/2025 | < 22 | < 22 | < 45 | < 26 | < 50 | < 23 | < 39 | < 33 | < 24 | < 25 | < 99 | < 30 | < 113 |
| | LETTUCE | 09/24/2025 | < 20 | < 19 | < 42 | < 22 | < 46 | < 20 | < 34 | < 30 | < 22 | < 21 | < 87 | < 26 | < 104 |
| | SWISS CHARD | 09/24/2025 | < 24 | < 24 | < 50 | < 25 | < 54 | < 26 | < 40 | < 37 | < 26 | < 26 | < 112 | < 33 | < 137 |

Table 17, Bi-weekly Grass Gamma Isotopic (pCi/kg Wet ± 2 Sigma)

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-01 | 05/14/2025 | < 27 | < 31 | < 62 | < 35 | < 72 | < 28 | < 47 | < 52 | < 30 | < 32 | < 121 | < 30 | < 196 |
| | 05/28/2025 | < 27 | < 28 | < 61 | < 38 | < 88 | < 27 | < 49 | < 43 | < 37 | < 31 | < 156 | < 50 | < 171 |
| | 06/11/2025 | < 26 | < 23 | < 56 | < 30 | < 64 | < 26 | < 45 | < 33 | < 29 | < 28 | < 97 | < 37 | < 125 |
| | 06/25/2025 | < 28 | < 30 | < 73 | < 37 | < 65 | < 30 | < 54 | < 53 | < 39 | < 34 | < 147 | < 40 | < 161 |
| | 07/09/2025 | < 27 | < 31 | < 65 | < 32 | < 85 | < 33 | < 53 | < 52 | < 32 | < 29 | < 129 | < 43 | < 170 |
| | 07/23/2025 | < 27 | < 32 | < 57 | < 34 | < 64 | < 27 | < 45 | < 49 | < 29 | < 30 | < 121 | < 36 | < 174 |
| | 08/06/2025 | < 28 | < 19 | < 51 | < 30 | < 50 | < 28 | < 37 | < 53 | < 24 | < 25 | < 114 | < 38 | < 169 |
| | 08/20/2025 | < 30 | < 29 | < 54 | < 38 | < 72 | < 32 | < 51 | < 51 | < 32 | < 34 | < 128 | < 42 | < 185 |
| | 09/03/2025 | < 31 | < 29 | < 76 | < 37 | < 74 | < 31 | < 58 | < 55 | < 31 | < 30 | < 146 | < 32 | < 170 |
| | 09/17/2025 | < 35 | < 36 | < 70 | < 32 | < 66 | < 32 | < 58 | < 54 | < 33 | < 30 | < 148 | < 40 | < 161 |
| | 10/01/2025 | < 35 | < 39 | < 88 | < 42 | < 82 | < 36 | < 53 | < 59 | < 41 | < 31 | < 127 | < 56 | < 210 |
| | 10/15/2025 | < 16 | < 15 | < 34 | < 16 | < 37 | < 17 | < 28 | < 32 | < 15 | < 16 | < 82 | < 25 | < 98 |

Table 17, Bi-weekly Grass Gamma Isotopic (pCi/kg Wet ± 2 Sigma) Cont'd

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-02 | 05/14/2025 | < 31 | < 28 | < 66 | < 34 | < 68 | < 29 | < 49 | < 38 | < 34 | < 31 | < 116 | < 37 | < 175 |
| | 05/28/2025 | < 26 | < 30 | < 53 | < 25 | < 53 | < 24 | < 50 | < 49 | < 33 | < 28 | < 128 | < 27 | < 182 |
| | 06/11/2025 | < 28 | < 28 | < 58 | < 31 | < 61 | < 31 | < 53 | < 39 | < 35 | < 28 | < 109 | < 15 | < 160 |
| | 06/25/2025 | < 34 | < 37 | < 81 | < 54 | < 100 | < 39 | < 81 | < 54 | < 40 | < 36 | < 141 | < 48 | < 246 |
| | 07/09/2025 | < 16 | < 16 | < 39 | < 19 | < 38 | < 19 | < 32 | < 28 | < 18 | < 18 | < 78 | < 26 | < 89 |
| | 07/23/2025 | < 32 | < 34 | < 74 | < 36 | < 80 | < 38 | < 74 | < 53 | < 34 | < 36 | < 89 | < 54 | < 192 |
| | 08/06/2025 | < 27 | < 21 | < 60 | < 34 | < 81 | < 21 | < 34 | < 32 | < 28 | < 25 | < 133 | < 30 | < 125 |
| | 08/20/2025 | < 33 | < 34 | < 71 | < 37 | < 71 | < 31 | < 59 | < 53 | < 37 | < 32 | < 135 | < 34 | < 190 |
| | 09/03/2025 | < 33 | < 34 | < 76 | < 37 | < 69 | < 34 | < 65 | < 53 | < 41 | < 37 | < 154 | < 30 | < 170 |
| | 09/17/2025 | < 22 | < 23 | < 53 | < 23 | < 52 | < 22 | < 37 | < 37 | < 24 | < 22 | < 109 | < 30 | < 123 |
| | 10/01/2025 | < 31 | < 32 | < 68 | < 36 | < 74 | < 31 | < 57 | < 56 | < 32 | < 34 | < 145 | < 35 | < 165 |
| | 10/15/2025 | < 16 | < 17 | < 39 | < 16 | < 40 | < 16 | < 29 | < 26 | < 19 | < 16 | < 75 | < 25 | < 98 |

Table 17, Bi-weekly Grass Gamma Isotopic (pCi/kg Wet ± 2 Sigma) Cont'd

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-08 | 05/14/2025 | < 24 | < 18 | < 47 | < 21 | < 53 | < 17 | < 35 | < 32 | < 20 | < 22 | < 88 | < 25 | < 114 |
| | 05/28/2025 | < 27 | < 27 | < 65 | < 32 | < 65 | < 29 | < 48 | < 39 | < 32 | < 26 | < 111 | < 29 | < 122 |
| | 06/11/2025 | < 28 | < 31 | < 69 | < 30 | < 64 | < 33 | < 49 | < 44 | < 27 | < 34 | < 124 | < 36 | < 150 |
| | 06/25/2025 | < 20 | < 20 | < 62 | < 21 | < 53 | < 24 | < 47 | < 37 | < 24 | < 25 | < 112 | < 28 | < 127 |
| | 07/09/2025 | < 28 | < 28 | < 56 | < 42 | < 52 | < 25 | < 52 | < 49 | < 26 | < 25 | < 137 | < 34 | < 142 |
| | 07/23/2025 | < 31 | < 28 | < 56 | < 34 | < 72 | < 37 | < 60 | < 43 | < 36 | < 31 | < 127 | < 39 | < 186 |
| | 08/06/2025 | < 24 | < 24 | < 57 | < 30 | < 66 | < 28 | < 40 | < 38 | < 26 | < 23 | < 102 | < 33 | < 143 |
| | 08/20/2025 | < 29 | < 30 | < 70 | < 32 | < 63 | < 29 | < 55 | < 54 | < 35 | < 28 | < 168 | < 33 | < 152 |
| | 09/03/2025 | < 30 | < 35 | < 79 | < 37 | < 90 | < 34 | < 49 | < 48 | < 34 | < 33 | < 129 | < 58 | < 175 |
| | 09/17/2025 | < 23 | < 27 | < 74 | < 32 | < 73 | < 27 | < 56 | < 54 | < 30 | < 31 | < 143 | < 35 | < 164 |
| | 10/01/2025 | < 34 | < 39 | < 89 | < 39 | < 85 | < 36 | < 67 | < 57 | < 46 | < 39 | < 172 | < 51 | < 227 |
| | 10/15/2025 | < 32 | < 28 | < 72 | < 36 | < 67 | < 30 | < 49 | < 56 | < 36 | < 32 | < 143 | < 42 | < 168 |

Table 17, Bi-weekly Grass Gamma Isotopic (pCi/kg Wet ± 2 Sigma) Cont'd

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-116 | 05/14/2025 | < 32 | < 31 | < 87 | < 39 | < 66 | < 34 | < 66 | < 43 | < 33 | < 33 | < 140 | < 48 | < 184 |
| | 05/28/2025 | < 29 | < 28 | < 63 | < 25 | < 47 | < 30 | < 44 | < 35 | < 29 | < 27 | < 133 | < 40 | < 147 |
| | 06/11/2025 | < 30 | < 30 | < 64 | < 32 | < 71 | < 35 | < 49 | < 37 | < 30 | < 27 | < 117 | < 34 | < 192 |
| | 06/25/2025 | < 30 | < 38 | < 78 | < 35 | < 80 | < 30 | < 43 | < 47 | < 32 | < 29 | < 122 | < 42 | < 162 |
| | 07/09/2025 | < 34 | < 31 | < 64 | < 29 | < 74 | < 33 | < 55 | < 52 | < 30 | < 32 | < 129 | < 23 | < 147 |
| | 07/23/2025 | < 33 | < 31 | < 69 | < 43 | < 79 | < 31 | < 41 | < 50 | < 30 | < 28 | < 150 | < 40 | < 175 |
| | 08/06/2025 | < 23 | < 23 | < 54 | < 25 | < 51 | < 22 | < 42 | < 51 | < 17 | < 25 | < 152 | < 37 | < 140 |
| | 08/20/2025 | < 32 | < 28 | < 72 | < 37 | < 71 | < 31 | < 50 | < 54 | < 35 | < 30 | < 141 | < 42 | < 206 |
| | 09/03/2025 | < 31 | < 35 | < 66 | < 26 | < 67 | < 27 | < 50 | < 36 | < 26 | < 26 | < 136 | < 28 | < 138 |
| | 09/17/2025 | < 35 | < 31 | < 74 | < 35 | < 67 | < 38 | < 59 | < 48 | < 32 | < 36 | < 140 | < 36 | < 169 |
| | 10/01/2025 | < 36 | < 39 | < 71 | < 42 | < 97 | < 36 | < 52 | < 57 | < 40 | < 32 | < 169 | < 38 | < 206 |
| | 10/15/2025 | < 15 | < 16 | < 35 | < 16 | < 36 | < 16 | < 26 | < 31 | < 18 | < 16 | < 82 | < 24 | < 82 |

Table 18, Monthly Surface Water Iodine-131 (pCi/L ± 2 Sigma)

| Station | Collection Dates | I-131 |
|---|---|---|
| CL-90 | 12/31/2024 | < 0.8 |
| | 01/29/2025 | < 0.8 |
| | 02/26/2025 | < 0.8 |
| | 03/26/2025 | < 0.8 |
| | 04/30/2025 | < 0.6 |
| | 05/28/2025 | < 0.8 |
| | 06/25/2025 | < 0.9 |
| | 07/30/2025 | < 0.8 |
| | 08/27/2025 | < 0.9 |
| | 09/24/2025 | < 0.9 |
| | 10/29/2025 | < 0.9 |
| | 11/26/2025 | < 0.7 |

Table 19, Monthly Surface Water Gamma Isotopic (pCi/L ± 2 Sigma)

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-90 | 12/31/2024 - 01/29/2025 | < 6 | < 6 | < 13 | < 7 | < 11 | < 8 | < 13 | < 6 | < 6 | < 32 | < 7 | < 44 |
| | 01/29/2025 - 02/26/2025 | < 3 | < 4 | < 13 | < 7 | < 12 | < 6 | < 8 | < 6 | < 7 | < 24 | < 8 | < 34 |
| | 02/26/2025 - 03/26/2025 | < 6 | < 7 | < 9 | < 8 | < 12 | < 8 | < 13 | < 9 | < 7 | < 31 | < 10 | < 43 |
| | 03/26/2025 - 04/30/2025 | < 6 | < 6 | < 14 | < 6 | < 10 | < 6 | < 10 | < 7 | < 7 | < 32 | < 7 | < 55 |
| | 04/30/2025 - 05/28/2025 | < 6 | < 7 | < 14 | < 7 | < 16 | < 8 | < 9 | < 7 | < 7 | < 30 | < 11 | < 46 |
| | 05/28/2025 - 06/25/2025 | < 7 | < 8 | < 15 | < 6 | < 15 | < 9 | < 12 | < 7 | < 7 | < 29 | < 10 | < 44 |
| | 06/25/2025 - 07/30/2025 | < 7 | < 7 | < 18 | < 7 | < 11 | < 8 | < 13 | < 8 | < 7 | < 39 | < 12 | < 62 |
| | 07/30/2025 - 08/27/2025 | < 7 | < 5 | < 15 | < 8 | < 15 | < 7 | < 12 | < 8 | < 8 | < 35 | < 13 | < 45 |
| | 08/27/2025 - 09/24/2025 | < 5 | < 6 | < 15 | < 8 | < 13 | < 6 | < 12 | < 8 | < 8 | < 34 | < 13 | < 52 |
| | 09/24/2025 - 10/29/2025 | < 4 | < 5 | < 12 | < 5 | < 9 | < 5 | < 7 | < 5 | < 5 | < 22 | < 8 | < 36 |
| | 10/29/2025 - 11/26/2025 | < 5 | < 5 | < 12 | < 7 | < 13 | < 6 | < 10 | < 5 | < 5 | < 30 | < 10 | < 31 |
| | 11/26/2025 - 12/31/2025 | < 5 | < 4 | < 13 | < 7 | < 9 | < 7 | < 9 | < 7 | < 5 | < 28 | < 6 | < 45 |

Table 19, Monthly Surface Water Gamma Isotopic (pCi/L ± 2 Sigma) Cont'd

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-13 | 12/31/2024 - 12/31/2024 | < 6 | < 5 | < 13 | < 7 | < 11 | < 6 | < 10 | < 6 | < 6 | < 33 | < 14 | < 42 |
| | 01/29/2025 - 01/29/2025 | < 6 | < 5 | < 14 | < 9 | < 15 | < 7 | < 12 | < 5 | < 7 | < 31 | < 10 | < 45 |
| | 02/26/2025 - 02/26/2025 | < 9 | < 8 | < 15 | < 10 | < 22 | < 10 | < 16 | < 10 | < 9 | < 40 | < 14 | < 56 |
| | 03/26/2025 - 03/26/2025 | < 6 | < 5 | < 11 | < 7 | < 9 | < 7 | < 13 | < 6 | < 7 | < 28 | < 6 | < 45 |
| | 04/30/2025 - 04/30/2025 | < 7 | < 6 | < 11 | < 8 | < 12 | < 8 | < 12 | < 8 | < 9 | < 34 | < 9 | < 54 |
| | 05/28/2025 - 05/28/2025 | < 8 | < 7 | < 15 | < 6 | < 11 | < 7 | < 10 | < 7 | < 7 | < 26 | < 13 | < 42 |
| | 06/25/2025 - 06/25/2025 | < 6 | < 6 | < 14 | < 6 | < 13 | < 6 | < 14 | < 7 | < 7 | < 34 | < 14 | < 41 |
| | 07/30/2025 - 07/30/2025 | < 5 | < 6 | < 14 | < 8 | < 16 | < 6 | < 12 | < 7 | < 8 | < 33 | < 9 | < 58 |
| | 08/27/2025 - 08/27/2025 | < 6 | < 7 | < 16 | < 6 | < 13 | < 7 | < 12 | < 8 | < 6 | < 30 | < 8 | < 53 |
| | 09/24/2025 - 09/24/2025 | < 7 | < 7 | < 13 | < 7 | < 13 | < 6 | < 11 | < 8 | < 8 | < 32 | < 12 | < 51 |
| | 10/01/2025 - 10/29/2025 | < 5 | < 6 | < 11 | < 5 | < 10 | < 6 | < 8 | < 5 | < 5 | < 27 | < 10 | < 47 |
| | 11/05/2025 - 11/26/2025 | < 7 | < 5 | < 15 | < 5 | < 10 | < 6 | < 9 | < 6 | < 5 | < 35 | < 12 | < 30 |

Table 19, Monthly Surface Water Gamma Isotopic (pCi/L ± 2 Sigma) Cont'd

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-91 | 12/31/2024 - 01/29/2025 | < 6 | < 6 | < 15 | < 9 | < 14 | < 6 | < 12 | < 6 | < 7 | < 33 | < 14 | < 57 |
| | 01/29/2025 - 02/26/2025 | < 6 | < 7 | < 12 | < 10 | < 10 | < 8 | < 10 | < 8 | < 7 | < 34 | < 11 | < 43 |
| | 02/26/2025 - 03/26/2025 | < 5 | < 6 | < 10 | < 5 | < 12 | < 6 | < 12 | < 5 | < 5 | < 19 | < 7 | < 34 |
| | 03/26/2025 - 04/30/2025 | < 5 | < 7 | < 14 | < 7 | < 15 | < 6 | < 11 | < 8 | < 7 | < 24 | < 9 | < 40 |
| | 04/30/2025 - 05/28/2025 | < 6 | < 7 | < 14 | < 9 | < 16 | < 5 | < 12 | < 6 | < 5 | < 31 | < 8 | < 42 |
| | 05/28/2025 - 06/25/2025 | < 6 | < 6 | < 11 | < 8 | < 13 | < 6 | < 9 | < 7 | < 5 | < 24 | < 9 | < 42 |
| | 06/25/2025 - 07/30/2025 | < 8 | < 6 | < 14 | < 6 | < 16 | < 7 | < 13 | < 7 | < 7 | < 34 | < 12 | < 44 |
| | 07/30/2025 - 08/27/2025 | < 7 | < 9 | < 19 | < 10 | < 15 | < 7 | < 9 | < 7 | < 9 | < 40 | < 10 | < 58 |
| | 08/27/2025 - 09/24/2025 | < 7 | < 9 | < 15 | < 9 | < 11 | < 7 | < 12 | < 8 | < 9 | < 39 | < 13 | < 66 |
| | 09/24/2025 - 10/29/2025 | < 6 | < 6 | < 14 | < 9 | < 13 | < 7 | < 12 | < 7 | < 8 | < 37 | < 13 | < 39 |
| | 10/29/2025 - 11/26/2025 | < 6 | < 6 | < 11 | < 6 | < 11 | < 6 | < 10 | < 6 | < 5 | < 36 | < 11 | < 44 |
| | 11/26/2025 - 12/31/2025 | < 6 | < 5 | < 13 | < 7 | < 11 | < 6 | < 10 | < 6 | < 6 | < 22 | < 10 | < 34 |

Table 19, Monthly Surface Water Gamma Isotopic (pCi/L ± 2 Sigma) Cont'd

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-99 | 12/31/2024 - 01/29/2025 | < 9 | < 7 | < 20 | < 7 | < 15 | < 9 | < 17 | < 10 | < 8 | < 40 | < 12 | < 57 |
| | 01/29/2025 - 02/26/2025 | < 6 | < 8 | < 20 | < 7 | < 16 | < 9 | < 13 | < 8 | < 8 | < 32 | < 13 | < 44 |
| | 02/26/2025 - 03/26/2025 | < 8 | < 7 | < 14 | < 7 | < 16 | < 8 | < 14 | < 8 | < 7 | < 27 | < 13 | < 49 |
| | 03/26/2025 - 04/30/2025 | < 7 | < 6 | < 14 | < 7 | < 11 | < 7 | < 10 | < 7 | < 7 | < 34 | < 12 | < 38 |
| | 04/30/2025 - 05/28/2025 | < 6 | < 7 | < 13 | < 8 | < 11 | < 7 | < 12 | < 9 | < 8 | < 30 | < 9 | < 40 |
| | 05/28/2025 - 06/25/2025 | < 7 | < 8 | < 14 | < 8 | < 14 | < 6 | < 14 | < 6 | < 7 | < 35 | < 12 | < 47 |
| | 06/25/2025 - 07/30/2025 | < 6 | < 7 | < 14 | < 8 | < 14 | < 6 | < 14 | < 7 | < 7 | < 37 | < 12 | < 42 |
| | 07/30/2025 - 08/27/2025 | < 8 | < 6 | < 12 | < 5 | < 15 | < 6 | < 12 | < 7 | < 7 | < 34 | < 10 | < 46 |
| | 08/27/2025 - 09/24/2025 | < 8 | < 7 | < 15 | < 7 | < 15 | < 6 | < 14 | < 8 | < 7 | < 35 | < 10 | < 42 |
| | 09/24/2025 - 10/29/2025 | < 5 | < 7 | < 10 | < 7 | < 15 | < 8 | < 11 | < 7 | < 6 | < 34 | < 8 | < 53 |
| | 10/29/2025 - 11/26/2025 | < 3 | < 5 | < 10 | < 5 | < 11 | < 4 | < 8 | < 5 | < 5 | < 27 | < 9 | < 31 |
| | 11/26/2025 - 12/31/2025 | < 7 | < 8 | < 15 | < 9 | < 15 | < 8 | < 12 | < 8 | < 8 | < 40 | < 9 | < 43 |

Table 20, Quarterly Surface Water Tritium (pCi/L ± 2 Sigma)

| Station | Collection Dates | H-3 |
|---|---|---|
| CL-90 | 12/31/2024 - 03/26/2025 | < 190 |
| | 03/26/2025 - 06/25/2025 | < 195 |
| | 06/25/2025 - 09/24/2025 | < 182 |
| | 09/24/2025 - 12/31/2025 | < 181 |
| CL-13 | 01/29/2025 - 03/26/2025 | < 190 |
| | 04/30/2025 - 06/25/2025 | < 193 |
| | 07/30/2025 - 09/24/2025 | < 191 |
| | 10/01/2025 - 12/31/2025 | < 183 |
| CL-91 | 12/31/2024 - 03/26/2025 | < 186 |
| | 03/26/2025 - 06/25/2025 | < 193 |
| | 06/25/2025 - 09/24/2025 | < 185 |
| | 09/24/2025 - 12/31/2025 | < 184 |
| CL-99 | 12/31/2024 - 03/26/2025 | < 187 |
| | 03/26/2025 - 06/25/2025 | < 193 |
| | 06/25/2025 - 09/24/2025 | < 183 |
| | 09/24/2025 - 12/31/2025 | < 178 |

Table 21, Monthly Drinking Water Gross Beta and I-131 (pCi/L ± 2 Sigma)

| Station | Collection Dates | Gr-B | I-131 |
|---|---|---|---|
| CL-14 | 01/08/2025 | < 2.0 | < 0.9 |
| | 02/05/2025 | < 2.2 | < 0.9 |
| | 03/05/2025 | < 2.2 | < 0.8 |
| | 04/02/2025 | < 1.9 | < 0.7 |
| | 05/07/2025 | < 1.9 | < 0.8 |
| | 06/04/2025 | < 1.8 | < 0.9 |
| | 07/02/2025 | < 1.5 | < 0.8 |
| | 08/06/2025 | < 2.2 | < 0.9 |
| | 09/03/2025 | < 2.8 | < 1.0 |
| | 10/01/2025 | < 2.3 | < 0.9 |
| | 11/05/2025 | < 1.9 | < 0.8 |
| | 12/03/2025 | < 2.3 | < 0.9 |

Table 22, Monthly Drinking Water Gamma Isotopic (pCi/L ± 2 Sigma)

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-14 | 01/08/2025 - 01/29/2025 | < 4 | < 4 | < 11 | < 5 | < 9 | < 5 | < 8 | < 5 | < 5 | < 20 | < 8 | < 31 |
| | 02/05/2025 - 02/26/2025 | < 7 | < 7 | < 17 | < 8 | < 14 | < 9 | < 12 | < 8 | < 8 | < 32 | < 10 | < 37 |
| | 03/05/2025 - 03/26/2025 | < 8 | < 7 | < 15 | < 6 | < 12 | < 7 | < 13 | < 7 | < 6 | < 31 | < 13 | < 38 |
| | 04/02/2025 - 04/30/2025 | < 8 | < 7 | < 12 | < 8 | < 10 | < 9 | < 12 | < 8 | < 8 | < 35 | < 10 | < 50 |
| | 05/07/2025 - 05/28/2025 | < 8 | < 7 | < 13 | < 7 | < 11 | < 6 | < 12 | < 7 | < 7 | < 32 | < 11 | < 39 |
| | 06/04/2025 - 06/25/2025 | < 7 | < 6 | < 11 | < 7 | < 12 | < 6 | < 12 | < 8 | < 7 | < 38 | < 11 | < 49 |
| | 07/02/2025 - 07/30/2025 | < 6 | < 6 | < 14 | < 6 | < 14 | < 7 | < 11 | < 7 | < 6 | < 33 | < 9 | < 58 |
| | 08/06/2025 - 08/27/2025 | < 7 | < 7 | < 15 | < 7 | < 16 | < 9 | < 11 | < 9 | < 7 | < 37 | < 7 | < 43 |
| | 09/03/2025 - 09/24/2025 | < 7 | < 7 | < 13 | < 7 | < 12 | < 5 | < 11 | < 6 | < 7 | < 33 | < 9 | < 52 |
| | 10/01/2025 - 10/29/2025 | < 6 | < 7 | < 12 | < 6 | < 12 | < 6 | < 10 | < 6 | < 6 | < 29 | < 10 | < 48 |
| | 11/05/2025 - 11/26/2025 | < 4 | < 5 | < 9 | < 4 | < 8 | < 4 | < 8 | < 5 | < 5 | < 36 | < 9 | < 37 |
| | 12/03/2025 - 12/31/2025 | < 7 | < 7 | < 15 | < 9 | < 15 | < 7 | < 12 | < 6 | < 6 | < 33 | < 12 | < 55 |

Table 23, Quarterly Drinking Water Tritium (pCi/L ± 2 Sigma)

| Station | Collection Dates | H-3 |
|---|---|---|
| CL-14 | 01/08/2025 - 03/26/2025 | < 195 |
| | 04/02/2025 - 06/25/2025 | < 199 |
| | 07/02/2025 - 09/24/2025 | < 191 |
| | 10/01/2025 - 12/31/2025 | < 183 |

Table 24, Quarterly Groundwater Tritium (pCi/L ± 2 Sigma)

| Collection Date | CL-07D | CL-12R | CL-12T |
|---|---|---|---|
| 03/26/2025 | < 170 | < 169 | < 174 |
| 06/25/2025 | < 191 | < 194 | < 199 |
| 09/24/2025 | < 190 | < 190 | < 188 |
| 12/17/2025 | < 191 | < 196 | < 191 |

Table 25, Quarterly Ground Water Gamma Isotopic (pCi/L ± 2 Sigma)

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-07D | 03/26/2025 - 03/26/2025 | < 6 | < 6 | < 13 | < 9 | < 14 | < 9 | < 12 | < 8 | < 8 | < 26 | < 10 | < 51 |
| | 06/25/2025 - 06/25/2025 | < 6 | < 7 | < 10 | < 5 | < 17 | < 9 | < 16 | < 10 | < 8 | < 30 | < 12 | < 41 |
| | 09/24/2025 - 09/24/2025 | < 6 | < 7 | < 16 | < 9 | < 16 | < 7 | < 13 | < 9 | < 8 | < 33 | < 12 | < 53 |
| | 12/17/2025 - 12/17/2025 | < 1 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 2 | < 1 | < 20 | < 6 | < 11 |
| CL-12R | 03/26/2025 - 03/26/2025 | < 6 | < 5 | < 12 | < 5 | < 11 | < 6 | < 11 | < 8 | < 8 | < 32 | < 12 | < 54 |
| | 06/25/2025 - 06/25/2025 | < 6 | < 7 | < 16 | < 5 | < 14 | < 5 | < 15 | < 8 | < 8 | < 40 | < 10 | < 45 |
| | 09/24/2025 - 09/24/2025 | < 7 | < 7 | < 16 | < 9 | < 14 | < 7 | < 9 | < 9 | < 7 | < 35 | < 11 | < 53 |
| | 12/17/2025 - 12/17/2025 | < 2 | < 2 | < 5 | < 2 | < 3 | < 2 | < 4 | < 2 | < 2 | < 22 | < 8 | < 10 |
| CL-12T | 03/26/2025 - 03/26/2025 | < 5 | < 7 | < 12 | < 10 | < 18 | < 7 | < 12 | < 8 | < 6 | < 29 | < 11 | < 42 |
| | 06/25/2025 - 06/25/2025 | < 8 | < 8 | < 17 | < 8 | < 16 | < 8 | < 13 | < 8 | < 9 | < 34 | < 14 | < 61 |
| | 09/24/2025 - 09/24/2025 | < 5 | < 7 | < 12 | < 8 | < 11 | < 6 | < 14 | < 7 | < 7 | < 29 | < 12 | < 41 |
| | 12/17/2025 - 12/17/2025 | < 1 | < 2 | < 4 | < 1 | < 3 | < 2 | < 3 | < 1 | < 1 | < 21 | < 7 | < 11 |

Table 26, Semi-Annual Fish Gamma Isotopic (pCi/kg Wet ± 2 Sigma)

| Station | | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-19 | Bluegill | 05/09/2025 | < 89 | < 69 | < 198 | < 115 | < 155 | < 95 | < 145 | < 92 | < 97 | < 469 | < 187 | < 442 |
| | Carp | 05/09/2025 | < 69 | < 70 | < 148 | < 73 | < 163 | < 63 | < 105 | < 78 | < 78 | < 335 | < 150 | < 326 |
| | Largemouth bass | 05/09/2025 | < 71 | < 80 | < 166 | < 85 | < 186 | < 74 | < 146 | < 76 | < 92 | < 524 | < 83 | < 502 |
| | White Crappie | 05/09/2025 | < 66 | < 59 | < 145 | < 62 | < 134 | < 75 | < 96 | < 67 | < 36 | < 450 | < 133 | < 265 |
| | Bluegill | 10/02/2025 | < 72 | < 76 | < 160 | < 51 | < 126 | < 78 | < 107 | < 61 | < 61 | < 901 | < 351 | < 304 |
| | Common Carp | 10/02/2025 | < 85 | < 94 | < 222 | < 75 | < 155 | < 96 | < 172 | < 86 | < 77 | < 1082 | < 368 | < 395 |
| | Largemouth bass | 10/02/2025 | < 72 | < 75 | < 181 | < 59 | < 161 | < 79 | < 128 | < 70 | < 63 | < 1032 | < 301 | < 421 |
| | White Crappie | 10/02/2025 | < 57 | < 75 | < 161 | < 71 | < 132 | < 77 | < 145 | < 57 | < 63 | < 957 | < 298 | < 372 |

Table 26, Semi-Annual Fish Gamma Isotopic (pCi/kg Wet ± 2 Sigma) Cont'd

| Station | | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-105 | Bluegill | 05/08/2025 | < 73 | < 83 | < 147 | < 89 | < 166 | < 76 | < 150 | < 73 | < 77 | < 516 | < 192 | < 350 |
| | Carp | 05/08/2025 | < 79 | < 93 | < 187 | < 68 | < 158 | < 105 | < 147 | < 63 | < 69 | < 594 | < 149 | < 349 |
| | Largemouth bass | 05/08/2025 | < 47 | < 53 | < 117 | < 64 | < 149 | < 54 | < 120 | < 60 | < 54 | < 379 | < 110 | < 239 |
| | White Crappie | 05/08/2025 | < 60 | < 65 | < 151 | < 55 | < 123 | < 55 | < 111 | < 50 | < 53 | < 298 | < 82 | < 204 |
| | Bluegill | 10/02/2025 | < 48 | < 50 | < 116 | < 55 | < 99 | < 45 | < 91 | < 48 | < 43 | < 574 | < 151 | < 200 |
| | Common Carp | 10/02/2025 | < 62 | < 74 | < 152 | < 74 | < 146 | < 89 | < 134 | < 70 | < 62 | < 976 | < 222 | < 317 |
| | Largemouth bass | 10/02/2025 | < 80 | < 94 | < 206 | < 91 | < 163 | < 91 | < 156 | < 86 | < 67 | < 1039 | < 399 | < 458 |
| | White Crappie | 10/02/2025 | < 73 | < 86 | < 202 | < 84 | < 171 | < 97 | < 143 | < 75 | < 79 | < 1178 | < 326 | < 432 |

Table 27, Semi-Annual Shoreline Sediment Gamma Isotopic (pCi/kg Dry ± 2 Sigma)

| Station | Collection Dates | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 | Ce-144 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CL-07B | 05/09/2025 | < 61 | < 54 | < 125 | < 64 | < 138 | < 67 | < 112 | < 69 | < 52 | < 355 | < 99 | < 357 |
| | 10/02/2025 | < 112 | < 122 | < 279 | < 95 | < 301 | < 166 | < 230 | < 136 | < 93 | < 1740 | < 540 | < 496 |
| CL-105 | 05/08/2025 | < 68 | < 67 | < 124 | < 68 | < 105 | < 80 | < 126 | < 71 | < 66 | < 391 | < 139 | < 397 |
| | 10/02/2025 | < 47 | < 74 | < 154 | < 65 | < 148 | < 76 | < 148 | < 62 | < 60 | < 1184 | < 334 | < 361 |

## 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.

Teledyne Brown Engineering Inc. (TBE) participated in the following proficiency testing studies provided by Eckert Ziegler Analytics, DOE's Mixed Analyte Performance Evaluation Program (MAPEP), and/or Environmental Resource Associates (ERA) in 2025. The Laboratory's intercomparison program results for 2025 are summarized below.

For the TBE laboratory, 157 out of 164 analyses performed met the specified acceptance criteria. Seven analyses did not meet the specified acceptance criteria and were addressed through the TBE Corrective Action Program. A summary is found below:

I. NCR 25-04: MAPEP 25, RdV52 vegetation study for Sr-90 evaluated as "Not Acceptable." Possible sample interference issue. Study results stated 8 out of 18 participants passed the study. All internal data reviewed and deemed accurate with internal quality control measures for sample also passing. The laboratory performed testing with Sr-85 spike with successful outcomes. The following provider study, RdV53, returned with passing results.

II. NCR 25-05: Interlaboratory crosscheck failure: MAPEP 25-MaS52 Ni-63 in soil. A manual data-entry error in the carrier volume for one nuclide/matrix led to an incorrect LIMS value. Manual verification showed that the crosscheck would have passed with the correct volume. The procedure has been revised with more prominent notation to assist technicians. No recurrence identified and the following crosscheck study did not result in repeated error supporting effectiveness of corrective action.

III. NCR 25-06: Interlaboratory crosscheck failure: ERA RAD141 Gr-A in water. The provider's acceptance range was 10.0–21.2, and their reported value of 15.6 fell within this interval. TBE-ES obtained 22.2 ± 3.76, which satisfied internal QC criteria and would have aligned with the acceptance range if error margins had been considered. The QC duplicate result of 17.8 met internal requirements, and the 22% RPD demonstrated internal consistency. The provider's Gr-A samples have historically been the lowest spiked. No internal failures identified so no corrective action deemed necessary. The following ERA RAD143 study's performance evaluation results returned acceptable/passing.

IV. NCR 25-10: *IN-PROGRESS* Interlaboratory crosscheck failure: ERA MRAD 43, PU-239/240 (AS) in Air Particulate (filter).

V. NCR 25-11: Interlaboratory crosscheck failure: ERA RAD-143 crosscheck failure of Uranium in water. Provider acceptance range: 48.0 – 60.0. TBE-ES result of 47.1 with internal acceptance ratio of 87.2 and no prior failures. No corrective action deemed necessary.

VI. NCR 25-12: *IN-PROGRESS* Interlaboratory crosscheck failure: MAPEP Series 53, Ni-63 in Soil.

VII. NCR 25-13: *IN-PROGRESS* Interlaboratory crosscheck failure: MAPEP Series 53, Th-232 in Soil.

Table 28, DOE Mixed Analyte Performance Evaluation Program (MAPEP)

Teledyne Brown Engineering - Environmental Services

| Month/Year | Identification Number | Matrix | Nuclide | Units | TBE Reported Value | Known Value (a) | Acceptance Range | Acceptance Ratio (%) | Evaluation (b) |
|---|---|---|---|---|---|---|---|---|---|
| Mar 2025 | 25-MaS52 | Soil | Ni-63 | Bq/kg | 964 | 1560 | 1092-2028 | 61.8 | N(1) |
| Mar 2025 | 25-MaS52 | Soil | Tc-99 | Bq/kg | 659 | 725 | 508-943 | 90.9 | A |
| Mar 2025 | 25-MaS52 | Soil | Th-228 | Bq/kg | 44.3 | 44.4 | 31.1-57.7 | 99.8 | A |
| Mar 2025 | 25-MaS52 | Soil | Th-230 | Bq/kg | 46.4 | 47 | 32.9-61.1 | 98.7 | A |
| Mar 2025 | 25-MaS52 | Soil | Th-232 | Bq/kg | 39.9 | 41.4 | 29.0-53.8 | 96.4 | A |
| Mar 2025 | 25-MaSU52 | Urine | Cs-134 | Bq/L | -0.0104 | False Positive | | N/A | A |
| Mar 2025 | 25-MaSU52 | Urine | Cs-137 | Bq/L | 0.497 | 0.608 | 0.426-0.490 | 81.7 | A |
| Mar 2025 | 25-MaSU52 | Urine | Co-57 | Bq/L | 0.0472 | False Positive | | N/A | A |
| Mar 2025 | 25-MaSU52 | Urine | Co-60 | Bq/L | 0.104 | 0.0765 | Sensitivity Eval | N/A | A |
| Mar 2025 | 25-MaSU52 | Urine | Mn-54 | Bq/L | 0.0365 | False Positive | | N/A | A |
| Mar 2025 | 25-MaSU52 | Urine | U-234 | Bq/L | 0.0963 | 0.105 | 0.074-0.137 | 91.7 | A |
| Mar 2025 | 25-MaSU52 | Urine | U-238 | Bq/L | 0.108 | 0.109 | 0.076-0.142 | 99.1 | A |
| Mar 2025 | 25-MaSU52 | Urine | Zn-65 | Bq/L | -0.278 | False Positive | | N/A | A |
| Mar 2025 | 25-MaW52 | Water | Ni-63 | Bq/L | 37.3 | 38.9 | 27.2-50.6 | 95.9 | A |
| Mar 2025 | 25-MaW52 | Water | Tc-99 | Bq/L | 6.64 | 6.34 | 4.44-8.24 | 104.7 | A |
| Mar 2025 | 25-RdV52 | Vegetation | Cs-134 | Bq/sample | 0.0452 | False Positive | | N/A | A |
| Mar 2025 | 25-RdV52 | Vegetation | Cs-137 | Bq/sample | 0.558 | 0.707 | 0.495-0.919 | 78.9 | W |
| Mar 2025 | 25-RdV52 | Vegetation | Co-57 | Bq/sample | 2.86 | 3.40 | 2.38-4.42 | 84.1 | A |
| Mar 2025 | 25-RdV52 | Vegetation | Co-60 | Bq/sample | 0.0284 | False Positive | | N/A | A |
| Mar 2025 | 25-RdV52 | Vegetation | Mn-54 | Bq/sample | 2.22 | 2.72 | 1.90-3.54 | 81.6 | A |
| Mar 2025 | 25-RdV52 | Vegetation | Sr-90 | Bq/sample | 0.222 | 0.370 | 0.259-0.481 | 60.0 | N(2) |
| Mar 2025 | 25-RdV52 | Vegetation | Zn-65 | Bq/sample | 1.5 | 1.87 | 1.31-2.43 | 80.2 | A |
| Mar 2025 | 25-RdV52 (R) | Vegetation | Sr-90 | Bq/sample | 0.356 | 0.370 | 0.259-0.481 | 96.2 | A |
| Mar 2025 | 25-RdV52 (R) | Vegetation | Sr-90 | Bq/sample | 0.4 | 0.370 | 0.259-0.481 | 108.1 | A |
| Sep 2025 | 25-MaS53 | Soil | Ni-63 | Bq/kg | 865 | 1474 | 1032-1916 | 58.7 | N(3) |
| Sep 2025 | 25-MaS53 | Soil | Tc-99 | Bq/kg | 314 | 370 | 259-481 | 84.9 | A |
| Sep 2025 | 25-MaS53 | Soil | Th-228 | Bq/kg | 51.2 | 41.7 | 29.2-54.2 | 123 | W |
| Sep 2025 | 25-MaS53 | Soil | Th-230 | Bq/kg | 54.8 | 45.6 | 31.9-59.3 | 120 | W |
| Sep 2025 | 25-MaS53 | Soil | Th-232 | Bq/kg | 50.4 | 38.7 | 27.1-50.3 | 130 | N(4) |
| Sep 2025 | 25-MaW53 | Water | Ni-63 | Bq/L | 23.0 | 25.0 | 17.5-32.5 | 92 | A |
| Sep 2025 | 25-MaW53 | Water | Tc-99 | Bq/L | 0.17 | *False Pos* | | N/A | A |
| Sep 2025 | 25-RdV53 | Vegetation | Cs-134 | Bq/sample | 0.1051 | *False Pos* | | N/A | A |
| Sep 2025 | 25-RdV53 | Vegetation | Cs-137 | Bq/sample | 0.9581 | 0.986 | 0.69-1.282 | 97 | A |
| Sep 2025 | 25-RdV53 | Vegetation | Co-57 | Bq/sample | 4.54 | 4.47 | 3.13-5.81 | 102 | A |
| Sep 2025 | 25-RdV53 | Vegetation | Co-60 | Bq/sample | 2.08 | 2.3 | 1.61-2.99 | 90 | A |
| Sep 2025 | 25-RdV53 | Vegetation | Mn-54 | Bq/sample | 2.64 | 3.1 | 2.17-4.03 | 85 | A |
| Sep 2025 | 25-RdV53 | Vegetation | Sr-90 | Bq/sample | 1.5 | 1.43 | 1.00-1.86 | 105 | A |
| Sep 2025 | 25-RdV53 | Vegetation | Zn-65 | Bq/sample | 8.39 | 9.29 | 6.50-12.08 | 90 | A |

(a)The MAPEP known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
(b)DOE/MAPEP evaluation:
A = Acceptable - reported result falls within ratio limits of 0.80-1.20
W = Acceptable with warning - reported result falls within 0.70-0.80 or 1.20-1.30
N = Not Acceptable - reported result falls outside the ratio limits of < 0.70 and > 1.30

Results Flags:
A = Result acceptable. |Bias| <= 20%
W = Result acceptable with warning. 20% < |Bias| <= 30%
N = Result not acceptable. |Bias| > 30%
RW = Report Warning NR = Not Reported
Uncertainty Flags:
NOT ACCEPTABLE. RP < 2%
ACCEPTABLE. 2% <= RP <= 15%
ACCEPTABLE WITH WARNING. 15% < RP <= 30%
NOT ACCEPTABLE. RP > 30%
Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

N(1) = NCR 25-05 N(2) = NCR 25-04
(R) = Additional Study for N(2) failure N(3) = NCR 25-12
N(4) = NCR 25-13

## Table 29, ERA Environmental Radioactivity Crosscheck Program

## Teledyne Brown Engineering - Environmental Services

| Month Year | Identification Number | Matrix | Nuclide | Units | TBE Reported Value | Known Value (a) | Acceptance Range | Acceptance Ratio (%) | Evaluation (b) |
|---|---|---|---|---|---|---|---|---|---|
| Mar 2025 | MRAD-42 | Soil | Am-241 | pCi/kg | 955 | 1060 | 572-1500 | 90.1 | A |
| Mar 2025 | MRAD-42 | Soil | Pu-238 | pCi/kg | 1010 | 1070 | 534-1630 | 94.4 | A |
| Mar 2025 | MRAD-42 | Soil | Pu-239 | pCi/kg | 1020 | 1150 | 627-1650 | 88.7 | A |
| Mar 2025 | MRAD-42 | Soil | Sr-90 | pCi/kg | 3540 | 5710 | 1780-8890 | 62.0 | A |
| Mar 2025 | MRAD-42 | Soil | U-234 | pCi/kg | 3598 | 3500 | 1640-4590 | 103 | A |
| Mar 2025 | MRAD-42 | Soil | U-238 | pCi/kg | 3857 | 3470 | 1900-4660 | 111 | A |
| Mar 2025 | MRAD-42 | AP | Am-241 | pCi/Filter | 73.5 | 67.7 | 48.3-90.3 | 109 | A |
| Mar 2025 | MRAD-42 | AP | Fe-55 | pCi/Filter | 224 | 181 | 66.1-289 | 124 | A |
| Mar 2025 | MRAD-42 | AP | Pu-238 | pCi/Filter | 41.7 | 40.2 | 30.4-49.4 | 104 | A |
| Mar 2025 | MRAD-42 | AP | Pu-239 | pCi/Filter | 64.5 | 62.3 | 46.6-75.2 | 104 | A |
| Mar 2025 | MRAD-42 | AP | U-234 | pCi/Filter | 30.8 | 34.2 | 25.4-40.1 | 90.1 | A |
| Mar 2025 | MRAD-42 | AP | U-238 | pCi/Filter | 29.4 | 33.9 | 25.6-40.4 | 86.7 | A |
| Mar 2025 | MRAD-42 | AP | Gr-A (Th-230) | pCi/Filter | 44.8 | 39.5 | 20.6-65.1 | 113 | A |
| Mar 2025 | MRAD-42 | AP | Gr-B (CS-137) | pCi/Filter | 62.6 | 55.2 | 33.5-83.4 | 113 | A |
| Mar 2025 | MRAD-42 | Water | Am-241 | pCi/L | 40.5 | 39.5 | 27.1-50.5 | 103 | A |
| Mar 2025 | MRAD-42 | Water | Fe-55 | pCi/L | 892.6 | 1460 | 858-2120 | 61.1 | A |
| Mar 2025 | MRAD-42 | Water | Pu-238 | pCi/L | 74.9 | 77.2 | 46.4-100 | 97.0 | A |
| Mar 2025 | MRAD-42 | Water | Pu-239 | pCi/L | 59.2 | 58.4 | 36.1-72.0 | 101 | A |
| Apr 2025 | RAD-141 | Water | Ba-133 | pCi/L | 42.7 | 48.3 | 34.3-62.3 | 88.4 | A |
| Apr 2025 | RAD-141 | Water | Cs-134 | pCi/L | 19.5 | 16.5 | 5.65-27.4 | 118 | A |
| Apr 2025 | RAD-141 | Water | Cs-137 | pCi/L | 47.3 | 50.8 | 27.3-74.3 | 93.1 | A |
| Apr 2025 | RAD-141 | Water | Co-60 | pCi/L | 99.2 | 104 | 84.4-124 | 95.4 | A |
| Apr 2025 | RAD-141 | Water | Zn-65 | pCi/L | 317 | 341 | 279-403 | 93.0 | A |
| Apr 2025 | RAD-141 | Water | GR-A | pCi/L | 22.2 | 15.6 | 10.0-21.2 | 142.3 | N(1) |
| Apr 2025 | RAD-141 | Water | GR-B | pCi/L | 21.6 | 22.9 | 15.0-30.8 | 94.3 | A |
| Apr 2025 | RAD-141 | Water | H-3 | pCi/L | 19900 | 21200 | 18200-24200 | 93.9 | A |
| Apr 2025 | RAD-141 | Water | I-131 (Low Level) | pCi/L | 26.1 | 26.8 | 23.2-30.4 | 97.4 | A |
| Apr 2025 | RAD-141 | Water | Sr-89 | pCi/L | 70.8 | 67.1 | 51.2-83.0 | 106 | A |
| Apr 2025 | RAD-141 | Water | Sr-90 | pCi/L | 22.5 | 23.9 | 19.7-28.1 | 94.1 | A |
| Apr 2025 | RAD-141 | Water | U (Total) | pCi/L | 48.0 | 49.6 | 44.0-55.2 | 96.8 | A |
| Sept 2025 | MRAD-43 | Soil | Sr-90 | pCi/kg | 6790 | 9490 | 2950-14800 | 71.5 | A |
| Sept 2025 | MRAD-43 | AP | Am-241 | pCi/Filter | 40.2 | 39.8 | 28.4-53.1 | 101 | A |
| Sept 2025 | MRAD-43 | AP | Fe-55 | pCi/Filter | 125 | 166 | 60.6-265 | 75.3 | A |
| Sept 2025 | MRAD-43 | AP | Pu-238 | pCi/Filter | 26 | 15.1 | 11.4-18.6 | 172 | N(3) |
| Sept 2025 | MRAD-43 | AP | U-234 | pCi/Filter | 57.7 | 63.4 | 47.0-74.3 | 91.0 | A |
| Sept 2025 | MRAD-43 | AP | U-238 | pCi/Filter | 63.1 | 62.9 | 47.5-75.0 | 100 | A |
| Sept 2025 | MRAD-43 | AP | Gr-A (Th-230) | pCi/Filter | 28.2 | 22 | 11.5-36.2 | 128 | A |
| Sept 2025 | MRAD-43 | AP | Gr-B (CS-137) | pCi/Filter | 38.6 | 40.5 | 24.6-61.2 | 95.3 | A |
| Sept 2025 | MRAD-43 | Water | Am-241 | pCi/L | 69.2 | 68.6 | 47.1-87.7 | 101 | A |
| Sept 2025 | MRAD-43 | Water | Fe-55 | pCi/L | 304 | 399 | 234-580 | 76.2 | A |
| Sept 2025 | MRAD-43 | Water | Pu-238 | pCi/L | 104 | 115 | 56.7-122 | 90.4 | A |
| Sept 2025 | MRAD-43 | Water | Pu-239 | pCi/L | 37.8 | 39.8 | 24.6-49.0 | 95.0 | A |
| Oct 2025 | RAD | Water | Ba-133 | pCi/L | 21.3 | 17.5 | 6.55-28.5 | 122 | A |
| Oct 2025 | RAD | Water | Cs-134 | pCi/L | 53.8 | 58 | 43.0-73.0 | 92.8 | A |
| Oct 2025 | RAD | Water | Cs-137 | pCi/L | 179.5 | 178 | 142-214 | 101 | A |
| Oct 2025 | RAD | Water | Co-60 | pCi/L | 58.3 | 55 | 40.3-69.7 | 106 | A |
| Oct 2025 | RAD | Water | Zn-65 | pCi/L | 37.04 | 36.8 | 5.51-68.1 | 101 | A |
| Oct 2025 | RAD | Water | GR-A | pCi/L | 64.8 | 59.9 | 45.5-74.3 | 108 | A |
| Oct 2025 | RAD | Water | GR-B | pCi/L | 19.3 | 19.3 | 12.2-26.4 | 100 | A |
| Oct 2025 | RAD | Water | H-3 | pCi/L | 18400 | 21200 | 18200-24200 | 86.8 | A |
| Oct 2025 | RAD | Water | I-131 (Low Level) | pCi/L | 23.9 | 24.3 | 20.9-27.7 | 98.4 | A |
| Oct 2025 | RAD | Water | Sr-89 | pCi/L | 69.7 | 64.2 | 48.6-79.8 | 109 | A |
| Oct 2025 | RAD | Water | Sr-90 | pCi/L | 39.8 | 43.8 | 37.6-50.0 | 90.9 | A |
| Oct 2025 | RAD | Water | U (Total) | pCi/L | 47.1 | 54 | 48.0-60.0 | 87.2 | N(2) |

(a)The ERA known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.
(b)ERA evaluation:
A = Acceptable - Reported value falls within the Acceptance Limits
N = Not Acceptable - Reported value falls outside of the Acceptance Limits
N(1) = NCR 25-06 N(2) = NCR 25-11 N(3) = NCR 25-10

Table 30: Eckert & Ziegler Analytics Environmental Radioactivity Crosscheck Program

Teledyne Brown Engineering - Environmental Services

| Month/Year | Identification Number | Matrix | Nuclide | Units | TBE Reported Value | Known Value [(a)] | Acceptance Ratio (%) | Evaluation [(b)] |
|---|---|---|---|---|---|---|---|---|
| March 2025 | E14230 | Milk | Ce-141 | pCi/L | 68.1 | 75.8 | 90 | A |
| March 2025 | E14230 | Milk | Cs-134 | pCi/L | 121 | 142 | 85 | A |
| March 2025 | E14230 | Milk | Cs-137 | pCi/L | 154 | 168 | 92 | A |
| March 2025 | E14230 | Milk | Cr-51 | pCi/L | 278 | 291 | 96 | A |
| March 2025 | E14230 | Milk | Co-58 | pCi/L | 95.4 | 105 | 91 | A |
| March 2025 | E14230 | Milk | Co-60 | pCi/L | 169 | 193 | 88 | A |
| March 2025 | E14230 | Milk | Fe-59 | pCi/L | 125 | 135 | 93 | A |
| March 2025 | E14230 | Milk | Mn-54 | pCi/L | 172 | 189 | 91 | A |
| March 2025 | E14230 | Milk | Zn-65 | pCi/L | 229 | 251 | 91 | A |
| March 2025 | E14230 | Milk | I-131 (Low Level) | pCi/L | 88.4 | 94.7 | 93 | A |
| March 2025 | E14229 | Milk | Sr-89 | pCi/L | 84.9 | 91.9 | 92 | A |
| March 2025 | E14229 | Milk | Sr-90 | pCi/L | 11.1 | 15.6 | 71 | W |
| March 2025 | E14323 | AP | Ce-141 | pCi | 55.9 | 54.2 | 103 | A |
| March 2025 | E14323 | AP | Cs-134 | pCi | 93.0 | 102 | 91 | A |
| March 2025 | E14323 | AP | Cs-137 | pCi | 107 | 120 | 89 | A |
| March 2025 | E14323 | AP | Cr-51 | pCi | 194 | 208 | 93 | A |
| March 2025 | E14323 | AP | Co-58 | pCi | 68.4 | 75.2 | 91 | A |
| March 2025 | E14323 | AP | Co-60 | pCi | 142 | 138 | 103 | A |
| March 2025 | E14323 | AP | Fe-59 | pCi | 95.0 | 96.3 | 99 | A |
| March 2025 | E14323 | AP | Mn-54 | pCi | 123 | 135 | 91 | A |
| March 2025 | E14234 | AP | Zn-65 | pCi | 181 | 179 | 101 | A |
| March 2025 | E14336 | AP | Ni-63 | pCi/Total | 81.5 | 87.4 | 93 | A |
| March 2025 | E14234 | AP | Sr-89 | pCi | 81.6 | 88.5 | 92 | A |
| March 2025 | E14234 | AP | Sr-90 | pCi | 13.6 | 15 | 90 | A |
| March 2025 | E14231 | Charcoal | I-131 | pCi | 70.3 | 66.3 | 106 | A |
| March 2025 | E14233 | Soil | Ce-141 | pCi/g | 0.124 | 0.129 | 96 | A |
| March 2025 | E14233 | Soil | Cs-134 | pCi/g | 0.283 | 0.242 | 117 | A |
| March 2025 | E14233 | Soil | Cs-137 | pCi/g | 0.333 | 0.351 | 95 | A |
| March 2025 | E14233 | Soil | Cr-51 | pCi/g | 0.495 | 0.494 | 100 | A |
| March 2025 | E14233 | Soil | Co-58 | pCi/g | 0.193 | 0.179 | 108 | A |
| March 2025 | E14233 | Soil | Co-60 | pCi/g | 0.323 | 0.327 | 99 | A |
| March 2025 | E14233 | Soil | Fe-59 | pCi/g | 0.231 | 0.229 | 101 | A |
| March 2025 | E14233 | Soil | Mn-54 | pCi/g | 0.325 | 0.321 | 101 | A |
| March 2025 | E14233 | Soil | Zn-65 | pCi/g | 0.446 | 0.426 | 105 | A |
| March 2025 | E14235 | Water | Gr-A (Am-241) | pCi/L | 79.6 | 89.4 | 89 | A |
| March 2025 | E14235 | Water | Gr-B (Cs-137) | pCi/L | 242 | 285 | 85 | A |

Table 30: Eckert & Ziegler Analytics Environmental Radioactivity Crosscheck Program

Teledyne Brown Engineering - Environmental Services

| Month/Year | Identification Number | Matrix | Nuclide | Units | TBE Reported Value | Known Value (a) | Acceptance Ratio (%) | Evaluation (b) |
|---|---|---|---|---|---|---|---|---|
| Sept 2025 | E14237 | Milk | Ce-141 | pCi/L | 91.6 | 89.5 | 102 | A |
| Sept 2025 | E14237 | Milk | Cs-134 | pCi/L | 121 | 142 | 85 | A |
| Sept 2025 | E14237 | Milk | Cs-137 | pCi/L | 115 | 126 | 91 | A |
| Sept 2025 | E14237 | Milk | Cr-51 | pCi/L | 280 | 260 | 108 | A |
| Sept 2025 | E14237 | Milk | Co-58 | pCi/L | 104 | 105 | 99 | A |
| Sept 2025 | E14237 | Milk | Co-60 | pCi/L | 145 | 150 | 97 | A |
| Sept 2025 | E14237 | Milk | Fe-59 | pCi/L | 91.4 | 98.6 | 93 | A |
| Sept 2025 | E14237 | Milk | Mn-54 | pCi/L | 159 | 161 | 99 | A |
| Sept 2025 | E14237 | Milk | Zn-65 | pCi/L | 205 | 196 | 105 | A |
| Sept 2025 | E14237 | Milk | I-131 (Low Level) | pCi/L | 79.5 | 76.3 | 104 | A |
| Sept 2025 | E14236 | Milk | Sr-89 | pCi/L | 109 | 89.8 | 121 | W |
| Sept 2025 | E14236 | Milk | Sr-90 | pCi/L | 10.9 | 13.1 | 83 | A |
| Sept 2025 | E14239 | AP | Ce-141 | pCi | 67.5 | 68.1 | 99 | A |
| Sept 2025 | E14239 | AP | Cs-134 | pCi | 103 | 108 | 95 | A |
| Sept 2025 | E14239 | AP | Cs-137 | pCi | 98.4 | 96.1 | 102 | A |
| Sept 2025 | E14239 | AP | Cr-51 | pCi | 227 | 197 | 115 | A |
| Sept 2025 | E14239 | AP | Co-58 | pCi | 79.6 | 79.9 | 100 | A |
| Sept 2025 | E14239 | AP | Co-60 | pCi | 131 | 114 | 115 | A |
| Sept 2025 | E14239 | AP | Fe-59 | pCi | 74.7 | 75 | 100 | A |
| Sept 2025 | E14239 | AP | Mn-54 | pCi | 120 | 123 | 98 | A |
| Sept 2025 | E14239 | AP | Zn-65 | pCi | 133 | 149 | 89 | A |
| Sept 2025 | E14337 | AP | Ni-63 | pCi/Total | 71.4 | 85.1 | 84 | A |
| Sept 2025 | E14241 | AP | Sr-89 | pCi | 78.2 | 84.2 | 93 | A |
| Sept 2025 | E14241 | AP | Sr-90 | pCi | 13.7 | 12.2 | 112 | A |
| Sept 2025 | E14238 | Charcoal | I-131 | pCi | 80.8 | 79 | 102 | A |
| Sept 2025 | E14240 | Soil | Ce-141 | pCi/g | 0.133 | 0.149 | 89 | A |
| Sept 2025 | E14240 | Soil | Cs-134 | pCi/g | 0.166 | 0.236 | 70 | W |
| Sept 2025 | E14240 | Soil | Cs-137 | pCi/g | 0.22 | 0.276 | 80 | A |
| Sept 2025 | E14240 | Soil | Cr-51 | pCi/g | 0.486 | 0.432 | 112 | A |
| Sept 2025 | E14240 | Soil | Co-58 | pCi/g | 0.16 | 0.175 | 91 | A |
| Sept 2025 | E14240 | Soil | Co-60 | pCi/g | 0.234 | 0.251 | 93 | A |
| Sept 2025 | E14240 | Soil | Fe-59 | pCi/g | 0.154 | 0.164 | 94 | A |
| Sept 2025 | E14240 | Soil | Mn-54 | pCi/g | 0.241 | 0.269 | 90 | A |
| Sept 2025 | E14240 | Soil | Zn-65 | pCi/g | 0.308 | 0.326 | 94 | A |
| Sept 2025 | E14242 | Water | Gr-A (Am-241) | pCi/L | 97.2 | 99.7 | 97 | A |
| Sept 2025 | E14242 | Water | Gr-B (Cs-137) | pCi/L | 200 | 201 | 100 | A |
| Sept 2025 | E14242 | Water | Gr-B (Cs-137) | pCi/L | 200 | 201 | 100 | A |

(a) The Analytics known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(b) Analytics evaluation based on TBE internal QC limits:
A = Acceptable - reported result falls within ratio limits of 0.80-1.20
W = Acceptable with warning - reported result falls within 0.70-0.80 or 1.20-1.30
N = Not Acceptable - reported result falls outside the ratio limits of < 0.70 and > 1.30

Attachment 4, Environmental Direct Radiation Dosimetry Results

| Monitoring Location | Quarterly Baseline, $B_Q$ (mrem) | $B_Q + MDD_Q$ (mrem) | Normalized Quarterly Monitoring Data, $M_Q$ (mrem) | | | | Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem, or "ND" if $F_Q \le MDD_Q$) | | | | Annual Baseline, $B_A$ (mrem) | $B_A + MDD_A$ (mrem) | Annual Monitoring Data, $M_A$ (mrem) | Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or "ND" if $F_A \le MDD_A$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | | | |
| CL-01 | 18.5 | 25.1 | 18.9 | 19.2 | 19.4 | 22.7 | ND | ND | ND | ND | 74.04 | 83.55 | 80.2 | ND |
| CL-02 | 19.2 | 25.8 | 19.2 | 19.5 | 22.4 | 23.3 | ND | ND | ND | ND | 76.7 | 86.21 | 84.4 | ND |
| CL-03 | 18.7 | 25.3 | 18.9 | 18.1 | 19.6 | 21.6 | ND | ND | ND | ND | 74.7 | 84.21 | 78.2 | ND |
| CL-04 | 18.2 | 24.8 | 18.3 | 18.5 | 19.2 | 21.2 | ND | ND | ND | ND | 72.8 | 82.31 | 77.2 | ND |
| CL-05 | 19.1 | 25.7 | 19.3 | 19 | 18.6 | 20.3 | ND | ND | ND | ND | 76.5 | 86.01 | 77.2 | ND |
| CL-06 | 16.5 | 23.1 | 15.1 | 17.3 | 16.7 | 19.1 | ND | ND | ND | ND | 65.8 | 75.31 | 68.2 | ND |
| CL-07 | 17.4 | 24 | 18.1 | 17.9 | 19 | 20.6 | ND | ND | ND | ND | 69.5 | 79.01 | 75.6 | ND |
| CL-08 | 18.5 | 25.1 | 18 | 17.6 | 21.4 | 20.4 | ND | ND | ND | ND | 74 | 83.51 | 77.4 | ND |
| CL-11 | 17.3 | 23.9 | 18 | 17 | 17.9 | 18.3 | ND | ND | ND | ND | 69.3 | 78.81 | 71.2 | ND |
| CL-114[(1)] | 20.1 | 26.7 | 19.9 | 19.6 | 20.2 | 21.3 | ND | ND | ND | ND | 81 | 90.81 | 81 | ND |
| CL-15 | 16.6 | 23.2 | 17.6 | 18 | 19.4 | 18.5 | ND | ND | ND | ND | 66.3 | 75.81 | 73.5 | ND |
| CL-22 | 19.4 | 26 | 19.4 | 20.1 | 22.7 | 22.2 | ND | ND | ND | ND | 77.6 | 87.11 | 84.4 | ND |
| CL-23 | 20.4 | 27 | 19 | 20.1 | 20.5 | 20.9 | ND | ND | ND | ND | 81.5 | 91.01 | 80.5 | ND |
| CL-24 | 20.1 | 26.7 | 19.2 | 21.3 | 19 | 22.6 | ND | ND | ND | ND | 80.5 | 90.01 | 82.1 | ND |
| CL-33 | 19.8 | 26.4 | 18.1 | 20.2 | 23 | 21.5 | ND | ND | ND | ND | 79.2 | 88.71 | 82.8 | ND |
| CL-34 | 19.4 | 26 | 18.6 | 18.8 | 18.2 | 17.9 | ND | ND | ND | ND | 77.5 | 87.01 | 73.5 | ND |
| CL-35 | 17.9 | 24.5 | *(2) | 18.5 | 19.5 | 19.9 | ND | ND | ND | ND | 71.6 | 81.11 | 57.9 | ND |
| CL-36 | 18.6 | 25.2 | 18.3 | 16.9 | 19.7 | 19.4 | ND | ND | ND | ND | 74.2 | 83.71 | 74.3 | ND |
| CL-37 | 17.8 | 24.4 | 18.5 | 19.1 | 19.2 | 20.3 | ND | ND | ND | ND | 71.1 | 80.61 | 77.1 | ND |
| CL-41 | 19.8 | 26.4 | 20.3 | 21.2 | 22.3 | 22.9 | ND | ND | ND | ND | 79.4 | 88.91 | 86.7 | ND |

$MDD_Q$ = Quarterly Minimum Differential Dose = 6.6 mrem
$MDD_A$ = Annual Minimum Differential Dose = 9.5 mrem
ND = Not Detected, where $M_Q \le (B_Q+MDD_Q)$ or $M_A \le (B_A+MDD_A)$

*(1)* During 2025, the ODCM was revised, and sampling location CL-14 changed in Figure 7-1. This change was effective in September of 2025. From January 2025 - September 2025, the CL-14 sampling location was in the janitorial closet in the Service Building. In September 2025, with the approved revision of the ODCM, the location changed to the sink in the Nuclear Training Department building.

*(2)* See Table 9: Sample Deviation Summary

| Monitoring Location | Quarterly Baseline, $B_Q$ (mrem) | $B_Q$ + $MDD_Q$ (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) | $B_A$ + $MDD_A$ (mrem) | Annual Monitoring Data, $M_A$ (mrem) | Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or “ND” if $F_A \leq MDD_A$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | | | |
| CL-42 | 18.6 | 25.2 | 18 | 18.9 | 20.1 | 21.8 | ND | ND | ND | ND | 74.2 | 83.71 | 78.8 | ND |
| CL-43 | 19.9 | 26.5 | 20.3 | 20.5 | 21.6 | 20.7 | ND | ND | ND | ND | 79.7 | 89.21 | 83.1 | ND |
| CL-44 | 18.9 | 25.5 | 18.9 | 17.9 | 21.9 | 21.1 | ND | ND | ND | ND | 75.4 | 84.91 | 79.8 | ND |
| CL-45 | 20.2 | 26.8 | 19.5 | 19.6 | 23.4 | 22.7 | ND | ND | ND | ND | 80.6 | 90.11 | 85.2 | ND |
| CL-46 | 19.2 | 25.8 | 17.8 | 18.4 | 19.9 | 21.6 | ND | ND | ND | ND | 73 | 82.51 | 77.7 | ND |
| CL-47 | 19.9 | 26.5 | 20 | 18.4 | 21.4 | 22.1 | ND | ND | ND | ND | 79.4 | 88.91 | 81.9 | ND |
| CL-48 | 18.6 | 25.2 | 18.6 | 20.1 | 20 | 19.4 | ND | ND | ND | ND | 74.2 | 83.71 | 78.1 | ND |
| CL-49 | 20 | 26.6 | 19.7 | 19.5 | 21.1 | 23 | ND | ND | ND | ND | 79.8 | 89.31 | 83.3 | ND |
| CL-51 | 20.2 | 26.8 | 19.8 | 20.1 | 19.6 | 23.1 | ND | ND | ND | ND | 76.6 | 86.11 | 82.6 | ND |
| CL-52 | 19.9 | 26.5 | 20 | 19.7 | 20 | 21.6 | ND | ND | ND | ND | 75.6 | 85.11 | 81.3 | ND |
| CL-53 | 18 | 24.6 | 22.1 | 18.9 | 20.7 | 20.3 | ND | ND | ND | ND | 71.9 | 81.41 | 82 | 10.1 |
| CL-54 | 19.5 | 26.1 | 19.6 | 19.7 | 18.6 | 20.6 | ND | ND | ND | ND | 78 | 87.51 | 78.5 | ND |
| CL-55 | 19.7 | 26.3 | 20 | 20.6 | 21.9 | 21.7 | ND | ND | ND | ND | 78.7 | 88.21 | 84.2 | ND |
| CL-56 | 20.3 | 26.9 | 18.4 | 21.7 | 24.5 | 21.2 | ND | ND | ND | ND | 81 | 90.51 | 85.8 | ND |
| CL-57 | 20.4 | 27 | 21.7 | 19.8 | 21.9 | 21.3 | ND | ND | ND | ND | 81.5 | 91.01 | 84.7 | ND |
| CL-58 | 19.8 | 26.4 | 21.1 | 19.2 | 18.2 | 21.1 | ND | ND | ND | ND | 79.1 | 88.61 | 79.6 | ND |
| CL-60 | 19.8 | 26.4 | 18.8 | 16.8 | 21.4 | 20.4 | ND | ND | ND | ND | 79 | 88.51 | 77.4 | ND |
| CL-61 | 19.5 | 26.1 | 19.2 | 18.8 | 19.7 | 19.7 | ND | ND | ND | ND | 78.1 | 87.61 | 77.4 | ND |
| CL-63 | 16.7 | 23.3 | 17.4 | 16.8 | 17 | 19.7 | ND | ND | ND | ND | 66.6 | 76.11 | 70.9 | ND |

Attachment 4, Environmental Direct Radiation Dosimetry Results

$MDD_Q$ = Quarterly Minimum Differential Dose = 6.6 mrem
$MDD_A$ = Annual Minimum Differential Dose = 9.5 mrem
ND = Not Detected, where $M_Q \leq (B_Q+MDD_Q)$ or $M_A \leq (B_A+MDD_A)$

Attachment 4, Environmental Direct Radiation Dosimetry Results

| Monitoring Location | Quarterly Baseline, $B_Q$ (mrem) | $B_Q + MDD_Q$ (mrem) | Normalized Quarterly Monitoring Data, $M_Q$ (mrem) | | | | Quarterly Facility Dose, $F_Q=M_Q-B_Q$ (mrem, or "ND" if $F_Q \le MDD_Q$) | | | | Annual Baseline, $B_A$ (mrem) | $B_A + MDD_A$ (mrem) | Annual Monitoring Data, $M_A$ (mrem) | Annual Facility Dose, $F_A=M_A-B_A$ (mrem, or "ND" if $F_A \le MDD_A$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | | | |
| CL-64 | 19 | 25.6 | 19.3 | 18.3 | 20.8 | 20.9 | ND | ND | ND | ND | 75.9 | 85.41 | 79.3 | ND |
| CL-65 | 20.1 | 26.7 | 20 | 19.5 | 22.9 | 22.8 | ND | ND | ND | ND | 80.5 | 90.01 | 85.2 | ND |
| CL-74 | 17 | 23.6 | 16.8 | 18.8 | 15.1 | 17.4 | ND | ND | ND | ND | 68 | 77.51 | 68.1 | ND |
| CL-75 | 18.9 | 25.5 | 19.8 | 19.7 | 17.5 | 20.1 | ND | ND | ND | ND | 75.7 | 85.21 | 77.1 | ND |
| CL-76 | 19.7 | 26.3 | 19.5 | 21.2 | 19.8 | 19.2 | ND | ND | ND | ND | 78.7 | 88.21 | 79.7 | ND |
| CL-77 | 18.1 | 24.7 | 17 | 17.2 | 17.6 | 20.4 | ND | ND | ND | ND | 72.2 | 81.71 | 72.2 | ND |
| CL-78 | 18 | 24.6 | 19.2 | 19.1 | 19 | 20.5 | ND | ND | ND | ND | 72 | 81.51 | 77.8 | ND |
| CL-79 | 19.3 | 25.9 | 17.7 | 19.3 | 20.8 | 20.9 | ND | ND | ND | ND | 77.1 | 86.61 | 78.7 | ND |
| CL-80 | 18.9 | 25.5 | 18.6 | 18.5 | 20.8 | 20.2 | ND | ND | ND | ND | 75.5 | 85.01 | 78.1 | ND |
| CL-81 | 19.2 | 25.8 | 20.2 | 20.5 | 20.6 | 20.6 | ND | ND | ND | ND | 76.8 | 86.31 | 81.9 | ND |
| CL-84 | 19.1 | 25.7 | 19.5 | 19.6 | 18.8 | 21.6 | ND | ND | ND | ND | 76.3 | 85.81 | 79.5 | ND |
| CL-90 | 15.6 | 22.2 | 16.8 | 15.4 | 15.1 | 16.6 | ND | ND | ND | ND | 62.2 | 71.71 | 63.9 | ND |
| CL-91 | 17.4 | 24 | 17.7 | 18 | 18.6 | 19.2 | ND | ND | ND | ND | 69.5 | 79.01 | 73.5 | ND |
| CL-97 | 19.4 | 26 | 18 | 21.5 | 20 | 21.4 | ND | ND | ND | ND | 77.6 | 87.11 | 80.9 | ND |
| CL-99 | 15.1 | 21.7 | 16.5 | 15.9 | 16.6 | 17.3 | ND | ND | ND | ND | 60.6 | 70.11 | 66.3 | ND |

$MDD_Q$ = Quarterly Minimum Differential Dose = 6.6 mrem
$MDD_A$ = Annual Minimum Differential Dose = 9.5 mrem
ND = Not Detected, where $M_Q \le (B_Q+MDD_Q)$ or $M_A \le (B_A+MDD_A)$

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# Annual Radiological Groundwater Protection Program Report 2025

Document Number: 50-461

**TABLE OF CONTENTS**



**TABLES**



**FIGURES**

## 1.0 LIST OF ACRONYMS AND DEFINITIONS

1. Alpha Particle (α): A charged particle emitted from the nucleus of an atom having a mass and charge equal in magnitude of a helium nucleus.

2. BWR: Boiling Water Reactor

3. 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.

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

5. Counting Error: An estimate of the two-sigma uncertainty associated with the sample results based on total counts accumulated.

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

7. Direct Radiation Monitoring: The measurement of radiation dose at various distances from the plant is assessed using thermoluminescent dosimeters (TLDs), optically stimulated luminescent dosimeters (OSLDs), and/or pressurized ionization chambers.

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

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

10. 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.

11. ISFSI: Independent Spent Fuel Storage Installation

12. LLD: Lower Limit of Detection. 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.

13. 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.

14. MDC: Minimum Detectable Concentration. Essentially synonymous with MDA for the purposes of radiological monitoring.

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

16. Microcurie (µCi): 3.7 x $10^4$ disintegrations per second, or 2.22 x$10^6$ disintegrations per minute.

17. millirem (mrem): 1/1000 rem; a unit of radiation dose equivalent in tissue.

18. Milliroentgen (mR): 1/1000 Roentgen; a unit of exposure to X- or gamma radiation.

19. N/A: Not Applicable

20. NEI: Nuclear Energy Institute

21. NRC: Nuclear Regulatory Commission

22. ODCM: Offsite Dose Calculation Manual

23. OSLD: Optically Stimulated Luminescence Dosimeter

24. Protected Area: A 10 CFR 73 security term is an area encompassed by physical barriers and to which access is controlled for security purposes. The fenced area immediately surrounding the plant and around ISFSI are commonly classified by the licensee as “Protected areas.” Access to the protected area requires a security badge or escort.

25. PWR: Pressurized Water Reactor

26. REC: Radiological Effluent Control

27. REMP: Radiological Environmental Monitoring Program

28. Restricted Area: A 10 CFRR 20 defined term where access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

29. TEDE: Total Effective Dose Equivalent (TEDE) means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

30. TLD: Thermoluminescent Dosimeter

31. TRM: Technical Requirements Manual

32. TS: Technical Specification

33. Unrestricted Area: An area, access to which is neither limited nor controlled by the licensee.

## 2.0 INTRODUCTION

### 2.1 About Nuclear Power

Commercial nuclear power plants are generally classified as either Boiling Water Reactors (BWRs) or Pressurized Water Reactors (PWRs), based on their design. A BWR includes a single coolant system where water used as reactor coolant boils as it passes through the core and the steam generated is used to turn the turbine generator for power production. A PWR, in contrast, includes two separate water systems: radioactive reactor coolant and a secondary system. Reactor coolant is maintained under high pressure, preventing boiling. The high-pressure coolant is passed through a heat exchanger called a steam generator where the secondary system water is boiled, and the steam is used to turn the turbine generator for power production.

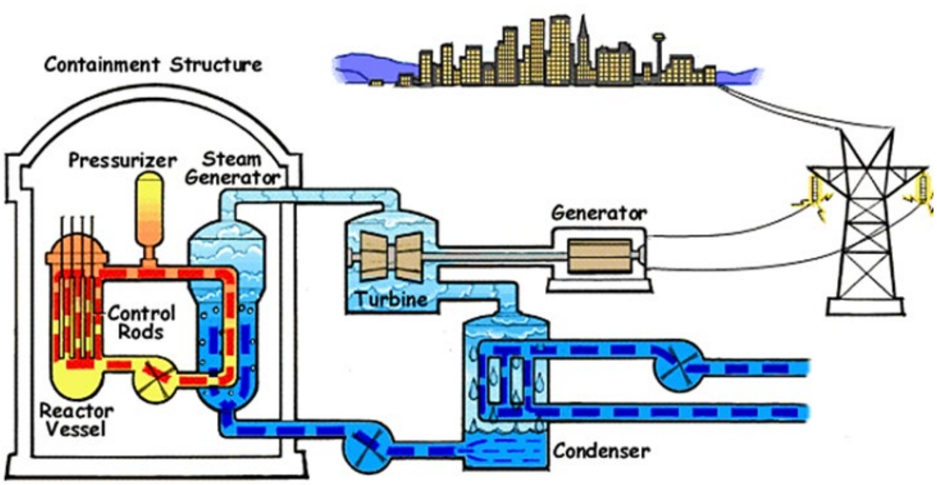



Figure 1, Pressurized Water Reactor (PWR) [1]

**2.1**

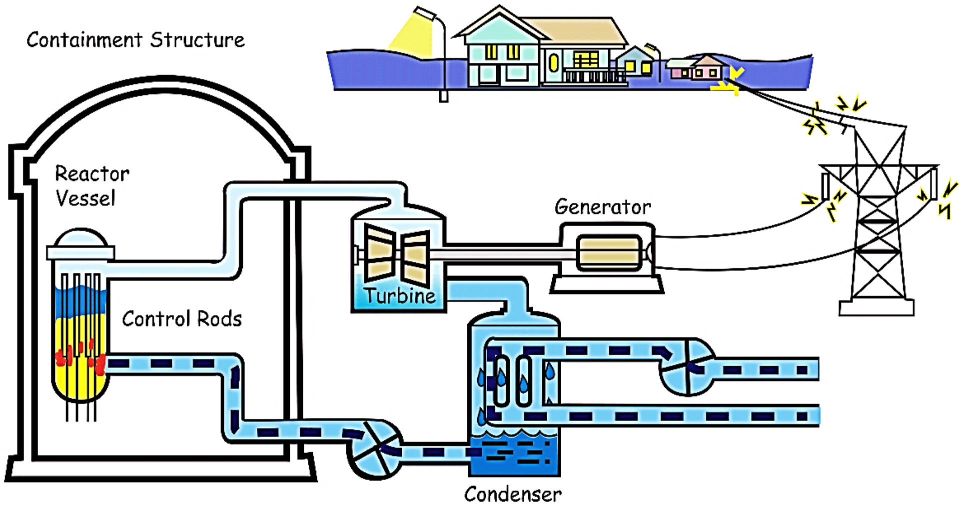



Figure 2, Boiling Water Reactor (BWR) [2]

Electricity is generated by a nuclear power plant similarly to the way that electricity is generated at other conventional types of power plants, such as those powered by coal or natural gas. Water is boiled to generate steam; the steam turns a turbine that is attached to a generator and the steam is condensed back into water to be returned to the boiler. What makes nuclear power different from these other types of power plants is that the heat is generated by fission and decay reactions occurring within and around the core containing fissionable uranium (U-235).

Nuclear fission occurs when certain nuclides (primarily U-233, U-235, or Pu-239) absorb a neutron and break into several smaller nuclides (called fission products) as well as producing some additional neutrons.

Fission results in production of radioactive materials including gases and solids that must be contained to prevent release or treated prior to release. These effluents are generally treated by filtration and/or hold-up prior to release. Releases are generally monitored by sampling and by continuously indicating radiation monitors. The effluent release data is used to calculate doses in order to ensure that dose to the public due to plant operation remains within required limits.

## 2.2 About Radiation Dose

Ionizing radiation, including alpha, beta, and gamma radiation from radioactive decay, has enough energy to break chemical bonds in tissues and result in damage to tissue or genetic material. The amount of ionization that will be generated by a given exposure to ionizing radiation is quantified as dose. Radiation dose is generally reported in units of millirem (mrem) in the US.

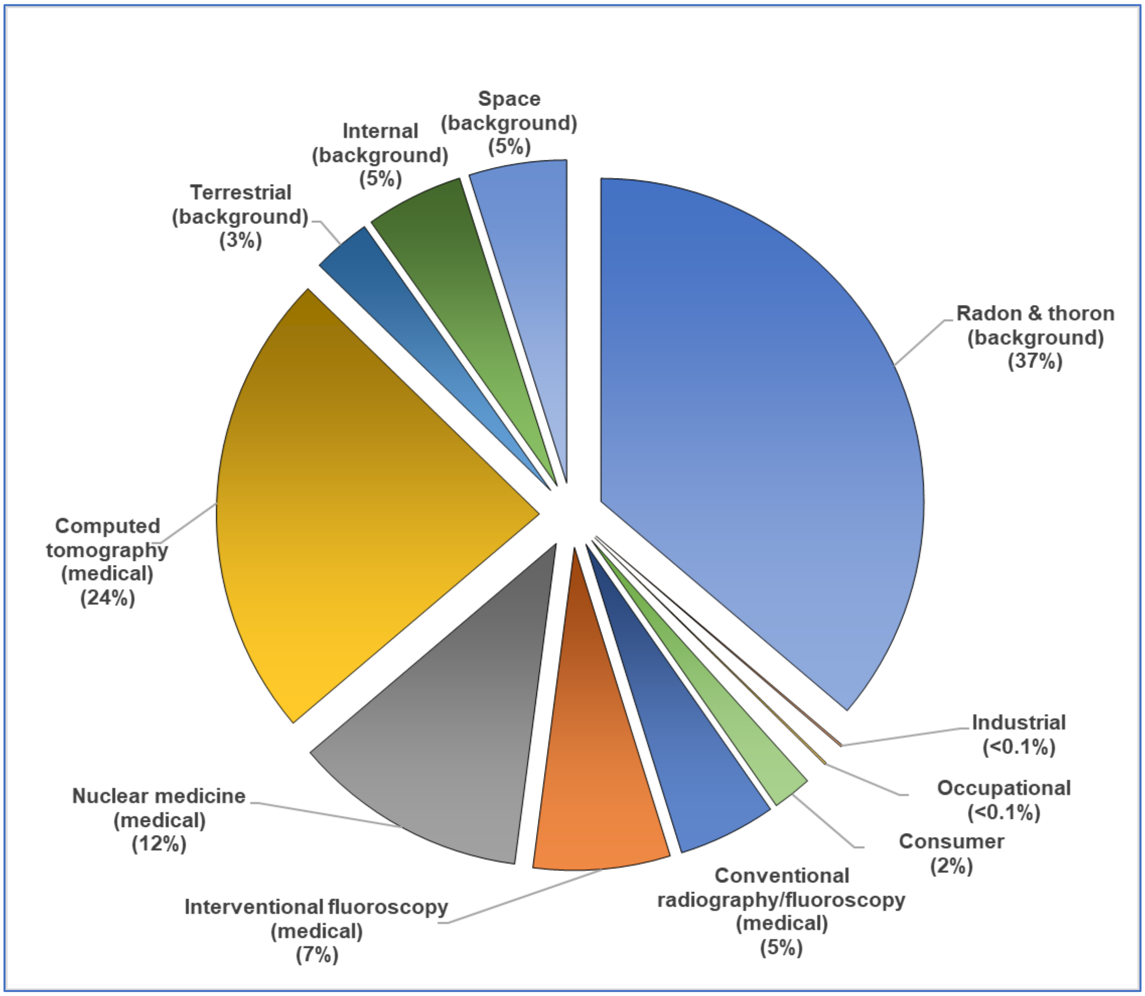



Figure 3, Sources of Radiation Exposure (NCRP Report No. 160) [3]

The National Council on Radiation Protection (NCRP) has evaluated the population dose for the US and determined that the average individual is exposed to approximately 620 mrem per year [3]. There are many sources for radiation dose, ranging from natural background sources to medical procedures, air travel, and industrial processes. Approximately half (310 mrem) of the average exposure is due to natural sources of radiation including exposure to radon, cosmic radiation, and internal radiation and terrestrial due to naturally occurring radionuclides. The remaining 310 mrem of exposure is due to man-made sources of exposure, with the most significant contributors being medical (48% of total mrem per year) due to radiation used in various types of medical scans and treatments. Of the remaining 2% of dose, most is due to consumer activities such as air travel, smoking cigarettes, and building materials. A small fraction of this 2% is due to industrial activities including generation of nuclear power.

Readers that are curious about common sources and effects of radiation dose that they may encounter can find excellent sources of information from the Health Physics Society, including the Radiation Fact Sheets [4], and from the US Nuclear Regulatory Commission website [5].

**2.3 About Dose Calculation**

Concentrations of radioactive material in the environment resulting from plant operations are very small and it is not possible to determine doses directly using measured activities of environmental samples. To overcome this, dose calculations based on measured activities of effluent streams are used to model the dose impact for Members of the Public due to plant operation and effluents. There are several mechanisms that can result in dose to Members of the Public, including: Ingestion of radionuclides in food or water; Inhalation of radionuclides in air; Immersion in a plume of noble gases; and Direct Radiation from the ground, the plant or from an elevated plume.

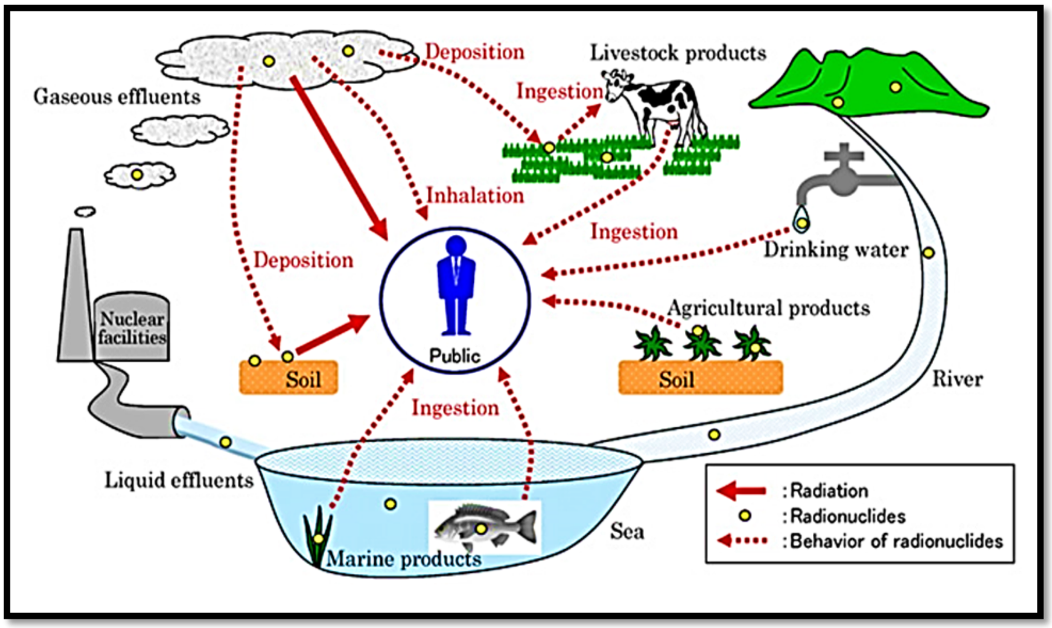



Figure 4, Potential exposure pathways to Members of the Public due to Plant Operations [6]

Each plant has an Offsite Dose Calculation Manual (ODCM) that specifies the methodology used to obtain the doses in the Dose Assessment section of this report. The dose assessment methodology in the ODCM is based on NRC Regulatory Guide 1.109 [7] and NUREG-0133 [8]. Doses are calculated by determining what the nuclide concentration will be in air, water, on the ground, or in food products based on plant effluent releases. Release points are continuously monitored to quantify what concentrations of nuclides are being released. For gaseous releases meteorological data is used to determine how much of the released activity will be present at a given location outside of the plant either deposited onto the ground or in gaseous form. Intake patterns and nuclide bio-concentration factors are used to determine how much activity will be transferred into animal milk or meat. Finally, human ingestion factors and dose factors are used to determine how much activity will be consumed and how much dose the consumer will receive. Inhalation dose is calculated by determining the concentration of nuclides and how much air is breathed by the individual.

For liquid releases, dilution and mixing factors are used to model the environmental concentrations in water. Drinking water pathways are modeled by determining the concentration of nuclides in the water at the point where the drinking water is sourced (e.g., taken from wells, rivers, or lakes). Fish and invertebrate pathways are determined by using concentration at the release point, bioaccumulation factors for the fish or invertebrate and an estimate of the quantity of fish consumed.

Each year a Land Use Census is performed to determine what potential dose pathways currently exist within a five-mile radius around the plant, the area most affected by plant operations. The Annual Land Use Census identifies the locations of vegetable gardens, nearest residences, milk animals and meat animals. The data from the census is used to determine who is the likely to be most exposed to radiation dose as a result of plant operation.

There is significant uncertainty in dose calculation results, due to modeling dispersion of material released and bioaccumulation factors, as well as assumptions associated with consumption and land-use patterns. Even with these sources of uncertainty, the calculations do provide a reasonable estimate of the order of magnitude of the exposure. Conservative assumptions are made in the calculation inputs such as the number of various foods and water consumed, the amount of air inhaled, and the amount of direct radiation exposure from the ground or plume, such that the actual dose received are likely lower than the calculated dose. Even with the built-in conservatism, doses calculated for the maximum exposed individual due to plant operation are a very small fraction of the annual dose that is received due to other sources. The calculated doses due to plant effluents, along with REMP results, serve to provide assurance that radioactive effluents releases are not exceeding safety standards for the environment or people living near the plant.

## 3.0 NEI 07-07 ONSITE RADIOLOGICAL GROUNDWATER MONITORING PROGRAM

Clinton Clean Energy Center has developed a Groundwater Protection Initiative (GPI) program in accordance with NEI 07-07, Industry Ground Water Protection Initiative – Final Guidance Document [9]. 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. During 2025, Clinton Station collected and analyzed groundwater samples in accordance with the requirements of approved procedures following regulatory methods.

This section is included in this report to communicate results of NEI 07-07 Radiological Groundwater Monitoring Program. Monitoring wells installed as part of GPI program are sampled and analyzed as summarized in Table 1, Groundwater Protection Program Monitoring Well Sampling Locations. In addition to reporting results from NEI 07-07 monitoring wells, voluntary communications to offsite governmental agencies for onsite leaks or spills per NEI 07-07 Objective 2.2 are also reported as part of this report. Samples and results taken in support of NEI 07-07 groundwater monitoring program are not part of the Radiological Environmental Monitoring Program (REMP) but should be reported as part of ARERR.

Table 1, Groundwater Protection Program Monitoring Well Sampling Locations

| Site | Site Type |
| --- | --- |
| B-3 | Monitoring Well |
| MW-CL-1 | Monitoring Well |
| MW-CL-2 | Monitoring Well |
| MW-CL-12I | Monitoring Well |
| MW-CL-13I | Monitoring Well |
| MW-CL-13S | Monitoring Well |
| MW-CL-14S | Monitoring Well |
| MW-CL-15I | Monitoring Well |
| MW-CL-15S | Monitoring Well |
| MW-CL-16S | Monitoring Well |
| MW-CL-17S | Monitoring Well |
| MW-CL-18I | Monitoring Well |
| MW-CL-18S | Monitoring Well |
| MW-CL-19S | Monitoring Well |
| MW-CL-20S | Monitoring Well |
| MW-CL-21S | Monitoring Well |
| MW-CL-22S | Monitoring Well |
| MW-CL-23S | Monitoring Well |
| MW-CL-24S | Monitoring Well |
| RG-E | Precipitation Water |
| RG-ENE | Precipitation Water |
| RG-ESE | Precipitation Water |

Table 1, Groundwater Protection Program Monitoring Well Sampling Locations Cont'd

| Site | Site Type |
|---|---|
| RG-N | Precipitation Water |
| RG-NE | Precipitation Water |
| RG-NNW | Precipitation Water |
| RG-S | Precipitation Water |
| RG-SE | Precipitation Water |
| RG-SW | Precipitation Water |
| RG-SW2 | Precipitation Water |
| RG-W | Precipitation Water |
| RG-WNW | Precipitation Water |
| RG-WSW | Precipitation Water |

## MAP OF COLLECTION SITES

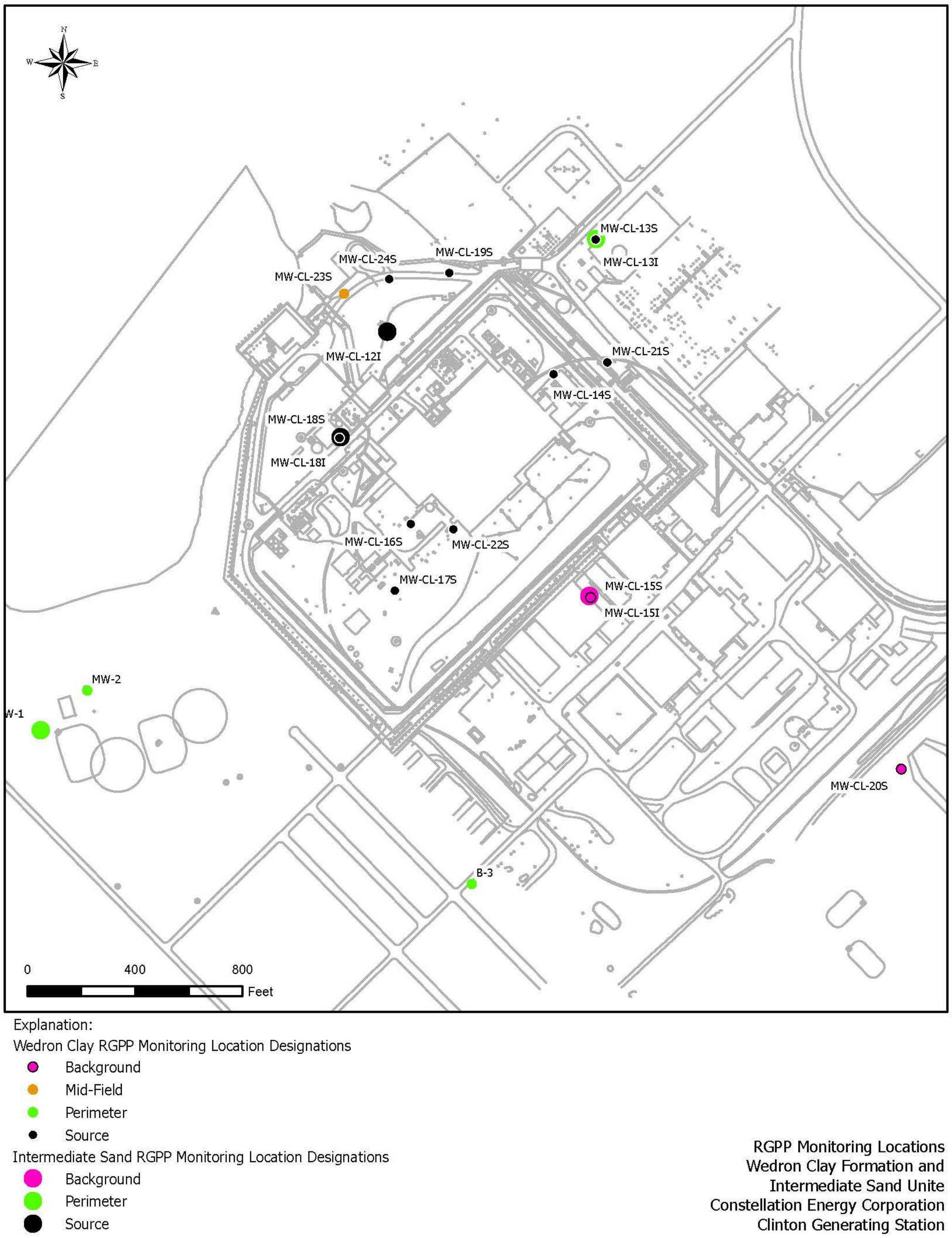



Figure 5, Onsite Sampling Locations at Clinton Power Station, 2025

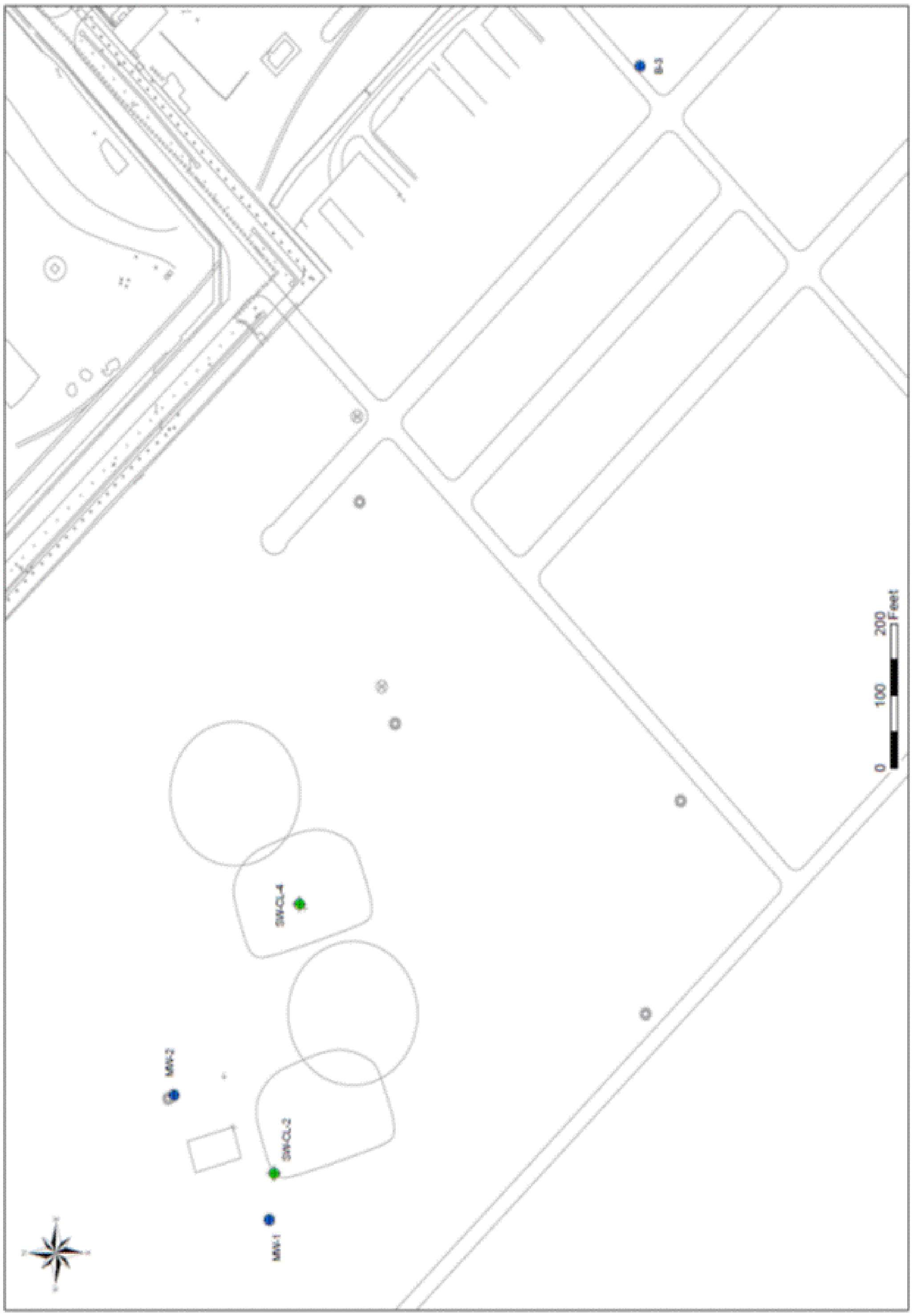



Figure 6, Sampling Locations South of Clinton Power Station, 2025

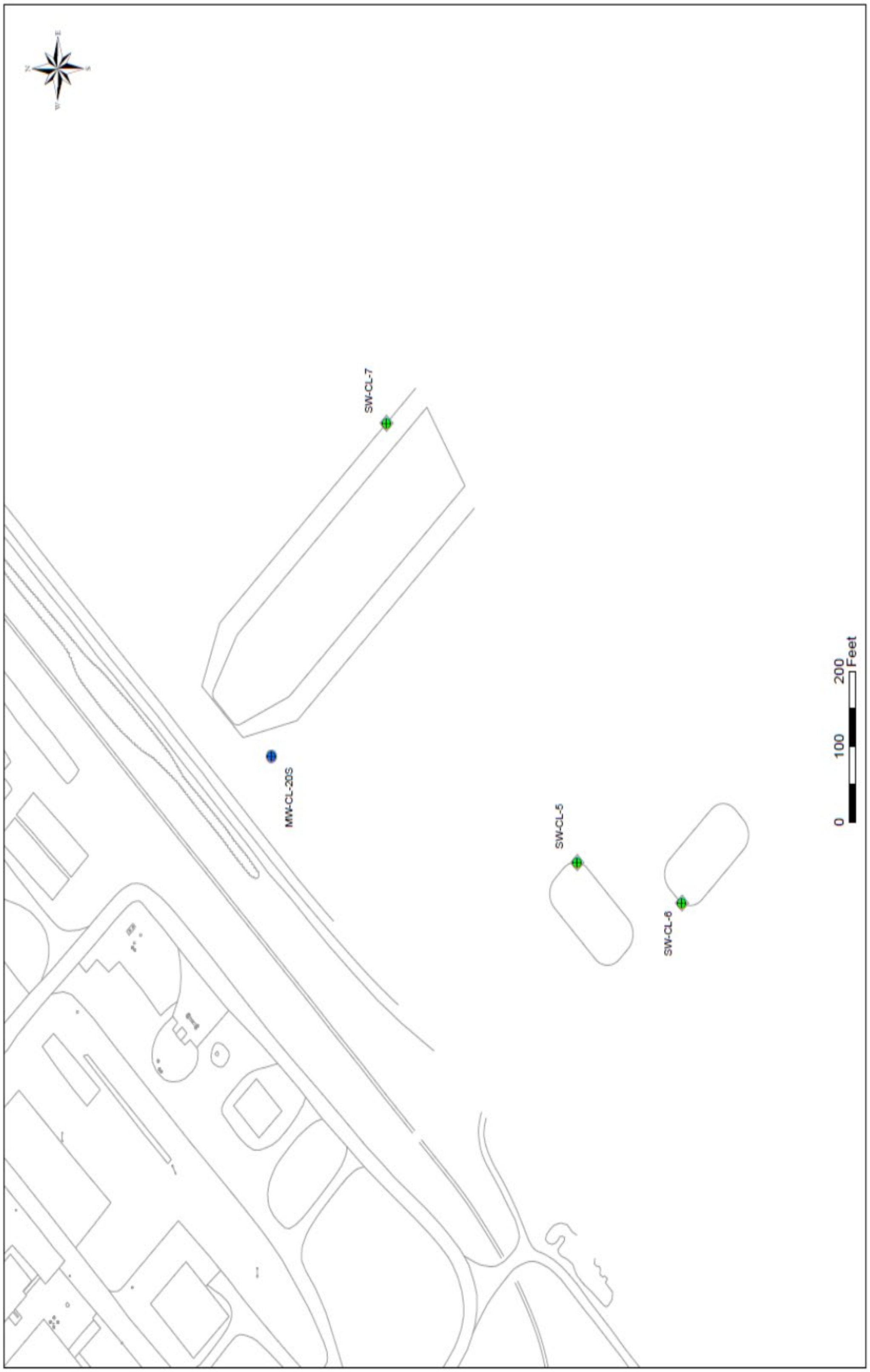
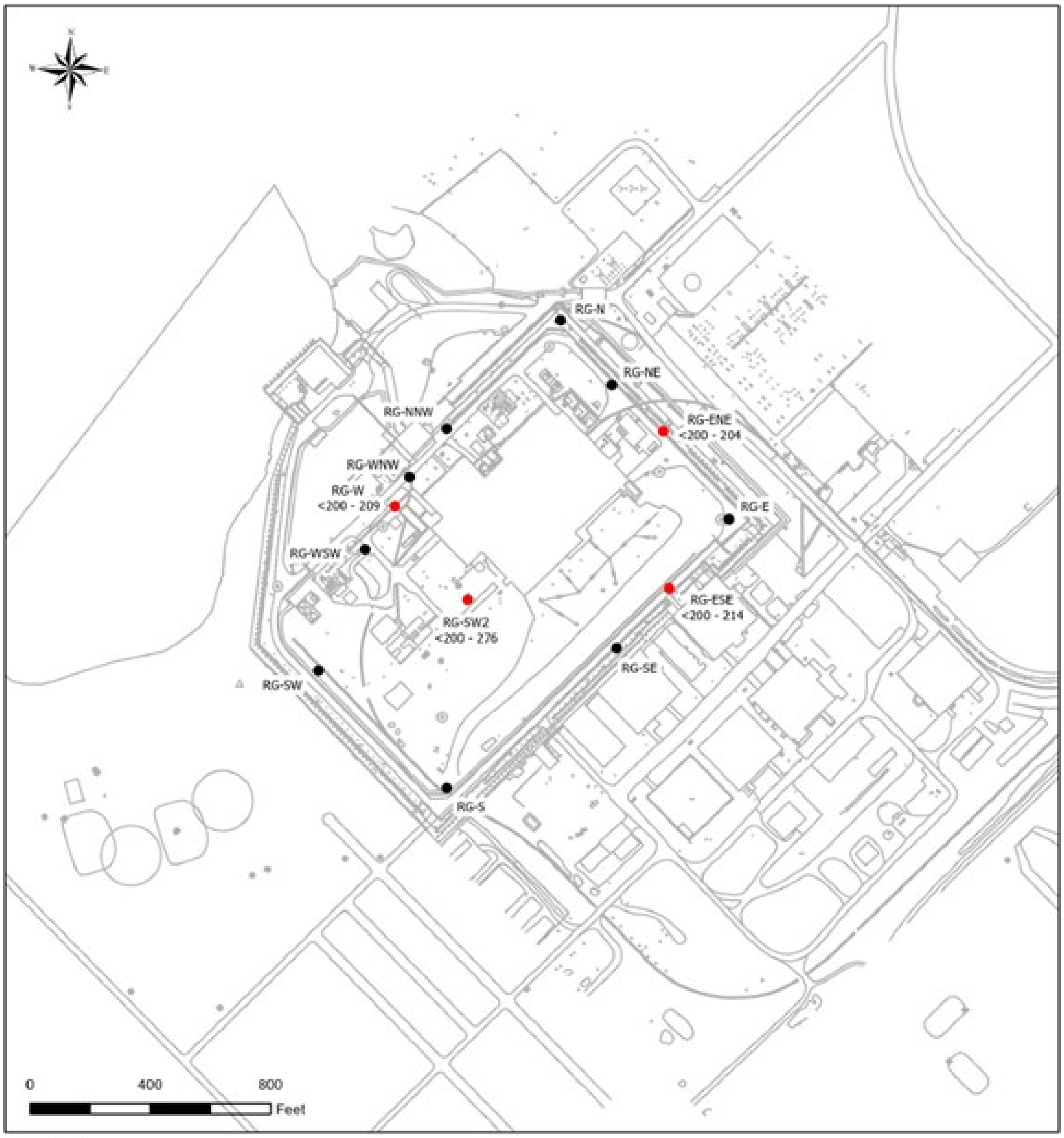



Figure 7, Sampling Locations East of Clinton Power Station, 2025




Explanation:
2023 Precipitation Recapture Sample Location
- ● (red) Result >200 pCi/L
- ● (black) Result <200 pCi/L
- Precipitation recapture samples collected in January and June, 2023.

Figure 8, Recapture Sampling Locations of Clinton Power Station, 2025

Radiological Groundwater Monitoring Program tritium results are summarized in Table 1. There was no detectable gross alpha, gamma, or HTDs in any of the groundwater monitoring locations in 2025.

Table 2, Groundwater Protection Monitoring Well Tritium, Gross Alpha, Strontium, Iron-55, and Nickel-63 in Ground Water Samples (pCi/L ± 2 sigma)

| Site | Collection Date | H-3 | Gr-A(Dis) | Gr-A(Sus) | Sr-89 | Sr-90 | Fe-55 | Ni-63 |
|---|---|---|---|---|---|---|---|---|
| B-3 | 5/28/2025 | < 187 | | | | | | |
| MW-CL-12I | 3/5/2025 | < 193 | | | | | | |
| MW-CL-12I | 5/28/2025 | < 184 | < 1 | < 0.6 | < 4 | < 0.9 | < 111 | < 4 |
| MW-CL-12I | 6/25/2025 | < 190 | | | | | | |
| MW-CL-12I | 7/1/2025 | < 188 | | | | | | |
| MW-CL-12I | 12/16/2025 | < 190 | | | | | | |
| MW-CL-13S | 3/5/2025 | < 186 | | | | | | |
| MW-CL-13S | 5/28/2025 | < 186 | < 2 | < 0.6 | < 4 | < 0.9 | < 59 | < 4 |
| MW-CL-13S | 7/1/2025 | < 191 | | | | | | |
| MW-CL-13S | 12/16/2025 | < 192 | | | | | | |
| MW-CL-14S | 3/6/2025 | < 185 | | | | | | |
| MW-CL-14S | 5/29/2025 | < 195 | < 2 | < 0.6 | < 4 | < 0.7 | < 85 | < 5 |
| MW-CL-14S | 6/25/2025 | < 196 | | | | | | |
| MW-CL-14S | 7/2/2025 | < 188 | | | | | | |
| MW-CL-14S | 12/17/2025 | 305 ± 125 | | | | | | |
| MW-CL-16S | 3/6/2025 | 210 ± 126 | | | | | | |
| MW-CL-16S | 5/29/2025 | 294 ± 126 | < 2 | < 0.6 | < 7 | < 1.0 | < 66 | < 4 |
| MW-CL-16S | 7/2/2025 | 273 ± 127 | | | | | | |
| MW-CL-16S | 12/17/2025 | 198 ± 120 | | | | | | |
| MW-CL-17S | 3/6/2025 | < 188 | | | | | | |
| MW-CL-17S | 5/29/2025 | < 183 | < 2 | < 0.6 | < 7 | < 0.7 | < 147 | < 5 |
| MW-CL-17S | 7/2/2025 | < 188 | | | | | | |
| MW-CL-17S | 12/17/2025 | < 184 | | | | | | |
| MW-CL-18I | 3/6/2025 | < 188 | | | | | | |
| MW-CL-18I | 5/29/2025 | < 184 | < 2 | < 0.6 | < 9 | < 0.8 | < 92 | < 4 |
| MW-CL-18I | 7/2/2025 | < 188 | | | | | | |
| MW-CL-18I | 12/17/2025 | < 183 | | | | | | |
| MW-CL-18S | 3/6/2025 | < 192 | | | | | | |
| MW-CL-18S | 5/29/2025 | < 194 | < 2 | < 0.6 | < 10 | < 0.9 | < 88 | < 4 |
| MW-CL-18S | 7/2/2025 | < 194 | | | | | | |
| MW-CL-18S | 12/17/2025 | < 187 | | | | | | |
| MW-CL-19S | 3/5/2025 | < 190 | | | | | | |
| MW-CL-19S | 5/28/2025 | < 185 | < 2 | < 0.7 | < 6 | < 0.9 | < 90 | < 5 |
| MW-CL-19S | 6/25/2025 | < 190 | | | | | | |
| MW-CL-19S | 7/1/2025 | < 198 | | | | | | |
| MW-CL-19S | 12/16/2025 | < 186 | | | | | | |

Table 2, Groundwater Protection Monitoring Well Tritium, Gross Alpha, Strontium, Iron-55, and Nickel-63 in Ground Water Samples (pCi/L ± 2 sigma) Cont'd

| Site | Collection Date | H-3 | Gr-A(Dis) | Gr-A(Sus) | Sr-89 | Sr-90 | Fe-55 | Ni-63 |
|---|---|---|---|---|---|---|---|---|
| MW-CL-21S | 3/5/2025 | < 188 | | | | | | |
| MW-CL-21S | 5/28/2025 | < 190 | < 2 | < 0.6 | < 7 | < 0.9 | < 104 | < 4 |
| MW-CL-21S | 7/1/2025 | < 198 | | | | | | |
| MW-CL-21S | 12/16/2025 | < 188 | | | | | | |
| MW-CL-22S | 3/6/2025 | < 190 | | | | | | |
| MW-CL-22S | 5/29/2025 | < 192 | < 2 | < 0.6 | < 5 | < 0.9 | < 118 | < 5 |
| MW-CL-22S | 7/2/2025 | < 193 | | | | | | |
| MW-CL-22S | 12/17/2025 | < 191 | | | | | | |
| MW-CL-23S | 8/18/2025 | < 195 | < 3 | < 0.6 | < 5 | < 0.6 | < 81 | < 4 |
| MW-CL-23S | 12/16/2025 | < 186 | | | | | | |
| MW-CL-24S | 8/18/2025 | < 197 | < 3 | < 0.6 | < 8 | < 0.8 | < 186 | < 4 |
| MW-CL-24S | 12/16/2025 | < 192 | | | | | | |
| MW-CL-1 | 5/28/2025 | < 182 | | | | | | |
| MW-CL-13I | 5/28/2025 | < 181 | | | | | | |
| MW-CL-15I | 5/28/2025 | < 191 | | | | | | |
| MW-CL-15S | 5/28/2025 | < 188 | | | | | | |
| MW-CL-2 | 5/28/2025 | < 188 | | | | | | |
| MW-CL-20S | 5/28/2025 | < 185 | | | | | | |

Table 3, Groundwater Protection Program Monitoring Well Gamma Isotopic in Groundwater Samples (pCi/L ± 2 sigma)

| Site | Collection Date | Be-7 | K-40 | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B-3 | 5/28/2025 | < 17 | < 29 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 11 | < 4 |
| MW-CL-1 | 5/28/2025 | < 16 | < 34 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 10 | < 4 |
| MW-CL-12I | 5/28/2025 | < 16 | < 29 | < 2 | < 2 | < 4 | < 2 | < 4 | < 1 | < 3 | < 2 | < 2 | < 9 | < 4 |
| MW-CL-13I | 5/28/2025 | < 18 | < 40 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 11 | < 3 |
| MW-CL-13S | 5/28/2025 | < 19 | < 38 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 11 | < 3 |
| MW-CL-14S | 5/29/2025 | < 19 | < 42 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 11 | < 4 |
| MW-CL-15I | 5/28/2025 | < 18 | < 30 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 11 | < 4 |
| MW-CL-15S | 5/28/2025 | < 21 | < 22 | < 2 | < 2 | < 6 | < 3 | < 5 | < 2 | < 4 | < 3 | < 2 | < 12 | < 4 |
| MW-CL-16S | 5/29/2025 | < 19 | < 31 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 12 | < 4 |
| MW-CL-17S | 5/29/2025 | < 18 | < 38 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 11 | < 3 |
| MW-CL-18I | 5/29/2025 | < 16 | < 18 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 10 | < 3 |
| MW-CL-18S | 5/29/2025 | < 15 | < 16 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 11 | < 3 |
| MW-CL-19S | 5/28/2025 | < 14 | < 16 | < 2 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 2 | < 2 | < 9 | < 3 |
| MW-CL-2 | 5/28/2025 | < 17 | < 31 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 10 | < 3 |
| MW-CL-20S | 5/28/2025 | < 15 | < 28 | < 2 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 2 | < 2 | < 9 | < 3 |
| MW-CL-21S | 5/28/2025 | < 15 | < 29 | < 2 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 2 | < 2 | < 9 | < 3 |
| MW-CL-22S | 5/29/2025 | < 19 | < 37 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 12 | < 4 |
| MW-CL-23S | 8/18/2025 | < 20 | < 40 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 9 | < 3 |
| MW-CL-24S | 8/18/2025 | < 18 | < 22 | < 2 | < 2 | < 4 | < 2 | < 4 | < 2 | < 3 | < 2 | < 2 | < 9 | < 3 |

Table 4, Groundwater Protection Program Monitoring Well Tritium in Surface Water Samples (pCi/L ± 2 sigma)

| |
| --- |
| No Surface Water Samples Analyzed for Tritium in 2025 |

Table 5, Groundwater Protection Program Monitoring Well Tritium in Precipitation Water Samples
(pCi/L ± 2 sigma)

| |
|---|
| No Precipitation Water Samples Analyzed for Tritium in 2025 |

### 3.1 Voluntary Notification

During June 2025, Clinton Clean Energy Center did make a voluntary NEI 07-07 notification to State/Local officials, NRC, and to other stakeholders required by site procedures.

A steam leak was identified in a main steam instrument line inside the Turbine Building on May 28, 2025. It was isolated the same day and fully repaired by May 30, 2025. Heat from the steam triggered a Fire Protection sprinkler system, which condensed the steam. Some of the condensed steam (roughly 69-gallons) mixed with fire protection water and flowed through a floor drain to an oil/water separator that discharges to Outfall 004. The remainder of the condensed steam and fire protection water was pumped to the Rad Waste treatment system for processing or was captured by the oil water separator.

The release of the condensed steam and fire protection water mixture was released through outfall 004 and discovered on June 6th, when a prior day's sample was analyzed and found to contain tritium at a concentration of 65,935 pCi/L. A confirmatory sample was collected and analyzed on June 6, 2025. Subsequently, on June 7, 2025, the oil/water system discharge lines were plugged and sealed to prevent further discharge. Additionally, all floor drains inside the turbine building leading to the separator were plugged.

Outfall 004, which discharges onto crushed stone, was visually inspected to verify that no flow reached a navigable waterway or migrated offsite. Surface water and drinking water samples were obtained and analyzed for tritium with all results indicating less than detectable. Mitigating actions included removing all water from the Oil Separator and returning it to the station for processing through the Rad Waste treatment system. The oil and solids within Oil Separator #1 were extracted and prepared for radiological shipment off-site for disposal. Oil Separator #1 was cleaned prior to return to service. To support the investigation, a back-up sample of Outfall 004 which was collected on May 29, 2025, and analyzed on June 7, 2025, revealed a Tritium concentration of 16,062 pCi/L. Adjacent monitoring wells MW-CL-19S, MW-CL-12I, and MW-CL-14S were sampled to assist in evaluating on-site groundwater impacts, if any. In July, two wells, MW-CL-23S and MW-CL-24S, were installed downgradient from Outfall 004. These wells were sampled and analyzed for tritium, gamma-radionuclides, and HTDs, with results showing no detectable activity.

The amount of licensed material that reached Outfall 004 has been calculated to be 68.85 gallons and the total activity of the discharge from Outfall 004 has been calculated to be 0.001203 Curies which is less than the reporting requirement of 0.002 Curies. Per NEI 07-07, this event is being voluntarily communicated regardless of volume or activity level.

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